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COMPUTERS FOR THE REAL ESTATE APPRAISAL OFFICE
A WORKSHOP
UNIVERSITY OF WISCONSIN CENTER
702 Langdon Street

December 4-6, 1969

Thursday evening, December 4th

5:30-7:30 P.M.   Buffet supper will be kept hot on the top floor of the
Madison Inn to accommodate a variety of arrival times
for the seminar members.

7:30-10:00 P.M.   Seminar will meet informally in the Business School
Computer Center room B-5 at the School of Business for
demonstration of the inter-facing problems with a straight
computer installation and of several statistical appraisal
models. Transportation from the Madison Inn to the School
of Business and back will be provided.

Friday, December 5th

8:30 SHARP-9:00 A.M. Room 109 - Outline of seminar objectives, schedules, and
group organization.

9:00-10:00 A.M.   Room 109 - Full group session - A standardized office
form for calculator procedures and after-tax income
analysis presented by M. B. Hodges, Jr.

10:00-10:15   Coffee break.

10:15-12:00   Room 325 Group A - Introduction to the Wang Calculator
System with Pete Ellwood, Chuck Clettenberg.

Room 211 Group B - Introduction to the Service Bureau
terminal with John Schneider, Tom Turk.

Room 205 Group C - Introduction to a Visual Terminal from
Dialogue System with Robert Knitter, Bob Gibson.

Room 109 Group D - Introduction to the Realmetrics System
with Ron Graybeal.

12:00-1:00   Luncheon - East dining room lower level of Center Building.

1:00-3:30   Room 325 Group D - Introduction to the Wang Calculator
System with Pete Ellwood, Chuck Clettenberg.

Room 211 Group A - Introduction to the Service Bureau
terminal with John Schneider, Tom Turk.

Room 205 Group B - Introduction to a Visual Terminal from
Dialogue System with Robert Knitter, Bob Gibson.

Room 109 Group C - Introduction to the Realmetrics System
with Ron Graybeal.

3:30-3:45	Coffee Break.
3:45-5:30	Room 325 Group C - Introduction to the Wang Calcuiator System with Pete Ellwood, Chuck Clettenberg.
	Room 211 Group D - Introduction to the Service Bureau terminal with John Schneider, Tom Turk.
	Room 205 Group A - Introduction to a Visual Termi.al from Dialogue System with Robert Knitter, Bob Gibson.
	Room 109 Group B - Introduction to the Realmetrics Syste with Ron Graybeal.
5:30-7:00	Coctails and dinner break - Alumni lounge and East dining room on lower level of Center.
7:00-7:30	Full group session presentation in East dining room.
7:30-9:00	Room 325 Group B - Introduction to the Wang Calculator System with Pete Ellwood, Chuck Clettenberg.
	Room 211 Group C - Introduction to the Service Bureau terminal with John Schneider, Tom Turk.
	Room 205 Group D - Introduction to a Visual Terminal from Dialogue System with Robert Knitter, Bob Gibson.
	Room 109 Group A - Introduction to the Realmetrics System with Ron Graybeal.
After 9:00	Open

Saturday morning, December 6th

8:30-SHARP-9:30 A.M.	Room 109 Review of economics of systems displayed at the seminar by their proponents followed by unstructured group questions and discussion.
9:30-11:00	Room 109 Joint discussion of standardization, feasibility of educational coordination, and definition of areas for collaboration among professional organizations introducing computer techniques.
11:00-Till your plane leaves	Additional lab time where each member of the group may return to one or more of the systems demonstrated during the Friday sessions.

COMPUTERS FOR THE REAL ESTATE APPRAISAL OFFICE
WORKSHOP GROUP ASSIGNMENT LIST

December 4-6, 1969

GROUP A	**GROUP B**
<u>L. W. Ellwood</u>	<u>John S. Schneider</u>
Jered Benedict	Donald E. Snyder
Jerome Dasso	Carl J. Tschappat
Edmond Fisher	George L. Fisher
John E. Shanahan	Stanley E. Goode, Jr.
Wayne D. Hagood	T. C. Hitchings, Jr.
Felice A. Rocca, Jr.	Al Spalding

GROUP D	**GROUP C**
<u>Dr. Ronald Graybeal</u>	<u>Robert Knitter</u>
James Wasson	Robert L. Purnell
Norbert Stefaniak	Pere Soelberg
Roy Fisher	Douglas L. Gibson
M. B. Hodges, Jr.	John P. Sammon
Walter T. Potts, Jr.	Stephen G. Nardi
Dunlap Vanice	Stephen D. Messner

COMPUTERS FOR THE REAL ESTATE APPRAISAL OFFICE
A WORKSHOP
UNIVERSITY OF WISCONSIN CENTER
702 Langdon Street

December 4-6, 1969

LIST OF PARTICIPANTS

Jared Benedict	VP-American Appraisal Institute
Professor Jerome Dasso	University of Oregon
L. W. Ellwood*	MAI-Education Committee
Edmond Fisher	Appraiser and Consultant
George L. Fisher	Appraiser and Consultant
Roy Fisher	Appraiser and Consultant
Douglas L. Gibson	Appraiser and Consultant
Stanley E. Goode, Jr.	Appraiser and Consultant
Ronald S. Graybeal*	President of Realmetrics, Inc.
Wayne D. Hagood	Appraiser and Consultant
T. C. Hitchings, Jr.	Appraiser and Consultant
M. B. Hodges, Jr.*	Appraiser and Consultant
Robert Knitter*	Director, Business School Computer Center
Professor Stephen D. Messner	University of Connecticut
Stephen G. Nardi	Education Committee-Society of Industrial Realtors
Walter T. Potts, Jr.	Appraiser and Consultant
Robert L. Purnell	Chairman-IAAO Education Committee
Felice A. Rocca, Jr.	Appraiser and Consultant
John P. Sammon	Appraiser and Consultant
John S. Schneider*	Appraiser and Consultant
John E. Shanahan	Chairman-SRA Education Committee
Donald E. Snyder	Executive VP-Society of Real Estate Appraisers
Professor Pere Soelberg	University of Wisconsin, Milwaukee
Al Spalding	Appraiser and Consultant
Professor Norbert Stefaniak	University of Wisconsin, Milwaukee
Professor Carl J. Tschappat	Georgia State University
James G. Wasson	Education and Training-Mortgage Bankers' Association of America
Dunlap Vanice	Appraiser and Consultant

School of Business **IB** 1155 Observatory Drive, The University of Wisconsin, Madison 53706

Professor Richard B. Andrews
Professor Robert Knitter
Professor James Graaskamp
Instructor Karel J. Clettenberg
Instructor Thomas L. Turk
Instructor Robert Gibson
Workshop Administrator Colonel Fred Roberto U.S.A. (Ret.)
Professor Arthur Kahn* U. W. Computer Science Department
And Graduate Students in Real Estate

* Speaker and Lab Session Instructor

I.   Introduction and development of a case history. Description of data required. Specification of a procedure for computation. Use of a calculator. *Multiple use programs.*

II.   Continuation of case history. Describing repetitive calculations. Principles of discounted cash flow (review). Use and limitations of tables. Calculator and computer computations using cash flows. Introduction of model for student use.

III.   Evaluation, modification and extension of ~~cash~~ *financial* model. Discussion of similar calculations. Elwood computations and the use of a computer or calculator. Exploring a problem using a model.

IV.   Basics of computational hardware. Basics of software. Evaluating hardware/software performance. The economics of hardware/software.

V.   The current scene for the real estate specialist. Hardware and services currently in use. Software for real estate: comparison and summary of features.

VI.   Changes to look for in hardware, software and economics. Changes to work for in applications. Bonus applications in accounting, planning, and coordinating, clerical procedures, special computations, etc.

VII.   God and the computer: social implications of technology. The impact of the computer on the role of the professional. *Course review & in perspective.*

UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS
Real Estate Investment Teaching Model
September , 1969
Instructions For Use of the Coding Form

GENERAL
1. Cards were designed to require no change in field spacing stops set on
   the keypunching machine so that large batches of input forms may be
   done at once and so that a student may keypunch single cards to alter
   one or more assumptions for a second or third run.
2. One character or number for each blank. Decimal points, "X's",
   "-s" may not be altered or written over.
3. All dollar amounts must be coded in the rightmost portion of the allowed
   space - do not include dollar signs. Decimal figures must be corrected
   to the left relative to pre-printed decimal point.
4. For numerical inputs blank spaces will be read as a zero (0); for
   alphabetical inputs, blank spaces will provide white space on the output.

CARD 1
1. Last two digits of social security number required to differentiate
   between those with the same name.
2. Course and section number required for internal school accounting.
3. The equity discount rate is the yield rate at which the investor wishes
   to determine the present value of the project, discounting all cash
   returns to the beginning of the first period.
4. The income tax rate is the marginal rate assumed by the investor.
5. "#Cards #3" indicates the number of component description cards (1-6) in
   column 61. "# cards #4" indicates the number of mortgage cards (1-4)
   in column 64. Failure to code these properly will terminate processing
   of your data and you will receive no output.

CARD 2
1. Project description can be an address, firm name, or description of
   project and run such as "24 Unit Apart. - 90% loan".
2. Extraordinary expenses can be used to deduct for high vacancies in
   first year, to eliminate excess rents in the first year, to recognize
   commissions for leasing space, to permit higher operating costs during
   a "shake down" year, etc.
3. The staging multiplier permits an optional increase in gross rent,
   expenses, and real estate taxes due to an increase in rentable area
   provided for in the Component Description and Mortgage Description
   cards Starting Year column. Indicate year increase is to take effect
   in column marked "staging year" (1-9) DO NOT STAGE IN TENTH YEAR!
   Both year and multiplier must be coded but if staging option is not
   used leave both coding spaced blank.

CARD 3
1. Component description might be land, structure, and furnishings and
   you would repeat these categories if you wished to build a second stage.
2. % depreciable is 100% minus % of salvage.
3. Depreciation method code:
   - 0 = no depreciation
   - 1 = sum of the digits
   - 2 = straight line depreciation
   - 3 = 150% declining balance
   - 4 = 200% declining balance

4. Starting year is always a 1 for the original investment components and the staging year for any additions or replacement of such short-lived items as furniture.
5. Useful life is number of years over which component will be depreciated (0-99).

CARD 4
1. Mortgage description may include any type of financial instrument. For example, a land lease could be defined as a site worth $300,000, monthly payment would be 1/12 of annual rent and interest rate would be the annual rent divided by the indicated value of the land.
2. Interest rates are constant annual rates. 8.5% interest = .0850.
3. Starting and Ending years are the first and last years payments are to be made.
4. If mortgage term is longer than ten years or is not refinanced, place a 10 in the column "Ending Year."
5. Indicate full amortization term in years of mortgage in column "Term".
6. You must indicate which new mortgage will replace a specific old mortgage. Otherwise if a loan matures during a projection period, final balance will appear in cash flow statement as "Principal Payment" and if it succeeds available cash, there will be an automatic working capital loan.

CARD 5
1. Expenses do not include real estate taxes. Expenses may include only cash outlay items or may include reserves for replacement and redecorating. In the first case you may wish to include several incremental cost component outlays for remodeling and refurnishing as an alternative to regular maintenance and reserve allocation.
2. All growth rates are constant annual rates.   5% growth rate = .05
                                                  - 5% growth rate = -.05
   Patterns of growth rates should be consistent; if rents are constant and expenses are expected to increase, project value rate of growth should probably decline.

CARD 6
1. Real estate taxes are for the first year. In Madison the average annual growth in real estate taxes is exceeding 6% and an average increase of 5% a year is the typical minimum rate of tax increase in cities throughout Wisconsin.

CARD 7
1. The vacancy rate is the percent of rent lost due to vacancy and turnover. For example, if an apartment has 10 units it has 120 monthly rental units. If 6 units turn over and are vacant 1 month the vacancy rate is 6/120 or 5%.
2. The working capital loan interest rate is either the 90 day note rate at the bank or the equity discount rate reflecting the yield required on short-term advances of equity money.

UNIVERSITY OF WISCONSIN SCHOOL OF BUSINESS
Real Estate Investment Teaching Model
September, 1969
Basic Definitions of Model Outputs

1) Current period return on Net Worth before taxes =

$$\frac{\text{Cash Throw-off + Change in Net Worth}}{\text{Net Worth at End of Previous Year}}$$

2) Current period return on net worth after taxes =

$$\frac{\text{Spendable cash + tax savings on other income + (change in net worth - change in cap. gains tax)}}{\text{Net worth at the end of previous year less capital gains tax}}$$

3) Cash Return on original cash equity before taxes =

$$\frac{\text{Cash throw-off}}{\text{Total initial investment less initial Mortgage Debt}}$$

4) Cash Return on original equity cash after taxes =

$$\frac{\text{Spendable Cash after taxes + Tax savings on other income}}{\text{Total initial investment cost less initial mtge. debt}}$$

5) Net income - market value ratio

$$\frac{\text{Net Income}}{\text{Market Value for the same period}}$$

6) Expense Ratio =

$$\frac{\text{Operating Expenses Including R.E. Taxes}}{\text{Gross Income}}$$

7) Default ratio =

$$\frac{\text{Operating Exp. + R. E. Taxes + Prin. \& Interest on Mtge. + Working Cap. Loan Princ. Repayment}}{\text{Gross Income}}$$

8) Lender Bonus Interest Rate =

$$\frac{\% \text{ of effective gross (not to exceed cash throw-off for period)}}{\text{balance due on loan at beginning of period}}$$

9) Resale Market Value at End of year

Total initial investment cost + Additional staged investment X

Index for Year

10) Net worth of property =

Market value less balance of loans less working capital loans

11) Capital Gains =

Market value projection - (Total capital investment - cumulative depreciation taken)

12) Market value less (total investment less cumulative depreciation + disallowed excess depreciation)

13) Capital Gains Tax =

(1/2 Capital Gain X Income Tax Rate) + (disallowed excess depreciation X income tax rate)

14) Present value of project before taxes =

Original mortgage balance + PV of received stream of cash throw-off + PV of net worth if sold at end of year indicated by column number.

15) Present value of project after taxes =

Original mortgage balance + present value of received stream of spendable cash after taxes + PV of received tax savings on other income + PV of (net worth less capital gains tax) if sold at end of year indicated by column number.

Disallowed excess depreciation = cumulative accelerated depreciation less straight line depreciation for the same period minus 12% of accelerated depreciation in excess of straight line for each year after year 11.

UNIVERSITY OF WISCONSIN
Real Estate Investment Teaching Model
Demonstration Case Study #1

ANALYSIS FOR PUCHASE OF APARTMENT HOUSE INVESTMENT

1. Assume you wish to analyze the investment value at alternative purchase prices
    of a 24 unit apartment building, located at 2575 University Avenue, Madison,
    Wisconsin. The building has twelve two-bedroom apartments that each rent fur-
    nished for $140 per month and twelve one-bedroom apartments that rent each for
    $125 per month. The building is five years old, unfurnished, in need of main-
    tenance and available as is for about $225,000.

2. The building is well located and vacant land in the area is selling for about
    $1700 per unit. This means that $40,000 of the purchase price could be de-
    signated as land value. In addition to the land and building, the purchase
    price could be allocated to include $12,500 for the elevator and $7,200 to the
    parking stalls.

3. Market analysis indicates that the building would rent very well if all the units
    were carpeted and furnished. For this work it is estimated that it would cost
    $600 per two-bedroom unit and $500 for each one-bedroom unit or a total invest-
    ment of $13,200 by the prospective buyer.

4. The total capital expenditures could be allocated for depreciation purposes
    as follows, keeping in mind that the prospect would be a second user and there-
    fore only entitled to a maximum of 150% declining balance except for his new
    investment in furnishing. The percent depreciable and the number of years of
    remaining useful life are reasonable estimates given some knowledge of the
    practices of the Internal Revenue Service and the condition of the building:

land	$40,000		No depreciation allowed	
parking	7,500	50%	10 years	150%
furnishings	13,200	100%	7 years	sum of the digits
building	177,500	100%	35 years	150%
transaction costs	1,800	100%	35 years	150%

5. After completion of repairs and refurbishing it is anticipated that the two-
    bedroom apartments will rent for $170 a month and the one-bedrooms $150 per
    month. The gross rent roll of the building would then be:

    $170 x 12 x 12 = 24,480

    $150 x 12 x 12 = 21,600
    $46,080

6. During the first year of changeover in ownership, refurbishing and re-leasing
    you estimate that each unit will be vacant about two months, that is about one-
    sixth of the time, (i.e. a vacancy of 17%) so that your average occupancy will

APARTMENT CASE STUDY #1

be 83% of potential for the first year. Thereafter you anticipate a normal
vacancy rate of 5%, or an occupancy of 95%.

7. The current real estate and personal property taxes to be paid in the first
    year following purchase are estimated to be $9,000. The normal current operating
    expenses, excluding real estate taxes but including management fees, are de-
    termined to be $8,400.

8. The property has been poorly maintained and will require additional expenditures
    of $2100 in the first year to justify the new rent schedule. This deferred
    maintenance charge will be added to the normal operating expenses of the first
    year.

9. The buyer is considering this property because his accountant suggested that
    with his 30% tax bracket, including state and federal taxes, he should look for
    some tax shelter to offset some of his other current income. Using the accel-
    erated method of depreciation, this real estate project should satisfy this
    requirement.

10. The investor feels that while the normal ratio of market value to income in
    his community ranges between 8% and 11%, proper financing should raise the
    pre-tax yield on his cash equity to at least 18%. The accountant suggest that
    if the investor considers the cash saved on deferred income taxes due to de-
    preciation, the investor should seek at least 18% to 22% on his investment
    annually on an after-tax basis.

11. The financing available to the investor would initially combine the assumption
    of a first mortgage with a balance of $180,000 with 235 months to run and a
    second mortgage taken back by the seller to be repaid in ten years, in monthly
    payments. The investor would plan to refinance both loans at the end of the
    sixth year of ownership when the prepayment penalty would lapse on the first
    mortgage. The seller feels he should receive $1,000 as points on the second
    mortgage since that is the discount he will take when he sells the note.

1st Mortgage	180,000 20 year 7 3/4% 6 year balloon
Private loan	15,000 10 year 8 1/2% $1000 discount 6 year balloon

12. While the seller will pay for title insurance, a survey, and related items
    the buyer expects to pay about $800 in professional appraisal and legal fees
    related to this transaction. These fees plus points in #11 equal transaction
    costs of $1800 which increase original cash required and must be amortized over
    life of structure.

13. Temporary cash deficits at the end of any month can be covered with bank notes at
    a rate of 9% per annum and repaid out of positive cash flows when available.

14. The financial plan is to maintain a highly leveraged position and therefore pay-
    off the original loans at the end of the fifth year by obtaining a new mortgage.
    To discover some measure of influence of such refinancing on yield to equity
    and cash flows, the investor will assume that in five years the best loan he
    could obtain would equal $190,000 for 20 year term at 8% interest. The age of the
    building at that time would require granting a bonus interest feature equal to 4%
    of gross rent as of the beginning of sixth year when the loan begins.

APARTMENT CASE STUDY #1

15. In the seventh year it is anticipated that additional refurbishing would be required in addition to ordinary annual replacement expenses. $10,000 is budgeted as additional refurbishing component to start for the eighth year and it is expected that appliance dealer terms will be at 9% interest and 18% constant, that is $150 a month.

16. With time, rents, expenses, real estate taxes, and resale value of the property could be expected to shift due to age of the property and inflation.

   a. Rents are determined to increase at a rate of 2% per year of first year rents thus indiating a relative loss of growth as the property ages.

   b. Operating expenses excluding real estate taxes have also generally increased in the community at a rate of 2% per year relative to first year costs.

   c. Real estate taxes, however, have increased at a rate of at least 5% per year for the last five years in the community and no relief is immediately in sight.

   d. Extraordinary expenses in the first year will include $2100 of deferred maintenance which can be deducted as an expense rather than capitalized. In addition rents are over-stated pending completion of remodeling in the first year and a return to normal vacancy of 5% of gross. The difference between an expected vacancy of 17% and 5% is 12% of gross or $5525. To adjust net income accordingly extraordinary expenses are therefore the sum of $2100 + $5525 or $7625.

17. A conservative expectation for resale price of this apartment building which will be 15 years old at the end of the ten-year forecast is $275,00 or about 115% of the original investment in the property. However, the cost of sale for brokers fees, etc. would be at least 5% so that the investor might receive net liquidating sale proceeds of about 110% of the original investment. Thus the growth rate in liquidating sale proceeds is assumed to be about 1% a year. For example at the end of the second year it is assumed tht the investor could sell at 106% but considering a 5% transaction cost he would realize a net market value of 101% of his original investment. It should be pointed out that while such a factor for inflation seems modest, in a highly leveraged position the impact of a optimistic resale price on equity yield can be very misleading in the early years. (Caveat: If the building is a good investment under conservative assumptions it is a better investment if more capital gains and income are realized than anticipated. It is less risky to make money with sound buys than with dreams of good sales.)

Card 1

Student's Name	Last 2 Digits of Social Security #	Course & Section #'s	Equity Discount Rate	Income Tax Rate	# Cards #3	# Cards #4
GRAASKAMP	77	520-1	.1800	.3000	6	4

Card 2

Project Description	Extraordinary Expenses	Staging Multiplier	Staging Year
24 UNIT APT - CASE 1	7625		

Card 3

Component Description	Original Cost	Percent Depreciable	Depreciation Method	Starting Year	Useful Life
LAND	40000	0.0000	00		1 00
BUILDING	177500	1.0000	03		1 35
PARKING	7500	0.5000	03		1 10
FURNISHINGS	13200	1.0000	01		1 07
TRANSACTION COST	1800	1.0000	03		1 35
7 TH YR REFERBISHING	10000	1.0000	01		8 07

Card 4

Mortgage Description	Principal Amount	Monthly Payment	Interest Rate	Bonus Interest Rate	Start	End	Term	Refinanced By Mortgage #
FIRST ASSUMED MORTG.	180000		0.0775		01	05	20	03
SELLERS 2ND MORTG.	15000		0.0850		01	05	10	03
REFINANCED FIRST	190000		0.0800	0.0400	06	10	20	
REFURBISH CHATTEL	10000	150	0.0900		08	10		

Card 5

	Gross Rent	Expenses	Rental Growth Rate	Expense Growth Rate
X	46080 X	8400 X	.0200 X	.0200 X	X	X	X	X

Card 6

	R E Taxes	R E Tax Growth Rate	Project Value Rate of Growth
X	X	9000 X	.0500 X	.0100 X	X	X	X	X

Card 7

	Vacancy Rate	Working Capital Loan Interest Rate
X	X	X	.0500 X	.0900 X	X	X	X	X

To code Depreciation Method, use the following code no's.

0 = no depreciation
1 = sum of the digits
2 = straight line depreciation
3 = 150% declining balance
4 = 200% declining balance

GRAASKAMP
520 1   77

ANALYSIS OF
24 UNIT APT - CASE 1

PAGE 1
69309

COMPONENTS	PCT. DEPR	BEGIN USE	USEFUL LIFE	DEPR METHOD	COST				
LAND	.00	1	.	0	$ 40000.	GROSS RENT	$ 46080.	RATE OF GROWTH OF GROSS RENT	.0200
BUILDING	1.00	1	35.	3	$ 177500.	EXPENSES	$ 8400.	RATE OF GROWTH OF EXPENSES	.0200
PARKING	.50	1	10.	3	$ 7500.	R E TAXES	$ 9000.	RATE OF GROWTH OF R E TAXES	.0500
FURNISHINGS	1.00	1	7.	1	$ 13200.	INCOME TAX RATE	.3000	RATE OF GROWTH OF PROJECT VALUE	.0100
TRANSACTION COST	1.00	1	35.	3	$ 1800.	VACANCY RATE	.0500	WORKING CAPITAL LOAN RATE	.0900
7 TH YR REFURBIS	1.00	8	7.	1	$ 10000.	EQUITY DISCOUNT RATE	.1800	EXTRAORDINARY EXPENSES	$ 7625.
TOTAL INITIAL INVESTMENT					$ 240000.				
CASH EQUITY REQUIRED					$ 45000.				

FINANCING PLAN

FIRST ASSUMED MORTG. $ 180000.
MONTHLY PAYMENT $ 1477.   INTEREST RATE .0775   STARTS 1 ENDS 5 BONUS INTEREST .0000 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	3919.	4234.	4574.	4942.	5339.	•	•	•	•	•
INTEREST	13812.	13497.	13157.	12790.	12393.	•	•	•	•	•
BALANCE	176080.	171845.	167270.	162328.	156989.	•	•	•	•	•

SELLERS 2ND MORTG. $ 15000.
MONTHLY PAYMENT $ 185.   INTEREST RATE .0850   STARTS 1 ENDS 5 BONUS INTEREST .0000 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	994.	1082.	1178.	1282.	1396.	•	•	•	•	•
INTEREST	1236.	1148.	1053.	949.	835.	•	•	•	•	•
BALANCE	14005.	12922.	11743.	10460.	9064.	•	•	•	•	•

REFINANCED FIRST $ 190000.
MONTHLY PAYMENT $ 1589.   INTEREST RATE .0800   STARTS 6 ENDS 10 BONUS INTEREST .0400 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	•	•	•	•	•	4016.	4349.	4710.	5101.	5524.
INTEREST	•	•	•	•	•	15054.	14721.	14360.	13969.	13546.
BALANCE	•	•	•	•	•	185983.	181634.	176924.	171822.	166298.

REFURBISH CHATTEL $ 10000.
MONTHLY PAYMENT $ 150.   INTEREST RATE .0900   STARTS 8 ENDS 10 BONUS INTEREST .0000 OF GROSS RENT

	1	2	3	4	5	6	7	8	9	10
PRINCIPAL	•	•	•	•	•	•	•	938.	1026.	1122.
INTEREST	•	•	•	•	•	•	•	861.	773.	677.
BALANCE	•	•	•	•	•	•	•	9061.	8035.	6913.

	1	2	3	4	5	6	7	8	9	10
GROSS RENT	46080.	47001.	47923.	48844.	49766.	50688.	51609.	52531.	53452.	54374.
LESS VACANCY ALLOWANCE	2304.	2350.	2396.	2442.	2488.	2534.	2580.	2626.	2672.	2718.
EFFECTIVE GROSS INCOME	43776.	44651.	45527.	46402.	47278.	48153.	49029.	49904.	50780.	51655.
LESS REAL ESTATE TAXES	9000.	9450.	9900.	10350.	10800.	11250.	11700.	12150.	12600.	13050.
LESS EXPENSES	16025.	8568.	8736.	8904.	9072.	9240.	9408.	9576.	9744.	9912.
NET INCOME	18751.	26633.	26891.	27148.	27406.	27663.	27921.	28178.	28436.	28693.
LESS DEPRECIATION	11546.	9954.	8835.	7996.	7329.	6771.	6282.	8428.	7212.	6377.
LESS INTEREST	15049.	14646.	14210.	13739.	13229.	17082.	16785.	17323.	16881.	16398.
TAXABLE INCOME	-7845.	2032.	3844.	5412.	6847.	3809.	4852.	2426.	4342.	5916.
PLUS DEPRECIATION	11546.	9954.	8835.	7996.	7329.	6771.	6282.	8428.	7212.	6377.
LESS PRINCIPAL PAYMENTS	4914.	5317.	5753.	6224.	6735.	4016.	4349.	5648.	6127.	6647.
CASH THROW-OFF	-1213.	6669.	6926.	7184.	7441.	6565.	6785.	5206.	5427.	5647.
LESS TAXES	.	609.	1153.	1623.	2054.	1142.	1455.	728.	1302.	1775.
CASH FROM OPERATIONS	-1213.	6059.	5773.	5560.	5387.	5422.	5330.	4478.	4124.	3872.
WORKING CAPITAL LOAN(CUM BALANCE)	1213.	.	.	.	.	.	.	.	.	.
SPENDABLE CASH AFTER TAXES	.	4737.	5773.	5560.	5387.	29368.	5330.	14478.	4124.	3872.
TAX SAVINGS ON OTHER INCOME	2353.	.	.	.	.	.	.	.	.	.

* *

	1	2	3	4	5	6	7	8	9	10
MARKET VALUE	240000.	242400.	244800.	247200.	249600.	252000.	254400.	256800.	259200.	261600.
BALANCE OF LOANS	191298.	184767.	179014.	172789.	166054.	185983.	181634.	185986.	179858.	173211.
NET WORTH OF PROPERTY	48701.	57632.	65785.	74410.	83545.	66016.	72765.	70813.	79341.	88388.
CAPITAL GAIN	7383.	9783.	12365.	14660.	16976.	19307.	21645.	25564.	27812.	30107.
CAPITAL GAINS TAX	2356.	2238.	2235.	2359.	2532.	2735.	2957.	3733.	3751.	3877.

* *

	1	2	3	4	5	6	7	8	9	10
NET INCOME-MARKET VALUE RATIO	.0781	.1098	.1098	.1098	.1098	.1097	.1097	.1097	.1097	.1096
RETURN ON NET WORTH BEFORE TAXES	.0552	.3203	.2616	.2403	.2227	-.1312	.2050	.0447	.1970	.1852
RETURN ON NET WORTH AFTER TAXES	-.0290	.2493	.2192	.1948	.1767	.1832	.1693	.1731	.1670	.1511
CASH RETURN ON ORIG CASH EQUITY BEF TAX	-.0269	.1482	.1539	.1596	.1653	.1313	.1357	.1301	.1356	.1411
CASH RETURN ON ORIG CASH EQUITY AFT TAX	.0523	.1052	.1282	.1235	.1197	.5873	.1066	.3619	.1031	.0968
DEFAULT RATIO	.9763	.8081	.8054	.8029	.8004	.8204	.8185	.8508	.8484	.8461
LENDER BONUS INTEREST RATE	.0000	.0000	.0000	.0000	.0000	.0122	.0110	.0115	.0114	.0120

* *

	1	2	3	4	5	6	7	8	9	10
PRESENT VALUE OF PROJECT BEFORE TAXES	229976.	234866.	237937.	240236.	241911.	234120.	234884.	232876.	233294.	233525.
PRESENT VALUE OF PROJECT AFTER TAXES	230278.	236083.	243130.	251819.	261810.	264257.	276367.	286899.	300590.	314456.

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AREA CODE 215 PEnnypacker 5-8614

September 15, 1969

Dr. James Graaskamp
University of Wisconsin
Madison, Wisconsin   53700

Dear Jim:

I would like to express my appreciation in your coming before
the SREA membership of the Society and presenting your thoughts
on the use of computers in Real Estate Appraisals.

Jim, I would like to introduce you to the name of Dr. David R.
Levin, Deputy Director Office of Right of Way and Location,
Federal Highway Administration, Department of Transportation,
Washington, D.C.

At a joint meeting between the Philadelphia Chapter of the
Institute and the Society, Dr. Levin discussed the many facets
of Right of Way and in a subsequent discussion, I mentioned
some of the things you were doing with computers. He was
extremely interested and may be in touch with you. I advised
Dr. Levin that I would mention his name to you and am forwarding
him a copy of this letter.

As I recall, we had tentatively thought of setting up a meeting
out in Wisconsin some time in November. I would imagine it gets
a bit cold out there at this time of year, however, I can say
that for scheduling purposes, this suits me just fine.

Once again, thank you for such an excellent presentation and I
look forward to seeing you again.

Very truly yours,

Felice A. Rocca, Jr., SREA, MAI

FAR, Jr., /ats

LOAN CORRESPONDENT, CONNECTICUT GENERAL LIFE INSURANCE COMPANY

REAL ESTATE APPRAISALS · FEASIBILITY STUDIES · PROPERTY MANAGEMENT

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SAN PEDRO, CALIFORNIA   90733

October 1, 1969

Professor James A. Graaskamp
School of Business
University of Wisconsin
Madison, Wisconsin

Dear Professor Graaskamp:

Your impact on the Colorado Springs Conference is a lasting
one on me and I wish to again thank you for your extraordinary
contribution.

I have just received an appraisal assignment which I believe
may benefit from the application of some form of computer
models.

You recommended a person to me and I misplaced his name.
I believe that he had offices in San Francisco and Los Angeles.
If you recall please send me his name and address on the
enclosed post card.

My very best wishes to you and if I can ever help you in the
Los Angeles Area please ask me.

Sincerely,

George L. Fisher, SREA

GLF:k

S.R.E.A. SOCIETY OF REAL ESTATE APPRAISERS • AMERICAN RIGHT OF WAY ASSOCIATION • INSTITUTE OF REAL ESTATE MANAGEMENT

benedict appraisal company

2830 WHITNEY AVENUE • HAMDEN, CONN., 06518

TELEPHONE 248-5511

October 1, 1969

Mr. James Grasskamp
University of Wisconsin
School of Business
Room 101
Madison, Wisconsin 53706

Dear Mr. Grasskamp:

Due to other commitments I will be unable to attend the meeting you
mentioned to me in our telephone conversation. At some time in the
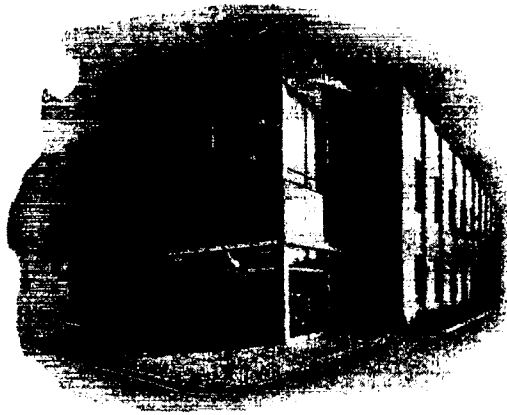future I hope it will be possible.

Very truly yours,

NORMAN R. BENEDICT, M.A.I.-C.R.E.
President of Benedict Appraisal Company

mmcc

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CORPORATION

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BROOKLYN, N. Y. 11220
TELEPHONE: 833-2700

October 2nd, 1969

Prof. James A. Grasskamp
Graduate School of Business
The University of Wisconsin
1155 Observatory Drive
Madison, Wisconsin 53706

Dear Jim:

I am enclosing the material prepared by Coldwell, Banker and Company. This is the information we discussed at our meeting in Colorado Springs.

I would greatly appreciate your comments and ideas.

Best wishes.

Cordially,

James S. Gibbons

mr

enc....

October 6, 1969

A few appraisal offices and universities have developed techniques and hardware which may be within the means and technical skills of a large number of real estate professionals. Introduction to these techniques has been greatly hindered because:

1) Appraisers have not had a chance to experience actual use of the hardware and

2) Clients require considerable re-education on what they might expect to find in a professional appraisal.

Relative to problem #1 the University of Wisconsin Real Estate Department, in conjunction with the research and education leaders of the various professional appraisal societies and mortgage banking firms will offer a seminar which will stress direct "hands-on-computer-time" for each participant for three alternative electronic computer systems within the means of small appraisal offices. No programming is required! Anyone can operate any one of the systems with 20 minutes of instruction!

By special arrangement we will offer for the use of the participants a complete Wang installation, together with the software and the expertise of Pete Ellwood. There will be a teletype terminal installation developed and explained by John Schneider in conjunction with Service Bureau Corporation. For our third alternative we will use a graphic display and dialogue terminal developed here at the University of Wisconsin by Robert Knitter and Dick McCoy of the Business School.

In addition to 9 hours of time on the equipment for each of the participants, there will be opportunity for discussion on the economics of each alternative hardware setup and on the desirable attributes of unified courses for introducing various professional groups to the use and advantages of such techniques. Admittedly the participants are guinea pigs whom we hope to infect with enthusiasm and confidence for their own use of electronic computational aids and whom we hope will suggest a prescription for contents and methodology of introductory EDP courses for real estate.

Finally, for those with an interest in regression analysis or comparison of the ready-to-use methods above with the more typical punch-card, computer apparatus, we will have available the School of Business computer installations.

This seminar will be limited to 21 participants, 7 of whom are already noted for their work in this subject area and the balance will be the first 14 of 30 invited because they are education directors in their particular field or are in the process of installing some form of EDP in their appraisal office.
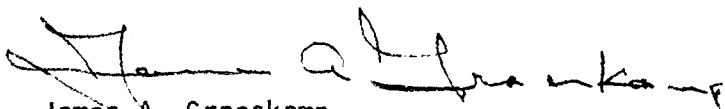
Each participant must pay for his own transportation, motel accommodations, and breakfasts. The $70.00 fee for the course will pay for lunches and dinners at the Wisconsin Center, installation setup expenses and servicing costs, and instructional assistance and programming by graduate students. All of the professional appraisers and University faculty contributors will be serving at their own expense. The administrative costs have been donated by the School of Business.

Please indicate on the attached form whether you will be able to attend and if you will arrive by Thursday evening in time for an informal hour of discussion with some of our graduate students. Please attach your check for the $70.00 seminar fee to this form, payable to Urban Land Fund, Alumni Foundation. We have reserved a block of rooms at the Madison Inn and you should return the enclosed reservation card directly to the Inn before November 10th. If you cancel after the 21st of November we may reserve the right to refund only 50% of the fee unless we can maintain our group of 21 due to tight budget constraints.

This seminar is experimental and is intended to incubate more formal and more extensive courses by the professional societies or may be repeated in one form or another at the University at a later date. Advertisement after the meeting we hope will be desirable, but please refrain from extensive promotion prior to the experiment, or you will embarrass us by the necessity of turning away requests to attend from so many of our professional friends.

A preliminary schedule is attached and additional information will follow for registrants. Registrants will be encouraged to bring financial data of an investment case which they may wish to try out on some of the programs that will be available.

Sincerely yours,

James A. Graaskamp
Assistant Professor in Business

SEMINAR: COMPUTERS FOR APPRAISAL OFFICES

DATE: Friday, December 5, and Saturday, December 6, 1969

PLACE: Wisconsin Center Building
           702 Langdon Street
           Madison, Wisconsin 53706

Formal Seminar Begins 8:45 AM, Friday, December 5, 1969
Informal Seminar Begins 6:30 PM, Thursday, December 4, 1969
    With Supper Meal to be Served at the Madison, Inn,
Madison, Wisconsin

Seminar Fee Includes Lunch and Dinner and All Workshop Costs.
    Those Attending Responsible for Own Motel Accommodations.
    Space Has Been Reserved for Those Attending at the
    Madison Inn, 601 Langdon Street, Madison, Wisconsin,
    Phone 257-4391, Reservation Form Enclosed

TEAR OFF _

____   I WILL ATTEND

____   I WILL NOT ATTEND

____   WILL ARRIVE FOR SUPPER THURSDAY

____   WILL ARRIVE EARLY EVENING THURSDAY

____   WILL BE PRESENT FRIDAY MORNING

Please attach check for $70.00 with your acceptance notice. Please
make check payable to Wisconsin Alumni Fund - Land Economics
(qualifies as charitable deduction).

PLEASE NOTE: ONLY ONE PERSON CAN ATTEND PER REGISTRATION BECAUSE
               OF LIMITED OPENINGS.

Signed _____

Date _____

October 29, 1969

Mr. Robert Devenish
722 University Avenue
University of Wisconsin
Campus Mail

Dear Bob:

    Please install unrestricted telephones in rooms 109, 205 and 211 of the Wisconsin Center for the conference on "Computers for Appraisal". This conference is under the direction of Professor James Graaskamp, School of Commerce and takes place in the Wisconsin Center during the period December 4-6, 1969. Please bill the cost of these telephones to the University of Wisconsin Foundation, Robert Rennebohm, Executive Director, 702 Langdon Street, Madison, Wisconsin.

Sincerely yours,

Robert P. Lee, Director

cc: John Feldt
    Prof. Graaskamp

L. W. ELLWOOD & COMPANY

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(201) 652-2141

November 5, 1969

Dr. James A. Graaskamp
Assistant Professor in Business
Graduate School of Business
The University of Wisconsin
1155 Observatory Drive
Madison, Wisconsin 53706

Dear Dr. Graaskamp:

I am writing this letter for my father, at his request.

He is scheduled to arrive in Madison at 5 P.M. December 4th (North Central Flight #571 out of Chicago).

As to the Wang Equipment, the following will be required:

        2 - #371 Card Readers
             #370 Keyboard
             #362 Electronic Package
             #372 Data Storage
             #377 Teletype Control Package
             #376 Teletype 33ASR

I would expect there might be some difficulty in obtaining the last two items. If this latter equipment is not available, the demonstration will necessarily be curtailed because many of our programs involve a print out. The Wang representative will understand and can perhaps contrive to make the best possible demonstration out of the available gear.

I'm particularly interested in other people's applications, so, if there is a record kept of the various programs demonstrated, an abstract of

this material would be appreciated.   The evolution of our library follows
three paths:

1. We have a recurring problem to solve. We write a
   program.

2. Many of these above or calls from our clients spark an
   idea for others.

3. Finally, we try to stay alert to applications other people
   are developing.

I am convinced your seminar will be extremely stimulating. I'll be most
anxious to get a report from the boss.

Yours truly,

L. W. ELLWOOD & COMPANY

C. R. Ellwood

CRE:amk

NOTE: L.W. ELLWOOD

L.W. Ellwood (1895-1974) was a dean of the appraisal profession in the United States. He was an active and teaching member of the American Institute. Following his retirement from New York Life Insurance Company, he published the **"Ellwood Tables"**, founded the L.W. Ellwood Company, Inc. and pursued his profession actively until his death. His son, C. Russell Ellwood, MAI, was one of his many pupils.

Courtesy of Richard S. Ellwood
Son of L.W. Ellwood

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P. O. BOX 1658 · PHONE 831-0775

SAN PEDRO, CALIFORNIA 90733

November 13, 1969

Professor James A. Grasscamp
Graduate School of Business
1155 Observatory Drive
University of Wisconsin
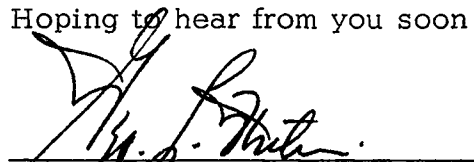
Dear Professor Grasskamp:

My plans are still directed to meeting with your
group barring any unforeseen emergencies involving
my being subpoenad as a witness in two very bother-
some trials being extended into the December 1st
area.

Could you please advise me if I have been accepted
into the group as per your letter of October 6, 1969;
and, if so, I will finalize my plans to the best of my
ability and hope to be with you on the dates specified.

I visited Ron Graybeal in Berkeley and as a result sent
him a few thoughts on my reactions of our meeting.
Perhaps you will find the comments of some interest.

Hoping to hear from you soon, cordially,

George L. Fisher, SREA

GLF:k

The instantaneous mathematical magic of the modern computer when related to the analysis of the investment potential of income producing real estate, or the processing of an income approach to value, is rising like a new dawn in the east.

But - many of the same ugly variables which existed before this new dawn must now be examined even more closely than ever before, otherwise this great new gift may likewise have feet of clay.

There can be no doubt that this great genii can do wondrous things with lightning speed. However, without conscientious dedication to certain principles, those bidding the genii's magic may cloud the new dawn and perhaps discredit a great new service to the investing public, the real estate business, and the computer image.

The validity of capitalization of income into value ($\frac{I}{R}$ equals value) has always been in direct proportion to the integrity of the step by step procedure of processing a gross income into its true net income.

The elements of the procedure are gross income, vacancy and credit losses, the effective gross income, fixed expenses of taxes and insurance, operating expenses, repairs and maintenance, utilities, management, and reserves for depreciation. The result of the procedure is a true <u>net income</u>.

How valid is the owner's statement of rental income? The gross income should be related to the market place and should be stabilized to reflect the best possible capacity of the property to produce an income at a rate consistent with the market place as of the date of appraisal. Any adjustment of the market insofar as gross income is concerned requires a reevaluation of the rental income. It would seem that the gross income should be developed for the precise time of the analysis. Any presumption of future gross income becomes speculative and con-jectural because of a constantly changing supply and demand factor. Likewise rental rates are subject to influence by many exterior economic factors. Nothing is constant but change.

The gross income estimate is the first key element and the foundation upon which a proper net must be developed.

Next, the vacancy factor, plus credit loss, amounts to something versus nothing. Obviously, each property, each situation is different. However, one almost certain fact is that over a 10-year projection vacancy and credit loss will be some amount. The fallacy is to suggest a zero amount. Good management will include a vacancy factor for scheduled repair, maintenance and reconditioning, if for no other reason. Credit losses may be or may not be but it is doubtful if a 10-year income program could be obtained without some loss in rental collections.

The effective gross income is the mathematical difference between the gross income less vacancy and credit losses. This factor is important because management is an amount equal to a percentage times effective gross income and management is related to actual incomes collected rather than the gross rent anticipated.

The fixed expenses are taxes and insurance and these two elements are subject to the least fluctuation. The insurance rate is obtainable by actual quotation and is usually extended over a 3 to 5 year period. The taxes are reasonably stabilized; however, some investigation should be made to ascertain if there is a pending increase in assessment value, or tax rate, in the immediate area of the subject property. Don't be caught asleep at the switch or your clients would have a good cause to change advisors.

Those expenses related to common areas such as pools, exterior lighting, landscaping, hall areas, utilities, should be capable of reasonable estimate based upon historical records or prediction. Likewise maintenance and repairs are estimated either from records of actual expenditure or prediction. However, both of these elements

should be considered in the light of the 10-year projection period. Contingencies are to be considered when evaluating these elements.

Management is a proper charge against effective gross Income and is expressed as a percentage of the effective gross income. It is an expense item payable for either professional management or payable to an owner for the performance of the management. Management collects rents, pays the mortgage, renews fire insurance, pays taxes on time without penalties, prevents excessive depreciation to the improvements, schedules preventive maintenance, controls good accounting procedures, checks expense items and oversees the on-premises management.

The Reserve for Depreciation is the expense item which accommodates the replacement or repair of those items such as carpeting, water heaters, roof replacement. These depreciation expenses may occur at a frequency greater than the overall structure depreciation and hence should be provided for by special reserve fund accounts.

Sometimes an all inclusive expense schedule is applied to the effective gross income to arrive at the net income amount. This all inclusive expense schedule may be an estimated percentage of the effective gross income, or gross income. This overall expense percentage may be somewhere between 35 to 50 percent, with industrial and commercial properties at the lower end of the range and multi family apartments and rental units at the upper end of the range. It seems inappropriate to procure a highly sophisticated computer analysis of an income property and estimate the expense schedule at 40, 45 or 50 percent with no breakdown or justification of the expense estimates. Each property deserves its own net income analysis because each property is a different problem.

Disregarding, or improperly estimating vacancy, management and reserves for depreciation could result in an error in the order of 10 percent or more of the actual net income. This could result in a substantial error in the final estimate of value.

Mr. Broker may proclaim that the data aren't available. This just isn't the case. The taxes and insurance elements are available. The management is available. Vacancies, reserves for depreciation, utilities, on-site management, landscaping, pool cleaning, and many other expense items are either available or capable of a reasonable estimate. So it is with all other repair and maintenance items; each must be analyzed, carefully estimated and checked with actual costs, industry rule-of-thumb costs, Institute of Real Estate Management literature, apartment owners' association literature and professional property managers.

It is very possible that the end answer will be identical with your first guess of an overall 45 percent expense ratio but you will know that you did a job to prove the 45 percent rather than guess at the 45 percent.

The brokers have a great responsibility to provide factual, complete and supported data resulting from a careful and demanding analysis of every probable income and expense item. But also the computer and its model master should demand reasonable attention to these facts before accepting partially completed information sheets. Poorly assembled data sheets may result in a disservice to the client and after all the client is paying both the broker and the computer.

This is a magnificent opportunity to start right, right now.

Now is the time to appreciate the new dawn in the area of income-producing real estate properties.

Now is the time to sophistocate the data as well as the system.

JOHN S. SCHNEIDER, M.A.I., C.R.E.

APPRAISER AND CONSULTANT

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REAL ESTATE APPRAISERS
AMERICAN SOCIETY OF
REAL ESTATE COUNSELORS

JOHN T. BREEDLOVE
ASSOCIATE
—
TELEPHONE:
524-8477

November 24, 1969

Dr. James A. Graaskamp
Room 101
School of Business
University of Wisconsin
Madison, Wisconsin 53706

Dear Jim:

Enclosed is a set of the programs and print-outs which we propose to demonstrate on the SBC time-sharing system.

It would be greatly appreciated if you could have these reproduced in sufficient quantity for the number in attendance.

If, for any reason, this cannot be done, I can reproduce them here and carry them with me, so I would appreciate your advising whether they can be reproduced with your facilities.

I understand that Ken Hesinger of the Service Bureau Corporation has been in touch with you and Tom Turk and that the arrangements have been completed for the use of SBC's portable typewriter terminal and the necessary data-phone telephone line. Mr. Hesinger informs me that all is in order and that the necessary back-up facilities will be available through both the Cleveland and Chicago computer installations of the Service Bureau Corporation. If these arrangements have not been completed, or if you feel they will not be completed in time for the seminar, I would greatly appreciate your advising me in sufficient time, since a breakdown in this installation would, of course, make any presentation of mine impossible.

Looking forward to seeing you and participating in the seminar, I am with best regards

Very truly yours,

John S. Schneider

JSS/lr

Enclosure

December 2, 1969

Professor James A. Graaskamp
Room 101
School of Business
University of Wisconsin
Madison, Wisconsin   53706

Dear Jim:

Many thanks for sending us an additional copy of your workshop program.
As I indicated in our phone conversation of last week, I wasn't certain
at that juncture whether someone from our staff would be able to come up.
As you know, we have just returned from our National Convention in
San Francisco and schedules are a bit tight here for one of us to arrange
to get away on short notice to make the Thursday and Friday sessions.

As I explained, John Schneider is Chairman of our Computer Research
Committee. Also, in conjunction with Pete Ellwood, the Institute will
be well represented from the standpoint of any discussions on educational
coordination which will take place on Saturday morning.

Again, many thanks for your invitation. I am sure your program will be
extremely informative and I am sorry that I will not personally be
able to attend.

Cordially yours,

Jared W. Benedict
Director of Education

JWB:kmg

cc: Mr. John Schneider

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Dec. 3, 1969

James A. Graaskamp,
Assistant Professor in Business
The University of Wisconsin
Graduate School of Business
1155 Observatory Drive
Madison, Wisconsin 53706

RE: Seminar on Computers

Dear Jim:

It is with extreme regret and disappointment that
I must inform you of my inability to make the
above mentioned seminar. I sincerely hope that
the opportunity will present itself again. In
the event that it does not, I am looking forward
to visiting you at the University of Wisconsin
within the next year.

Kind personal regards,

SPALDING REALTY CO.

AL SPALDING,
PRESIDENT

AS:jh

VINCENT J. O'FLAHERTY M.A.I., S.R.A.
&
JOHN D. O'FLAHERTY M.A.I., S.R.A.

REAL ESTATE APPRAISERS

4117 BROADWAY   KANSAS CITY, MO. 64111   LO 1-5300 (AREA CODE 816)

December 8, 1969

Professor J. A. Graaskamp
The University of Wisconsin
Graduate School of Business
Madison, Wisconsin 53706

Dear Professor Graaskamp:

I want to thank you, your graduate students and other members of
your staff for a very interesting and informative seminar. I was
greatly impressed by the presentation of the different methods of
computer use and also your instruction programs in the graduate
school.

As I mentioned to you on Saturday, I would like to send some of my
income projections to you to be put in the computer. I think
certain parts of the printouts will be very helpful in investment
analysis and I am planning to use them in my appraisal work.

John O'Flaherty and I will be interested in hearing of other semi-
nars or meetings you might have on computer use.

Sincerely,

Dunlap Vanice

DV:jc

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VALUATION CONSULTANTS • REAL ESTATE COUNSELORS   1614 E. 17th St., Santa Ana, Calif. 92701 (AC 714) 547-5464

S. E. GOODE, SR., MAI
S. E. GOODE, JR., MAI
G. E. SCHMITZ, MAI

December 24, 1969

Professor James A. Graaskamp
School of Business
University of Wisconsin
Madison, Wisconsin 53706

Dear Jim:

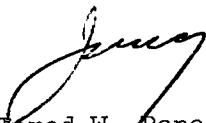As you know, a trip from California to Madison, Wisconsin, is an expensive and time consuming event. You may rest assured that I received a full measure of reward as a result of the excellent manner in which you organized and conducted the Computer Seminar.

I am deeply grateful for having been included in the group, and feel that I learned a number of things of major importance which will contribute to my professional advancement.

I am convinced that some of the systems displayed could be applied in my office, and certainly within this area. Frankly, I was most impressed by John Schneider's demonstration, and feel that it has the greatest applicability, providing that a full set of real estate programs are made available with the service.

In view of the short time available, I feel that you did just about the best possible job of exposing us to the various systems. Improvement could only be made by adding more time, utilizing certain set problems which would be fed to each type of system for the purpose of comparison of results, together with the addition of a greater variety of real estate programs.

I am most enthusiastic about the future application of computers in our field, and hope to hear more from you as your program develops.

It was a great privilege for me to spend the evening with you and enjoy the opportunity of close personal contact. Your inspirational part in this activity,
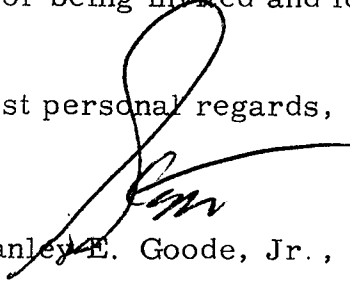
together with your well organized problem assure us of the development of a means of disseminating information regarding computers to the members of our respective organizations.

Again, please accept my sincere thanks for being invited and for having the opportunity to visit with you.

Best personal regards,

Stanley E. Goode, Jr., MAI-CRE

SEGJr:mh

1978 SCHEDULE OF JOINT REAL ESTATE DEPARTMENT - EXTENSION COURSES

University of Wisconsin

CONTEMPORARY REAL ESTATE APPRAISAL METHODS   (Graaskamp, Knitter, Hansen)
February 1, 2, 3, 4, 1978 - Lowell Hall
May 23-25 1978 - Lowell Hall

CONTEMPORARY REAL ESTATE FINANCIAL ANALYSIS (Graaskamp, Robbins)

   March 29, 30, 31, April 1, 1978 - Lowell Hall
   September 27, 28, 29, 30, 1978 - Wisconsin Center, Room 138

CONTEMPORARY LAND USE AND THE LAW (Matthews)

   March 3-4, 1978 - Wisconsin Center, Room 212

CONTEMPORARY APPRAISAL PHOTOGRAPHY AND GRAPHICS (Canestero, Robbins)

   May 25-27 - Wisconsin Center, Room 138

CONTEMPORARY REAL ESTATE MARKET ANALYSIS (Stanley, Graaskamp, Rasmussen)

   April 26, 27, 28, 29, 1978 - Lowell Hall

CONTEMPORARY REAL ESTATE APPRAISAL METHODS

Jointly Sponsored by University of Wisconsin
School of Business & Extension Business Department

WEDNESDAY

4:00-6:00 P.M.   Registration

6:00-7:00   Dinner

7:00-9:00   Introductory Lecture
1. Relationship of appraisal to the decision process
2. Relationship between feasibility and appraisal analysis
3. Recent redefinition of highest and best use by appraisal professional groups

THURSDAY

8:30-10:15 A.M.   Contemporary Appraisal Theory
1. Summary of Ratcliff position
2. Summary of appraisal concepts of other recent critics of appraisal methods
3. Concept of most probable sales price

10:15-10:30   Coffee Break

10:30-12:00   A Contemporary Appraisal Approach and Report Format
1. General outline of report and logic
2. Explanation of applications

12:00-1:00   Lunch

1:00-3:00 P.M.   Property Analysis for Alternative Uses
1. Site attribute analysis format
2. Improvement analysis format
3. Market area attribute analysis
4. Identification of alternative marketable uses

3:00-3:15   Coke Break

3:15-4:45   Selection of Most Probable and Fitting Use
1. Comparison of marketable, legal uses using back door financial approach
2. Screening matrix of alternatives with non-financial constraints
3. Final screen based on risk evaluation of alternatives
4. Selection of most fitting use

6:00-7:00   Dinner

7:00-9:00   Concept of Most Probable Buyer Type/Most Probable Price
1. Investor motivation
2. Comparison with fair market value concept of buyer
3. Definition of transaction zone around most probable price
4. Primary reliance on inference from actual sales
5. Secondary reliance on simulation of buyer logic

FRIDAY

8:30-10:15 A.M.   Predicting Probable Price From Market Sales (Knitter)
1. Concept of averages
2. Concept of standard error, dispersion, and range
3. Data sets and automated MKT COMP System

10:15-10:30   Coffee Break

10:30-12:00   Simple Linear Regression to Relate Different Market Sales
1. Explanation of point scoring for comparables to avoid individual dollar adjustments
2. Comparing total points to total price by means of linear regression
3. Single family home demonstration of market comparison scoring and linear regression
4. Commercial land appraisal demonstration of market comparison scoring and linear regression

12:00-1:00   Lunch

1:00-3:15 P.M.   Investment Purchase Simulation for Most Probable Price
1. Profiling investment criteria of most probable buyer
2. Investing scenarios establishing assumptions for pattern of investment receipts and outlays
3. Estimating a normative budget
4. Projecting budgets to future periods
5. Market rents to justified investment value (back door approac
6. Investment band approaches
7. Investment market value approach

3:15-3:30   Coke Break

3:30-4:45   Adjusting the Preliminary
1. Adjustments for recent changes in probable buyer demand
2. Adjustments for buyer-seller bargaining positions
3. Adjustments for changing terms of sale
4. Matching of grantee motivations to subject property attribute
5. Transaction zone compared to market comparable

6:00-7:00   Dinner

7:00-8:30   Effective Communication (Hansen)

SATURDAY

8:30-10:15 A.M.   Testing the Estimated Most Probable Price
1. Front door test of required rents
2. Bracketing Investment value with market sales
3. Case Demonstration with Complete finished appraisal of Obsolete downtown store
4. Required rate of appreciation
5. After tax financial ratios and yields

10:15-10:30   Coffee Break

10:30-12:00   Report Preparation Technique

CONTEMPORARY REAL ESTATE FINANCIAL ANALYSIS
FOR
MORTGAGE LOANS AND EQUITY INVESTMENTS
IN INCOME PROPERTIES

Jointly Sponsored by University of Wisconsin
School of Business & Extension Business Department

WEDNESDAY

4:00-6:00 P.M.   Registration

6:00-7:00   Dinner

7:00-9:00   Introductory Lecture
     1. The concept of the real estate process
     2. The objectives of financial analysis
     3. The objectives of risk management analysis

THURSDAY

8:30-10:15 A.M.   Basic Approaches to Financial Analysis
     1. Total cost approach to rents (front door approach)
     2. Market rent approach to total cost (back door approach)
     3. The critical financial links - default point and cash on cash

10:15-10:30   Coffee Break

10:30-12:00   Applications of Front Door/Back Door Approaches
     1. Justified mortgage amount
     2. Justified building costs/remodeling costs/land costs
     3. Required rental income structure
     4. Sensitivity analysis of critical assumptions

12:00-1:00   Lunch

1:00-3:00   Basic Cash Flow Computation - Mini Mod
     1. Format for after cash tax flow analysis
     2. Making the computation
     3. Computing key financial ratios

3:00-3:15   Coke Break

3:15-4:45   Definition of Investment Yields
     1. Alternative measures of yield
     2. Alternative measures of value
     3. Making the computations

4:45-6:00   Recreation

6:00-7:00   Dinner

7:00-8:30   Coldwell Banker application of cash flow to
investment property brokerage

FRIDAY

8:30-10:15 A.M. Introduction to Mortgage Loans on Income Property
1. Basic concepts
2. Risk analysis and terms of loan
3. Lease terms and risk management
4. Cash flow and mortgage as a perfect straddle

10:15-10:30 Coffee Break

10:30-12:00 Financial Analysis of Sale and Leaseback
1. Existing facility
2. Land subject to lease hold mortgage

12:00-1:00 P.M. Lunch

1:00-3:00 Equity Analysis and Profit Center Viewpoint
1. Defining the point of view for cash analysis
2. Choosing yield ratios for the decision process
3. Applying cash flow alternatives for investment comparison
4. Assumptions for cash flow projection
5. Equity investment as a security

3:00-3:15 Coke Break

3:15-4:45 Case Studies for the Investor
1. The small apartment building
2. The small retail complex
3. A joint venture or partnership

6:00-7:00 Dinner

7:00-9:00 Land Development Financial Analysis
1. Projection of revenues
2. Projection of outlays
3. Financing alternatives
4. Key Ratios

SATURDAY

8:30-10:15 A.M. Instructors to assist students in the analysis of
investment case studies from students own offices.
Computer terminal access available

10:15-10:30 Coffee Break

10:30-12:00 Financial projection and future trends in Real Estate Investment

CONTEMPORARY LAND USE AND THE LAW

Jointly Sponsored by University of Wisconsin
School of Business & Extension Business Departemnt

THURSDAY EVENING

4:00 - 6:00   Registration

6:00 - 7:00   Dinner

7:00 - 9:00   Introductory Lecture - Prof. Graaskamp
                             and Attorney Matthews

FRIDAY

8:30 - 10:15   Prezoning, Zoning

10:15 - 10:30   Coffee Break

10:30 - 12:00   Downzoning

12:00 - 1:00   Lunch

1:00 - 2:00   Zoning Administration

2:00 - 3:15   Zoning by Referenda

3:15 - 3:30   Coke Break

3:30 - 5:00   Exclusionary Zoning

5:00 - 6:00   Cocktails

6:00 - 7:00   Dinner

7:00 - 9:00   Contract Zoning and Subdivisions

SATURDAY

8:30 - 10:15   County and Municipal Management of Growth -
                             case studies

10:15 - 10:30   Coffee Break

10:30 - 12:00   Case Studies cont.

12:00 - 1:00   Lunch

1:00 - 3:00   How to Deal with Local Government:
                             Zoning changes and subdivision approval

GRAPHIC TECHNIQUES FOR APPRAISERS

May 25, 26, 27, 1978

University of Wisconsin-Extension

General Seminar Description: The objective of this two-day seminar is
to present the appraiser with a "toolbox" of graphic techniques
and equipment which will maximize the impact of his appraisal
or feasibility reports. The seminar program will concentrate
on methods of increasing the visual communications potential of
the report with a minimal time investment on the part of the
appraiser or his staff. Examples, demonstrations, and practice
exercises will allow the participant to identify the methods
which will be most profitable to his firm.

Course Outline: The seminar is divided into four half-day sessions
each dealing with a specific visual communications element of
the appraisal or feasibility report. The following outline
identifies the organization of each session:

THE APPRAISAL/ FEASIBILITY REPORT

FORMAT

CONTENT

GENERAL LAYOUT
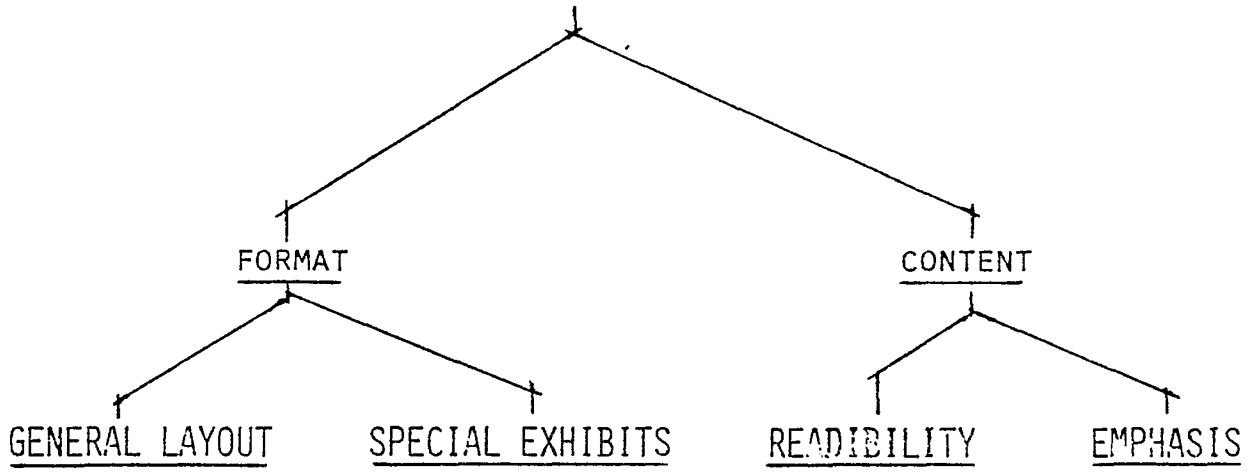
1. COVER & PAGE DESIGN
2. VISUAL ORIENTATION
3. CONTINUITY
4. AUTHORSHIP IDENTITY

SPECIAL EXHIBITS

1. SKETCHES
2. MAPS
3. DIAGRAMS
4. GRAPHS
5. CHARTS

READIBILITY

1. TYPE STYLE
2. REPRODUCTIVE
   TECHNIQUES
   A. PHOTOCOPY
   B. OFFSET

EMPHASIS

1. HIGHLIGHTING
2. OVERLAYS/
   TRANSPARENCIES
3. PHOTOGRAPHS
   A. ON-SITE
      PHOTOS
   B. PHOTO-
      REPRODUCTION

THURS. EVENING,	FRIDAY, MORNING,	FRIDAY AFTERNOON,	SAT. MORNING,
May 25	May 26	May 26	May 27

Course Materials: Each participant in the seminar will be provided with all the equipment and materials necessary to experiment with each of the visual presentation methods. In addition, exhibits of each media technique will be included in a reference manual distributed to each seminar participant.

SPEAKER

James C. Canestaro is an architect registered in Wisconsin and a Corporate Member, American Institute of Architects. He is on the faculty of the Department of Real Estate, School of Business, University of Wisconsin-Madison, where he is also a doctoral candidate in Business. His Bachelor of Architecture is from Notre Dame and his Master of Architecture and Master of Urban Planning are from the University of Illinois.

Mr. Canestaro has taught at the University of Illinois in the Departments of Architecture and Finance. He has taught courses in Residential Property Development, Commercial Property Development, Recreational Land Development, Impact Analysis, Valuation of Real Estate, and Construction Enterprise Management. His consulting includes Real Estate Feasibility Analysis, Property Valuation and Pre-architectural Programming.

CONTEMPORARY REAL ESTATE MARKET ANALYSIS

Jointly Sponsored by University of Wisconsin
School of Business and Extension Business Department

WEDNESDAY

Time	Session
4:00-6:00 P.M.	Registration
6:00-7:00	Dinner
7:00-9:00	Defining Market and Merchandise Target (Graaskamp)

THURSDAY (Stanley)

Time	Session
8:30-10:15 A.M.	Introduction to Census Analysis
10:15-10:30	Coffee Break
10:30-12:00	Economic Base: Improvements and Applications
12:00-1:00	Lunch
1:00-2:00	Income and Employment Multipliers
2:00-3:15	Housing Analysis - Single Family
3:15-3:30	Coke Break
3:30-5:00	Housing Analysis - Multifamily
6:00-7:00	Dinner
7:00-9:00	Estimating subsidized housing demand in Wisconsin Communities

FRIDAY (Rasmussen)

Time	Session
8:30-10:15 A.M.	Application of Survey Research to Real Estate Problems
10:15-10:30	Coffee Break
10:30-12:00	Design and construction of a survey
12:00-1:00	Lunch
1:00-2:00	Processing and costs of survey assignments
2:00-3:15	Analysis of Survey responses
3:15-3:30	Coke Break
3:30-5:00	Case study applications of Real Estate Survey Studies

6:00-7:00   Dinner

7:00-9:00   Discussion and comparison of survey techniques

SATURDAY (Stanley)

8:30-10:15 A.M. Retail trade area analysis

10:15-10:30   Coffee Break

10:30-11:30   Retail trade area cont.

11:30-12:30   Demonstration of Business School model of Milwaukee
        Metropolitan economy

UNIVERSITY OF WISCONSIN-EXTENSION CONFERENCE CENTERS

CONFIRMATION OF MEETING ROOM AND DINING ROOM RESERVATIONS

To: Professor James Grasskamp   2-6378

Department School of Business

This will confirm that the rooms and food facilities of University of
Wisconsin-Extension Conference Centers indicated below have been reserved
at The Wisconsin Center Guest House

Certified Insurance Counselors Program   Account No. 90-206
(Name of Conference or Institute)

MEETING ROOMS

Date	Room	Type of Set-Up	Time	Number of People
Sept. 6-8, 1979	B-1		8:30 a.m. - - 5:00 p.m.	80-100
Apr. 24-26, 1980	B-1			

		9/5	9/8	
LODGING: 40 rooms	Arrive 4/23	Depart 4/26		

NOTE: PLEASE SEND BROCHURE OR AGENDA WHEN AVAILABLE. (Rooms subject to change)

FOOD SERVICE

Date	Room	Type of Service	Time	Number of People

If you have made further arrangements with the unit manager, this form may be
incomplete.

Signed _Donna Beutel_   (eb)

(Ms.) Donna Beutel, Manager

Date   8/8/79   256-2621

UNIVERSITY OF WISCONSIN-EXTENSION CONFERENCE CENTERS

CONFIRMATION OF MEETING ROOM AND DINING ROOM RESERVATIONS

To: Professor James Grasskamp   2-6378

Department   School of Business

This will confirm that the rooms and food facilities of University of
Wisconsin-Extension Conference Centers indicated below have been reserved
at _____ UNIVERSITY BAY CENTER _____

Certified Insurance Counselors Program   Account No. 90-206
(Name of Conference or Institute)

MEETING ROOMS

Date	Room	Type of Set-Up	Time	Number of People
Nov. 15-17, 1979	16		?	80-100
Feb. 7-9, 1980	16		?	80-100

		11/14	Depart	11/17
LODGING: 40 rooms	Arrive	2/6	"	2/9

NOTE: **PLEASE SEND BROCHURE OR AGENDA WHEN AVAILABLE.** (Rooms subject to change)

FOOD SERVICE   ??

Date	Room	Type of Service	Time	Number of People

If you have made further arrangements with the unit manager, this form may be
incomplete.

Signed _Steve Johnson_   (eb)
Steve Johnson, Manager

Date   8/9/79   231-1341

Extension Conference Centers
701 Langdon Street
Madison, Wisconsin 53706

In accordance with your request, we enclose a formal application for the use of Extension Conference Centers for the _____

_____ Certified Insurance Councelors Program _____
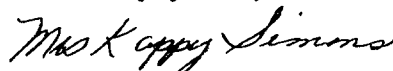
July 10-12 Sept. 25-27 Dec. 11-13 _____ to _____ ,19 _80_

Please fill out this form and obtain the endorsement of the Dean of your college, School or Division, Chancellor of your campus, or the President of the University, whichever applies. (In case of state agencies, the signature of the head of the department is required.) We have enclosed three copies, only one of which need be returned to us: the others may be used for your files.

The manager of the unit to which your program has been assigned will make contact with you to arrange the specific details of the event.

It is important that you give us complete information together with all changes well in advance of the beginning dates of your program. We are anxious to cooperate with you in making this event the success you would like it to be.

Sincerely yours,

(Mrs.) Kappy Simons
Scheduler and Program
Coordinator

KS/jr
Enc.

**The
School
of Business**

Office of Associate Dean
for External Relations

University of Wisconsin-Madison

1155 Observatory Drive
Madison, WI 53706
608/262-1550

M E M O R A N D U M

TO: Bob Witte   DATE: June 24, 1985
       Jim Graaskamp

FROM: Bill Strang

SUBJECT: Real Estate Programs formerly offered by Extension's Business
           Outreach Group

        The Business Outreach Organization in UW-Extension has historically
offered a number of real estate programs. Gar Stock, who organized these
programs, has been reassigned. The Business Outreach Organization is
being itself integrated with the Business School. Thus, we need to make a
decision as to whether or not we want to continue any or all of the
programs that were offered before.

        Chris Forrest has reported that UW-Milwaukee's Extension group has an
interest in picking up the real estate programs that formerly were offered
over the ETN (Educational Telephone Network). We should decide whether or
not we want to release these programs to them. Chris Forrest is obtaining
some information regarding enrollments for the programs so that we have
some ideas of their relative "profitability". I will forward that
information to you as soon as it becomes available to me.

        Would you look over the attached list of courses (those with asterisks
indicate that they were taught via ETN) and give some thought as to whether
you would like to take over responsibility for offering these courses? My
understanding is that much of the past demand was based on the fact that
real estate brokers were required to do a certain amount of continuing
education course work in order to keep their licenses.

        I do firmly believe that whether or not we wish to be involved in this
educational programming, it is important for the University or the Vocational
School System to provide training in this area if there is a demand for it.
If we are no longer going to demand the courses, we should very quickly take
steps to be sure that the Vocational System is aware of a new market that
they might reach or that UW-Milwaukee Extension operations take over all or
part of the programming.

        One possibility that sounds good to me off the top, is our selecting
out from the broader list of programs a limited number that we might do very
well. It seems to me that it would be useful for the business school to

have some basis for making regular contacts with real estate brokers through-
out the state. Perhaps this could be effectively done through a limited
number of high quality courses or perhaps you would see it as more viable for
us to offer an annual conference or biennual conference that would draw such
people to a central location. Anyhow, because you are the people who
potentially could be involved in these programs, I would like your reactions
and ideas as soon as possible. We will need to contact Bob Davidson in
Milwaukee as soon as possible to give him an answer to his request that we
pass the programs on to him.

jgk

Attachment

the Lt. Governor of Kentucky, Steven Beshear, a leader of the Kentucky Tomorrow Project; Rep. David Clarenbach, Speaker Pro-tem, Wis. State Assembly; and Dorothy Dean, Milwaukee County Board of Supervisors. Dr. Belden Paulson, Prof. of Political Science, UW-Milwaukee/Extension, will moderate.

Sept. 18/25   Wed.
8:00-9:50 p.m.   2 sessions
$10/1 session; $15/both sessions

Real Estate

APPRAISING, FINANCING AND MARKETING REAL ESTATE (ETN-119)

This course fulfills 30 of the 60 required hours for a real estate brokers license. If you became licensed as a real estate salesperson after May 1977, you must take this 30-hour class within two years of becoming licensed. Not only will this practical course help to prepare you for the state licensing exam, but it will also give you the tools for beginning a satisfying career in real estate.

Sept. 14-Dec. 14   Sat.
1:30-3:50 p.m.   12 sessions
$150

BASIC REAL ESTATE INVESTMENT (ETN-308)

This course is for the person who wants to get started investing in real estate. It is designed to give the beginning real estate investor or would-be investor the basic tools to maximize investment success. Topics will include: setting up investor motives; a review of basic financial concepts; selecting and analyzing investment property; getting financing; and analyzing the holding strategy. The main purpose of this course is to help students relate the above topics to their personal situation and use them. Approved for 10 hours credit.

Oct. 1-Oct. 22   Tues.
1:30-4:20 p.m.   4 sessions
$72

CONDOMINIUM MARKETING UPDATED FOR THE 80s (SEEN-022)

This course, designed for licensed real estate people, is a new look at marketing techniques for condominiums in today's market. Topics scheduled are: (1)Buyers Profile Updated Including First Time Buyers and Second Home Buyers; (2) New Look at Conversions; (3) Doing Market Feasibility Studies; (4) Advertising and Public Relations; (5) Help for Problem Projects — How to Make the Condominium Association Work for You; and (6) Marketing for

the Small Condominium Project. Approved for 10 hours credit.

Oct. 15-Nov. 5   Tues.
1:00-3:50 p.m.   4 sessions
$72

CREATING REAL ESTATE ADS THAT SERVE REAL ESTATE BUYERS (SEEN-021)

This course, for licensed real estate people, gives how-to information on areas of real estate advertising. It will cover: (1) How to Budget for Maximum Results; (2) How to Capitalize on Consumer Habits; (3) How Potential Home Buyers are Motivated; (4) How Color Can Work on Signs and Ads; (5) How to Write Classified Ads; (6) How to Use a Marketing Approach; (7) How to Select Words that Move People; (8) How to Lay Out Effective Display Ads; (9) How to Write Headlines that Sell; (10) How to Convert Features into Benefits; and (11) How to Improve Your Current Ads. Approved for 10 hours credit.

Oct. 1-Oct. 10   Tues./Thurs.
1:00-3:50 p.m.   4 sessions
$72

CREATIVE REAL ESTATE FINANCING AND EXCHANGE TECHNIQUES (ETN-122)

Almost no real estate transaction takes place without some kind of financing arrangements being made. As conventional mortgage financing of income property becomes difficult and costly to obtain, real estate investors and lenders alike look to new, more flexible financing techniques. This seminar presents financing techniques that you can use in your real estate business. Approved for 10 hours credit.

Dec. 16/23/30   Mon.
6:00-9:50 p.m.   3 sessions
$72

EFFICIENT MANAGEMENT OF APARTMENTS (ETN-123)

This course is designed for licensed real estate people. Topics will cover: (1) Operations of the Rental Complex and Rental Advertising including the managers manual; (2) Phone Procedure; (3) Showing Apartments; (4) Follow-up Responding to Residents; (5) Lease Renewals; and (6) the Use of Several Media. Approved for 10 hours credit.

Nov. 4-Dec. 9   Mon.
8:00-9:50 p.m.   6 sessions
$72

MANAGING COMMERICAL RENTAL PROPERTIES (ETN-314)

Managing Commercial Rental Properties is designed for licensed real estate people. Topics will include: (1) Operations at the Rental Property (managing the lease office); (2) Rental Policies and Procedures; (3) Lease Renewal Policies; (4) Lease Renewal Procedures; and (5) Advertising Commercial Space. Approved for 10 hours credit.

Sept. 16-Oct. 7   Mon.
10:00 a.m.-12:50 p.m.   4 sessions
$72

MANAGING THE REAL ESTATE OFFICE (ETN-309)

This course is a "how to" for the real estate office offering the following: (1) How to interview to get and keep good team members to improve client satisfaction; (2) How to set performance standards (expectations to benefit the consumer; (3) How to develop coach-counsel to increase the level of service to client; (4) How to influence sales associates and employees in your real estate firm; and (5) How to develop yourself as a professional to improve time management and productivity. Approved for 10 hours credit.

Oct. 23-Nov. 5   Tues./Wed.
9:00-11:50 a.m.   4 sessions
$72

THE MICROCOMPUTER AND REAL ESTATE MANAGEMENT (ETN-121)

This class is designed to help licensed real estate people understand and learn about microcomputers. The microcomputer as a management tool can be used in the real estate business to increase productivity. Topics to be covered in this course include: microcomputer's hardware, software and terminology. Approved for 10 hours credit.

Sept. 4-Nov. 14   Wed./Thurs.
8:30-9:50 p.m.   8 sessions
$72

MODERN REAL ESTATE MARKETING (ETN-310)

This course, for licensed real estate people, will cover topics to be considered for successful management of the real estate office to meet consumer needs and improve financial rewards. Such areas as office policies, internal marketing procedures, advantages, disadvantages of finances and developing office associates to utilize modern real estate marketing techniques. Approved for 10 hours credit.

Nov. 5-Nov. 26   Tues.
1:30-4:20 p.m.   4 sessions
$72

QUESTIONS TO ASK WHEN BUY-ING OR SELLING A HOME (ETN-117)

This is a basic course on buying or selling a home, designed for the consumer, but also approved for continuing education for real estate licensees. The following topics will be covered: The legal aspects and responsibilities of the broker/salesperson and consumer as they relate to the listing and offer to purchase contracts, financing arrangements, estimating value and closing costs. Approved for 10 hours credit.

Sept. 3-Oct. 7	Tues./Mon.
8:00-9:50 p.m.	6 sessions
$72	

REAL ESTATE INVESTMENT ANALYSIS — ADVANCED (ETN-120)

Licensed real estate people have the opportunity to explore evaluation, acquisition and disposition of investment real estate in this course. Topics include forms of real estate ownership, real estate syndication, tax implications of ownership and sales, plus more. Approved for 10 hours credit.

Sept. 5-Sept. 26	Thurs.
7:00-9:50 p.m.	4 sessions
$72	

RECYCLING OLD BUILDINGS FOR NEW USES (SEEN-061)

Of interest to licensed real estate people. Some of the topics to be discussed are: (1) Specific do's and don'ts in the recycling process; (2) A financial overview of a recycling project; (3) Horizontal versus vertical revitalization; and (4) Ten innovative ways to finance a recycling project. Approved for 10 hours credit.

Oct. 15/17	Tues./Thurs.
10:00 a.m.-12:50 p.m.	2 sessions
$72	

TAX CONSIDERATIONS IN REAL ESTATE TRANSACTIONS (ETN-124)

Real estate brokers and salespeople will learn the basic tax concepts involved in buying and selling real estate. You also will review valuable, practical techniques to use yourself or share with clients who plan to purchase, or wish to sell real estate. Approved for 10 hours credit.

Nov. 19-Dec. 11	Tues./Wed.
8:00-9:50 p.m.	6 sessions
$72	

WISCONSIN REAL ESTATE LAW (ETN-118)

Wisconsin law requires persons interested in obtaining a real estate license to complete classroom instruction before applying for a broker's license. This course fulfills 30 of the 60 required hours. It covers all of the essential steps in the typical real estate transaction, the legal aspects of the instruments and circumstances surrounding the sale of real estate.

Sept. 14-Dec. 14	Sat.
10:00 a.m.-12:20 p.m.	12 sessions
$150	

Small Business

HIRING, MOTIVATING AND COMPENSATING EMPLOYEES IN SMALL BUSINESS (SEEN-023)

This program is designed for owner-managers and key management employees in companies employing under 100 people. It focuses on three critical elements to raise labor productivity: getting the right person for the right job, maintaining a high rate of performance, and a pay system that rewards producers.

Professor Ed Pickett will share his ten years of personnel experience with IBM and Control Data, as well as 19 years with the University working with employers on the people side of their position. Topics to be covered: (1) HIRING—What to Do Prior to the Interview, How to Interview Effectively, and What to Do After the Interview; (2) MOTIVATION—Relation of Motivation to Performance, Use Expectancy to Raise Performance, and How to Get the Behavior You Want; (3) COMPENSATION—Setting Up a Wage Structure, Pricing the Job (Why Some Get $5 per hour and Others $6), and Paying for Performance.

Oct. 30-Nov. 20	Wed.
6:00-7:50 p.m.	4 sessions
$60	

SELLING TO THE STATE OF WISCONSIN (ETN-126)

This program is an introduction for Wisconsin businessmen who want to learn how to sell their products and services to departments of the State of Wisconsin. The topics include the state procurement outreach program; how the bidding process works; how, what, and where the state buys; the bidders list; and an open discussion of the problems and opportunities of selling to the State of Wisconsin.

Sept. 4	Wed.
7:00-8:20 p.m.	1 session
Free (registration required)	

Speech

THE 1985-86 DEBATE PROPOSITION (ETN-130)

This series will be presented for teachers, judges, and students who will be debating the 1985-86 proposition. Assistance and information regarding avenues of research, approaches to analysis and debating skills will be topics for discussion. Experienced and beginning debators and teachers will profit. Individuals who will be used as judges should also be encouraged to attend. Sept. 9/16/23

	Mon.
4:00-5:20 p.m.	3 sessions
$35	

WHSFA SPRING SPEECH CATEGORIES (ETN-131)

This series will cover the new WHSFA categories, with emphasis on judge training in using the critique sheet. Evaluation of the success of the new categories will also be included. We encourage coaches to involve community members and other school personnel who will be used as judges to attend these sessions. Beginning and experienced coaches will benefit from attending these sessions. DPI accreditation is being sought.

Sept. 30-Nov. 18	Mon.
4:00-5:20 p.m.	9 sessions
$50	

Writing

ARTICLE WRITING FOR FUN AND PROFIT (ETN-047)

Beginning and veteran writers alike can hone their writing, editing and marketing skills with Bill Nelson's practical and popular writing course. Bill is articles editor and a feature writer for *The Milwaukee Journal's Wisconsin* magazine, and is a successful freelance writer with well over 1,000 published articles to his credit. His enthusiastic instruction and critique, blended with guest lecturers and interviews with writers, editors and agents, have helped hundreds of Wisconsin writers, many of whom take the course two or three times.

Sept. 17-Dec. 10	Tues.
6:00-7:50 p.m.	9 sessions
$36/Audit; $67/With Critique	

MAKING MONEY: INVESTMENT STRATEGIES AND TAX PLANNING (ETN)

This course is aimed at individuals who desire to learn the basics of strategic tax planning and wise investing. In addition to learning the ins-and-outs of real estate investment and investing in stocks and bonds, the course will help participants to plan their finances through budgeting and tax planning. Alternative strategies will be discussed, depending on individual objectives; whether it be planning for retirement, college education, or simply financial security. Case studies involving single, married, divorced, and semi-retired persons will be discussed in depth, as well as plans to achieve goals through a total financial plan.

The objective of this course is to introduce participants to a wide range of investment alternatives with different professionals.

DATE: Sept. 13, 20, 27; Oct. 4, 1985

TIME: 7:00 pm - 9:00 pm

Fee: $50.00

NEW DESCRIPTIONS FOR
REAL ESTATE PROGRAMS

APPRAISING, FINANCING AND MARKETING REAL ESTATE
E119

Being a successful broker takes more than a knowledge
of the law. This practical course gives you the tools
to build a satisfying real estate career, and fulfills
30 of the 60 required hours.
If you became licenses as a real estate sales person after
May 1977, you must take a 30 hour XXXX class in real estate
within two years of becoming licensed. By taking this course,
you meet that requirement.

WISCONSIN
REAL ESTATE LAW #E118

Wisconsin law requires you to complete classroom instruction
before you can be licensed as a broker. This course fulfills
30 of the 60 required hours. It covers all of the essential
steps in the typical real estate transactions, the legal aspects
of the instruments and circumstances surrounding the sale of
real estate.

The School of Business

University of Wisconsin–Madison

Graduate School of Business

1155 Observatory Drive
Madison, WI 53706
608/262-0391

M E M O R A N D U M

TO: Jim Graaskamp   DATE: July 9, 1985

FROM: Bill Strang   *Bill*

SUBJECT: Extension Real Estate Programs

It appears that Business Outreach and its real estate programs will be integrated with our school later this year. A few weeks ago, I asked you about your interest in these – particularly the "set" offered over ETN.

Attached is some data on last year's enrollments. These seem to have generally been low income producers on a per student per day basis. And several of the courses seem better fitted to Vocational School programming.

We need to decide promptly how to respond to U.W.–Milwaukee's request to "pick up" the ETN programs. Someone will need to do the planned programming.

My inclination is to give up the ETN programs and if you or your department want to do any programming, ask the Business Outreach group to market your set of programs. Please let me know ASAP what you want to do.

jgk

Attachment

cc: Chris Forrest

BUSINESS OUTREACH

PROGRAM PLAN and COORDINATION REPORT

Campus **Madison**

Coordinator **Garfield R. Stock**   __ Big Business   for X Small Business   Programs **Jan 1 – June 30, 1984**
                                      __ Inplant   __ Public Service

IF#	Cr./ CEU	Beg/End Dates	Fee Cat.	Title Location (City & County)	Projected						Actual						Rat.
					No.Mtg. Days	Hrs./ Mtg.Day	Fee	Rev.	Enr.	SCHs	No.Mtg. Days	Hrs./ Mtg.Day	Fee	Rev.	Enr.	SCHs	
224	1.2	1/4 18	2	Quest. to ask when B/S a Home (ETN)	3	4	50	750	15	180	3	4	50	903	19	228	
225	3.0	1/21 5/12	2	WI Real Estate Law (ETN)	13	2.5	100	1500	15	450	13	2.5	100	1700	17	510	
226	3.0	2/18 4/14	2	App. Fin. & Marketing RE (ETN)	10	3	100	1500	15	450	10	3	100	1900	19	570	
227	1.2	2/27 4/2	2	Buying a Condom or Conv.(ETN	6	2	50	750	15	180	6	2	50	850	17	204	
228	1.2	4/19 5/3	2	Real Estate Valuation (ETN)	3	4	50	750	15	180	3	4	50	6000	120	1440	
229	1.2	5/9 23	2	Quest. to Ask When Purch. Raw Land (ETN)	4	3	50	750	15	180	4	3	50	5600	112	1344	
230	1.2	1/25 3/21	2	Creat. RE Fin. & Exch. Techniques (ETN)	8	1.5	50	750	15	180	8	1.5	50	1405	28	336	
231	7.1	1/30 2/17	1	Mgmt Development Institute (DNR)	10	7	1000	9000	15	1065	10	7	1000	9000	30	2130	
233	4.1	3/12 17	2	App. Income Prop Val-SREA 202	5	6	80	1200	15	615	5	6	80	2080	26	1040	
236	1.2	2/18 25	2	RE Investment Analysis	2	6	160	2400	15	180	CANCELLED						
237	1.2	3/24 31	2	RE Feasibility	2	6	160	2400	15	180	CANCELLED						
238	1.2	3/28 29	2	Using the Computer in the RE office	2	6	160	2400	15	180	2	6	160	5912	39	444	
239	1.2	2/8 9	2	Real Estate Syndication	2	6	160	2400	15	180	CANCELLED						
				TOTALS				26550	195	4200							Ave.

Campus __Madison__

Coordinator __Garfield R. Stock__

__ Big Business   X Small Business   Programs   Jan 1 – June 30, 1984

__ Inplant   __ Public Service

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					No.Mtg. Days	Hrs./ Mtg.Day	Fee	Rev.	Enr.	SCHs	No.Mtg. Days	Hrs./ Mtg.Day	Fee	Rev.	Enr.	SCHs	
242	3.0	1/9-13	2	WI RE Law	5	6	100	1500	15	450	5	6	100	1000	10	300	
243	3.0	1/16-20	2	App. Fin & Marketing RE	5	6	100	1500	15	450	5	6	100	700	7	210	
244	3.0	3/14-4/12	2	WI RE Law	10	3	100	1500	15	450	CANCELLED						
245	3.0	4/18-5/17	2	App. Fin & Marketing RE	10	3	100	1500	15	450	CANCELLED						
246	3.0	5/7-11	2	WI RE Law	5	6	100	1500	15	450	5	6	100	400	4	120	
247	3.0	5/14-18	2	App. Fin & Marketing RE	5	6	100	1500	15	450	5	6	100	800	8	240	
249	2.6	4/9-11	2	Comm. in RE Acq. –IRWA Course 101	3	8	270	4050	15	390	3	8	270	2830	12	312	
255	1.2	3/5-6	2	Management of Corp. RE –Course II	2	6	300	4500	15	180	2	6	300	6900	23	276	
258	.6	6/12	2	RE Negotiations	1	6	150	2250	15	90	CANCELLED						
TOTALS								46,350	330	7560				47980	491	9704	Ave.

Expenses – 26043.00

BUSINESS OUTREACH

PROGRAM PLAN and COORDINATION REPORT

for

Campus __Madison__

Coordinator __Garfield R. Stock__

__ Big Business   X Small Business   Programs

__ Inplant   __ Public Service

January 1, 1985 - June 30, 1985

IF#	Cr./CEU	Reg/End Dates	Fee Cat.	Title Location (City & County)	Projected						Actual						Rat.
					No.Mtg. Days	Hrs./ Mtg.Day	Fee	Rev.	Enr.	SCHs	No.Mtg. Days	Hrs./ Mtg.Day	Fee	Rev.	Enr.	SCHs	
219	1.2	1/9-23	2	Questions to Ask When Buying or Selling A Home (ETN)	3	4	65	975	15	180	3	4	65	3705	57	684	3.6
220	1.2	2/7-3/7	2	Creative Real Estate Financing & Exchange Techniques (ETN)	5	2.5	65	975	15	180	5	2.5	65	780	12	144	3.4
221	1.2	2/11-3/18	2	Condominium Marketing - Updated for the 80'S (ETN)	6	2	65	975	15	180	CANCELLED						
222	1.2	3/25-4/29	2	Real Estate Valuation (ETN)	6	2	65	975	15	180	6	2	65	1040	16	192	3.5
223	1.2	5/6-20	2	Questions to Ask When Purchasing Raw Land or Rural Property (ETN)	3	4	65	975	15	180	3	4	65	1105	17	204	
224	1.2	1/8-17	2	Efficient Management of Apartments (SEEN)	4	3	65	975	15	180	4	3	65	1625	25	300	3.5
225	1.2	2/11-20	2	Condominium Marketing Updated for 80's (SEEN)	4	3	65	975	15	180	4	3	65	585	9	108	3.7
226	1.2	4/8-17	2	Creating Real Estate Ads That Serve Real Estate Buyers (SEEN)	4	3	65	975	15	180	4	3	65	650	10	120	3.9
235	3.0	1/26-3/30	2	Appraising, Financing and Marketing Real Estate (ETN)	9	2.5	135	2025	15	450	9	2.5	135	2295	17	510	3.5
236	3.0	2/2-4/27	2	Wisconsin Real Estate Law (ETN)	9	3.5	135	2025	15	450	9	3.5	135	2025	15	450	N/A
238	4.2	3/4-9	2	Applied Residential Property Valuation - SREA 102	6	7	80	1200	15	630	6	7	80	2720	34	1428	N/A
242	2.4	4/10-12	2	Group Communications - IRWA Course 204	3	8	240	3600	15	360	3	8	240	4550	21	504	3.5
244	1.2	3/4-13	2	Efficient Management of Apartments (SEEN)	4	3	65	975	15	180	4	3	65	910	14	168	Ave.
				TOTALS													

?

Campus __Madison__

Coordinator __Garfield R. Stock__

for
___ Big Business _X_ Small Business   Programs   January 1, 1985 - June 30, 1985
___ Inplant   ___ Public Service

IF#	Cr./CEU	Beg/End Dates	Fee Cat.	Title Location (City & County)	Projected						Actual						Rat.
					No.Mtg Days	Hrs./Mtg.Day	Fee	Rev.	Enr.	SCHs	No.Mtg Days	Hrs./Mtg.Day	Fee	Rev.	Enr.	SCHs	
245		2/23 5/18	3	Radio Station Development Mgmt.	4	1.5	N/A	N/A	15		CANCELLED						
246	3.0	1/14 18	2	Wisconsin Real Estate Law	5	6	135	2025	15	450	5	6	135	802	6	180	3.7
247	3.0	1/21 25	2	Appraising, Financing and Marketing Real Estate	5	6	135	2025	15	450	5	6	135	1064	8	240	3.8
248	1.2	3/25 4/29	2	Condominium Marketing Updated for the 80's (SEEN)	6	2	65	975	15	180	CANCELLED						
249	1.0	2/28 3/1	2	Micro-Computers & the Realtor	2	5	120	1800	15	150	2	5	120	600	5	50	3.8
250	1.0	3/19 20	2	Micro-Computers & the Realtor	2	5	120	1800	15	150	CANCELLED						
251	1.0	4/11 12	2	Micro-Computers & the Realtor	2	5	120	1800	15	150	2	5	120	720	6	60	3.7
252	1.2	4/11 12	2	Efficient Management of Apartments	2	6	160	2400	15	180	CANCELLED						
254	3.0	1/30 2/28	2	Wisconsin Real Estate Law	10	3	135	2025	15	450	10	3	135	810	6	180	4.0
255	3.0	3/6 4/4	2	Appraising, Financing and Marketing Real Estate	10	3	135	2025	15	450	10	3	135	1080	8	240	3.9
256	3.0	3/4 8	2	Wisconsin Real Estate Law	5	6	135	2025	15	450	5	6	135	675	5	150	3.8
258	3.0	3/11 15	2	Appraising, Financing and Marketing Real Estate	5	6	135	2025	15	450	5	6	135	945	7	210	3.8
259	3.0	5/6 10	2	Wisconsin Real Estate Law	5	6	135	2025	15	450	5	6	135	945	7	210	3.9 Ave.
				TOTALS													

PROGRAM PLAN and COORDINATION REPORT

Campus __Madison__

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					No.Mtg. Days	Hrs./ Mtg.Day	Fee	Rev.	Enr.	SCHs	No.Mtg. Days	Hrs./ Mtg.Day	Fee	Rev.	Enr.	SCHs	
260	3.0	5/13 17	2	Appraising, Financing and Marketing Real Estate	5	6	135	2025	15	450	5	6	135	270	2	60	
261	.6	5/11	2	Real Estate Exam Review	1	6	80	1200	15	90	CANCELLED						
														29901	307	6392	Ave.
				TOTALS				43800	420	8010							

CONTEMPORARY REAL ESTATE APPRAISAL METHODS

May 22-25, 1978

PROGRAM SCHEDULE

Monday, May 22, 1978

7:00-8:30 P.M.   Introduction to the Real Estate Process & Feasibility Analysis

Tuesday, May 23

8:30-10:15   Contemporary Appraisal Theory

10:15   Coffee Break

10:30-12:00   Outline of Contemporary Appraisal Report

12:00   Lunch

1:00-3:00 P.M.   Property Analysis to Identify Alternative Uses

3:00   Refreshment Break

3:15-5:00   Selection of most Probable and Fitting Use

6:00   Dinner

7:00-9:00   Concept of Most Probable Buyer Type and Selection of
                    Appraisal Methods
                    (Prof. James A. Graaskamp)

Wednesday, May 24, 1978

8:30-10:15   Statistics and Predicting Probable Price for Market Sales
                    (H. Robert Knitter)

10:15   Coffee Break

10:30-12:00   Automated Market Comparison Techniques
                    (H. Robert Knitter & Prof. James A. Graaskamp)

12:00   Lunch

1:00-3:00   Linear Regression for Market Comparison
                    (Prof. James A. Graaskamp)

3:00   Refreshment Break

3:15-5:00   Writing a Readable Report
                    (Prof. Richard Hansen)

6:00   Dinner

7:00-9:00   Investment Purchase Simulation for Most Probable Buyer
                    (Prof. James A. Graaskamp)

<u>Thursday, May 25, 1978</u>

8:30-9:30   Testing the Appraisal Value Conclusion
                   (Prof. James A. Graaskamp)

9:30-11:00   Demonstration Report Techniques
                   (Prof. James A. Graaskamp)

CONTEMPORARY REAL ESTATE APPRAISAL SEMINAR

Instructor: Professor James A. Graaskamp
University of Wisconsin School of Business

FIRST MORNING
8:30-10:15 a.m.

I. A Real Estate Appraisal - A Business Forecast

A. Prof. Richard U. Ratcliff was the first of several urban land
    economists to critique traditional appraisal in light of current
    business forecasting methods and techniques. In effect Ratcliff
    describes an appraisal as a prediction about the price of a future
    transaction under conditions of uncertainty. Uncertainty is
    introduced because knowledge of the facts is less than perfect ·
    and future conditions unknown.

    One approach to forecasting or reaching a decision is by modeling
    to structure facts and relationships in a manner appropriate to
    the decision process. Three types of models are common in real
    estate analysis:

    1. Physical models = sand tables to understand site, building mass,
        and shape.
    2. Communication models = flow charts of industrial process or
        traffic patterns.
    3. Abstract or symbolic models = items with mathematical or logic
        concepts, $1/C = V$ is a symbolic model of the relationship
        between income productivity.

C. In constructing any decision model there are six basic elements to
    be considered:

    1. The decision to be made or the question to be answered.
    2. The data available with which a decision must be made.
    3. The theoretical relationships or logical structure which
        focuses the data on the problem.
    4. The interface between the analyst and the requirements of the
        model.
    5. The interface between the results of the model and the
        decision maker or client and their ability to comprehend and
        believe (credit ability is always more important than credit
        in real estate).
    6. The relationship between the economic significance of the answer
        and the cost to acquire the answer by using the model.

D. In general, a decision requires that information be systematically
    organized to identify choices of action and the alternative out-
    comes from each choice. (See Diagram #1). At the same time facts
    help shape general values which in turn lead to explicit objectives,
    and then specific selection criteria.

Diagram #1

```
                              ┌─Alternative Outcome #1  gain
              Choice #1 ◄──────Alternative Outcome #2  lose
                (run)         └─Alternative Outcome #3  fumble

                                                                      Criteria Screen    Choice
              Choice #2        a.  Outcome    gain                                       Selection
                (pass)         b.  Outcome    incomplete
Input Facts                    c.  Outcome    interception


              Values #1 _____  Objectives     weight _____
                (win)          (gain yards)
              Values #2 _____  Objectives     weight _____
                (don't lose    (ball control)
                   big)
```
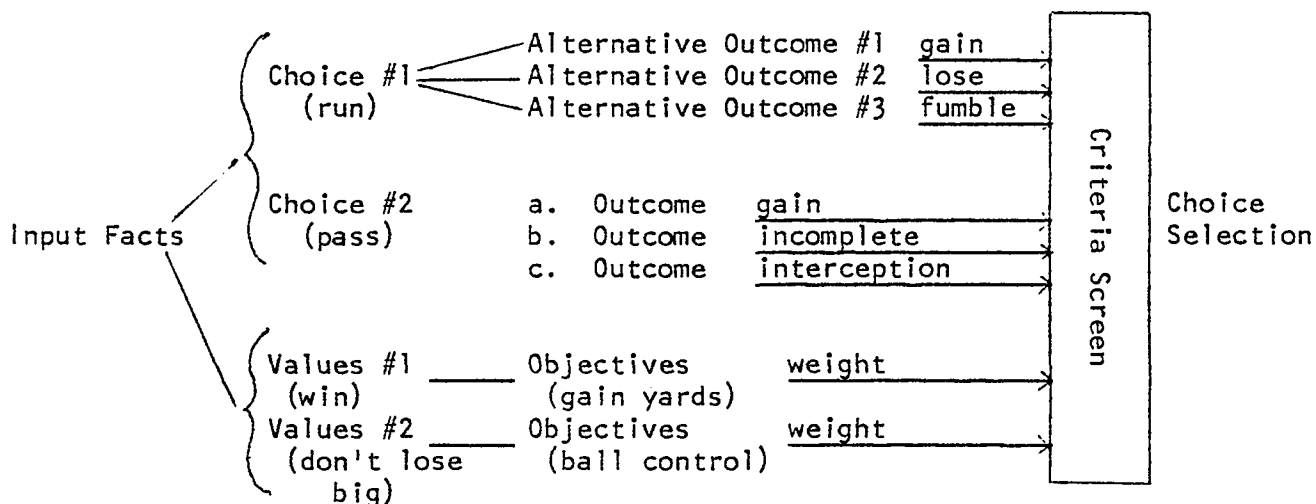
E. The three approaches to value are models of how economic man might price a property to maximize his return and minimize his cost. It represents an historical compromise between three powerful groups in the early 1930's who really had different needs or questions about price.

1. Insurance company lenders wanted to lend less than cost to build - thus they emphasize the cost approach.
2. Real estate brokers wanted to know what they could sell it for today, and therefore emphasize the market comparison approach.
3. The FHA appraisal section was headed by a Michigan professor, Fred Babcock, who believed all property should be valued as a capital budgeting decision, i.e. as the present value of future net returns.
4. To compromise they seized on Marshallian economics which said in the short run the market is out of balance and reveals market price. During the intermediate term, it reflects income value which cannot be forecast for the long run. In the long run, prices have tendency to equal cost of production.

F. Since that time, writers have shown buyers are interested in many things besides maximum profit including minimum risk, compatibility with community, portfolio effects from taxes and diversification as well as subjective, qualitative satisfactions. Therefore, an appraisal model may seem to have the same question - What is the value of property - but in fact it represents multiple questions:

1. What is the nature of the decision to be served by the appraisal benchmark?
2. What is the specific asset for which value is sought?
3. What is the date for which value is relevant?
4. What is the definition of value - theoretical structure - which focuses the data on the problem?

G. Ratcliff points out a variety of value estimates or viewpoints which have significance in the appraisal of any specific property:

    1. Vs - value to the owner or user.
    2. Vc - cost of constructing a substitute property.
    3. Vp - a probabilistic prediction of what the property will
         sell for.
    4. Vo - price at which the property is offered for sale.
    5. Vb - bid price by a prospective purchaser.
    6. Vt - the price at which the property is actually sold, as an
         historic fact.

H. The Ratcliff viewpoint is just plain common sense. On page 14 of his text he states his premise:

"The fundamental concepts of value and price which are central to appraisal are at the heart of the social science of economics. Economic goods are valuable because of their utility (productivity) and scarcity. Thus in analyzing the value of a parcel of real estate, the starting point is with its inherent utility - the characteristics and qualities which can make it productive and desirable, and for which people are willing to pay.

"But price is set in the market place. To serve his client's needs, the appraiser seeks to predict the price at which the subject property will probably sell. Viewing the property as a package of potentially productive qualities, the appraiser must predict the outcome of the interaction of the market forces of demand and supply to which the property might be exposed and which could trigger a transaction from which market price will emerge.

"Economics is a behavioral science, descriptive of the economic behavior of people under various conditions. It is the appraiser's task to predict how people, both buyers and sellers, will behave with respect to the subject property when it is exposed for sale. People make values and determine prices."

I. An appraisal as a benchmark for decision requires the appraisal report to reflect the client's purposes for which an appraisal is sought. It is common sense that the more questions that an appraisal can serve, the more business potential there is; fair market value serves only a limited number of issues.

    1. For the mortgage lender, the issue is the liquidating value or probability of future cash returns being adequate to repay the loan, interest, and cost, and the distribution of profit centers over time to maintain repayment incentive to the borrower.
    2. For the courts eminent domain or assessment appeal, the statement of function leads to the definition of value as the jurisdictional market value.
    3. A report for a would-be buyer or seller might lead to the definition of value as investment market value.
    4. For most cases the appraiser would seek to determine the most probable selling price.

J. Investment market value is a term coined by Mack Hodges for the present value of future income receipts, considering a specific set of assumptions about the after tax cash flow of property and

requires some general description of the investment standards and tax status of buyers interested in a specific type of property, specifically income investment property. Investment value, which requires some detail about motivations of a probable or specific buyer, is a special case of the broader concept of "most probable sales price." (Vp)

K. Most probable selling price is derivative of the theoretical work of Prof. Richard U. Ratcliff.

1. The quotable definition: "The most probable price is that selling price which is most likely to emerge from a transaction involving the subject property if it were to be exposed for sale in the current market for a reasonable time at terms of sale which are currently predominant for properties of the subject type."

2. This approach makes the point conclusion explicitly a statement of the central tendency (mode, mean, or median) around which a transaction price is likely to fall. Thus it generally supplies a valuation as a range of prices within which a transaction would most likely occur, similar to but not necessarily a concept of statistical standard error. This range will be called a transaction zone.

L. Combining the basic question for which an answer is sought - most probable price - with the elements of economic analysis forecasting leads to a simple appraisal logic.

1. The purpose of the appraisal (assessment, mortgage loan, insurance, etc.) leads to a selection of a value definition.

2. Detailed analysis of the property leads to a statement about most probable productive use.

3. Most probable use leads to inference about the most probable buyer-type, his motivation, and economic logic.

4. Buyer-type leads to a choice of valuation method. Comparability becomes a matter of analyzing a buyer-type as well as a physical piece of similar real estate.

5. In Ratcliff the basic approaches are:

a. Preferred method is to infer buyer behavior from actual market transactions.

b. In the absence of adequate market data, the method requires simulation of probable buyer investment analysis or enterprise budgeting.

C - normative approaches - i.e. investment values, cost approach, etc.

M. The number of points would be underscored:

1. One or more of the traditional approaches to value may be used if relevant to the purpose or any other method may be used which provides a reliable conclusion. The degree of error in the estimate is more important than the consistency of the theoretical logic.

2. Buyer-type may be a class of buyers, it may be a single buyer such as the property owner next door, or a particular investor with a very strong preference for property attributes inherent in the subject property.

3. There is no need that buyers be fully informed as the market may provide evidence that prices are being set by ignorance; there is no need that buyers have reasonable choices if the seller is enjoying a monopoly position.

4. Finally it should be noted that the logical development from productivity analysis to selection of the appraisal report structures the form of the report.

II. Since appraisal starts from what is known about a specific piece of property (Productivity Analysis, Chapter 2 in Ratcliff), it is similar to a feasibility report until one has determined the probable use and the probable buyer.

A. Refer to Exhibit 2.

B. The traditional appraisal report always moves from the general to the specific, subject to a series of limiting conditions. Many of these special conditions are professional courtesy to avoid competition with other professions at the same time that one avoids paying the other professions and continues as a lone wolf in appraisal, controlling the customer, a psychological hang-up of real estate brokerage. Thus the appraiser avoids:

1. Engineering factors
2. Finance and taxation matters
3. Title issues, surveys, etc.
4. Legal character of leases, permits, and other contracts

C. At the same time the element of uncertainty, left implicit by a single number conclusion, is hedged by additional limiting conditions including the appraisal practice of ignoring politics, land use administration, and personalities.

1. The practice of using limiting conditions has moved to the point where the appraiser supports consistency based on faulty premises rather than honesty as the reliability of a prediction
2. Nevertheless, all an investor buys is a set of assumptions about future.
3. Since risk is the variance between assumptions and realizations, how can the appraiser evaluate the probable productivity of the property without evaluating all the assumptions which can be made explicit.
4. Thus the transaction zone or range of estimates together with other report writing techniques are intended to provide better methods of recognizing the need for tolerance in the decision process for the conditions of uncertainty which surround the appraisal estimate.

III. Ratcliff has been most comprehensive in statement of basic appraisal theory, many writers are contributing to the rethinking of the appraisal process and appraisal techniques. A number of selected readings by these other professional and academic critics have been included in the appendix of your workbook.

Exhibit 2

TRADITIONAL APPRAISAL AS A FICTIONAL SET OF FEASIBILITY ASSUMPTIONS

Feasibility Analysis	Appraisal Analysis
Will the project really work for a specific investor?	What would the project sell for if it did work for a typical investor?

1. Objectives - decision standards provided by client decision process
  a. Maximize spendable cash of total enterprise
  b. Subjective gratification of specific individual
  c. Adaptation to enterprise management specialties and weaknesses
	1. Objectives - decision standards provided by theoretical framework
	  a. Maximize economic surplus of individual parcel
	  b. Prudent behavior of economic man
	  c. Average management to isolate return to land & capital

2. Aggregate market potential opportunity identification	2. Aggregate market potential business climate
3. Merchandising analysis (Defining competitive edge) and specific user profile	3. Merchandising comparison (Defining standard competitive substitute)

4. Legal-political context
  a. All legal constraints on site, seller, buyer and user are considered
  b. What is legal is qualified by what is political
	4. Legal-political context
	  a. Legality assumed
	  b. Limited to site use rather than regulations on probable user as alternative buyers are assumed

5. Physical-technical constraints are examined in terms of what might be	5. Physical-technical constraints are studied as is or in terms of conventional uses
6. Impact on environment and community specifically forecast	6. Impact on environment and community assumed acceptable within existing permitted uses
7. Financing from buyer viewpoint considering all profit centers	7. Financing from lender viewpoint considering only net income line and below
8. Income tax advantages or disadvantages affecting spendable cash	8. Income tax not considered except implicitly recognized in market comparison
9. Actual cash revenues and expenses forecasted for each period of time horizon	9. Revenues and expenses generally normalized and projected on linear trend for standard period

10. Limiting assumptions of solution
  a. Identification of potential variance and sensitivity of objectives to alternative futures
  b. Responsibility allocated among sources of expertise
  c. Budget & purpose of study edits information scope
  d. Format of analysis determined by structuring of data to lead to desired conslusion or recommendation
	10. Limiting assumptions of solution
	  a. Average outcome without qualification as to alternative futures
	  b. Responsibility denied for other areas of expertise
	  c. Date of appraisal edits information scope
	  d. Format of analysis defined by model of fair market value appraisal report

A. Much commentary on appraisal can be divided between those who would just as soon scrap the historical textbooks and language of appraisal (a la Ratcliff and Graaskamp), and those who would simply like to refine present dogma and techniques of appraisal report content (Wendt and Smith).

B. While the rebels attack theory head-on with the romantic notion of toppling the temple of principles built in Chicago, the more pragmatic politicians are realistically chipping away at the stone tablets from within traditional institutions.

C. A few argue that the change in appraisal method represents a shift from deductive logic based on principles to inductive forecasting tools capitalizing on observed behavior. A parody of scientific method versus theory and reason.

D. Some of the other issues in debate relate to the following topics:

  1. What is function of appraisal?
     a. Benchmark of value
     b. Predict transaction price under conditions of uncertainty
     c. To answer a question of a client
  2. What is the standard of professionalism?
     a. Format (profession vs. institution)
     b. Tools and techniques
     c. Standards of business conduct
     d. Reliability of results
  3. What is the frame of reference of real estate productivity?
     a. The parcel
     b. The individual investment interest
     c. The community
     d. The collective interest of society

COFFEE BREAK

EXHIBIT I

DATA IMPUT CONCENTRATION
FOR A "FRONT DOOR - BACK
DOOR" FEASIBILITY ANALYSIS

SPACE CONSUMER
"CLIENT/ USER"
CONCERNS:
- OCCUPANCY COST MEET BUDGETARY CONSTRAINTS
- SATISFIES FUNCTION/AMENITY REQUIREMENTS

PROJECT
- SPACE·
- TIME·
- MONEY·
SITE & IMPROVEMENTS
CONCERN:
- SUPPLY ATTRIBUTES IN DEMAND TO MEET NEEDS

PUBLIC INFRASTRUCTURE
"COMMUNITY"
CONCERNS:
- POSITIVE TAX REVENUE TO SERVICE COST BALANCE
- MEET MINIMUM SERVICE DEMANDS

SPACE PRODUCER
"DEVELOPER"
CONCERNS:
- ADEQUATE RETURN ON EQUITY FOR INVESTMENT RISKS ASSUMED
- DO NOT EXCEED CAPITAL BUDGET LIMITATIONS

SERVICES
TAXES
REAL ESTATE TAXES
SERVICES
NET BENEFITS
RENTS & PURCHASES
CAPITAL
SERVICES
GROWTH CONTROLS & INCENTIVES

THE REAL ESTATE DEVELOPMENT SYSTEM

EXHIBIT 2

SPACE PRODUCER

ARCHITECTURAL PROGRAM:

ESTABLISHMENT OF A
MINIMUM LEVEL
OF BUILDING
PERFORMANCE

INITIAL
INVESTMENT

CAPITAL BUDGET

FINANCIAL PLAN
CREDIT AMOUNTS & TERMS
EQUITY AMOUNTS & TERMS
HOLDING POWER

MEASURES OF PROFITABLITY & RISK
DEFINITION OF INVESTMENT & PROFIT
EQUITY PROTECTION & PAYBACK
CONTROL OF VARIANCE

INCOME TAX STRATEGY
REDUCTION OF MARGINAL TAX RATE
POSTPONEMENT OF TAX PAYMENT

OPERATING BUDGET
PATTERN OF OPERATING EXPENSES
LEVELS OF MANAGEMENT & SERVICE
PROFIT & LOSS STATEMENT

MARKET RENTAL
DEMAND & SUPPLY FACTORS

MARKETING SURVEY:

SPACE, PRICE & AMENITIES
DIRECTED AT A SPECIFIC
REAL ESTATE
SUB-MARKET

BACK-DOOR FEASIBILITY APPROACH

FRONT-DOOR FEASIBILITY APPROACH

EXPECTATIONS OF FUTURE
BENEFITS LIMIT THE POTENT-
IAL QUALITY OF THE SPACE
TIME PRODUCT FUNCTIONAL
EFFICIENCY & AESTHETICS

ESTABLISHMENT OF SPACE
PRODUCT RESULTS IN FIRM
INITIAL COST BUT LITTLE
SENSITIVITY TO FUTURE
BENEFITS OR LENGHT OF
HOLDING PERIOD

SPACE CONSUMER

TWO SIDES OF THE COIN

BACKDOOR APPROACH FORMAT
FOR RANKING MOST PROBABLE USE

$$\left\{\begin{array}{c} \boxed{R/U} \\ \boxed{nLU} \end{array}\right\} \times \quad + \quad \left\{\begin{array}{c} \boxed{R/U} \\ \boxed{nLU} \end{array}\right\} \times \quad + \quad \left\{\begin{array}{c} \boxed{R/U} \\ \boxed{nLU} \end{array}\right\} \times$$

$$=$$

$$\boxed{GI} \times \boxed{DP} = \boxed{Cash}$$

$$\boxed{1-DP} \times \qquad \qquad \boxed{OE}$$

$$=$$

$$\boxed{ECm} \qquad \qquad \boxed{CE}$$

$$\boxed{VAC} \qquad \qquad \boxed{RTE}$$

$$=$$

$$\boxed{RES} \qquad \qquad \boxed{COS}$$

$$=$$

$$\boxed{ET} \qquad \qquad \boxed{MC} \div$$

$$\boxed{ECu} \qquad \qquad \boxed{JMC}$$

$$=$$

$$\boxed{J\&I} \qquad +$$
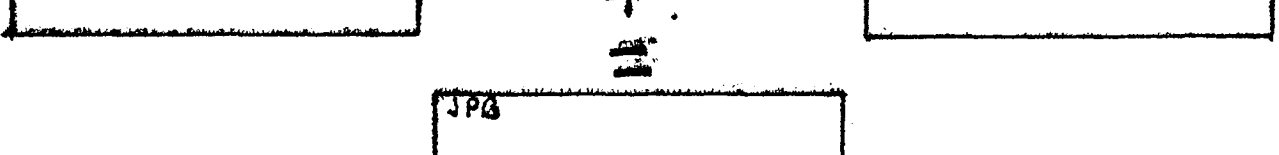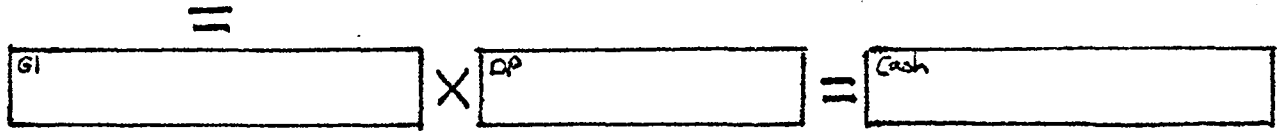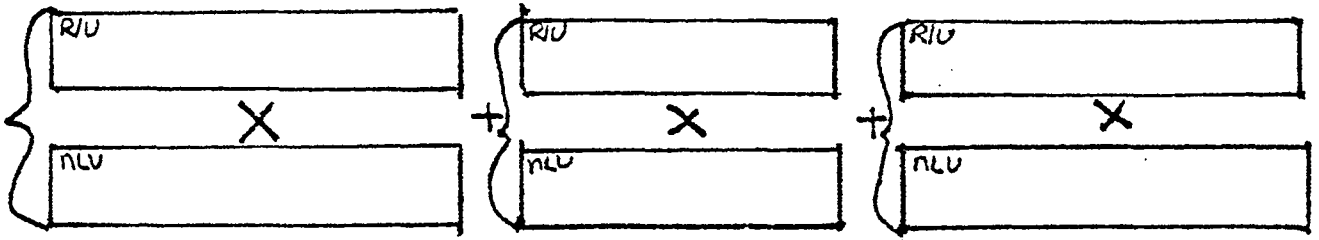
$$\boxed{JPB}$$

$$\boxed{RB}$$

$$\boxed{PB}$$

BACKDOOR APPROACH FORMAT
FOR RANKING MOST PROBABLE USE
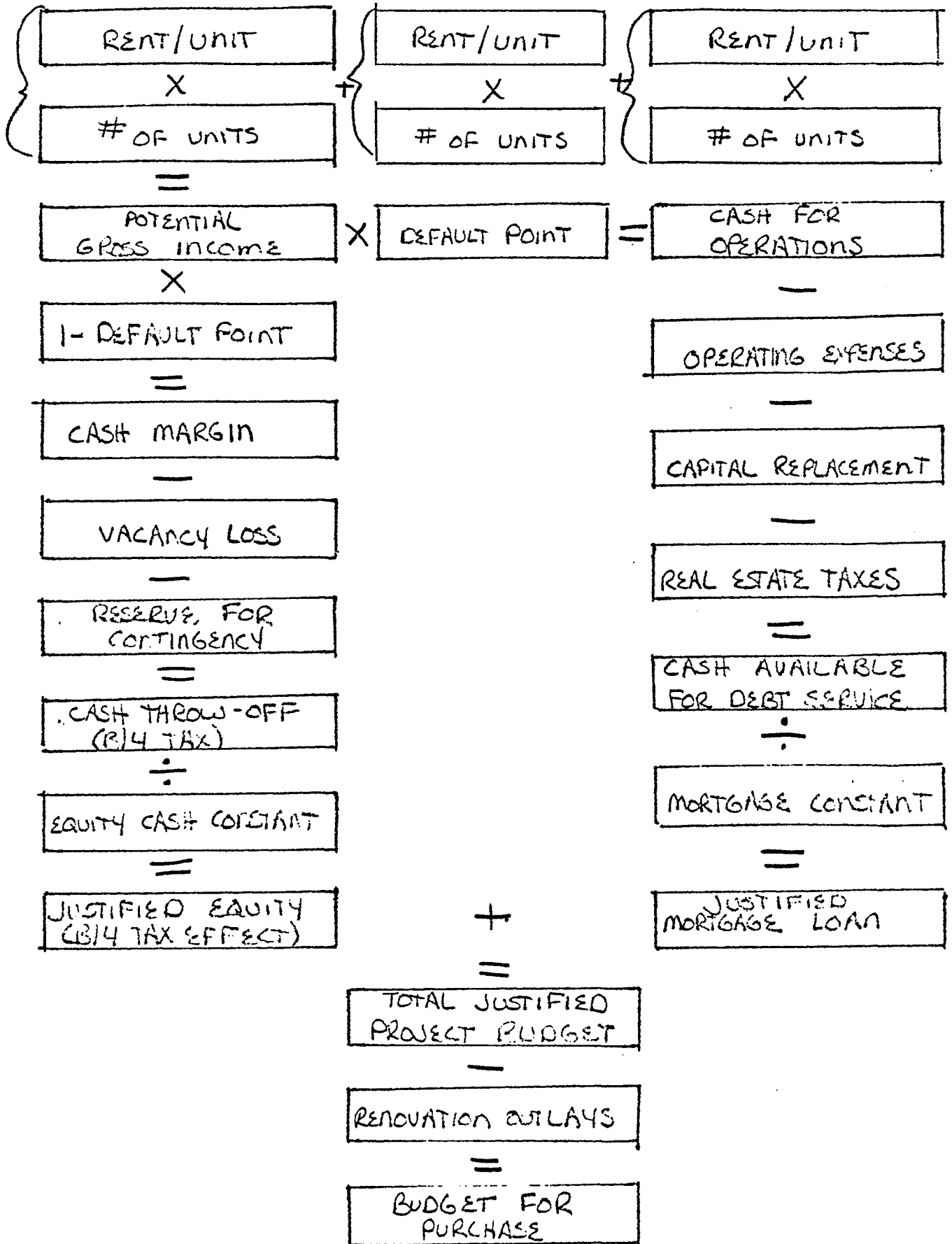
RENT/UNIT		RENT/UNIT		RENT/UNIT
X	+	X	+	X
# OF UNITS		# OF UNITS		# OF UNITS

=

POTENTIAL GROSS INCOME	X	DEFAULT POINT	=	CASH FOR OPERATIONS

X   —

1- DEFAULT POINT   OPERATING EXPENSES

=   —

CASH MARGIN   CAPITAL REPLACEMENT

—   —

VACANCY LOSS   REAL ESTATE TAXES

—   =

RESERVE FOR CONTINGENCY   CASH AVAILABLE FOR DEBT SERVICE

=   ÷

CASH THROW-OFF (B/4 TAX)   MORTGAGE CONSTANT

÷   =

EQUITY CASH CONSTANT   JUSTIFIED MORTGAGE LOAN

=

JUSTIFIED EQUITY (B/4 TAX EFFECT)   +

=

TOTAL JUSTIFIED PROJECT BUDGET

—

RENOVATION OUTLAYS

=

BUDGET FOR PURCHASE

INSTRUCTORS:
Professor JAMES A. GRAASKAMP, SREA, CRE,
Chairman-Department of Real Estate &
Urban Land Economics, University of
Wisconsin-Madison.
MICHAEL L. ROBBINS, Environmental and
Systems Analyst, Ph.D. candidate, Civil
and Environmental Engineering.

GENERAL INFORMATION:

Fee: $275 includes program materials
and refreshment breaks.
Location: University Bay Center for
Continuing Education, 1950 Willow Dr.,
Madison, WI.
Lodging & Parking:Information will be
sent with confirmation of registration.
Time: March 16-19, 1977, beginning on
March 16 at 7:00 p.m., and closing at
noon on March 19, 1977.
Veterans' Benefits: Eligible veterans
can receive full reimbursement for
fees and textbooks from the Wis. Dept.
of Veterans' Affairs upon satisfactory
completion of this course. See your
County Veterans' Service Officer to
ascertain eligibility and to make
application for benefits.
CEU: In conformance with guidelines
established by the National Task Force
on the Continuing Education Unit, this
course is authorized for 2.4 CEU.
Cancellation: You may cancel your res-
ervation up to seven calendar days
prior to program start without incurring
a fee or cancellation charge. If you
withdraw during the final seven days,
a $25 handling fee is charged. Enrollees
who fail to attend without properly
cancelling are liable for the total
program fee. Registration is limited.
For further information: Contact the
program administrator, Garfield R. Stock,
Dept. of Business & Management,
UW-Extension, 432 N. Lake Street,
Madison, WI 53706; or call (608)262-9789.

Contemporary Real Estate Financial Analysis for Mortgage Loans & Equity Investments in Income Properties

MARCH 16-19, 1977

TO BE HELD IN

MADISON, WISCONSIN

CONTEMPORARY REAL ESTATE FINANCIAL
ANALYSIS FOR MORTGAGE LOANS AND EQUITY
INVESTMENTS IN INCOME PROPERTIES

- -

This seminar is an intensive introduc-
tion to principles, concepts, and ap-
plications which are taught as the core
of the University of Wisconsin graduate
program in Appraisal & Investment Anal-
ysis. These ideas may contradict or
expand appraisal doctrine and techniques
advocated by the various professional
appraisal societies. THUS THIS COURSE
IS NOT APPROVED OR SPONSORED BY ANY
PROFESSIONAL REAL ESTATE CERTIFICATION
GROUP. IT DOES NOT CARRY CREDIT TOWARD
ANY PROFESSIONAL DESIGNATION OR REQUIRE-
MENT. Nevertheless, its techniques are
practical and tested in appraisal and
investment counseling and will expand
the professional's ability to serve the
needs of his client on matters requir-
ing systematic real estate analysis.

PROGRAM SCHEDULE:

WEDNESDAY, March 16, 1977
4:00-6:00 p.m.--Registration
7:00-9:00 p.m.--Introductory lecture
   1. The concept of the real estate
      process
   2. The objectives of financial
      analysis
   3. The objectives of risk management
      analysis

THURSDAY, March 17, 1977
8:30 a.m.-12:00 noon
BASIC APPROACHES TO FINANCIAL ANALYSIS
1. Total cost approach to rents (front
   door approach)
2. Market rent approach to total cost
   (back door approach)
3. The critical financial links -
   default point and cash on cash

APPLICATIONS OF FRONT DOOR/BACK DOOR
APPROACHES
1. Justified mortgage amount
2. Justified building costs/remodeling
   costs/land costs
3. Required rental income structure
4. Sensitivity analysis of critical
   assumptions

1:00-4:45 p.m.
BASIC CASH FLOW COMPUTATION
1. Format for after cash tax flow
   analysis
2. Making the computation
3. Computing key financial ratios
DEFINITION OF INVESTMENT YIELDS
1. Alternative measures of yield
2. Alternative measures of value
3. Making the computations

4:45-6:00 p.m.--Recreation

7:00-8:30 p.m.-Introduction to Mini-Mod

FRIDAY, March 18, 1977
8:30 a.m.-12:00 noon
INTRODUCTION TO MORTGAGE LOANS ON
INCOME PROPERTY
1. Basic concepts
2. Basic case study (including Mini-Mod
   output)
CASH FLOW ANALYSIS FOR MORTGAGE LENDER
1. Risk analysis and terms of loan
2. Lease terms and risk management
3. Cash flow and mortgage as a perfect
   straddle

1:00-4:45 p.m.
EQUITY ANALYSIS AND PROFIT CENTER VIEW-
POINT
1. Defining the point of view for cash
   analysis
2. Choosing yield ratios for the
   decision process
3. Applying cash flow alternatives for
   investment comparison
4. Assumptions for cash flow projection
5. Equity investment as a security

CASE STUDIES FOR THE INVESTOR
1. The small apartment building
2. The small retail complex
3. An older downtown building
   requiring remodeling
4. New office building
7:00-9:00 p.m.-- Open discussion

SATURDAY, March 19, 1977
8:30 a.m.-12:00 noon
Group A -- CASH FLOW FORECASTING VERSUS
CASH FLOW CUSHIONS FOR FUTURE VARIANCE
1. Allocating risk of variance
2. Projections require explicit assump-
   tions
3. Feasibility assumptions versus con-
   firmation to fact
Group B -- HANDS-ON COMPUTER TERMINAL
TIME TO DEMONSTRATE AVAILABLE CASH
FLOW SERVICES
After coffee break: Group A and B will
Reverse Roles.

ENROLLMENT FORM
Please enroll me in CONTEMPORARY REAL
ESTATE FINANCIAL ANALYSIS FOR MORTGAGE
LOANS AND EQUITY INVESTMENTS IN INCOME
PROPERTIES, March 16-19, 1977. ($275)

Name_____

Firm Name_____

Firm Address_____

_____

Phone No._____
           business   home
Social Security No.*_____
*-Not required, used only to assure
accuracy of your educational records.
Make check payable to UW-Extension.
Mail check with enrollment form to:
Wisconsin Center Registration, 702
Langdon Street, Madison, WI 53706.

This Summer in Madison, Wisconsin...

CONTEMPORARY REAL ESTATE APPRAISAL METHODS

July 6-9, 1977

Jointly sponsored by:
Department of Business and Management
University of Wisconsin—Extension
and
Real Estate Program
Graduate School of Business
University of Wisconsin—Madison

Plan now to continue your appraisal education this summer... Enroll today in this valuable course

CONTEMPORARY REAL ESTATE APPRAISING METHODS
July 6-9, 1977

UWEX
UNIVERSITY OF WISCONSIN—EXTENSION
Department of Business and Management
432 North Lake Street
Madison, Wisconsin 53706

CONTEMPORARY REAL ES
APPRAISAL METHOD

July 6-9, 1977

PROGRAM SCHEDULE:

Wednesday, July 6, 1977

p.m.

4:00- **Registration**
6:00

7:00- **Introductory Lecture**
9:00
1. Relationship of appraisal to the decision process
2. Relationship between feasibility and appraisal analysis
3. Recent redefinition of highest and best use by appraisal professional groups

Thursday, July 7, 1977

a.m.

8:30- **Contemporary Appraisal Theory**
10:15
1. Summary of Ratcliff position
2. Summary of appraisal concepts of other recent critics of appraisal methods
3. Concept of most probable sales price

10:15- **Refreshment Break**
10:30

10:30- **A Contemporary Appraisal Approach and**
12:00 **Report Format**
noon
1. General outline of report and logic
2. Explanation of applications

p.m.

1:00- **Property Analysis for Alternative Uses**
3:00
1. Site attribute analysis format
2. Improvement analysis format
3. Market area attribute analysis
4. Identification of alternative marketable uses

3:00- **Refreshment Break**
3:15

3:15- **Selection of Most Probable and Fitting Use**
4:45
1. Comparison matrix of alternatives with non-financial constraints
2. Comparison of marketable, legal uses using back-door financial approach
3. Selection of most fitting use
4. Most fitting use, productivity, and investment product

7:00- **Concept of Most Probable Buyer Type/Most**
9:00 **Probable Price**
1. Investor motivation
2. Comparison with fair market value concept of buyer
3. Definition of transaction zone around most probable price
4. Primary reliance on inference from actual sales
5. Secondary reliance on simulation of buyer logic

Friday, July 8, 1977

a.m.

8:30- **Predicting Probable Price From Market Sales**
10:15
1. Concept of averages
2. Concept of normal distribution
3. Concept of standard error
4. Concept of standard error, dispersion, and range

10:15- **Refreshment Break**
10:30

10:30- **Simple Linear Regression to Relate Different**
12:00 **Market Sales**
noon
1. Explanation of point scoring for comparables to avoid individual dollar adjustments
2. Comparing total points to total price by means of linear regression
3. Single family home demonstration of market comparison scoring and linear regression
4. Commercial land appraisal demonstration of market comparison scoring and linear regression

p.m.

1:00- **Testing the Market Comparison Most**
3:00 **Probable Price**
1. Adjustments for recent changes in probable buyer demand
2. Adjustments for buyer-seller bargaining positions

TATE

3. Adjustments for changing terms of sale
4. Matching of grantee motivations to subject property attributes
5. Transaction zone compared to market comparable

3:00- **Refreshment Break**
3:15

3:15- **Investment Purchase Simulation for Most**
4:45 **Probable Buyer**

1. Relationship of property attributes to investment characteristics
2. Profiling investment criteria of most probable buyer
3. Investing scenario and selection of investment valuation
4. Establishing assumptions for pattern of investment receipts and outlays
5. Estimating a normative budget
6. Projecting budgets to future periods

7:00- **Selecting Method for Investment Valuation**
8:30
1. Market rents to justified investment value (back-door approach)
2. Investment band approaches
3. Investment market value approach

Saturday, July 9, 1977

a.m.

8:30- **Case Demonstrations**
10:15
1. Vacant commercial land appraisal for courtroom presentation
2. Obsolete downtown store to establish sales strategy
3. Downtown office building to establish tax assessment valuation

10:15- **Refreshment Break**
10:30

10:30- **Report Preparation Techniques**
12:00
noon

CONTEMPORARY REAL ESTATE APPRAISAL METHODS
July 6-9, 1977

This seminar is an intensive introduction to principles, concepts, and applications which are taught as the core of the University of Wisconsin graduate program in appraisal and investment analysis. These ideas may contradict or expand appraisal doctrine and techniques advocated by the various professional appraisal societies. THUS THIS COURSE IS NOT APPROVED OR SPONSORED BY ANY PROFESSIONAL REAL ESTATE CERTIFICATION GROUP. IT DOES NOT CARRY CREDIT TOWARD ANY PROFESSIONAL DESIGNATION OR REQUIREMENT. Nevertheless, its techniques are practical and tested in appraisal and investment counseling and expand the professional's ability to serve the needs of his client on matters requiring systematic real estate analysis.

INSTRUCTORS:

Professor James A. Graaskamp, SREA, CRE, chairman, Department of Real Estate and Urban Land Economics, University of Wisconsin—Madison.

Michael L. Robbins, Environmental and Systems Analyst, Ph.D. candidate, Civil and Environmental Engineering, University of Wisconsin—Madison.

WATCH FOR INFORMATION ON THESE UPCOMING PROGRAMS:

Management of Corporate Real Estate
Madison, September 13-15, 1977

Management Process for Real Estate Managers
October 26-27, 1977

SREA appraisal courses; call Professor Stock's office for further information.

GENERAL INFORMATION:

LOCATION: University Bay Center for Continuing Education, 1950 Willow Drive, Madison, WI. The Center is on the University of Wisconsin campus overlooking beautiful Lake Mendota.

FEE: $275, includes cost of institute sessions, handout materials, notebook and refreshment breaks.

LODGING: Lodging is available at the University Bay Center, as is a meal package. Information about this will be sent to enrollees upon registration.

ENROLL NOW: You may cancel your reservation up to seven calendar days prior to program start without incurring a fee or cancellation charge. If you withdraw during the final seven days, a $25 handling fee is charged. Enrollees who fail to attend without properly cancelling are liable for the total program fee.

VETERANS' BENEFITS: Eligible veterans can receive full reimbursement for fees and textbooks from the Wisconsin Department of Veterans Affairs upon satisfactory completion of this course. See your County Veterans' Service Officer to ascertain eligibility and to make application for benefits.

CONTINUING EDUCATION UNITS: In conformance with guidelines established by the National Task Force on the Continuing Education Unit, this program is authorized for 2.4 CEU.

FOR FURTHER INFORMATION ON THE PROGRAM: Contact program administrator, *Garfield R. Stock,* Department of Business and Management, University of Wisconsin—Extension, 305 Extension Building, 432 North Lake Street, Madison, WI 53706; or phone (608) 262-9789.

FOR REGISTRATION, complete enrollment form inside.

University of Wisconsin ✳ Madison

School of Business
1155 Observatory Drive
Madison, Wisconsin 53706

Graduate School of Business

December 23, 1976

Prof. Garfield Stock
Room 309, Extension Building
Business & Management Department
University of Wisconsin
432 N. Lake Street
Madison, Wisconsin 53706

Dear Gar:

Here are the proposals for the first two seminars to be co-sponsored by the School of Business Real Estate Department and your Extension Business Division.
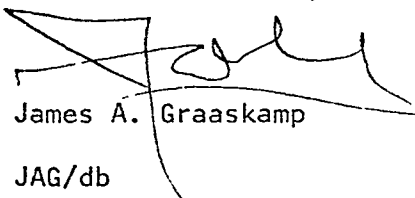
The faculty for these seminars would be Michael L. Robbins and myself with possible occasional help from teaching assistants as yet un-named. The billing rate for Robbins and myself would be $500 a day which translates into $1500 each for the seminar. Teaching assistants would not be more than 25 man hours at $4 an hour for each seminar, almost entirely for some assistance with computer terminal demonstration.

The School of Business will front end the preparation of materials and the workbook and charge Extension $25 per student attending for the workbook and $15 per student for adminstration of instructors and workbook production. Maximum enrollment per course is controlled by the facility at University Bay Center and probably should be set at a maximum of 80 persons per seminar.

The Real Estate Department has already made reservations at the University Bay Center for Wednesday evening, March 16, 1977 until 12:00 noon, March 19, and for Wednesday evening, July 6 through Saturday noon, July 9, 1977, and copies of these reservation slips are attached.

A program outline for each course is enclosed and we should finalize our arrangements and prepare advertising mailers immediately. Enclosed is a brochure from a previous six-day seminar that may provide some copy ideas. See marked paragraphs. I will return to Madison on January 11 and will contact you then to put this program into operation.

Best of the season,

James A. Graaskamp

JAG/db

CONTEMPORARY REAL ESTATE FINANCIAL ANALYSIS
FOR
MORTGAGE LOANS AND EQUITY INVESTMENTS
IN INCOME PROPERTIES

March 16-19, 1977
Jointly Sponsored by University of Wisconsin
School of Business & Extension Business Department

WEDNESDAY

4:00-6:00 P.M.   Registration

6:00-7:00   Dinner

7:00-9:00   Introductory Lecture
                  1. The concept of the real estate process
                  2. The objectives of financial analysis
                  3. The objectives of risk management analysis

THURSDAY

8:30-10:15 A.M.   Basic Approaches to Financial Analysis
                  1. Total cost approach to rents (front door approach)
                  2. Market rent approach to total cost (back door approach)
                  3. The critical financial links - default point and cash
                      on cash

10:15-10:30   Coffee Break

10:30-12:00   Applications of Front Door/Back Door Approaches
                  1. Justified mortgage amount
                  2. Justified building costs/remodeling costs/land costs
                  3. Required rental income structure
                  4. Sensitivity analysis of critical assumptions

12:00-1:00   Lunch

1:00-3:00   Basic Cash Flow Computation
                  1. Format for after cash tax flow analysis
                  2. Making the computation
                  3. Computing key financial ratios

3:00-3:15   Coke Break

3:15-4:45   Definition of Investment Yields
                  1. Alternative measures of yield
                  2. Alternative measures of value
                  3. Making the computations

4:45-6:00   Recreation

6:00-7:00   Dinner

7:00-8:30   Introduction to Mini-Mod

FRIDAY

8:30-10:15 A.M.   Introduction to Mortgage Loans on Income Property
                              1. Basic concepts
                              2. Basic case study (including Mini-Mod output)

10:15-10:30   Coffee Break

10:30-12:00   Cash Flow Analysis for Mortgage Lender
                              1. Risk analysis and terms of loan
                              2. Lease terms and risk management
                              3. Cash flow and mortgage as a perfect straddle

12:00-1:00 P.M. Lunch

1:00-3:00   Equity Analysis and Profit Center Viewpoint
                              1. Defining the point of view for cash analysis
                              2. Choosing yield ratios for the decision process
                              3. Applying cash flow alternatives for investment comparison
                              4. Assumptions for cash flow projection
                              5. Equity investment as a security

3:00-3:15   Coke Break

3:15-4:45   Case Studies for the Investor
                              1. The small apartment building
                              2. The small retail complex
                              3. An older downtown building requiring remodeling
                              4. New office building

6:00-7:00   Dinner

7:00-9:00   Open Discussion

SATURDAY

8:30-10:15 A.M. (Group A)
Cash Flow Forecasting Versus Cash Flow Cushions for Future Variance
                              1. Allocating risk of variance
                              2. Projections require explicit assumptions
                              3. Feasibility assumptions versus confirmation to fact

(Group B)
Hands-On Computer Terminal Time to Demonstrate Available Cash
Flow Services

10:15-10:30   Coffee Break

10:30-12:00   Group A and B Will Reverse Roles

CONTEMPORARY REAL ESTATE APPRAISAL METHODS

July 6-9, 1977
Jointly Sponsored by University of Wisconsin
School of Business & Extension Business Department

WEDNESDAY

4:00-6:00 P.M.   Registration

6:00-7:00   Dinner

7:00-9:00   Introductory Lecture
                  1. Relationship of appraisal to the decision process
                  2. Relationship between feasibility and appraisal analysis
                  3. Recent redefinition of highest and best use by appraisal
                      professional groups

THURSDAY

8:30-10:15 A.M.   Contemporary Appraisal Theory
                  1. Summary of Ratcliff position
                  2. Summary of appraisal concepts of other recent critics
                      of appraisal methods
                  3. Concept of most probable sales price

10:15-10:30   Coffee Break

10:30-12:00   A Contemporary Appraisal Approach and Report Format
                  1. General outline of report and logic
                  2. Explanation of applications

12:00-1:00   Lunch

1:00-3:00 P.M.   Property Analysis for Alternative Uses
                  1. Site attribute analysis format
                  2. Improvement analysis format
                  3. Market area attribute analysis
                  4. Identification of alternative marketable uses

3:00-3:15   Coke Break

3:15-4:45   Selection of Most Probable and Fitting Use
                  1. Comparison matrix of alternatives with non-financial
                      constraints
                  2. Comparison of marketable, legal uses using back door
                      financial approach
                  3. Selection of most fitting use
                  4. Most fitting use, productivity, and investment product

6:00-7:00   Dinner

7:00-9:00   Concept of Most Probable Buyer Type/Most Probable Price
                  1. Investor motivation
                  2. Comparison with fair market value concept of buyer
                  3. Definition of transaction zone around most probable price
                  4. Primary reliance on inference from actual sales
                  5. Secondary reliance on simulation of buyer logic

FRIDAY

8:30-10:15 A.M.   Predicting Probable Price From Market Sales
    1. Concept of averages
    2. Concept of normal distribution
    3. Concept of standard error
    4. Concept of standard error, dispersion, and range

10L15-10:30   Coffee Break

10:30-12:00   Simple Linear Regression to Relate Different Market Sales
    1. Explanation of point scoring for comparables to avoid individual dollar adjustments
    2. Comparing total points to total price by means of linear regression
    3. Single family home demonstration of market comparison scoring and linear regression
    4. Commercial land appraisal demonstration of market comparison scoring and linear regression

12:00-1:00   Lunch

1:00-3:00 P.M.   Testing the Market Comparison Most Probable Price
    1. Adjustments for recent changes in probable buyer demand
    2. Adjustments for buyer-seller bargaining positions
    3. Adjustments for changing terms of sale
    4. Matching of grantee motivations to subject property attributes
    5. Transaction zone compared to market comparable

3:00-3:15   Coke Break

3:15-4:45   Investment Purchase Simulation for Most Probable Buyer
    1. Relationship of property attributes to investment characteristics
    2. Profiling investment criteria of most probable buyer
    3. Investing scenario and selection of investment valuation
    4. Establishing assumptions for pattern of investment receipts and outlays
    5. Estimating a normative budget
    6. Projecting budgets to future periods

6:00-7:00   Dinner

7:00-8:30   Selecting Method for Investment Valuation
    1. Market rents to justified investment value (back door approach)
    2. Investment band approaches
    3. Investment market value approach

SATURDAY

8:30-10:15 A.M.   Case Demonstrations
    1. Vacant commercial land appraisal for courtroom presentation
    2. Obsolete downtown store to establish sales strategy
    3. Downtown office building to establish tax assessment valuation

10:15-10:30   Coffee Break

10:30-12:00   Report Preparation Techniques

University of Wisconsin ✳ Madison

School of Business
1155 Observatory Drive
Madison, Wisconsin 53706

February 25, 1983

Graduate School of Business

*Letter sent to each
Committee Member*

Mr. Jack Miles, Vice President
Homart Development Co.
Xerox Centre Suite 3100
55 West Monroe
Chicago, IL 60603

Dear Mr. Miles:

The Graduate School of Business at the University of Wisconsin has featured a strong program in real estate development leading to an MS degree in Real Estate Analysis for many years. Now the Graduate School of Business intends to offer an Executive Management Certificate Program in Real Estate Development and Finance. The impetus for a series of coordinated two-day seminars has come from the following development organizations which are consulting with us on the program:

Wayne Adair, Vice President Administration,
    General Growth Companies, Des Moines, IA

Thomas Bithell, Vice President Personnel,
    The Taubman Company, Inc., Troy, MI

Dennis L. Cavanagh, Vice President Controller,
    May Centers, St. Louis, MO

William A. Holland, Vice President, Human Resources
    Urban Investment and Development Co., Chicago, IL

Lorraine Latour, Vice President, Human Resources
    The Center Companies, Minneapolis, MN

John J. Manicke, Director Human Resources
    Melvin Simon & Associates, Inc., Indianapolis, IN

Jack Miles, Vice President Personnel
    Homart Development Co, Chicago, IL

Robert Engstrom, Vice President and Chairman of the Education Committee,
    Urban Land Institute, Washington, D.C.

At this point the Committee and the University need your comment and review on a profile of the intended student, the general format, the specific course topic priorities, and the costs per student.

The questionnaire with this letter of introduction first states the proposed
concept and then provides blank space for your comments, critical, constructive
or approving. We would appreciate your earliest possible response in the
enclosed stamped envelope.

Sincerely,

William A. Holland
Vice President, Human Resources
Urban Investment & Development Co.
Chicago, Illinois 60611

James A. Graaskamp
Chairman, Real Estate & Urban Land Economics
University of Wisconsin School of Business
Madison, Wisconsin   53706

University of Wisconsin ✳ Madison

School of Business
1155 Observatory Drive
Madison, Wisconsin 53706

Graduate School of Business

March 14, 1983

As Dean of the School of Business I am pleased to present this new Executive Management Series in Real Estate especially because it represents a prototype partnership between leading firms in the industry and our nationally known Real Estate program.

In the coming decade all aspects of real estate development and urban enterprises will require increasing use of new and complex techniques so that college education must become a continuing process rather than a four year transition state in life.

The University of Wisconsin-Madison has always considered that its responsibilities extend to the borders of the state, and now we welcome the idea of the School of Business Real Estate Department as a regional center for the real estate and development industry. With your guidance and participation we will continue to refine, expand, and enrich the program outlined in this first annual announcement.

The outstanding faculty and carefully selected subject areas described in detail in the following pages represent our commitment in the School of Business to excellence, relevance, and service to the development industry and its need for continuing education. We welcome you to experience and share with us in this commitment.

Robert H. Bock
Dean of the School of Business

James A. Graaskamp
Chairman, Real Estate & Urban Land Economics

1983

REAL ESTATE
EXECUTIVE DEVELOPMENT
SEMINAR SERIES

REAL ESTATE SEMINARS

SPONSORED BY MAJOR MIDWESTERN DEVELOPERS
FOR THE MANAGERS OF REAL ESTATE ENTERPRISE

UNIVERSITY OF WISCONSIN
REAL ESTATE DEPARTMENT
SCHOOL OF BUSINESS

University of Wisconsin ✳ Madison

Graduate School of Business

School of Business
1155 Observatory Drive
Madison, Wisconsin 53706

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Robert Bock
Robert H. Bock
Dean of the School of Business

James A. Graaskamp
Chairman, Real Estate & Urban Land Economics

ADMINISTRATIVE HEADQUARTERS
Real Estate Seminar Series
Room 118, School of Business
1155 Observatory Drive
Madison, Wisconsin 53706
Phone: 608/262-6378

Board of Advisors

Wayne Adair, Vice President Administration,
General Growth Companies, Des Moines, IA

Thomas Bithell, Vice President Personnel,
The Taubman Company, Inc., Troy, MI

Dennis L. Cavanagh, Vice President Controller,
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Lorraine Latour, Vice President, Human Resources
The Center Companies, Minneapolis, MN

William Malkasian, Executive Vice President
Wisconsin Realtors Association, Madison, WI

John J. Manicke, Director Human Resources
Melvin Simon & Associates, Inc., Indianapolis, IN

Jack Miles, Vice President Personnel
Homart Development Co., Chicago, IL

Director of Real Estate Management Series

James A. Graaskamp, Ph.D., CRE, SREA
Chairman, Real Estate and Urban Land Economics

EXECUTIVE MANAGEMENT CERTIFICATE PROGRAM

This program is intended to provide a certificate of completion for the executive manager who completes 25 days of training over a span of five years while employed in real estate development, construction management, financial institutions, real estate leasing, and real estate research and consulting. The program recognizes and incorporates educational programs of particular merit offered by professional trade associations and other University continuing educational programs to avoid duplication, counter-productive competition, and oversight of many of the fine specialty programs which have been perfected for the real estate entrepreneur.

GENERAL OBJECTIVES OF CERTIFICATE PROGRAM

1. To achieve maximum attendance per course for lower cost per student by formatting 2-day modules which are focused on specific needs of employees with varying levels of experience and education;
2. To provide an alternative to inhouse orientation of staff employees in real estate development using professional educators;
3. To fill in gaps in the education of professionals with knowledge of other disciplines that are a part of the development process; and,
4. To give the top level executive and the employee with management potential a common incentive to complete the program by providing a certificate granted by the nationally known University of Wisconsin Real Estate Department.

CURRICULUM PATTERN AND STUDENT PROFILE

Student Group	Course Number	Student Group	Course Number
1. Employee with management potential without much college preparation in business or real estate	100-200	2. Employee with project/staff management experience wishing to improve specific skills in real estate or construction management	300-400

Student Group	Course Number
3. Upper level executive seeking intensive briefing on current trends and innovative programs	500-500

Upper Level executives:	no less than 60% of courses should be chosen from Advanced courses.
Employees with project/ management experience:	no less than 50% of courses should be chosen from Intermediate courses.
Employees with management potential:	no less than 50% of courses should be chosen from Basic courses.

Professional association courses assigned to comparable levels of sophistication for credit toward certificate program on a basis that eight hours class time equals one credit day for certificate.

100-200 level courses	300-400 level courses	500-500 level courses
Wharton - Seminars for Executives	NYU Real Estate Institute	Practicing Law Institute
Realtors National Marketing Institute Commercial Investment Courses	Institute for Real Estate Management (IREM)	Real Estate Securities and Syndication Institute
Society of Real Estate Appraisers	Realtors National Marketing Institute Commercial Investment Courses	Urban Land Institute Seminars
American Institute of Real Estate Appraisers	Urban Land Institute Semi-annual Meetings Taken for Credit	
	National Association of Office and Industrial Park Developers	
	International Council of Shopping Centers	

The administrative office of the Executive Management Series will maintain a record on each participant seeking a certificate. The student need only send evidence of having participated in courses of two days or more conducted by the above organizations. A maximum of two credit days will be given for any one course and the University of Wisconsin Administrators reserve the right to categorize or exclude any offerings by the above organizations at our sole discretion to maintain rigor and integrity of Certificate program.

STUDY PROGRAM CURRENTLY PLANNED AND SCHEDULED

Course No.	Name of Course	1983 Dates	1984 Dates	Location	Tuition	Room and Board
	Core Courses					
101	Overview of the real estate development process	Apr. 20-21 Sept. 19-20		Lowell Ctr. Lowell Ctr.	$260.00 260.00	
103	Principles of real estate accounting (for non-accounting people)					
104	Principles of personal and corporate risk management (control of budget variance)					
201	Real estate marketing strategy and feasibility analysis	Oct. 12-13		J.F.Frederick Ctr.	260.00	
203	Land use law: Citizen and corporate viewpoints	Oct. 19-20		J.F.Frederick Ctr.	260.00	
	Real Estate Finance					
301	Principles of real estate cash flow budgets and models					
302	Basic principles of financing income property developments	Nov. 7-8		J.F.Frederick Ctr.	260.00	
303	Basic principles of financing land development					
304	Case problems in real estate development finance					
401	Income tax strategies, tactics, and traps for real estate investment					
402	How to read, critique, and purchase an appraisal report					
403	Tax Increment Financing of Redevelopment	April 25-26		Lowell Hall	260.00	

STUDY PROGRAM CURRENTLY PLANNED AND SCHEDULED

Course No.	Name of Course	1983 Dates	1984 Dates	Location	Tuition	Room and Board
501	Dynamic capitalization methods for present value analysis during periods of inflation	May 8-13		Lowell Ctr.	$475.00	$ 280.00
	Construction					
105	Basic vocabulary of building components materials, and construction	Apr. 11-12 Oct. 10-11		WI Relators Ctr. J.F.Frederick Ctr.	260.00 260.00	
106	Basic construction management					
205	Insurance for the construction site					
206	Principles of construction contract bids and specification for the non-construction specialist					
	Marketing					
202	Evaluating markets and merchandising targets for real estate products					
403	Case problems in market research (a review of the state of the art)					
404	Marketing the development concept for political approval	Nov. 9-10		J.F. Frederick Ctr.	260.00	
	Data Processing for Real Estate Development					
108	General introduction to relationship of management to electronics data processing					
308	Using the 1980 Census tapes effectively					
409	A review of lease roll data management systems	Sept. 21-22		Lowell Ctr.	260.00	

COMMERCIAL CONSTRUCTION SEMINAR
April 11 - 12, 1983
Madison, Wisconsin

Monday Morning
I.   Introduction
    1.1   Architectural Blueprints
    1.2   Environmental Factors
    1.3   Site Conditions
    1.4   Site Work
    1.5   Historical Styles

    (Break)

II. Structures
    2.1   Introduction
    2.2   Substructure
        Pilings
        Grade Beams
        Slab on Grade
        Footings
        Foundations
    2.3   Steel
        Framing
        Trusses
        Bar Joist
        Steel Decking
        Lightweight Framing

    (Lunch)

Monday Afternoon
    2.4   Concrete
        Columns
        Walls
        Ribbed One-Way Slabs
        Two-Way Slabs
        Waffle Slabs
        Post Tension
        Pre-Cast
        Pre-Cast Tilt-Up

    (Break)

    2.5   Wood
        Post and Beam
        Framing
        Trusses
    2.6   Masonry
        Concrete Block
        Brick
        Stone

Adjourn

Tuesday Morning
III. Envelope
    3.1   Curtain Wall
        Brick
        Stone
        Pre-Cast Concrete
        Glass
        Metal
    3.2   Facia and Soffet
    3.3   Roofing
        Built Up
        Membrane
        Metal
        Shingles
    3.4   Moisture Proofing
    3.5   Insulation
    3.6   Expansion Joints

    (Break)

IV. Enclosure
    4.1   Doors
    4.2   Windows
    4.3   Partitions
        Drywall
        Gypsum Lath and Plaster
        Masonry
    4.4   Interior Finishes
    4.5   Suspended Ceilings
    4.6   Flooring
    4.7   Soundproofing
    4.8   Circulation
        Stairs
        Elevators
        Escalators

    (Lunch)

Tuesday Afternoon
V.   Environmental Systems
    5.1   Introduction
    5.2   Electrical
    5.3   Communications
    5.4   Sewer
        Sanitary
        Storm
        Septic
    5.5   Water
        Supply
        Fire Protection

    (Break)

Adjourn

A Seminar in

Introduction To Real Estate Development Process

(A basic introduction to the feasibility, negotiation, and investment decisions facing developers, public officials, users, and citizen board members involved in real estate)

Taught by

James A. Graaskamp
Ph.D., CRE, SREA

Chairman, Real Estate and
Urban Land Economics
University of Wisconsin School of Business

Sunday, April 24 - Tuesday, April 26, 1983

Sponsored by

Business Alumni Supporting Education
Department of Real Estate and
Urban Land Economics
Graduate School of Business
University of Wisconsin-Madison

Who Should Participate: The seminar content is designed to provide an intensive introduction to the real estate development process of decisions and negotiation in the real world for those individuals entering into the development industry or public service regulating real estate who have a background in other related fields, such as accounting, engineering, architecture, or any other staff position in a development related organization. It's an excellent introduction to all aspects of development for the new employee who needs an overview of the process of which the individual is now a part.

Overview: The course is a capsule version of the nationally famous Real Estate Process course taught in the School of Business at Wisconsin for many years by Professor Graaskamp. It is relevant to those in industry and those in government as well as investors seeking a basic approach to real estate analysis. It makes heavy use of basic materials developed by the Urban Land Institute. It does not require any special preparation or high level mathematics. It counts for 12 CEU's.

Time and Location: Seminar will be held from Sunday evening, April 24, through Tuesday, April 26, 1983. Instruction sessions will be held at Lowell Hall Center, 610 Langdon St., Madison, which is also where lodging rooms and meals will be provided from Sunday evening through Tuesday noon. Registration will be from 4:30 to 5:30 p.m. on Sunday, April 24. Sessions will be conducted from 8:30 a.m. to 12 Noon, and 1:00 p.m. to 5:00 p.m. on Monday, April 25, and 8:30 a.m. to Noon, and 1:00 p.m. to 3:30 p.m. on Tuesday, April 26.

Seminar Fee: Full fee of $260 is payable in advance and includes tuition, materials, lodging and meals Sunday night through Tuesday noon. Sleeping accommodations are single rooms with private baths.

Persons who preregister but are unable to attend will, upon application in writing, receive a refund of the seminar fee. All refunds will be processed by mail after the seminar has been concluded. Partial seminar fees or refunds cannot be accepted or handled.

Confirmation of your enrollment will be made before the seminar begins. Right is reserved to limit enrollment or cancel the seminar.

Instructor

Professor James A. Graaskamp

Professor James A. Graaskamp is nationally known both for his seminars in real estate and for his consulting on matters of real estate feasibility, court room valuation, and investment strategy.

His education includes a Ph.D. in Real Estate and Risk Management from the University of Wisconsin, Madison, in 1964; an MBA in Securities Analysis and Investment from Marquette University, Milwaukee, in 1957; and an AB in English and Creative Writing from Rollins College, Winter Park, Florida, in 1955. He has won many academic honors including teaching awards for his courses in Urban Land Economics, Real Estate Investment, Finance, Marketing Research, and Contemporary Appraisal. His research interests range from urban tax assessment to wilderness appraisal.

Experience in private industry has included land development, co-ownership of a home building firm, and of a nationally known consulting firm, Landmark Research, Inc. He is presently a Trustee of the Urban Land Institute and member of the Board of First Asset Realty Advisors, a wholly owned subsidiary of First Minneapolis Bank. He was formerly the Treasurer of the Wisconsin Housing Finance Authority. He holds designations of CRE, SREA, CPCU, and Realtor.

Seminar Agenda

Sunday:

4:30-5:30 p.m.	Registration
5:00-6:00 p.m.	Dutch Treat Mixer
6:00-7:00 p.m.	Dinner
7:00-8:00 p.m.	Course Introduction

Monday:

8:30 a.m. Definition of Real Estate Process
The Driving Force — The User Group
The Reactive Force — The Production Group
The Constraining Force — The Public Infrastructure

10:15 a.m. Break

The Common Denominator — Cash Budgets and Cash Solvency

Noon Lunch

1:00 p.m. Systematic Property Analysis

3:00 p.m. Break

Investor Strategy Analysis
Public/Private Joint Ventures

Tuesday:

8:30 a.m. The Land Development Process
Office Building Process

10:15 a.m. Break

The Shopping Center Process

Noon Lunch

1:00 p.m. Corporate Real Estate Strategies Today
Risk Management Theory in Real Estate Operations
Basic Reading Recommendations for Better Knowledge of Real Estate Development

3:45 p.m. End

A Seminar in

DYNAMIC CAPITALIZATION

Appraising with Real Rates of Interest

Presented by

C. Gordon Blackadar
Vice-President, Real Estate Investments
Metropolitan Life Insurance Company

Sunday May 8 - Friday May 13, 1983

University of Wisconsin
Madison

JAMES A. GRAASKAMP, Ph.D., C.R.E.
Director
Real Estate Executive Management Series

Sponsored by

Business Alumni Supporting Education
Department of Real Estate &
Urban Land Economics
Graduate School of Business
University of Wisconsin-Madison

Who Should Participate: The seminar content is designed for those individuals interested in the valuation and analysis of income producing real estate. This includes real estate appraisers and consultants, brokers, private and institutional real estate investors, and real estate lenders. Participants should be familiar with discounted cash flow and IRR techniques.

Overview: Dynamic Capitalization is a technique that uses actuarial theory to value a particular varying annuity: the one that reflects the dynamics of investment real estate. The technique is much more efficient than discounted cash flow methods. It is particularly applicable in today's economy since it takes into account the effects of inflation, depreciation, interest rates, and long-term versus short-term leases to project probable yields on investments. Although the seminar touches on the Theory of Compound Interest and relates it to Capitalization Theory, the primary focus is on practical applications. For example, participants will use Dynamic Capitalization techniques to evaluate leases and lease options and determine what various negotiated terms and options imply as to value.

Time and Location: The seminar will be held from Sunday, May 8, through Friday, May 13, 1983. Instruction sessions will be held at Lowell Hall Center and lodging will be at the Madison Inn on the University of Wisconsin-Madison campus. Registration will be from 3:00 - 5:00 p.m. Sunday May 8. Sessions will be conducted from 8:30-12:00 a.m. and 1:30-5:00 p.m. Monday through Thursday and 8:30-12:00 a.m. Friday.

Seminar Fee: The full fee of $475 is payable in advance and includes tuition and materials. Lodging Sunday evening through Friday morning, three meals each day Monday through Thursday with dinner Sunday evening and breakfast and lunch Friday will be $280. Sleeping accomodations are single-occupancy rooms with private bath.

Persons who preregister but are unable to attend will, upon application in writing, receive a refund of the seminar fee. All refunds will be processed by mail after the seminar has been concluded. Partial seminar fees or refunds cannot be accepted or handled.

Confirmation of your enrollment will be made before the seminar begins. Right is reserved to limit enrollment or cancel the seminar.

Participants must bring a hand-held *financial* calculator. the HP-12C or HP-38C calculators are prefered.

Instructor

C. Gordon Blackadar
Vice-President, Real Estate Investments
Metropolitan Life Insurance Company.

Mr. Blackadar, a Member of the American Society of Appraisers, joined Metropolitan Life Insurance Company in 1969 and is currently Vice-President in the Real Estate Investments Department. Since 1976, he has been one of three members that comprise the Department's Real Estate Investments Committee. This Committee at Metropolitan serves the role filled by Chief Appraiser at other companies. As such, it reviews all investments recommended by the Department to the Investment Committee of Metropolitan's Board of Directors. Previously, Mr. Blackadar was Appraiser in Metropolitan's Southern Territory Office in Atlanta and was in charge of investments in the State of Georgia, Kentucky and Tennessee.

Mr. Blackadar's accomplishments at Metropolitan include the design of the computer program for Joint Venture Profitability and Yield to Date which since 1975 has been used to evaluate joint venture portfolio performance. He is the author of "Dynamic Capitalization," a monograph recently published by Metropolitan in June, 1981. He has been awarded Metropolitan's Special Achievement Compensation Award in recognition of this achievement. He has also designed a computer program used at Metropolitan utilizing the principles of "Dynamic Capitalization."

Mr. Blackadar began his appraisal career in 1950 as an employee of the J. K. Powell (MAI) Company of New Brunswick, New Jersey. He later was State Superintendent (New Jersey) for the J. M. Clemenshaw Company (Cleveland, Ohio). In this capacity he participated in the revaluation of more than 60 municipalities and/or counties in New Jersey, Delaware and New York and qualified as expert witness in defense of the company's valuations.

Mr. Blackadar holds an A.B. Degree from Princeton University.

Seminar Agenda

Sunday: Registration

Monday:

A.M.   Introduction
The Nature of Capitalization
The Dynamics of Investment Real Estate
Actuarial Theory of Interest
International Actuatial Notation

P.M.   Measures of Interest
Value
The Dynamic Model
Algorithms for the Theory of Interest

Tuesday:

A.M.   The Nature of the Annuity-Certain
The Valuation of Annuities
Practical Examples

P.M.   Varying Annuities
Forces of Increase and Decrease
The Nature of Inflation
Three Types of Cash Flow in Inflationary Environments

Wednesday:

A.M.   The Dynamic Capitalization Formula
Illustrative Exercises

P.M.   More Illustrative Exercises

Thursday:

A.M.   Case Studies

P.M.   More Case Studies

Friday:

A.M.   Review
Summary and Wrap-up

Registration Form

Name (Please Print)

Title

Company

Address   City

State   Zip   Phone

☐ The Following person may be interested in this seminar. Please send information to:

Name (Please Print)

Title

Company

Address   City

State   Zip   Phone

General Information

Who Should Participate: These seminars are designed to provide an intensive introduction to essential components of the real estate development process. Content of the seminars is designed for those individuals embarking on a career in the development industry and who seek to broaden their analytical skills as well as an understanding of their applicability to the overall real estate process. Real estate development personnel, appraisers, consultants, private and institutional investors, and lenders will benefit from this excellent introduction to specific aspects of development.

Location: The seminars will be held at Lowell Hall Center, 610 Langdon Street or J.F. Friedrick Center, 1950 Willow Drive, where lodging and meals will be provided. Individual dates are:

105 COMMERCIAL CONSTRUCTION VOCABULARY

Time: October 19-20, 1983. Registration will be from 4-7 p.m. Tuesday, October 18. Sessions will be conducted from 8:30-noon and 1:00-5:00 Wednesday and Thursday.

Place: Lowell Hall Center

Seminar Fee: The full fee of $260 is payable in advance and includes tuition and materials. Lodging Tuesday and Wednesday evenings. Dinner Tuesday, three meals on Wednesday, and breakfast and lunch on Thursday will be $90. Sleeping accommodations are single-occupancy rooms.

302 BASIC PRINCIPLES OF FINANCING INCOME PROPERTY DEVELOPMENT

Time: November 7-8, 1983. Registration will be from 4-7 p.m. Sunday, November 6. Sessions will be conducted from 8:30-noon and 1:30-5:30 Monday and Tuesday.

Place: J.F. Friedrick Center

Seminar Fee: The full fee of $260 is payable in advance and includes tuition and materials. Lodging Sunday and Monday evenings. Dinner Sunday, three meals on Monday, and breakfast and lunch on Tuesday will be $90. Sleeping accommodations are single-occupancy rooms.

403 TAX INCREMENT FINANCING OF REDEVELOPMENT

Time: November 9-10, 1983. Registration will be from 4-7 p.m. Tuesday, November 8. Sessions will be conducted from 8:30-noon and 1:30-5:30 Wednesday and Thursday.

Place: J.F. Friedrick Center

Seminar Fee: The full fee of $260 is payable in advance and includes tuition and materials. Lodging Sunday and Monday evenings. Dinner Sunday, three meals on Monday, and breakfast and lunch on Tuesday will be $90. Sleeping accommodations are single-occupancy rooms.

Persons who preregister but are unable to attend will, on application in writing, receive a refund of the seminar fee. All refunds will be processed by mail after the seminar has been concluded. Partial seminar fees or refunds cannot be accepted or handled.

Confirmation of your enrollment will be made before the seminar begins. Right is reserved to limit enrollment or cancel the seminar.

The School of Business

University of Wisconsin-Madison

Real Estate Executive Management Seminar Series

presents

A Seminar In
BUILDING COMPONENTS MATERIAL AND CONSTRUCTION VOCABULARY
taught by
JAMES CANESTARO, A.I.A.

Associate Professor, College of Architecture
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

October 19-20, 1983

A Seminar In
BASIC PRINCIPLES OF FINANCING INCOME PROPERTY DEVELOPMENT
taught by
DR. JAMES A. GRAASKAMP and DR. MIKE E. MILES

Chairperson and Professor
Real Estate and Urban Land Economics
University of Wisconsin School of Business

November 7-8, 1983

A Seminar In
TAX INCREMENT FINANCING OF REDEVELOPMENT
taught by
RICHARD GEORGE, ESQ. and RICHARD A. LEHMANN, ESQ.

Vice President - First Wisconsin Bank
Partner, Kassner & Lehmann

November 9-10, 1983

Sponsored by:
Center for Advanced Studies
Department of Real Estate and
Urban Land Economics
Graduate School of Business
University of Wisconsin-Madison

Instructors

Professor James A. Graaskamp

Professor James A. Graaskamp is nationally known both for his seminars in real estate and for his consulting on matters of real estate feasibility, court room valuation, and investment strategy.

His education includes a Ph.D. in Real Estate and Risk Management from the University of Wisconsin, Madison, in 1964; an MBA in Securities Analysis and Investment from Marquette University, Milwaukee, in 1957; and an AB in English and Creative Writing from Rollins College, Winter Park, Florida, in 1955. He has won many academic honors including teaching awards for his courses in Urban Land Economics, Real Estate Investment, Finance, Marketing Research, and Contemporary Appraisal. His research interests range from urban tax assessment to wilderness appraisal.

Experience in private industry has included land development, co-ownership of a home building firm, and of a nationally known consulting firm, Landmark Research, Inc. He is presently a Trustee of the Urban Land Institute and member of the Board of First Asset Realty Advisors, a wholly owned subsidiary of First Minneapolis Bank. He was formerly the Treasurer of the Wisconsin Housing Finance Authority. He holds designations of CRE, SREA, CPCU, and Realtor.

Mike E. Miles, Ph.D.
Professor, Real Estate Finance
Graduate School of Business
University of Wisconsin, Madison

Mike E. Miles is a Texan with an MBA from Stanford University in Finance and Accounting and a Ph.D. from the University of Texas at Austin in Real Estate and Finance. He formerly developed the Real Estate and Banking MBA programs at the University of North Carolina in Chapel Hill. In addition to a distinguished academic career, he has worked for a development company and served as his own development contractor. He is nationally known for his work in pension fund real estate portfolio investment.

Seminar Agenda

BASIC PRINCIPLES OF FINANCING INCOME PROPERTY DEVELOPMENT

Monday, November 7, 1983

8:30 A.M. Basic Elements and Strategy of Mortgage Loan

9:30 Risk Management Issues

10:15 Coffee Break

10:30 Basic Cash Flow Format for Rental Income Property

Noon Lunch

1:00 P.M. Constructing Rent Roll
1. Lease Analysis
2. Projecting Rental Increases
3. Projecting Expense Pass-throughs

2:30 Projecting Expenses

3:00 Break

3:15 Straight Mortgage Loan - Suburban Office Building Case

Tuesday, November 8, 1983

8:30 A.M. The Construction Loan
1. Risk Analysis
2. Letter of Commitment
3. Tripartite Agreement
4. Construction Loan Draw Process

10:15 Coffee Break

10:30 Closing the Permanent Loan
1. Pre-closing Conditions
2. Perfecting Claims on Collateral
3. Extinguishing Mechanics Liens
4. Protocol of Closing

Noon Lunch

1:00 P.M. Development of Participating Loan
1. Historical Origins & Precedents
2. Income Participations
3. Equity Participations
4. Convertible Loans

3:30 Seminar Concluded

Instructor

Professor James C. Canestaro

James C. Canestaro is a registered architect in Virginia and Wisconsin and a Corporate Member of the American Institute of Architects. He is presently an associate professor and teaching in the College of Architecture at Virginia Polytechnic Institute and State University in Blacksburg, Virginia. His Bachelor of Architecture degree was received at Notre Dame, and Masters Degrees in Architecture and Urban Planning were earned at the University of Illinois-Urbana. He is presently completing a Ph.D. in Real Estate at the Graduate School of Business, University of Wisconsin-Madison.

Professor Canestaro has been a member of the Architecture and Finance Department faculty at the University of Illinois, and of the Department of Real Estate and Urban Land Economics, Graduate School of Business, University of Wisconsin-Madison. He presently teaches courses in Project Feasibility Analysis, Residential Property Development, Commercial Property Development, and Real Estate Investment Analysis.

Professor Canestaro is the author of several books on the subject of project cost-benefit and feasibility analysis. He is actively involved in his own private architectural consulting firm which specializes in project feasibility and market analysis, property valuation, and pre-architectural programming studies.

Seminar Agenda

"EVALUATING COMMERCIAL CONSTRUCTION"

First Day (August 22, 1983)
Registration 8:00-9:00 a.m.

I. Introduction
  1.1 Architectural Blueprints
  1.2 Environmental Factors
  1.3 Site Conditions
  1.4 Site Work
  1.5 Historical Styles

II. Structures
  2.1 Introduction
  2.2 Substructure
    Pilings
    Grade Beams
    Slab on Grade
    Footings
    Foundations
  2.3 Steel
    Framing
    Trusses
    Bar Joist
    Steel Decking
    Lightweight Framing

Lunch 12:30 - 1:30 p.m.

  2.4 Concrete
    Columns
    Walls
    Ribbed One-Way Slabs
    Two-Way Slabs
    Post Tension
    Pre-Cast
    Pre-Cast Tilt-Up
  2.5 Wood
    Post and Beam
    Framing
    Trusses
  2.6 Masonry
    Concrete Block
    Brick
    Stone

III. Envelope
  3.1 Curtain Wall
    Brick
    Stone
    Pre-Cast Concrete
    Glass
    Metal
  3.2 Facia and Soffet

Adjourn 5:30 p.m.

Second Day
(August 23, 1983)

III. Envelope (continued)
  3.3 Roofing
    Built Up
    Membrane
    Metal
    Shingles
  3.4 Moisture Proofing
  3.5 Insulation
  3.6 Expansion Joints

IV. Enclosure
  4.1 Doors
  4.2 Windows
  4.3 Partitions
    Drywall
    Gypsum Lath and Plaster
    Masonry
  4.4 Interior Finishes
  4.5 Suspended Ceilings
  4.6 Flooring
  4.7 Soundproofing
  4.8 Circulation
    Stairs
    Elevators
    Escalators

Lunch 12:30 - 1:30 p.m.

V. Environmental Systems
  5.1 Introduction
  5.2 Electrical
  5.3 Communications
  5.4 Sewer
    Sanitary
    Storm
    Septic
  5.5 Water
    Supply
    Fire Protection
  5.6 Mechanical Systems
    Electrical Heat
    Electrical Air Conditioning
    Hydronics
    Chilled Water
    Forced Air
    Solar
    Heat Pump

VI. Conclusions
  6.1 Building Con-Construction Evolution

Adjourn 5:30 p.m.

Instructors

Richard D. George
Vice President, Municipal Finance
First Wisconsin Bank
Milwaukee, Wisconsin

Richard D. George is a magna sum laude graduate of the Syracusn University College of Law. Prior to joining Madsen, George was a partner in the law firm of Foley & Lardner specializing in real estate and governmental finance, and served from 1976-1978 as Executive Director and General Counsel of the Wisconsin Housing Finance Authority. He has actively represented contractors, municipalities, developers, lenders and owners in connection with their construction and financing programs.

Richard A. Lehmann
Kassner & Lehmann
6629 University Avenue
Middleton, Wisconsin 53562

Richard A. Lehmann holds degrees from the University of Wisconsin in Urban Planning and in Law. He is a former research director of the State of Wisconsin Local Affairs and Development agency, and former Madison alderman. Prior to entering law practice he was an Associate Professor with the University of Wisconsin Extension. His law practice includes representation of municipalities, planning and development agencies and corporations and development groups. Member, Urban Land Institute, American Planning Association.

Seminar Agenda

TECHNIQUES AND PROBLEMS IN TAX INCREMENTAL FINANCING

(Emphasizing Wisconsin, Iowa, Illinois and Minnesota)
November 9-10, 1983
Wisconsin Center
Madison, Wisconsin

WEDNESDAY, NOVEMBER 9, 1983

9:30 a.m.	Welcome; Introduction - Professor Graaskamp
9:45	Introduction to Tax Increment Financing - Attorney Lehmann
	History
	Elements of Tax Increment Financing
	Legal Structure; Legal Issues
	The Broader Context of Public-Private Partnership Development
	Closely Related Programs: Special Assessment Bonding; Industrial Development Bonding; others
	Federal Tax Treatment of Municipal Development Project Bonds; Historical Overview
	History and Extent of TIF Financing in Upper Midwest States
11:30	Question/Discussion Period
12:00	Luncheon
1:00 p.m.	In-depth Exploration of Three Projects where TIF was used in Conjuction with other Supporting Programs - Attorney George and Guest Presenters
	Madison's Capitol Centre Project
	(Twin Cities project: Meredith Lincoln)
	(Illinois Project)
4:30	Question/Discussion Period
5:30	Social Hour
6:30	Dinner

THURSDAY, NOVEMBER 10, 1983

8:30 a.m.	Current and Future Federal Law "Environment" for Tax Increment Financing - Attorney George
9:30	Question/Discussion Period
10:00	Break
10:30	Marketing Aspects of Tax Increment Debt - Guest Presenter
	Credit Rating Agencies; Principal Techniques and Consequences
	Credit Enhancement Measures: Letters of Credit; Insurance
11:30	Question/Discussion Period
12:00	Luncheon
1:00 p.m.	State by State Review: Four Upper Midwestern States - Attorney Lehmann; Attorney George; Attending Seminar Members
	Legal Structure
	Practice
	Explanation for Differences
	Interaction of State and Federal Requirements and Future Prospects
3:00	Question/Discussion Period
3:30	Synthesis and Summary - Professor Graaskamp
4:00	Adjournment

General Information

Who Should Participate: These seminars are designed to provide an intensive introduction to essential components of the real estate development process. Content of the seminars is designed for those individuals embarking on a career in the development industry and who seek to broaden their analytical skills as well as an understanding of their applicability to the overall real estate process. Real estate development personnel, appraisers, consultants, private and institutional investors, and lenders will benefit from this excellent introduction to specific aspects of development.

Location: The seminars will be held at Lowell Hall Center, 610 Langdon Street, Madison, where lodging and meals will be provided. Individual dates are:

APPRAISAL REPORTS; CRITIQUE & PURCHASE

Time: January 24-26, 1984. Registration beginning at 4:30 Tuesday and sessions will be conducted Tuesday evening after dinner, Wednesday until 5:00 p.m. and Thursday until 4:00 p.m. to provide convenient travel connections. Certificates will be awarded and each course provides 12 CEU's.

Place: Lowell Hall Center.

Seminar Fee: The full fee of $260 is payable in advance and includes tuition and materials. Lodging Tuesday and Wednesday evening, dinner on Tuesday, three meals on Wednesday, and breakfast and lunch on Thursday will be $90.' Sleeping accommodations are single-occupancy rooms with private bath.

108 REAL ESTATE ANALYSIS WITH THE IBM PERSONAL COMPUTER (LIMIT 25)

Time: January 26-28, 1984. Registration will be from 3:00-5:00 p.m. Thursday, January 26. Sessions will be conducted from 8:30-noon and 1:30-5:00 p.m. Friday and Saturday.

Place: Lowell Hall Center

Seminar Fee: The full fee of $260 is payable in advance and includes tuition and materials. Lodging Tuesday and Wednesday evening, dinner on Tuesday, three meals on Wednesday, and breakfast and lunch on Thursday will be $90. Sleeping accommodations are single-occupancy rooms with private bath.

THE PENSION IMPACT ON REAL ESTATE FINANCE

Time: February 1-3, 1984. Registration will be from 5:00-6:00 p.m. Wednesday, February 1. Sessions will be conducted from 7:00-9:00 p.m. on Wednesday, 8:30-noon and 1:30-5:00 p.m. Thursday and Friday.

Place: Lowell Hall Center.

Seminar Fee: The full fee of $260 is payable in advance and includes tuition and materials. Lodging Wednesday and Thursday evenings, dinner Wednesday, three meals on Thursday, and breakfast and lunch on Friday will be $90. Sleeping accommodations are single-occupancy rooms with private bath.

Persons who preregister but are unable to attend will, on application in writing, receive a refund of the seminar fee. All refunds will be processed by mail after the seminar has been concluded. Partial seminar fees or refunds cannot be accepted or handled.

Confirmation of your enrollment will be made before the seminar begins. Right is reserved to limit enrollment or cancel the seminar.

B **The School of Business**

University of Wisconsin-Madison

Real Estate Executive Management Seminar Series

presents

A Seminar In

APPRAISAL REPORTS; CRITIQUE & PURCHASE

taught by

DR. JAMES A. GRAASKAMP
Ph.D., CRE, SREA

Chairperson, Real Estate and Urban Land Economics
University of Wisconsin School of Business

January 24-26, 1984

A Seminar In

REAL ESTATE ANALYSIS WITH THE IBM PERSONAL COMPUTER

taught by

DR. MICHAEL ROBBINS

Assistant Professor, Real Estate
and Urban Land Economics
University of Wisconsin School of Business

January 26-28, 1984

A Seminar In

THE PENSION IMPACT ON REAL ESTATE FINANCE

taught by

DR. MIKE E. MILES

Professor, Real Estate Finance
University of Wisconsin School of Business

February 1-3, 1984

Sponsored by:

Center for Advanced Studies
Department of Real Estate and
Urban Land Economics
Graduate School of Business
University of Wisconsin-Madison

Instructor

Professor James A. Graaskamp

Professor James A. Graaskamp

Professor James A. Graaskamp is nationally known both for his seminars in real estate and for his consulting on matters of real estate feasibility, court room valuation, and investment strategy.

His education includes a Ph.D. in Real Estate and Risk Management from the University of Wisconsin, Madison, in 1964; an MBA in Securities Analysis and Investment from Marquette University, Milwaukee, in 1957; and an AB in English and Creative Writing from Rollins College, Winter Park, Florida, in 1955. He has won many academic honors including teaching awards for his courses in Urban Land Economics, Real Estate Investment, Finance, Marketing Research, and Contemporary Appraisal. His research interests range from urban tax assessment to wilderness appraisal.

Experience in private industry has included land development, co-ownership of a home building firm, and of a nationally known consulting firm, Landmark Research, Inc. He is presently a Trustee of the Urban Land Institute and member of the Board of First Asset Realty Advisors, a wholly owned subsidiary of First Minneapolis Bank. He was formerly the Treasurer of the Wisconsin Housing Finance Authority. He holds designations of CRE, SREA, CPCU, and Realtor.

Seminar Agenda

APPRAISAL REPORTS; CRITIQUE & PURCHASE

Overview: This course is designed for accountants, mortgage underwriters, lawyers, investors, project managers, and others who must understand the terms of art in appraisal, the appropriate conditions and assumptions which may qualify an appraisal report, the alternative definitions of what is value and what is to be valued, as well as contemporary modification of the appraisal process which can make the appraiser more effective and valuable in the real estate decision process. Once the relationship of the problem for which an appraisal is required is understood, an appraiser can be engaged in a manner consistent with the conditions appropriate to the following:

The course counts for 12 CEU's.

Tuesday, January 24
4:30-5:30 p.m.	Registration
5:00-6:00 p.m.	Dutch Treat Cocktail Mixer
6:00-7:00 p.m.	Dinner
7:00-8:30 p.m.	Course Introduction Lecture

Wednesday, January 25
8:30 a.m.	Decision Models & the Appraisal Process
	Origins of the Three Approaches to Value
	Appraisal Definitions & Their Implications
10:15	Coffee Break
10:30	Matching the Issue, the Definition of Value & the Description of What is to be Valued
12:00	Lunch
1:00 p.m.	A Critique of the Market Comparison Approach to Value
	1. Choosing the Unit of Market Comparison
	2. Choosing the Method of Adjustment for Differences
	3. Attributing Price to Components of Purchase
	4. Strengths & Weaknesses of Statistical Methods
	5. Contemporary Methods
3:00	Break
3:15	Elements of the Cost Approach
	Use of Computer Services
	Pitfalls in the Application of Cost Systems
	Legal and Theoretical Problems of Reliance on the Cost Approach
5:00	Adjourn - Cocktails and dinner

Thursday, January 26
8:30 a.m.	Elements of the Income Approach
	Requirements of an Appraisal Rent Roll
	Requirements of an Appraisal Vacancy Study
	Requirements of Operating Expense Schedule
10:15	Coffee Break
10:30	Dangers of Simple Capitalization Methods
	Use of Broker Pricing Methods
	Transition to Cash Flow Forecasting
	Testing Income Value Conclusions
12:00	Lunch
1:00 p.m.	Residential Relocation Appraisals for Corporate Employees
2:00	Use of a Letter of Engagement
3:00	Appraiser Liability for Errors, Omissions & Malfeasance

Instructor

Mike E. Miles, Ph.D.
Professor, Real Estate Finance
Graduate School of Business
University of Wisconsin, Madison

Mike E. Miles is a Texan with an MBA from Stanford University in Finance and Accounting and a Ph.D. from the University of Texas at Austin in Real Estate and Finance. He formerly developed the Real Estate and Banking MBA programs at the University of North Carolina in Chapel Hill. In addition to a distinguished academic career, he has worked for a development company and served as his own development contractor. He is nationally known for his work in pension fund real estate portfolio investment.

Overview: This course is designed for real estate brokers, developers, mortgage bankers, and other real estate professionals who wish to understand the opportunities and limitations for real estate finance by means of pension funds. Pension funds are the new intermediary institution for both mortgage money and equity investment. This seminar will examine how the investment of pension funds will impact on various real estate markets and identify the various actors in the process of obtaining finance.

This course counts for 12 CEU's.

Seminar Agenda

THE PENSION IMPACT ON REAL ESTATE FINANCE

I. Introduction
    A. Pension Funds as Investors - The Relative Size Question.
    B. Changing Capital Markets - Evaluation in the Context of Increasing Institutionalization.
    C. The Issues
        1. How much new money in real estate?
        2. What does the pension fund want?
        3. Who makes the decisions?
        4. Changing regulations and tax laws.
        5. What will be financed and how will it be financed.

II. What does the pension fund want.
    A. Who is the pension fund?
    B. Who makes the decisions?
    C. Returns
        1. Historic
        2. Expected
    D. Inflation
        1. Actual
        2. Unanticipated
    E. Diversification
        1. General definition
        2. The definition for pension funds today
        3. Ways to achieve diversification in real estate
    F. Direct vs. Indirect Investment
        1. Incentive for direct
        2. Reasons for indirect
        3. Directed indirect
    G. Regulation
    H. Tax Law

III. Investment Managers
    A. Who are they and how big are they?
        1. Institutions
        2. Independents
        3. Inside players???
    B. Agency issues and changing investment criteria.
        1. Overall
        2. Compensation systems
            a. direct
            b. indirect
    C. Evaluation methods and periods
        1. Stock and bond
        2. arbitrage
        3. tomorrow
    D. Open or closed end
        1. Yesterday
        2. Tomorrow
    E. Evolving strategies over time - Prisa to Prisa

IV. What does it mean?
    A. Availability of Financing.
    B. Investment manager organizations and vehicles
    C. Project Preferences
        1. size
        2. type
        3. region
        4. lease
        5. ownership structure
    D. Developer expertise

Instructor

Dr. Michael L. Robbins, Ph.D.
Assistant Professor, Dept. of Real Estate
Graduate School of Business
University of Wisconsin - Madison

Dr. Robbins began teaching Real Estate at Wisconsin in 1973. Currently Dr. Robbins is responsible for the undergraduate appraisal course as well as the residential and commercial development courses. Since the early 1970's Dr. Robbins has developed a large portion of the software utilized by the real estate department.

Software developed at Wisconsin is incorporated into all levels of course work. Computer utilization provides an efficient self-correcting introduction to the concepts of contemporary real estate analysis theory as taught by Dr. James A. Graaskamp, based on original work of Richard U. Ratcliff.

The most recent expansion of computer resources in the real estate department is the utilization of the micro computer. Students, under the direction of Dr. Robbins, are required to develop skills in the use of spreadsheet, word processing, and data management systems.

Dr. Robbins' current research interests lie in the area of pricing roadless wilderness lands of great topographical and ecological diversity. This special appraisal problem has received little theoretical or practical development and consequently has been ignored by appraisers and the courts.

Dr. Robbins received a B.S. degree in Landscape Architecture; a joint M.S. degree in Landscape Architecture, Civil and Environmental Engineering, and Real Estate; and a Ph.D. degree in Civil and Environmental Engineering, all from the University of Wisconsin-Madison.

Seminar Agenda

MICRO COMPUTER APPLICATIONS FOR THE COMTEMPORARY REAL ESTATE OFFICE

The purpose of this two day seminar is to acquaint the practicing real estate analyst with the availability of micro computer software for office use. The attendee will have the opportunity to evaluate alternative software packages through hands-on exposure during the seminar. The seminar encompasses three critical components of the electronic real estate office, i.e. Data Management, Spreadsheet Analysis, and Word Processing.

Program Outline

4:00-7:00	Registration and dinner buffet.
7:00-8:30	Introduction to seminar
	Components of the contemporary office
	Office Enhancements.

DAY 1

Gearing Up The Office

8:00-9:45	Data Base Management "Converting data to information"
9:45-10:00	Break
10:00-12:00	Data Base Management - Demo Problem 1 • 2 • 3 & Residential Sales Data
12:00-1:30	Lunch - Guest Speaker H. Robert Knitter "Doing MKTCOMP with the IBM Personal Computer"
1:30-3:00	Spreadsheet Analysis "Information evaluation"
3:00-3:15	Break
3:15-5:00	Compare and contrast Demo Problem 1 • 2 • 3 (with Graph) and Supercalc
5:00-6:00	Cash Bar
6:00-7:00	Dinner
7:00-10:00	Evening Workshop/Demonstrations

DAY 2

8:00-9:45	Word Processing "Information transfer"
9:45-10:00	Break
10:00-12:00	Compare and contrast - Demo Problem Wordstar and Proofwriter
12:00-1:30	Lunch - Guest Speaker Frank Scarpace "Proofwriter" Enhancements
1:30-3:00	Investment Analysis Models
3:00-3:15	Break
3:15-5:00	Investment Analysis Evaluation

The following is a list of most of the programs that will be available during the financial analysis session:

Supercalc	In-House Programs
1 • 2 • 3 Spreadsheet	Land Development
Realval	Income Capitalization
Superval	Lease Analysis
Palmer Berg -	Risk Analysis, etc.
Investment Analysis Pac	FPL
5:00	Seminar Over

General Information

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Location: The seminars will be held at the J.F. Friedrick Center, 1950 Willow Drive in Madison, Wisconsin, where lodging and meals will be provided if requested. Individual dates are:

203 LAND USE LAW
Time: March 12-14, 1984. Registration will be from 4-6 p.m. Monday, March 12. Sessions will be conducted from 8:30-noon and 1:00-5:00 Tuesday and Wed.
Place: J.F. Friedrick Center, 1950 Willow Drive
University of Wisconsin, Madison, Wisconsin
Seminar Fee: The full fee of $260.00 is payable in advance and includes tuition and materials. Lodging Monday and Tuesday evenings, dinner Monday and Tuesday, breakfasts and lunches on Tuesday and Wednesday will be $90. Sleeping accommodations are single-occupancy rooms.

302 BASIC PRINCIPLES OF FINANCING INCOME PROPERTY DEVELOPMENT
Time: April 9-11, 1984. Registration will be from 4-6 p.m., Monday, April 9. Sessions will be conducted from 8:30-noon and 1:30-5:30 Tuesday and Wed.
Place: J.F. Friedrick Center, 1950 Willow Drive
University of Wisconsin, Madison, Wisconsin
Seminar Fee: The full fee of $260 is payable in advance and includes tuition and materials. Lodging Monday and Tuesday evenings, dinner Monday and Tuesday, breakfasts and lunches on Tuesday and Wednesday will be $90. Sleeping accommodations are single-occupancy rooms.

101 INTRODUCTION TO THE REAL ESTATE DEVELOPMENT PROCESS
Time: April 24-26, 1984. Registration will be from 4-6 p.m. Tuesday, April 24. Sessions will be conducted from 8:30 a.m.-noon and 1:30-5:30 Wednesday and Thursday.
Place: J.F. Friedrick Center, 1950 Willow Drive
University of Wisconsin, Madison, Wisconsin.
Seminar Fee: The full fee of $260 is payable in advance and includes tuition and materials. Lodging Tuesday and Wednesday evenings, dinner Tuesday and Wednesday, breakfasts and lunches on Wednesday and Thursday will be $90. Sleeping accommodations are single-occupancy rooms.

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Confirmation of your enrollment will be made before the seminar begins. Right is reserved to limit enrollment or *cancel the seminar.*

B The School of Business

University of Wisconsin-Madison

Real Estate Executive Management Seminar Series

presents

A Seminar in
LAND USE LAW

taught by

RODERICK J. MATTHEWS,
Attorney Lecturer, Real Estate and
Urban Land Economics
University of Wisconsin School of Business

March 12-14, 1984

A Seminar in
BASIC PRINCIPLES OF FINANCING INCOME PROPERTY DEVELOPMENT

taught by

DR. JAMES A. GRAASKAMP
DR. MIKE E. MILES
Chairperson and Professor
Real Estate and Urban Land Economics
University of Wisconsin School of Business

April 9-11, 1984

A Seminar in
INTRODUCTION TO THE REAL ESTATE DEVELOPMENT PROCESS

taught by

DR. JAMES A. GRAASKAMP
Chairperson
Real Estate and Urban Land Economics
University of Wisconsin School of Business

April 24-26, 1984

Instructor

Roderick J. Matthews

Roderick J. Matthews is a pragmatic practicing attorney who has taught real estate law and land use at the University of Wisconsin School of Business since 1974. In addition, Matthews has frequently taught land use law at the UW Law School. He received BA in economics from the University of Wisconsin, and his law degree from the Harvard Law School.

Matthews has focused on land use and real estate at the law firm of Sieker and Matthews in Madison. He has structured his courses on the practical lessons of this lawyering experience. He also brings the local government perspective to his teaching by utilizing expertise developed during his 10 years as a member of the Dane County Board of Supervisors and his two terms as its Chairman.

An example of this local government land use experience is his chairing of the National Association of Counties Special Antitrust Committee, which focuses on the land use implications of the recent **Boulder** case.

"Current Cases and Procedural Trends in Land Use Control Law" is a timely and practical business review of trends in local governmental land use control law. It will point out the land use pitfalls placed in the path of the developer, the business person, the banker, and the neighbor. More importantly, it will point out how to avoid these pitfalls.

The course counts for 10 hours CEU's.

Seminar Agenda

LAND USE LAW

Monday, March 12

4-6 p.m.	Registration
7-8:30 p.m.	Introduction to the Seminar

Tuesday, March 13

8:30 a.m.　THE TAKING ISSUE 1984: how far can local government go before land use regulations result in taking and the need for compensation?

10:00 a.m.　Break

10:30 a.m.　Case studies:
1. Green spaces
2. Wetlands

Noon　Lunch

1:00 p.m.　HISTORIC PRESERVATION: what is the line between historic buildings and economically unfeasible buildings?

2:45 p.m.　Break

3:00 p.m.　Case studies:
1. Grand Central Station 1984
2. Historic district regulations and ordinances.

Wednesday, March 14

8:30 a.m.　ZONING AND PEOPLE: how far can zoning go beyond basic land use planning? For example, when must the zoning administrator check on who lives with whom, how can local government handle adult entertainment, and can the city zone pac-man away from the kids.

10:00 a.m.　Break

Noon　Lunch

1:00 p.m.　ZONING AND BUSINESS: what is the current status of anti-trust law and the land use law? Under what circumstances will a property owner be awarded a treble damage judgment against a local government?

2:45 p.m.　Break

3:00 p.m.　The mixes in mixed use zoning: are zoning requirements becoming more or less flexible — what is the trend? Becoming more realistic, or more inflexible?

5:00 p.m.　Seminar Concludes

Instructor

STEPHEN P. JARCHOW
PARTNER/VICE PRESIDENT — FINANCE
Lincoln Property Company, Inc.
Foster City, California

Stephen P. Jarchow is a partner in Lincoln Properties of Foster City, California, responsible for financial management, including debt and equity relationships. Mr. Jarchow was born in Madison, Wisconsin, and graduated from the University of Wisconsin-Madison in 1976 with a Masters of Science in Business-Real Estate Analysis, and also a degree in Law. Before joining Lincoln Property Company in May, 1981, Jarchow practiced law in Dallas, Texas for two years specializing in the tax and securities aspects of real estate transactions. Prior to that time, Mr. Jarchow practiced law for three years with a firm in Milwaukee, Wisconsin. Mr. Jarchow is a Certified Public Accountant and has taught at the University of Wisconsin and Southern Methodist University on the subjects of taxation, real estate law and international finance.

Mr. Jarchow's responsibilities at Lincoln Properties consist of assisting his partners in finding suitable financing for their developments and coordinating acquisitions, financings and equity syndications. In this position Mr. Jarchow handles negotiations with lenders, underwriters and other capital sources, both domestic and foreign. Mr. Jarchow is a partner in over seventy-five Lincoln developments including residential, commercial and industrial projects and has also acted as an independent consultant to real estate developers, syndicators and investors.

Stephen Jarchow is a member of the Wisconsin, Texas and American Bar Associations. He is a Contributing Editor on Real Estate Syndications in **Real Estate Review.**

This course counts for 10 CEU's.

Seminar Agenda

REAL ESTATE FINANCE 502
APARTMENT PROJECT FINANCE AND SYNDICATION

Wednesday, May 16:
4-6 p.m.   Seminar Registration
6-7 p.m.   Dinner
7-8:30 p.m.   Introduction to the Seminar

Thursday, May 17:
8:30 a.m.   Overview of U.S. Real Estate Markets
　　　　　　1. The Market Segments
　　　　　　2. Current Trends
　　　　　　3. The Apartment Development Business
10:00 a.m.   Break
10:15 a.m.   Apartment Financing Alternatives
　　　　　　1. GNMA Tandem Financing
　　　　　　2. FSLIC/FDIC Bond Program
　　　　　　3. FHA Bond Program
　　　　　　4. Institutional Guarantee Bond Program
　　　　　　5. Other Collateral for Bonds
Noon   LUNCH
1:00 p.m.   Apartment Financing Alternative (Cont.)
　　　　　　1. Conventional Debt Financing in General
　　　　　　2. Convertible Mortgages
　　　　　　3. Joint Venture - All Cash
　　　　　　4. Joint Venture - With Debt
　　　　　　5. Land Sale/Leaseback Loan
3:00 p.m.   Break
3:15-5 p.m.   Apartment Financing Alternatives (Cont.)
　　　　　　1. Bullet Loans
　　　　　　2. Misc. Financing Considerations
　　　　　　3. Refinancing Considerations

Friday, May 18:
8:30 a.m.   Syndication: A Capitalization Approach
　　　　　　1. The Business Reasons
　　　　　　2. Fundamental Business Considerations
　　　　　　3. Choice of Business Entity
　　　　　　4. Tax Structuring
10:00 a.m.   Break
10:15 a.m.   Syndication: A Capitalization Approach (Cont.)
　　　　　　1. Securities Laws
　　　　　　2. Accouting
　　　　　　3. Legal Counsel
　　　　　　4. Investor Concerns
Noon   LUNCH
1:00 p.m.   The Major Markets and Apartments
　　　　　　1. New York　　6. Phoenix
　　　　　　2. Chicago　　 7. Denver
　　　　　　3. Dallas　　　8. Los Angeles
　　　　　　4. Houston　　 9. San Francisco
　　　　　　5. Atlanta
3:00 p.m.   Break
3:15 p.m.   The Future
5:00 p.m.   End

General Information

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Location: The seminars will be held at the J.F. Friedrick Center, 1950 Willow Drive in Madison, Wisconsin, where lodging and meals will be provided if requested. Individual dates are:

404 OFFICE MARKETING AND LEASING

Time: May 8-10, 1984. Registration will be from 4-6 p.m. Tuesday, May 8. Sessions will be conducted from 8:30 a.m. to noon and 1:00 to 5:00 p.m. Wednesday and will adjourn at 3:00 p.m. on Thursday.

Place: J.F. Friedrick Center, 1950 Willow Drive
University of Wisconsin, Madison, Wisconsin

Seminar Fee: The full fee of $260.00 is payable in advance and includes tuition and materials. Lodging Tuesday and Wednesday evenings, dinner Tuesday and Wednesday will be $90. Sleeping accommodations are single-occupancy rooms.

502 APARTMENT PROJECT FINANCE AND SYNDICATION

Time: May 16-18, 1984. Registration will from 4-6 p.m. Wednesday, May 16. Sessions will be conducted from 8:30 a.m. to noon and 1:00 to 5:00 p.m. Thursday and Friday.

Place: J.F. Friedrick Center, 1950 Willow Drive
University of Wisconsin, Madison, Wisconsin

Seminar Fee: The full fee of $260.00 is payable in advance and includes tuition and materials. Lodging Wednesday and Thursday evenings, dinner Wednesday and Thursday evening will be $90. Sleeping accommodations are single-occupancy rooms.

Persons who preregister but are unable to attend will, on application in writing, receive a refund of the seminar fee. All refunds will be processed by mail after the seminar has been concluded. Partial seminar fees or refunds cannot be accepted or handled.

Confirmation of your enrollment will be made before the seminar begins. Right is reserved to limit enrollment or cancel the seminar.

Instructor

CLINTON A. MILLER
VICE PRESIDENT, DIRECTOR OF MARKETING
United Properties
Minneapolis, Minnesota

Clinton A. Miller is Vice President, Director of Marketing for United Properties, Minneapolis, Minnesota. In this capacity, he is responsible for leasing, brokerage, market research, and promotion for United Properties and its clients. Mr. Miller was born in St. Paul, Minnesota and is a 1973 graduate in business administration from the University of Minnesota, Duluth. Miller joined United Properties in 1980 following two years of national marketing responsibilities with the wholly-owned real estate subsidiary of Honeywell. Prior to that he spent six years in sales and sales management for major accounts with Xerox Corporation.

United Properties, a division of The Northland Company, is also affiliated with Northland Mortgage Company, Northland Insurance Company, and Universal Title Company. The firm owns or manages in excess of 2.8 million square feet of commerical space in the Twin Cities Metropolitan area, which makes it one of the largest property landlords in the area. Since 1973, the company has developed for its own account over 1.3 million square feet of new space, primarily in suburban office buildings. United properties also has an additional 650,000 square feet of office space under development and owns or markets approximately 350 acres of development land in the Twin Cities.

Mr. Miller's professional affiliations include the Greater Minneapolis Board of Realtors, National Association of Industrial and Office Parks, and the National Association of Corporate Real Estate Executives.

Seminar Agenda

MARKETING 404
OFFICE MARKETING AND LEASING

WHO SHOULD PARTICIPATE:

The seminar content is designed to provide a thorough introduction to office space marketing and leasing. This session would be useful for anyone with an interest in the development, ownership, leasing or management of commercial and industrial property. It provides practical and up-to-date information for the real estate practitioner who wants to continually develop and improve the strategies involved in the marketing of commercial space.

OVERVIEW:

The course conveys many industry techniques which have proven successful in the marketing effort. Included in the seminar is a detailed look at the comprehensive marketing plan for Northland Executive Office Center, a 470,000 square foot Class A executive office complex on a major freeway interchange in suburban Minneapolis.

This course counts for 10 CEU's.

Tuesday, May 8:
4-6 p.m.	Seminar Registration
6-7 p.m.	Dinner
7-8 p.m.	Course Introduction

Wednesday, May 9:
8:30 a.m.	The Company Marketing Plan The Foundation of the Entire Marketing Effort
10:15 a.m.	Break
10:30 a.m.	Market Research Knowing Your Clients, Product, Competition, and Marketplace
Noon	LUNCH
1:00 p.m.	The Comprehensive Marketing Plan Northland Executive Office Center, Bloomington, Minnesota
3:00 p.m.	Break
3:15 p.m.	Marketing Plan (Cont.)

Thursday, May 10:
8:30 a.m.	Locating Prospects; Leasing Agent Preparation, Canvassing, Merchandising the Space
10:15 a.m.	Break
10:30 a.m.	Special Campaigns, Sales Contests, Broker Program
Noon	LUNCH
1:00 p.m.	Professional Selling/Negotiating Skills Questions & Answers
3:00 p.m.	End

General Information

Who Should Participate: The purpose of this two day seminar is to acquaint the practicing real estate analyst with the availability and utilization of micro-computer software for real estate analysis. The attendee will have the opportunity to evaluate alternative software packages through hands-on use during the seminar.

The seminar facility will provide for a maximum ratio of two attendees per micro-computer. With this extensive hands-on utilization, it is expected that all attendees have a working understanding of the IBM-PC or look-alike. At a minimum, an attendee should have an experience level obtained in the preceding conference "Micro Computer Applications for the Contemporary Real Estate Office."

108 - REAL ESTATE ANALYSIS WITH THE IBM/PC

Time: June 17 - 19, 1984. Registration will be from 4 - 6 p.m. Sunday, June 17. Sessions will be conducted from 7 - 9 p.m. on Sunday, from 8 a.m. to 6 p.m. on Monday, and from 8 a.m. to 5 p.m. on Tuesday.

Classroom: Wisconsin Center, 702 Langdon Street, Madison, WI
Lodging: Madison Inn, 601 Langdon Street, Madison, WI
Seminar Fee: The full fee of $300 is payable in advance and includes tuition and materials. Lodging Sunday and Monday evenings, dinner Sunday, breakfast and lunch on Monday and Tuesday will be $90.

Sleeping Accommodations: Single occupancy rooms are located at the Madison Inn, 601 Langdon Street, Madison.

209 - MODELING REAL ESTATE PROBLEMS ON IBM/PC

Time: June 19 - 21, 1984. Registration will be from 4 - 6 p.m. Tuesday, June 19. Sessions will be conducted from 8:30 a.m. to 6 p.m. Wednesday and Thursday.

Classroom: Wisconsin Center, 702 Langdon Street, Madison, WI
Lodging: Madison Inn, 601 Langdon Street, Madison, WI
Seminar Fee: The full fee of $300 is payable in advance and includes tuition and materials. Lodging Tuesday and Wednesday evenings, dinner Tuesday, breakfast and lunch on Wednesday and Thursday will be $90.

Sleeping Accommodations: Single occupancy rooms are located at Madison Inn, 601 Langdon Street, Madison.

105 - INTRODUCTION TO COMMERCIAL CONSTRUCTION TECHNIQUES (SLIDES, CRITIQUES, AND CASE STUDIES)

Time: July 11 - 13, 1984. Registration will be from 4-6 p.m. Wednesday, July 11. Sessions will be conducted from 8:30 a.m. to 5:30 p.m. on Thursday and Friday.

Place: J.F. Friedrick Center, 1950 Willow Drive, Madison, WI.

Seminar Fee: The full fee of $260.00 is payable in advance and includes tuition and materials. Lodging Wednesday and Thursday evenings, dinner Wednesday and Thursday evenings, breakfast and lunch on Thursday and Friday will be $90. Sleeping accomodations are single-occupancy rooms located at the Friederick Center.

Persons who preregister but are unable to attend will, on application in writing, receive a refund of the seminar fee. All refunds will be processed by mail after the seminar has been concluded. Partial seminar fees or refunds cannot be accepted or handled.

Confirmation of your enrollment will be made before the seminar begins. Right is reserved to limit enrollment or cancel the seminar.

B The School of Business

University of Wisconsin-Madison

Real Estate Executive Management Seminar Series

presents

A Seminar in
REAL ESTATE ANALYSIS WITH THE IBM/PC

taught by

DR. MICHAEL L. ROBBINS, Ph. D.

Assistant Professor, Dept. of Real Estate
Graduate School of Business
University of Wisconsin-Madison

June 17 - 19, 1984

A Seminar in

ADVANCED MODELING REAL ESTATE PROBLEMS ON IBM/PC

taught by

ROBBINS, WIECKERT, GIBSON AND HEATH

June 19 - 21, 1984

A Seminar in

INTRODUCTION TO COMMERCIAL CONSTRUCTION TECHNIQUES (SLIDES, CRITIQUES, AND CASE STUDIES)

taught by

JAMES CANESTARO, A.I.A.

Associate Professor, College of Architecture
Virginia Polytechnic Institute and State University
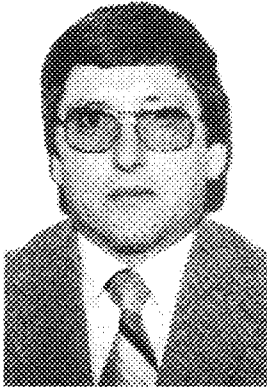Blacksburg, Virginia

July 11-13, 1984

JAMES A. GRAASKAMP, Ph.D., C.R.E.

Director — Real Estate
Executive Management Series

Instructor

Dr. Michael L. Robbins, Ph.D.
Assistant Professor, Dept. of Real Estate
Graduate School of Business
University of Wisconsin-Madison

Dr. Robbins began teaching Real Estate at Wisconsin in 1973. Currently Dr. Robbins is responsible for the undergraduate appraisal course as well as the residential and commercial development courses. Since the early 1970's Dr. Robbins has developed a large portion of the software utilized by the real estate department.

Software developed at Wisconsin is incorporated into all levels of course work. Computer utilization provides an efficient self-correcting introduction to the concepts of contemporary real estate analysis theory as taught by Dr. James A. Graaskamp, based on original work of Richard U. Ratcliff.

The most recent expansion of computer resources in the real estate department is the utilization of the micro computer. Students, under the direction of Dr. Robbins, are required to develop skills in the use of spreadsheet. word processing, and data management systems.

Dr. Robbins' current research interests lie in the area of pricing roadless wilderness lands of great topographical and ecological diversity. This special appraisal problem has received little theoretical or practical development and consequently has been ignored by appraisers and the courts.

Dr. Robbins received a B.S. degree in Landscape Architecture; a joint M.S. degree in Landscape Architecture, Civil and Environmental Engineering, and Real Estate; and a Ph.D. degree in Civil and Environmental Engineering, all from the University of Wisconsin-Madison.

Seminar Agenda

Data Processing Course 108 —
REAL ESTATE ANALYSIS WITH THE
IBM PERSONAL COMPUTER

The purpose of this two day seminar is to acquaint the practicing real estate analyst with the availability of micro computer software for office use. The attendee will have the opportunity to evaluate alternative software packages through hands-on exposure during the seminar. The seminar encompasses three critical components of the electronic real estate office, i.e. Data Management, Spreadsheet Analysis, and Word Processing. This course counts for 10 CEU's.

Sunday, June 17
PROGRAM OUTLINE
4:00– 7:00	Registration and dinner buffet.
7:00– 8:30	Intruction to seminar
	Components of the contemporary office
	Office Enhancements

Monday, June 18
GEARING UP THE OFFICE
8:00– 9:45	Data Base Management "Converting data to information"
9:45–10:00	Break
10:00–12:00	Data Base Management - Demo Problem 1 • 2 • 3 & Residential Sales Data
12:00– 1:30	Lunch - Guest Speaker H. Robert Knitter "Doing MKTCOMP with the IBM Personal Computer"
1:30– 3:00	Spreadsheet Analysis "Information evaluation"
3:00– 3:15	Break
3:15– 5:00	Compare and contrast Demo Problem 1 • 2 • 3 (with Graph) and Supercalc
5:00– 6:00	Cash Bar
6:00– 7:00	Dinner
7:00–10:00	Evening Workshop/Demonstrations

Tuesday, June 19
8:00– 9:45	Word Processing "Information transfer"
9:45–10:00	Break
10:00–12:00	Compare and contrast - Demo Problem Wordstar and Proofwriter
12:00– 1:30	Lunch - Guest Speaker Frank Scarpace "Proofwriter" Enhancements
1:30– 3:00	Investment Analysis Models
3:00– 3:15	Break
3:15– 5:00	Investment Analysis Evaluation

The following is a list of most of the programs that will be available during the financial analysis session:

Supercalc, 1 • 2 • 3 Spreadsheet, Realval, Superval, Palmer Berg-Investment Analysis Pac. In-House Programs: Land Development, Income Capitalization, Lease Analysis, Risk Analysis, etc., FPL.

5:00   Seminar Over

Instructor

Seminar Agenda

INSTRUCTORS
Michael L. Robbins (Ph. D. University of Wisconsin)
Assistant Professor, Department of Real Estate
Graduate School of Business
Madison, Wisconsin

Mr. Jeff Wieckert (M.S. - Real Estate U.W.)
Boisclair Corp.
2925 Dean Pkwy.
Minneapolis, Minnesota

Guest Presenters
Mr. Lee Brown (M.S. Urban & Regional Planning, U.W. Madison, Wisconsin)
Development Director/Planner
City of Monona
Monona, Wisconsin

Mr. Charles Heath (M.S.-Real Estate U.W.)
Ph.D - In Progress
University of Wisconsin
Graduate School of Business
Madison, Wisconsin

Mr. Robert Gibson (M.S. - Real Estate U.W.)
Ph.D. - In Progress
University of Wisconsin
Graduate School of Business
Madison, Wisconsin

Data Processing Course 209 —
MODELING REAL ESTATE PROBLEMS ON IBM PERSONAL COMPUTERS

Who Should Participate: This workshop is intended for real estate practitioners and students with prior experience in timesharing or micro-computer based real estate analysis. This course counts for 10 CEU's.

PROGRAM OUTLINE
Tuesday, June 19
4:00- 7:00	Registration and dinner buffet
7:00- 8:30	Introduction to seminar
	Introduction to participants
	Introduction to computer systems

Wednesday, June 20
Preliminary Analysis Models (Robbins-Gibson)
8:30- 10:00	A. Feasibility (Front Door/Back Door)
	LOTUS 1-2-3- Model
	Default Ratio
	Loan-To-Value Ratio
	Debt Cover Ratio
	Risk Adjusted Default Ratio
10:00- 10:15	COFFEE BREAK
10:15- 11:15	B. Income Capitalization Models
	Before Tax Evaluation
	After Tax Evaluation
11:15- noon	C. Discounted Cash Flow Models
Noon- 1:00	LUNCH

Initial Analysis Models (Robbins-Wieckert)
1:00- 2:00	A. Lease Analysis
	Preliminary
	Intermediate
2:00- 3:00	B. Discounted Cash Flow
3:00- 3:15	COFFEE BREAK
3:15- 4:30	C. Equity Participation Analysis
4:30- 6:00	D. Case Studies with Solutions
	(Robbins-Wieckert)
	Commercial Analysis Models
	Custom Analysis Models
	Basic
	Spread Sheet

Thursday, June 21
Techniques and Statistical Applications for Market Survey Research (Robbins-Heath)

8:30- 10:00	A. Data Input Via LOTUS 1-2-3
10:00- 10:15	COFFEE BREAK
10:15- 11:00	B. Data Summary Via LOTUS 1-2-3
11:00- noon	C. Data Analysis Via NWA
Noon- 1:00	LUNCH

Multiuse Development and Shared Parking (Robbins-Brown)
1:00- 2:00	A. Multiuse Development Model
	1. Cost/Use Estimates
	2. Before Tax Value Estimates
	3. After Tax Value Estimates
2:00- 3:00	B. Shared Parking and Site Requirements
	1. Base Date-ULI Shared Parking Study
	2. Modeling Parking Needs
3:00- 3:15	COFFEE BREAK
3:15- 5:30	C. Determining Optimal Multiuse Development Mix Via Shared Parking and Linear Programming

Instructor

Professor James C. Canestaro

James C. Canestaro is a registered architect in Virginia and Wisconsin and a Corporate Member of the American Institute of Architects. He is presently an associate professor and teaching in the College of Architecture at Virginia Polytechnic Institute and State University in Blacksburg, Virginia. His Bachelor of Architecture degree was received at Notre Dame, and Masters Degrees in Architecture and Urban Planning were earned at the University of Illinois-Urbana. He is presently completing a Ph.D. in Real Estate at the Graduate School of Business, University of Wisconsin-Madison.

Professor Canestaro has been a member of the Architecture and Finance Department at the University of Illinois, and of the Department of Real Estate and Urban Land Economics, Graduate School of Business, University of Wisconsin-Madison. He presently teaches courses in Project Feasibility Analysis, Residential Property Development, Commercial Property Development, and Real Estate Investment Analysis.

Professor Canestaro is the author of several books on the subject of project cost-benefit and feasibility analysis. He is actively involved in his own private architectural consulting firm which specializes in project feasibility and market analysis, property valuation, and pre-architectural programming studies.

This course counts for 10 CEU's.

Seminar Agenda

Construction 105 —
INTRODUCTION TO COMMERCIAL CONSTRUCTION TECHNIQUES (SLIDES, CRITIQUES, AND CASE STUDIES)

Thursday, July 12

8:30 a.m.
- I. Introduction
  - 1.1 Architectural Blueprints
  - 1.2 Environmental Factors
  - 1.3 Site Conditions
  - 1.4 Site Work
  - 1.5 Historical Styles
- II. Structures
  - 2.1 Introduction
  - 2.2 Substructure
    - Pilings
    - Grade Beams
    - Slab on Grade
    - Footings
    - Foundations
  - 2.3 Steel
    - Framing
    - Trusses
    - Bar Joist
    - Steel Decking
    - Lightweight Framing

Lunch 12:30 - 1:30 p.m.
  - 2.4 Concrete
    - Columns
    - Walls
    - Ribbed One-Way Slabs
    - Two-Way Slabs
    - Post Tension
    - Pre-Cast
    - Pre-Cast Tilt-Up
  - 2.5 Wood
    - Post and Beam Framing
    - Trusses
  - 2.6 Masonry
    - Concrete Block
    - Brick
    - Stone
- III. Envelope
  - 3.1 Curtain Wall
    - Brick
    - Stone
    - Pre-Cast Concrete
    - Glass
    - Metal
  - 3.2 Facia and Soffet

Adjourn 5:30 p.m.

Friday, July 13

8:30 a.m.
- III. Envelope (continued)
  - 3.3 Roofing
    - Built Up
    - Membrane
    - Metal
    - Shingles
  - 3.4 Moisture Proofing
  - 3.5 Insulation
  - 3.6 Expansion Joints
- IV. Enclosure
  - 4.1 Doors
  - 4.2 Windows
  - 4.3 Partitions
    - Drywall
    - Gypsum Lath and Plaster
    - Masonry
  - 4.4 Interior Finishes
  - 4.5 Suspended Ceilings
  - 4.6 Flooring
  - 4.7 Soundproofing
  - 4.8 Circulation
    - Stairs
    - Elevators
    - Escalators

Lunch 12:30 - 1:30 p.m.
- V. Environmental Systems
  - 5.1 Introduction
  - 5.2 Electrical
  - 5.3 Communications
  - 5.4 Sewer
    - Sanitary
    - Storm
    - Septic
  - 5.5 Water
    - Supply
    - Fire Protection
  - 5.6 Mechanical Systems
    - Electrical Heat
    - Electrical Air Conditioning
    - Hydronics
    - Chilled Water
    - Forced Air
    - Solar
    - Heat Pump
- VI. Conclusions
  - 6.1 Building Construction Evolution

Adjourn 5:30 p.m.

The School of Business

University of Wisconsin-Madison

Real Estate Executive Management Seminar Series

and the

Commercial Real Estate Organization

present

A Seminar on

REAL ESTATE FEASIBILITY ANALYSIS AND CREATIVE PROBLEM SOLVING

taught by

DR. JAMES A. GRAASKAMP Ph.D., CRE, SREA

Chairperson, Real Estate and Urban Land Economics
University of Wisconsin School of Business

September 13 and 14, 1984

in Chicago

at the Ritz Carlton Hotel

Sponsored by:

Center for Advanced Studies
Department of Real Estate and
Urban Land Economics
Graduate School of Business
University of Wisconsin-Madison
and
The Commercial Real Estate Organization

General Information

Who Should Participate: Real estate professionals of many years of experience, trainees in commercial real estate and land development, and staff people in their real estate offices will find many techniques and concepts of practical use in this nationally known seminar. Leasing agents, brokers, property managers, architects, and public planners will find the material fresh and unique in viewpoint.

Location: Real Estate Feasibility Analysis will be held at the Ritz Carlton Hotel, 160 E. Pearson Street, Chicago, Illinois (12th Floor).

Fees: $350 for members of the Commercial Real Estate Organization. $370 for non-members. The full fee is payable in advance and includes tuition, materials and lunch on both days. Hotel accommodations are not included.

Hotel Accommodations: Should you need hotel accommodations, you may contact the Ritz Carlton at (312) 266-1000. Of course, Chicago has a wide range of hotels for you to choose from in the Michigan Avenue area.

Refunds: Persons who preregister but are unable to attend must notify the Commercial Real Estate Organization no later than August 24, 1984 (contact Julie Scales at (312) 853-3700). A refund of 80% of your fee will be made. No refunds will be possible after August 24, 1984.

Confirmation: Confirmation of your enrollment will be made before the seminar begins. The right is reserved to limit enrollment or cancel the seminar.

Instructor

Professor James A. Graaskamp

Professor James A. Graaskamp is nationally known both for his seminars in real estate and for his consulting on matters of real estate feasibility, court room valuation, and investment strategy.

His education includes a Ph.D. in Real Estate and Risk Management from the University of Wisconsin, Madison, in 1964; an MBA in Securities Analysis and Investment from Marquette University, Milwaukee, in 1957; and a BA in English and Creative Writing from Rollins College, Winter Park, Florida, in 1955. He has won many academic honors including teaching awards for his courses in Urban Land Economics, Real Estate Investment, Finance, Marketing Research, and Contemporary Appraisal. His research interests range from urban tax assessment to wilderness appraisal.

Experience in private industry has included land development, co-ownership of a home building firm, and of a nationally known consulting firm, Landmark Research, Inc. He is presently a Trustee of the Urban Land Institute and member of the Board of First Asset Realty Advisors, a wholly owned subsidiary of First Minneapolis Bank. He was formerly the Treasurer of the Wisconsin Housing Finance Authority. He holds designations of CRE, SREA, CPCU, and Realtor.

Seminar Agenda

Course #201
REAL ESTATE FEASIBILITY ANALYSIS
AND CREATIVE PROBLEM SOLVING

Thursday, September 13, 1984

8:30-9:30	The Real Estate Process and Problem Context
9:30-10:15	Definition of Decision Process as Basis for Real Estate Feasibility
10:15	COFFEE BREAK
10:30-12:00	Client/Consultant Relationship and Definition of Feasibility Assignment
Noon	LUNCH
1:00-2:00	Framework For Inventory of Physical Real Estate to Define Alternative Uses
2:00-3:00	Initial Screening of Alternatives to Determine Most Probable Use
3:00	COKE BREAK
3:15-4:00	Converting Probable Use to Initial Financial Parameters to be Researched
4:00-5:00	Research for Political Marketing of Project Concept

Friday, September 14, 1984

8:30-9:30	Definitions of Market Research and Editing Secondary Aggregate Data Resources
9:30-10:15	Case Applications of Secondary Data Impact on Project
10:15	COFFEE BREAK
10:30-12:00	Introduction to Primary Merchandising Research to Profile Consumer and Product
Noon	LUNCH
1:00-2:00	Primary Market Research Questionnaire
2:00-3:00	Panel Groups and Encounter Groups
3:00	COKE BREAK
3:15-4:00	Synthesis of Marketing Research into Project Strategy for Market Positioning
4:00-5:00	Structuring and Critiquing the Final Feasibility Report

Here's Your Chance To Learn How Consumer Research Is Changing Real Estate Marketing On The West Coast

BEYOND DEMOGRAPHICS

MODERN REAL ESTATE MARKETING RESEARCH WITH FOCUS PANEL GROUPS AND CONJOINT MEASUREMENTS

A REAL ESTATE EXECUTIVE MANAGEMENT SEMINAR

This Two-day Seminar Will Give You Techniques and Case Examples To:

- ☐ Design better home and apartment units
- ☐ Measure demand for industrial space
- ☐ Segment office rental demand
- ☐ Identify real estate features preferred when trading off against price
- ☐ Understand relationship of lifestyle to product and advertising impact
- ☐ Be aware of verbal architecture and unspoken consumer codes

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SCHEDULE

December 11, and 12, 1984
8:30 A.M. to 5:00 P.M. Each Day
University Campus, Madison, Wisconsin

Sponsored By:
Center for Advanced Studies
Department of Real Estate and
Urban Land Economics
Graduate School of Business
University of Wisconsin-Madison

THREE NATIONAL EXPERTS

DR. WILLIAM MUNDY
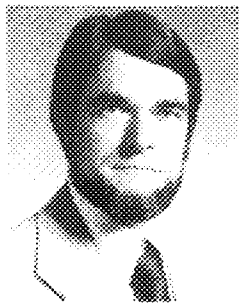
Dr. William Mundy

Dr. Mundy has over 20 years' experience in real estate analysis. Since 1976 he has been President and Senior Analyst of Mundy, Jarvis & Associates, Inc. From 1971 to 1973 Bill was a land economist for Weyerhaeuser Company in Tacoma, Washington and between 1968-1969 an appraiser and market analyst for Fenton, Conger & Ballaine in Seattle, Washington. He worked as a farm manager and rural appraiser for Daone Agricultural Service in St. Louis, Missouri from 1965 to 1967.

As President of Mundy, Jarvis, Bill oversees a staff of twelve professional analysts that perform economic, market and valuation studies in the Pacific Northwest and Alaska. He is active in curriculum development and teaching for the Appraisal Institute. He has published numerous articles on real estate and is a frequent speaker before professional and civic groups.
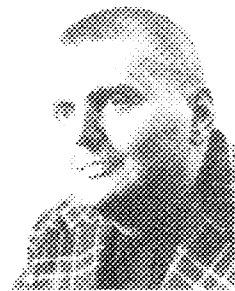
GADI KAUFMANN

Gadi Kaufmann

Gadi Kaufmann is Senior Vice President and Partner in charge of consulting operations of Robert Charles Lesser & Company, and specializes in market research, management consulting, economic and financial analysis, and project and development programming. Since joining the firm in 1979, Kaufmann has worked on and directed numerous market studies in major real estate markets throughout North America.

He is actively involved in economic and marketing analysis, product and development program evaluation, management and financial planning and market opportunity search for commerical and residential projects.

DR. JAMES A. GRAASKAMP

Dr. James A. Graaskamp

Professor James A. Graaskamp is nationally known both for his seminars in real estate and for his consulting on matters of real estate feasibility, court room valuation, and investment strategy.

His education includes a Ph.D. in Real Estate and Risk Management from the University of Wisconsin, Madison, in 1964; an MBA in Securities Analysis and Investment from Marquette University, Milwaukee, in 1957; and a BA in English and Creative Writing from Rollins College, Winter Park, Florida, in 1955. He has won many academic honors including teaching awards for his courses in Urban Land Economics, Real Estate Investment, Finance, Marketing Research, and Contemporary Appraisal. His research interests range from urban tax assessment to wilderness appraisal.

He is presently a Trustee of the Urban Land Institute and member of the Board of First Asset Realty Advisors, a wholly owned subsidiary of First Minneapolis Bank. He was formerly the Treasurer of the Wisconsin Housing Finance Authority. He holds designations of CRE, SREA, CPCU, and Realtor.

FAST, EASY REGISTRATION

BY PHONE
Call (608) 233-6400
Ask for Dawn and Seminar
Registration

BY MAIL
Real Estate Seminars
Center for Advanced Studies
Room 118
School of Business
1155 Observatory Drive
Madison, WI 53706

Tuition: The Seminar fee is $300 for each person, including tuition, materials and lunch on both days.
Hotel accommodations are not included.

Location: Wisconsin Center, 702 Langdon St., Madison, Wisconsin.

Lodging: Lodging is available at the Wisconsin Center for Monday night, Dec. 10 and Tuesday night, Dec. 11 for $30 for a single with a bath & TV. Off-campus alternatives include Madison Inn at 701 Langdon, the Edgewater Hotel or the InnTowner.

Refunds: Persons who preregister but are unable to attend must notify the Center for Advanced Studies no later than Friday, Dec. 7, 1984 by calling (608) 233-6400. No refunds of tuition will be possible thereafter, but prepaid lodging will be refunded in full at any time.

Confirmation: of your enrollment will be made in writing only if you enroll by Monday, December 3.

The
School
of Business
University of Wisconsin - Madison
/o Prof. James Graaskamp
155 Observatory Drive, Rm. 118
Madison, WI 53706

REAL ESTATE EXECUTIVE MANAGEMENT SERIES

The Seminar, "**BEYOND DEMOGRAPHICS: MODERN REAL ESTATE MARKETING RESEARCH,**
is one of a series called the **EXECUTIVE MANAGEMENT SERIES FOR REAL ESTATE,** originall
designed for the major development companies in the Midwest to provide 25 days of training ove
several years in an intensive certificate program. Seminar attendance provides 12 hours credi
toward continuing education requirements of Wisconsin Realtors, Society of Real Estat
Appraisers and other groups. This seminar in marketing is an upper-level course.

BEYOND DEMOGRAPHICS:

MARKETING RESEARCH FOR SUCCESSFUL REAL ESTATE PROJECTS

Tuesday, December 11, 1984

8:30 - 9:30	The New Look in Real Estate Market Analysis (Graaskamp)
9:30 - 10:30	Estimating Absorption Rates for Industrial Land: A Case Study (Mundy)
10:30 - 10:45	COFFEE BREAK
10:45 - 12:00	Estimating Office Space Demand Using SIC Codes (Mundy)
NOON	LUNCH
1:00 - 2:00	Introduction to Conjoint Measurement of Consumer Tradeoff Value Systems (Mundy)
2:00 - 3:00	Analysis of Homebuyers Project Tradeoffs: A Case Study (Mundy)
3:00 - 3:15	COKE BREAK
3:15 - 4:30	Conjoint Measurement Applied to Condominium Design: A Case Study (Mundy and Kaufmann)
4:30 - 5:30	Workshop Exchange of Experience with Conjoint Measurement (Mundy, Kaufmann and Graaskamp)

Wednesday, December 12, 1984

8:30 - 9:30	Market Segmentation and Polishing the Consumer Profile (Kaufmann)
9:30 - 10:15	The Consumer Panel Focus Technique —Pros and Cons (Kaufmann)
10:15 - 10:30	COFFEE BREAK
10:30 - 12:00	Focus Panel Analysis of Office Development (Kaufmann)
NOON	LUNCH
1:00 - 2:00	Focus Panel Refinement of Residential Designs (Kaufmann)
2:00 - 3:00	Segmentation by Lifestyle — SRI Films and Applications (Graaskamp)
3:00 - 3:15	COFFEE BREAK
3:15 - 4:30	Open Question and Answer Workshop (Mundy, Kaufmann & Graaskamp)

Return Registration Form and Make Check Payable To:

Center for Advanced Studies
Dept. of Real Estate and Urban Land Economics
School of Business, Room 118
1155 Observatory Drive
Madison, WI 53706

Name _____

Firm Name _____

Mailing Address _____

Telephone Number _____

FEES: Tuition $300

Hotel Room: _____

☐ Enclosed is my check for $ _____ covering tuition, materials and lunches for **BEYOND DEMOGRAPHICS: MODERN REAL ESTATE MARKETING RESEARCH**

☐ Sorry, cannot attend this session, but please send me the complete schedule offered in 1985.

Seminar Agenda

**CONTEMPORARY APPRAISAL OF
INCOME PROPERTIES FOR A VARIETY OF
INVESTMENT AND LITIGATION PURPOSES**

Thursday, April 11

8:30 a.m.	Defining the Appraisal Problem to Fit the Legal Issues.
10:15 a.m.	Coffee Break
10:30 a.m.	Issues in Application of the Market Comparison Approach
Noon	LUNCH
1:00 p.m.	Contemporary Applications of the Market Approach 1. Subsidized Housing 2. Renovation - Commercial 3. Development Land
2:30 p.m.	Coke Break
2:45 p.m.	Automated Market Comparison Techniques 1. Dilmore Price Per Point System 2. MTKCOMP Assessment System
5:00 p.m.	End

Friday, April 12

8:30 a.m.	Contemporary Problems with the Income Approach
10:15 a.m.	Coffee Break
10:30 a.m.	Shopping Center Appraisal Case
Noon	LUNCH
1:00 p.m.	VALTEST - The Simplified Cash Flow Valuation Model
2:15 p.m.	Coke Break
2:30 p.m.	Trends in Contracting for Appraisal Services
4:30 p.m.	End

B The School of Business

University of Wisconsin-Madison

Real Estate Executive Management Seminar Series

presents

A Seminar In

INTRODUCTION TO THE REAL ESTATE DEVELOPMENT PROCESS

taught by

DR. JAMES A. GRAASKAMP
Ph.D., CRE, SREA

Director, Real Estate Executive Management Series

FEBRUARY 27 & 28, 1985

A Seminar In

CONTEMPORARY APPRAISAL OF INCOME PROPERTIES FOR A VARIETY OF INVESTMENT AND LITIGATION PURPOSES

taught by

DR. JAMES A. GRAASKAMP
Ph.D., CRE, SREA

Director, Real Estate Executive Management Series

APRIL 11 & 12, 1985

General Information

Who Should Participate: These seminars are designed to provide an intensive introduction to essential components of the real estate development process. Content of the seminars is designed for those individuals embarking on a career in the development industry and who seek to broaden their analytical skills as well as an understanding of their applicability to the overall real estate process. Real estate development personnel, appraisers, consultants, private and institutional investors, and lenders will benefit from this excellent introduction to specific aspects of development.

101 INTRODUCTION TO THE REAL ESTATE DEVELOPMENT PROCESS

Time: February 27 & 28, 1985. Sessions will be conducted from 8:30 a.m. - noon and 1:30 - 5:30 Wednesday and Thursday.

Place: Lowell Hall, 610 Langdon Street
University of Wisconsin, Madison, Wisconsin

Seminar Fee: The full fee of $325 is payable in advance and includes tuition, materials and two lunches. Lodging is available at Lowell Hall if reservations are made no less than two weeks in advance. Center for Advanced Studies will make reservations and seminar participants will pay Lowell Hall directly. A single costs $27 a night including breakfast.

503 - CONTEMPORARY APPRAISAL OF INCOME PROPERTIES FOR A VARIETY OF INVESTMENT AND LITIGATION PURPOSES

Time: April 11 & 12, 1985. Sessions will be conducted from 8:30 a.m. - noon and 1:30 - 5:30 Thursday and Friday.

Place: InnTowner, 2424 University Avenue
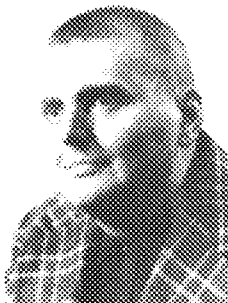Madison, WI 53705

Seminar Fee: The full fee of $325 is payable in advance and includes tuition, materials and two lunches. Lodging is available at the InnTowner if reservations are made no less than two weeks in advance. Center for Advanced Studies will make reservations and seminar participants will pay the InnTowner directly. A single costs $36 a night not including breakfast.

Persons who preregister but are unable to attend will, on application in writing, receive a refund of the seminar fee. All refunds will be processed by mail after the seminar has been concluded.

Confirmation of your enrollment will be made before the seminar begins. Right is reserved to limit enrollment or cancel the seminar.

Instructor

Professor
James A. Graaskamp

Professor James A. Graaskamp is nationally known both for his seminars in real estate and for his consulting on matters of real estate feasibility, court room valuation, and investment strategy.

His education includes a Ph.D. in Real Estate and Risk Management from the University of Wisconsin, Madison, in 1964; an MBA in Securities Analysis and Investment from Marquette University, Milwaukee, in 1957; and an AB in English and Creative Writing from Rollins College, Winter Park, Florida, in 1955. He has won many academic honors including teaching awards for courses in Urban Land Economics, Real Estate Investment, Finance, Marketing Research, and Contemporary Appraisal. His research interests range from urban tax assessment to wilderness appraisal.

Experience in private industry has included land development, co-ownership of a home building firm, and of a nationally known consulting firm, Landmark Research, Inc. He is presently a Trustee of the Urban Land Institute and member of the Board of First Asset Realty Advisors, a wholly owned subsidiary of First Minneapolis Bank. He was formerly the Treasurer of the Wisconsin Housing Finance Authority. He holds designations of CRE, SREA, CPCU, and Realtor.

Seminar Agenda

Overview: The course is a capsule version of the nationally famous Real Estate Process course taught in the School of Business at Wisconsin for many years by Professor Graaskamp. It is relevant to those in industry and those in government as well as investors seeking a basic approach to real estate analysis. It makes heavy use of basic materials developed by the Urban Land Institute. It does not require any special preparation or high level mathematics. It counts for 10 CEU's.

Wednesday, February 27

8:30 a.m. Definition of Real Estate Process
The Driving Force — The User Group
The Reactive Force — The Production Group
The Constraining Force — The Public Infrastructure

10:15 a.m. Break

The Common Denominator — Cash Budgets and Cash Solvency

Noon Lunch

1:00 p.m. Systematic Property Analysis

3:00 p.m. Break

Investor Strategy Analysis
Public/Private Joint Ventures

Thursday, February 28

8:30 a.m. The Land Development Process
Office Building Process

10:15 a.m. Break

The Shopping Center Process

Noon Lunch

1:00 p.m. Corporate Real Estate Strategies Today
Risk Management Theory in Real Estate Operations
Basic Reading Recommendations for Better Knowledge of Real Estate Development

3:45 p.m. End

Instructor

Professor James C. Canestaro

James C. Canestaro is a registered architect in Virginia and Wisconsin and a Corporate Member of the American Institute of Architects. He is presently an associate professor and teaching in the College of Architecture at Virginia Polytechnic Institute and State University in Blacksburg, Virginia. His Bachelor of Architecture degree was received at Notre Dame, and Masters Degrees in Architecture and Urban Planning were earned at the University of Illinois-Urbana. He is presently completing a Ph.D. in Real Estate at the Graduate School of Business, University of Wisconsin-Madison.

Professor Canestaro has been a member of the Architecture and Finance Department at the University of Illinois, and of the Department of Real Estate and Urban Land Economics, Graduate School of Business, University of Wisconsin-Madison. He presently teaches courses in Project Feasibility Analysis, Residential Property Development, Commercial Property Development, and Real Estate Investment Analysis.

Professor Canestaro is the author of several books on the subject of project cost-benefit and feasibility analysis. He is actively involved in his own private architectural consulting firm which specializes in project feasibility and market analysis, property valuation, and pre-architectural programming studies. He has been a visiting Professor teaching development economics at the Harvard School of Design for the spring semester of 1985.

This course counts for 10 CEU's.

Seminar Agenda

Construction 105 —
INTRODUCTION TO COMMERCIAL CONSTRUCTION TECHNIQUES (SLIDES, CRITIQUES, AND CASE STUDIES)

Thursday, June 27
8:30 a.m.
I. Introduction
  1.1 Architectural Blueprints
  1.2 Environmental Factors
  1.3 Site Conditions
  1.4 Site Work
  1.5 Historical Styles
II. Structures
  2.1 Introduction
  2.2 Substructure
    Pilings
    Grade Beams
    Slab on Grade
    Footings
    Foundations
  2.3 Steel
    Framing
    Trusses
    Bar Joist
    Steel Decking
    Lightweight Framing
Lunch 12:30 - 1:30 p.m.
  2.4 Concrete Columns
    Walls
    Ribbed One-Way Slabs
    Two-Way Slabs
    Post Tension
    Pre-Cast
    Pre-Cast Tilt-Up
  2.5 Wood
    Post and Beam
    Framing
    Trusses
  2.6 Masonry
    Concrete Block
    Brick
    Stone
III. Envelope
  3.1 Curtain Wall
    Brick
    Stone
    Pre-Cast Concrete
    Glass
    Metal
  3.2 Facia and Soffet
Adjourn 5:30 p.m.

Friday, June 28
8:30 a.m.
III. Envelope (continued)
  3.3 Roofing
    Built Up
    Membrane
    Metal
    Shingles
  3.4 Moisture Proofing
  3.5 Insulation
  3.6 Expansion Joints
IV. Enclosure
  4.1 Doors
  4.2 Windows
  4.3 Partitions
    Drywall
    Gypsum Lath and Plaster
    Masonry
  4.4 Interior Finishes
  4.5 Suspended Ceilings
  4.6 Flooring
  4.7 Soundproofing
  4.8 Circulation
    Stairs
    Elevators
    Escalators
Lunch 12:30 - 1:30 p.m.
V. Environmental Systems
  5.1 Introduction
  5.2 Electrical
  5.3 Communications
  5.4 Sewer
    Sanitary
    Storm
    Septic
  5.5 Water
    Supply
    Fire Protection
  5.6 Mechanical Systems
    Electrical Heat
    Electrical Air Conditioning
    Hydronics
    Chilled Water
    Forced Air
    Solar
    Heat Pump
VI. Conclusions
  6.1 Building Construction Evolution
Adjourn 5:30 p.m.

The School of Business

University of Wisconsin-Madison

Real Estate Executive Management Seminar Series

presents

A Seminar In

REAL ESTATE ANALYSIS WITH THE IBM/PC

taught by

DR. MICHAEL L. ROBBINS, Ph.D.

Assistant Professor, Dept. of Real Estate
Graduate School of Business
University of Wisconsin-Madison

JUNE 3 & 4, 1985

A Seminar in

INTRODUCTION TO COMMERCIAL CONSTRUCTION TECHNIQUES (SLIDES, CRITIQUES, & CASE STUDIES)

taught by

PROF. JAMES C. CANESTARO

JUNE 27 & 28, 1985

Assistant Professor, Dept. of Architecture
Harvard School of Design
and
Virginia Polytechnic Institute

General Information

Who Should Participate: These seminars are designed to provide an intensive introduction to essential components of the real estate development process. Content of the seminars is designed for those individuals embarking on a career in the development industry and who seek to broaden their analytical skills as well as an understanding of their applicability to the overall real estate process. Real estate development personnel, appraisers, consultants, private and institutional investors, and lenders will benefit from this excellent introduction to specific aspects of development.

108 - REAL ESTATE ANALYSIS WITH THE IBM/PC

Time: June 3 & 4, 1985. Sessions will be conducted from 8:30 a.m. - noon and 1:30 - 5:00 p.m., Monday and Tuesday.

Place: Wisconsin Center, 702 Langdon Street Madison, WI

Seminar Fee: The full fee of $375 is payable in advance and includes tuition, materials and two lunches. Lodging is available at Lowell Hall if reservations are made no less than two weeks in advance. Center for Advanced Studies will make reservations and seminar participants will pay Lowell Hall directly. A single costs $27 a night including breakfast.

105 - INTRODUCTION TO COMMERCIAL CONSTRUCTION TECHNIQUES (SLIDES, CRITIQUES, AND CASE STUDIES)

Time: June 27 & 28, 1985. Sessions will be conducted from 8:30 a.m. - noon and 1:30 - 5:30 p.m., Thursday and Friday.

Place: InnTowner, 2424 University Avenue Madison, WI 53705

Seminar Fee: The full fee of $325 is payable in advance and includes tuition, materials and two lunches. Lodging is available at the InnTowner if reservations are made no less than two weeks in advance. Center for Advanced Studies will make reservations and seminar participants will pay the InnTowner directly. A single costs $36 a night not including breakfast.

Persons who preregister but are unable to attend will, on applications in writing, receive a refund of the seminar fee. All refunds will be processed by mail after the seminar has been concluded.

Confirmation of your enrollment will be made before the seminar begins. Right is reserved to limit enrollment or cancel the seminar.

Instructor

Dr. Michael L. Robbins, Ph.D.
Assistant Professor, Dept. of Real Estate
Graduate School of Business
University of Wisconsin-Madison

Dr. Robbins began teaching Real Estate at Wisconsin in 1973. Currently Dr. Robbins is responsible for the undergraduate appraisal course as well as the residential and commercial development courses. Since the early 1970's Dr. Robbins has developed a large portion of the software utilized by the real estate department.

Software developed at Wisconsin is incorporated into all levels of course work. Computer utilization provides an efficient self-correcting introduction to the concepts of contemporary real estate analysis theory as taught by Dr. James A. Graaskamp, based on original work of Richard U. Ratcliff.

The most recent expansion of computer resources in the real estate department is the utilization of the micro computer. Students, under the direction of Dr. Robbins, are required to develop skills in the use of spreadsheet, word processing, and data management systems.

Dr. Robbins' current research interests lie in the area of pricing roadless wilderness lands of great topographical and ecological diversity. This special appraisal problem has received little theoretical or practical development and consequently has been ignored by appraisers and the courts.

Dr. Robbins received a B.S. degree in Landscape Architecture; a joint M.S. degree in Landscape Architecture, Civil and Environmental Engineering, and Real Estate; and a Ph.D. degree in Civil and Environmental Engineering, all from the University of Wisconsin-Madison.

Seminar Agenda

Data Processing Course 108 —
REAL ESTATE ANALYSIS WITH THE
IBM PERSONAL COMPUTER

The purpose of this two day seminar is to acquaint the practicing real estate analyst with the availability of micro computer software for office use. The attendee will have the opportunity to evaluate alternative software packages through hands-on exposure during the seminar. The seminar encompasses three critical components of the electronic real estate office, i.e. Data Management, Spreadsheet Analysis, and Word Processing. This course counts for 10 CEU's.

Monday, June 3

GEARING UP THE OFFICE

8:30– 9:45	Data Base Management "Converting data to information"
9:45–10:00	Break
10:00–12:00	Data Base Management - Demo Problem 1 • 2 • 3 & Residential Sales Data
12:00– 1:30	Lunch - Guest Speaker H. Robert Knitter "Doing MKTCOMP with the IBM Personal Computer"
1:30– 3:00	Spreadsheet Analysis "Information evaluation"
3:00– 3:15	Break
3:15– 5:00	Compare and contrast Demo Problem 1 • 2 • 3 (with Graph) and Supercalc
5:00– 6:00	Cash Bar
6:00– 7:00	Dinner
7:00–10:00	Evening Workshop/Demonstrations

Tuesday, June 4

8:30– 9:45	Word Processing "Information transfer"
9:45–10:00	Break
10:00–12:00	Compare and contrast - Demo Problem Wordstar and Proofwriter
12:00– 1:30	Lunch - Guest Speaker Frank Scarpace "Proofwriter" Enhancements
1:30– 3:00	Investment Analysis Models
3:00– 3:15	Break
3:15– 5:00	Investment Analysis Evaluation

The following is a list of most of the programs that will be available during the financial analysis session:

Supercalc, 1 • 2 • 3 Spreadsheet, Realval, Superval, Palmer Berg-Investment Analysis Pac. In-House Programs: Land Development, Income Capitalization, Lease Analysis, Risk Analysis, etc., FPL.

5:00   Seminar Over

1985
REAL ESTATE
EXECUTIVE MANAGEMENT
SEMINAR SERIES

REAL ESTATE DEVELOPMENT

**THE PREMIERE CERTIFICATE PROGRAM
SPONSORED BY MAJOR MIDWESTERN DEVELOPERS
FOR THE MANAGERS OF REAL ESTATE ENTERPRISE**

**UNIVERSITY OF WISCONSIN
REAL ESTATE DEPARTMENT
SCHOOL OF BUSINESS**

The School of Business
University of Wisconsin-Madison

January 2, 1985

As Dean of the School of Business I am pleased to present the 1985 Executive Management Series in Real Estate especially because it represents a prototype partnership between leading firms in the industry and our nationally known Real Estate program.

In the coming decade all aspects of real estate development and urban enterprises will require increasing use of new and complex techniques so that college education must become a continuing process rather than a four year transition state in life.

The University of Wisconsin - Madison has always considered that its responsibilities extend to the borders of the state, and now we encourage the idea of the School of Business Real Estate Department as a regional center for the real estate and development industry. With your guidance and participation we will continue to refine, expand, and enrich the program outlined in this annual announcement.

The outstanding faculty and carefully selected subject areas described in detail in the following pages represent our commitment to the School of Business and its need for continuing education. We welcome you to experience and share with us in this commitment.

E. J. Blakely

E. J. Blakely
Acting Dean of the School of Business

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Chairman, Real Estate and Urban Land Economics
University of Wisconsin — Madison

ADMINISTRATIVE HEADQUARTERS
Real Estate Seminar Series
Room 118, School of Business
1155 Observatory Drive
Madison, Wisconsin 53706
Phone: 608/262-6378

EXECUTIVE MANAGEMENT CERTIFICATE PROGRAM

This program is intended to provide a certificate of completion for the executive manager who completes 25 days of training over a span of five years while employed in real estate development, construction management, financial institutions, real estate leasing, and real estate research and consulting. The program recognizes and incorporates educational programs of particular merit offered by professional trade associations and other University continuing educational programs to avoid duplication, counter-productive competition, and oversight of many of the fine specialty programs which have been perfected for the real estate entrepreneur.

GENERAL OBJECTIVES OF CERTIFICATE PROGRAMS

1. To achieve maximum attendance per course for lower cost per student by formatting 2-day modules which are focused on specific needs of employees with varying levels of experience and education;
2. To provide an alternative to in-house orientation of staff employees in real estate development using professional educators;
3. To fill in gaps in the education of professionals with knowledge of other disciplines that are a part of the development process; and,
4. To give the top level executive and the employee with management potential a common incentive to complete the program by providing a certificate granted by the nationally known University of Wisconsin Real Estate Department.

CURRICULUM PATTERN AND STUDENT PROFILE

Student Group	Course Number	Student Group	Course Number	Student Group	Course Number
1. Employee with management potential without much college preparation in business or real estate	100-200	2. Employee with project/staff management experience wishing to improve specific skills in real estate or construction management	300-400	3. Upper level executive seeking intensive briefing on current trends and innovative programs	500-500

Upper Level Executives:	no less than 60% of courses should be chosen from Advanced courses.
Employees with project/management experience:	no less than 50% of courses should be chosen from Intermediate courses.
Employees with management potential:	no less than 50% of courses should be chosen from Basic courses.

Professional association courses assigned to comparable levels of sophistication for credit toward certificate program on a basis that eight hours class time equals one credit day for certificate.

100-200 level courses	300-400 level courses	500-500 level courses
Wharton — Seminars for Executives	NYU Real Estate Institute	Practicing Law Institute
Realtors National Marketing Institute Commercial Investment Courses	Institute for Real Estate Management (IREM)	Real Estate Securities and Syndication Institute
Society of Real Estate Appraisers	Realtors National Marketing Institute Commercial Investment Courses	Urban Land Institute Seminars
American Institute of Real Estate Appraisers	Urban Land Institute Semi-annual Meetings Taken for Credit	
	National Association of Office and Industrial Park Developers	
	International Council of Shopping Centers	

The administrative office of the Executive Management Series will maintain a record on each participant seeking a certificate. The student need only send evidence of having participated in courses of two days or more conducted by the above organizations. A maximum of two credit days will be given for any one course and the University of Wisconsin Administrators reserve the right to categorize or exclude any offerings by the above organizations at our sole discretion to maintain rigor and integrity of Certificate program.

STUDY PROGRAM CURRENTLY PLANNED AND SCHEDULED

Course No.	Name of Course	1985 Dates	Location	Tuition	Room and Board*
	Core Courses				
101	Introduction to the Real Estate Development Process	Feb. 27—28	Lowell Ctr.	$325.00	1
103	Principles of real estate accounting (for non-accounting people)				
104	Principles of personal and corporate risk management (control of budget variance)				
201	Real estate feasibility analysis and problem solving				
203	Land use law: Citizens and corporate Viewpoints				
	Real Estate Finance				
301	Principles of real estate cash flow budgets and models				
302	Basic principles of financing income property developments				
303	Basic principles of financing land development				
304	Case problems in real estate development finance				
401	Income tax strategies, tactics, and traps for real estate investment				
402	How to read, critique, and purchase an appraisal report				
403	Tax Incremental Financing of Redevelopment				
501	Dynamic capitalization methods for present value analysis during periods of inflation				
502	Apartment house financing, taxation & syndication				
503	Contemporary Appraisal of Income Properties	April 11—12	InnTowner	325.00	2
	Construction				
105	Introduction to Commercial Construction techniques (slides, critiques, and case studies)	June 27—28	InnTowner	325.00	2
106	Basic construction management				
205	Insurance for the construction site				
206	Principles of construction contract bids and specification for the non-construction specialist				
	Marketing				
202	Evaluation markets and merchandising targets for real estate products				
403	Case problems in market research (a review of the state of the art)				
404	Office marketing and Leasing				
405	Marketing research				
	Data Processing for Real Estate Development				
108	Real Estate Analysis with the IBM Personal Computer	June 3—4	Wisconsin Center	375.00 Limited Enrollment of 30	1
209	Modeling Real Estate Problems on IBM Personal Computers				

*Participants will be responsible for payment of room and board and will pay at either (1) Lowell Hall or (2) The InnTowner

Name of Personnel or Training Officer _____

Company Name _____

Street Address _____

City _____, State _____ Zip _____

Business Phone # _____

Indicate course numbers for which you are registering.

Course #	Date	Name of Employee	Home Address	Area Code & Telephone No.	Tuition	Room & Board Yes or No	# Special Needs*
				TOTAL	$	$	$

Reservation deposit — $100 per student per course
*Please reserve rooms for two nights
1. Please reserve for third night following seminar
2. Will provide my own room arrangements, _____ yes, _____ no
3. Please reserve a parking space for a car, _____ yes, _____ no
   (There is limousine service from airport to Lowell Hall and Frederick Center)
4. Please call me at my home phone to arrange special diet requirements, my home phone # is _____

Reservation is not confirmed until you receive a confirmation postcard.
Refund policy: Will refund full tuition if you cancel in writing ten days prior to seminar;
50% refund if notified in writing between 2-9 days prior to seminar.

REAL ESTATE

DEVELOPMENT PROCESS

A University of Wisconsin School of Business
Executive Management Series for
Real Estate Development

April 24-26, 1983

Course Schedule

INTRODUCTION TO REAL ESTATE DEVELOPMENT PROCESS
A University of Wisconsin School of Business
Executive Management Series for
Real Estate Development
April 24-26, 1983
Lowell Conference Center

SUNDAY, APRIL 24

4:30-5:30   Registration

5:30-6:00   Cash Bar

6:00-7:00   Sunday Night Dinner

7:00-8:00   Course Introduction

MONDAY, APRIL 25

8:30-9:30   Decision Process, Problem Solving, and Feasibility for Real
             Estate Development (Prof. James Graaskamp)

9:30-10:15   Definition and Measurement of Objectives

10:30-11:30 Basic Financial Parameters for Feasibility Analysis

11:30-12:00 Concept of Risk Management

1:00-2:00   Site Analysis

2:00-3:00   Market Analysis

3:15-4:45   Evolution of Neighborhood Shopping Center Project (Prof. Michael L.
                                                                  Robbins)
6:00-7:00   Dinner

7:00-8:30   The Psychology of Shopping Center Design (slide lecture)

TUESDAY, APRIL 26

8:30-9:30   Dynamics of Office Building Design

9:30-10:15   Private/Public Interface for Land Development

10:30-12:00 Public Incentives in Private Development

12:00-1:00   Lunch

1:00-2:00   Structuring Group Investments

2:00-3:00   Structuring Private/Public Joint Ventures

TABLE OF CONTENTS

page

STATEMENT OF PURPOSE

The objective of Project Feasibility Analysis is to:

> reduce the risk of uncertainty by stating assumptions
> completely and explicitly, and

> enhance the value of the asset— land— by maximizing
> the margin between revenues from market opportunities
> and costs of development.

The process and techniques employed can be used to
continuously assess feasibility from undocumented to fully
documented assumptions. The level of documentation may
vary for each of three categories of input, but each
requires consideration as the analysis is undertaken.
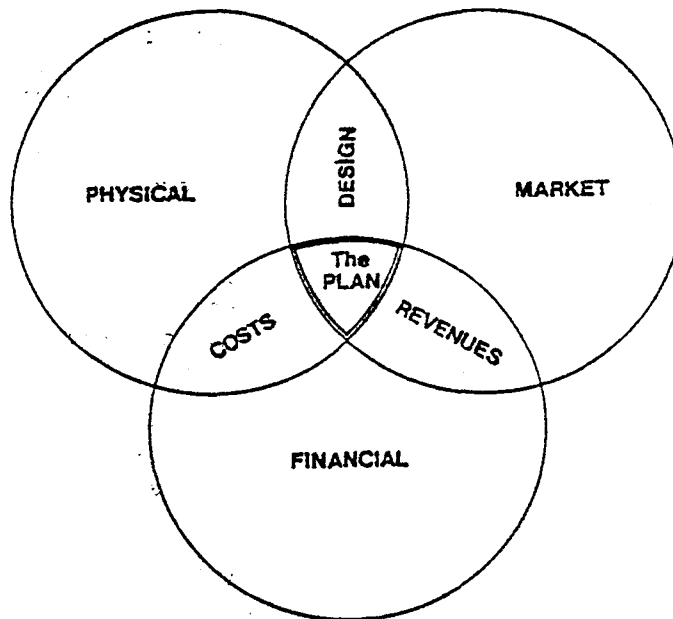
INTRODUCTION

The Development Impact Model (DIM) provides a technique for performing a balanced feasibility analysis. It was developed by John Rahenkamp and Associates, Inc., in response to the need for feasibility evaluations which incorporate the social and political externalities affecting the feasibility of a proposed project. By recognizing the real and growing power of local political forces and environmental values as well as the need for a reasonable rate of return, the DIM measures the true feasibility of a particular project from the developer's and also the community's point of view.

Essentially, the model identifies existing capacities of physical and fiscal systems, the projected demands resulting from the proposed project, and the resulting costs or benefits. It calculates not only front end expenses and bottom line profit, but it may also calculate the development's impact on local educational and municipal support systems. This information provides the developer and/or the community with a balanced measure of feasibility, political and environmental as well as financial. Since this information is objective as well as extensive, it should establish a sound basis for proper project approval or rezoning decisions.

Furthermore, the DIM is a computerized system utilizing the speed of the computer to deal with the numerous factor items and the vast range of possible combinations and permutations. Manual calculations of possible alternatives may take weeks, forcing decision-makers to act on incomplete information. In contrast, the computer offers the critical advantage of simulating available options quickly and performing continuous runs as criteria change either in the community's or developer's requirements.

It must be recognized that the value of a DIM feasibility evaluation is directly related to the accuracy and completeness of the basic data input. Each DIM analysis pertains only to the individual project and requires site-specific information. Much of the required data is usually already held by the developer or immediately available to him. The cost of a DIM feasibility analysis will obviously vary significantly depending on the amount of in-house research and data gathering required. If the information is provided directly by the developer in an appropriate form, the DIM evaluation costs are appreciably reduced.

The schematic diagram on the following page indicates the framework in which a feasibility analysis is carried out. Careful attention must be given to each of the three categories of project parameters depending upon the political/market/physical situation of a specific property. Once a minimum level of data is acquired and synthesized, gaming with critical variables can be accomplished quickly to develop an optimum project profile.

1

PROJECT FEASIBILITY ANALYSIS
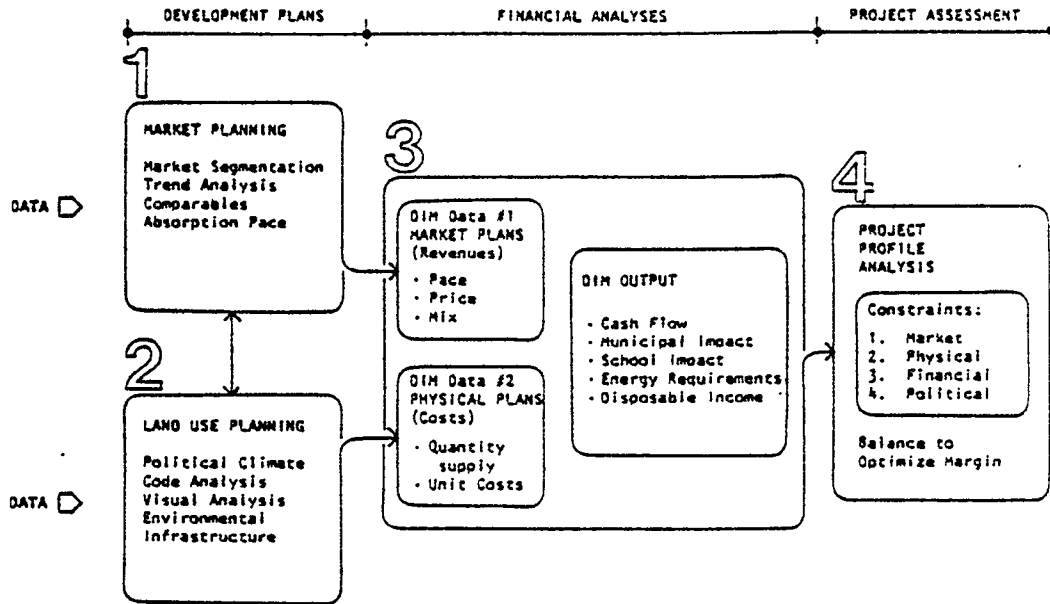
The sections following discuss the kinds and character of analysis re-
quired prior to establishing data inputs to DIM. The level of detail of
each separate analysis will depend upon that element's criticality for
project approval, both from public officials and the developer initiating
the evaluation.

The third section contains a project checklist itemizing the information
supplied by a developer. This checklist illustrates the scope and detail
of the DIM feasibility analysis and provides the necessary data to run
the DIM program.

The Feasibility Checklist is supplemented by several pages of explanatory
notes and exhibits. Each input space on the checklist has been assigned
a code number which corresponds to a note describing the information re-
quired, and in five cases, these notes refer to one of the exhibits.
After the exhibits is a sample of the checklist which was prepared for a
typical project and a feasibility analysis printout which can be a guide.

It should be noted that all of the data indicated on the checklist is
not required for analysis purposes. Where data is missing either a
specific analysis will not be performed, e.g., School, Municipal, Demand,
or the computer will assume a zero value. However, before each analysis
all the data is reviewed by a staff computer specialist to insure its
completeness.

2

1

market
planning

MARKET SEGMENTATION

Define Region:
Projected Population
Average Household Size ⎤ DEMAND
Vacancy Rates ⎦

Existing Units
Substandard Units
Depreciation ⎤ SUPPLY
Overcrowded Units
Units in "pipeline" ⎦

Market is the key development factor. Unit type, size, price and mix can be determined by demographic analysis and comparables. Absorption (pace), however, is more judgmental, sensitive to both specific locational advantages and the general economic climate. This diagram represents a systematic approach to market analysis.

MARKET

Existing
Population
Distribution
by age and
household
size

PROJECTED
MARKET
DISTRIBUTION

HOUSING
PREFERENCE
(Unit type
by house-
hold size)

PREFERENCE
DISTRIBUTION

CURRENT
INCOME
DISTRIBUTION

EFFECTIVE
DISTRIBUTION

TREND ANALYSIS:
Population
Growth
Segments
Employment

COMPARABLES:
Price
Type/Size
Amenity
*Absorption

PRICE/TYPE

PRICE
TYPE/SIZE
MIX

Reasonable Capture(%)
*Comparable Absorption
Construction
Capability
Site Location/
Attractiveness

PACE
(Assumption)

General
Economic
Conditions
Consumer
Confidence
Interest Rates

MARKET
PROGRAM ---→ REVENUE

LAND
USE
PLAN

MARKET SEGMENTATION ILLUSTRATION

MONTGOMERY CO.

PRICE LEVEL COMPARABLES

(RENT/MONTH)	180.	225.	275.	350.
GA-1BR	9697.	0.	0.	0.
GA-2BR	1727.	7856.	0.	0.
TH	2715.	2761.	2590.	0.
SF	422.	5368.	4808.	13836.
TOTAL NET MARKET	14562.	15986.	14397.	13836.
% TOTAL DEMAND	25.	27.	24.	24.

TOTAL NET MARKET (15 YEAR ESTIMATE)   58780.

MARKET TREND ANALYSIS

RESEARCH:

* Major commercial centers within 15 minutes
* Major commercial centers within 45 minutes
* Major employment centers within 15 minutes
* Major employment centers within 45 minutes
* Commercial and employment growth rate
* Population growth rate by age segments
* Family income growth rate by segments
* Housing vacancy rates
* Permits issued by type

INTERPRETATIONS:

* Strength and income/housing type implications of future employment opportunities
* Locational convenience
* Growing age and income segments related to price and housing type
* Strengh of competition; how much of the market is being absorbed and/or lost?

CONCLUSIONS:

* What is presently being built (price/type) is correct; follow the leaders and do comparables
* Identify market demands not being met
* There is some elasticity in the market to support price increases over competition
* Hold or reduce prices due to competition

MARKET COMPARABLES

Date: 2/14/75

Project Name: Indian Hills   Address: Winona Way
Owner: C. Quinn   Lender:
Builder: Architect:
Age or Status: 8 yrs.   No. of Units: 120   No. of Bldgs: 10
No. of Stories: 2 & 3   No. Vacant: none   Type of Constr: frame
Map Key: 9

Bedrooms - Baths:	1/1	2/1		
Number of Units:				
Monthly Rents:	185	275		
Square Feet:	900	1000		
Rent/Sq. Ft. (Unfurn):	.206	.275		
No. of Furn. Apts:	none			
No. of Vacant Apts:	none			

Utilities Furnished: Electric: _____ Gas: _____ Water: __x__

Extra Charges: Refrigerator: _____ Other: _____
Furniture: 0 BR _____ 1 BR _____ 2 BR _____ 3 BR _____

Cooking Energy: elec.   Type of Heating: central gas   Walk-In Closets: ____
Air Conditioning: central   Ranges/Ovens: __x__   Fireplaces: ____
Dishwashers: __x__   Patios/Balconies: __x__   Carpets/Drapes: __x__
Washer/Dryer: in bldg.   Other Good Features/Remarks: _____

Pool(s): __x__   Laundry Facilities: in bldg.
Clubhouse(s): __x__   Security System: _____
Tennis: _____   Parking: incl. garages
Playground Area: _____   Storage Lockers: _____
Other Good Recreation or Project Features/Remarks: _____

MARKET PLAN/SUMMARY OF ASSUMPTIONS

Upon completion of the market segmentation analysis, the following information is arranged in a convenient form for direct input to the DIM data sheets and as a working program for physical land use planning.

Unit Types:	Single Family	Townhouse	Garden Apartment	
Mix (%):	11.3	54.7	34.0	
Price (K$):	60.0	45.0	30.0	
Average Size (S.F.):	2,000	1,500	900	
Average Stories:	1.5	2.5	3.0	

Annual Sales*:				Pace
Year 1	0	0	0	0
2	●	●	●	100
3	●	●	●	130
4	●	●	●	130
5	●	●	●	130
6	●	●	●	130
7	●	●	●	140

*Based on market analysis only: Subject to physical confirmation after land use planning.

●Actual minimal distribution will be approximately equal to projected market mix but is subject to physical planning

6

2
land use
planning

POLITICAL CLIMATE ANALYSIS

APPROVABILITY

Project Proposal Impacts:	on existing zoning
	on fair share
	on existing demography
	on existing population size
	on growth rate
Index of Exclusionary Tendency:	elected official turnover rate
	professional staff capability and attitudes
	change approval rate
	allowable density and land use types
	fair share allocation
	"vigilante" groups
	community income distribution
Codes and Procedures:	complexity
	clarity
	time lines
	flexibility
	requirements
	standards
Local Issues:	fiscal
	environmental
	land use
	utilities
	open space

Estimate of legal position and potential tradeoffs.

Summary estimate of probability (%) of approval for proposed project.

CODE ANALYSIS

Applicable zoning codes are reviewed and analyzed to determine
development potential under existing zoning or the availability
of appropriate zoning districts which might satisfy the client's
building program.

...ip ...ast y... ...election expe...nc.d a
drastic realignment in its political structure. The
Township, turned-out the "democratic machine" who had
dominated Berlin for the past thirty to forty years.
A group of young independents, whose platform was a
change of government was elected with nearly 75% of
the vote. As a result, all the major administrative
boards were changed and people of the same persuasion
as the Mayor-Council were appointed. A portion of
the platform of the new government was to promote good
substantial growth.

As a result of these changes, the Mayor-Council has
appointed a Land Use Study Committee to review the
Township's existing zoning ordinance to determine what
changes should be made to encourage growth while minimizing
its adverse effects.

The site is presently zoned into three categories:
276 ac. in R-1 Residential with minimum lots of one
acre; 21.5 ac. I-1 Light Industrial; and 2.5+ ac. C-
2 Neighborhood Commercial. With this splitting of the
parcel into various zones, the chance of unified development
is lessened which would not permit maximizing the site's
development potential. The Township is relatively
unsophisticated in its planning activities, but the
new officials are aggressive and appear to be open
to construction suggestion which will enable them to
promote the desired quality growth.

INFRASTRUCTURE ANALYSIS

Every development generates demands on man-made systems. The capacity
to absorb these demands must exist or be built. An analysis is required
to make this determination which is often the difference between a pro-
fitable project and one that is marginal or premature.

2 NEIGHBORHOOD CONTEXT - LAND USE & UTILITIES

3 PHYSICAL SYSTEMS
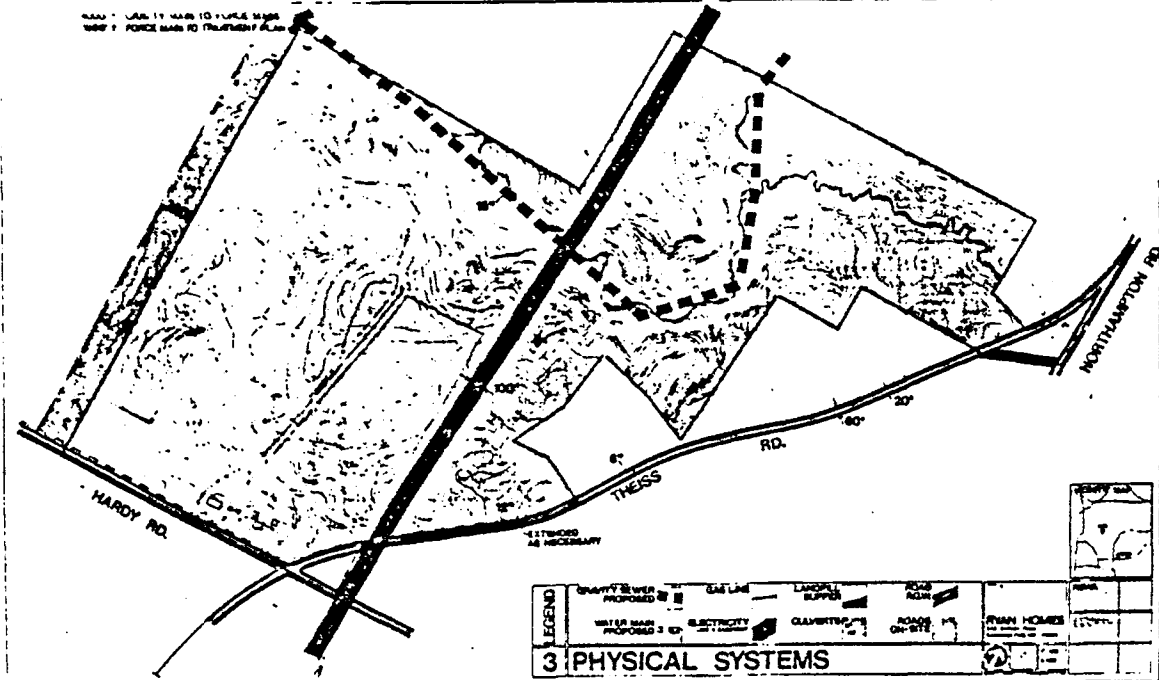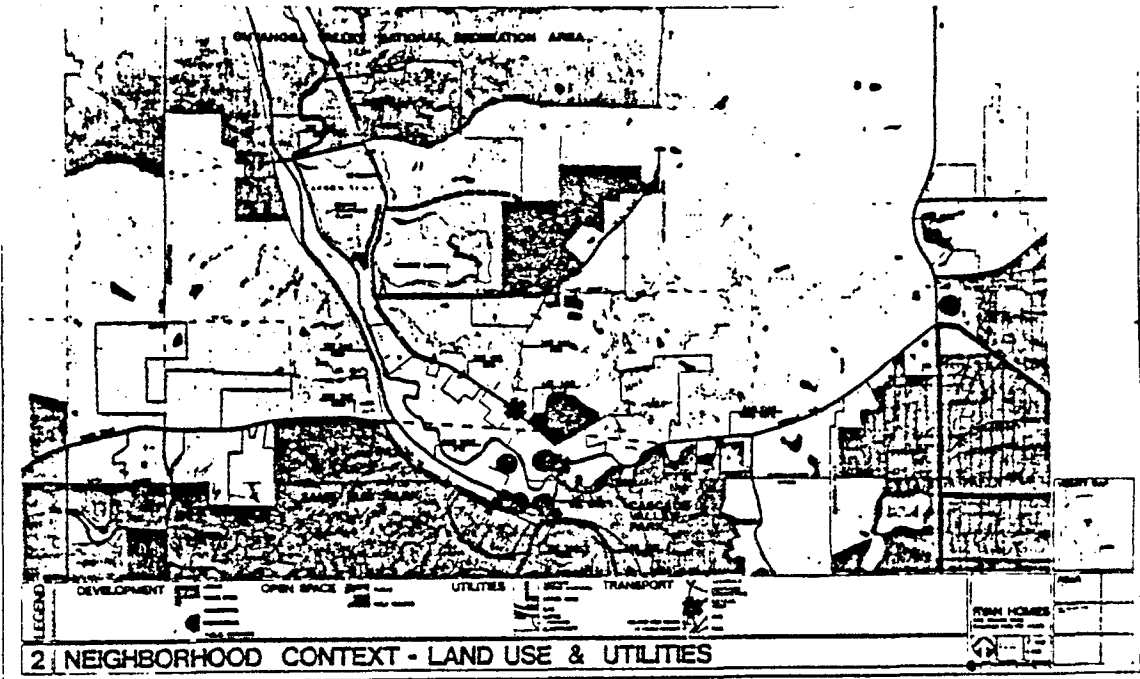
ENVIRONMENTAL ANALYSIS

Environmental variables can be identified which materially affect the disposition of land uses if the plan is to be cost effective. Severe slopes, high water tables, and shallow bedrock have obvious cost consequences if not identified. Conserving trees and natural ground covers reduces landscaping costs and helps to prevent excessive erosion. Public health and safety must also be protected by identifying easily polluted soils and underground water supplies. If properly conducted and used, environmental analysis proves it is less costly to work with, rather than against, nature.

As part of the environmental analysis, the visual opportunities and burdens of the site, whether part of a larger neighborhood (if it's a small site) or as a self-contained neighborhood (if a large one) must be identified. Visual attributes include long or intimate views, dense or filtered spatial enclosures, natural features, and water. Burdens that must be mitigated if possible include noise, odors, visual obstructions like high tension lines, and unsightly views. The visual analysis locates these opportunities and burdens so they can be used in developing the land use plan most effectively.

4 ENVIRONMENTAL COMPOSITE
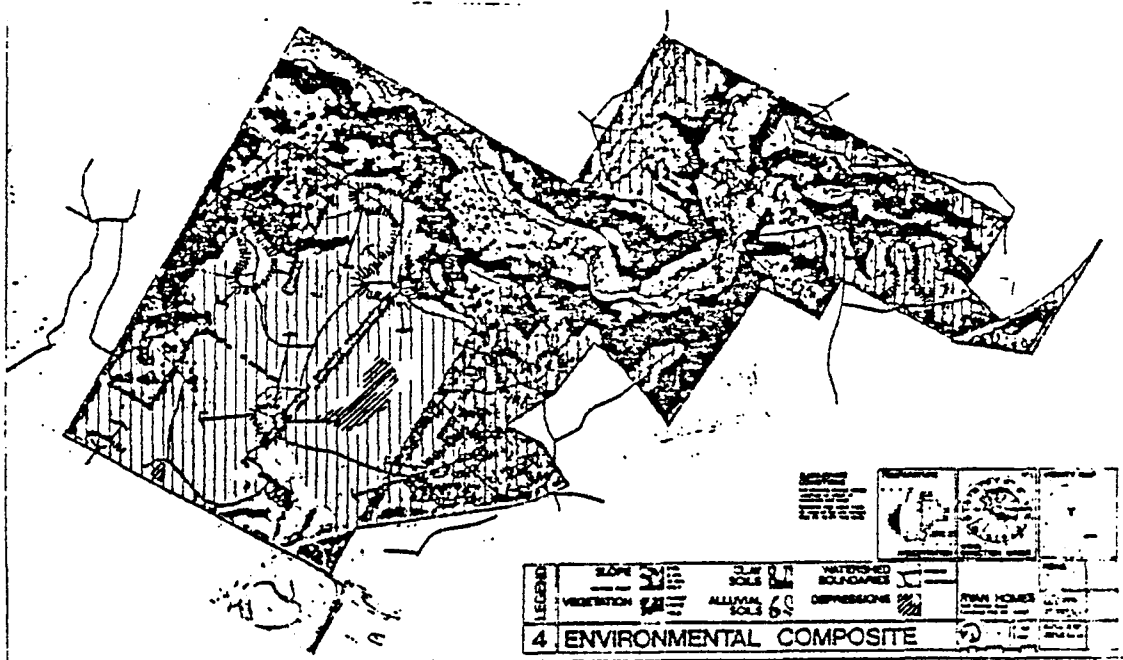
HOUSING PRODUCTS ANALYSIS

For land use plans to be used as reasonable representations of what can
be built and for rough development cost estimates, it is necessary to be
realistic about what can be placed on the ground (usually expressed as
net densities for each unit type). Typical cluster designs are developed
to insure that unit counts can be achieved and that lot improvement
costs are accurate.

Typical Residential Clusters

Townhouses

Garden
Apartments

Fourplexes

11
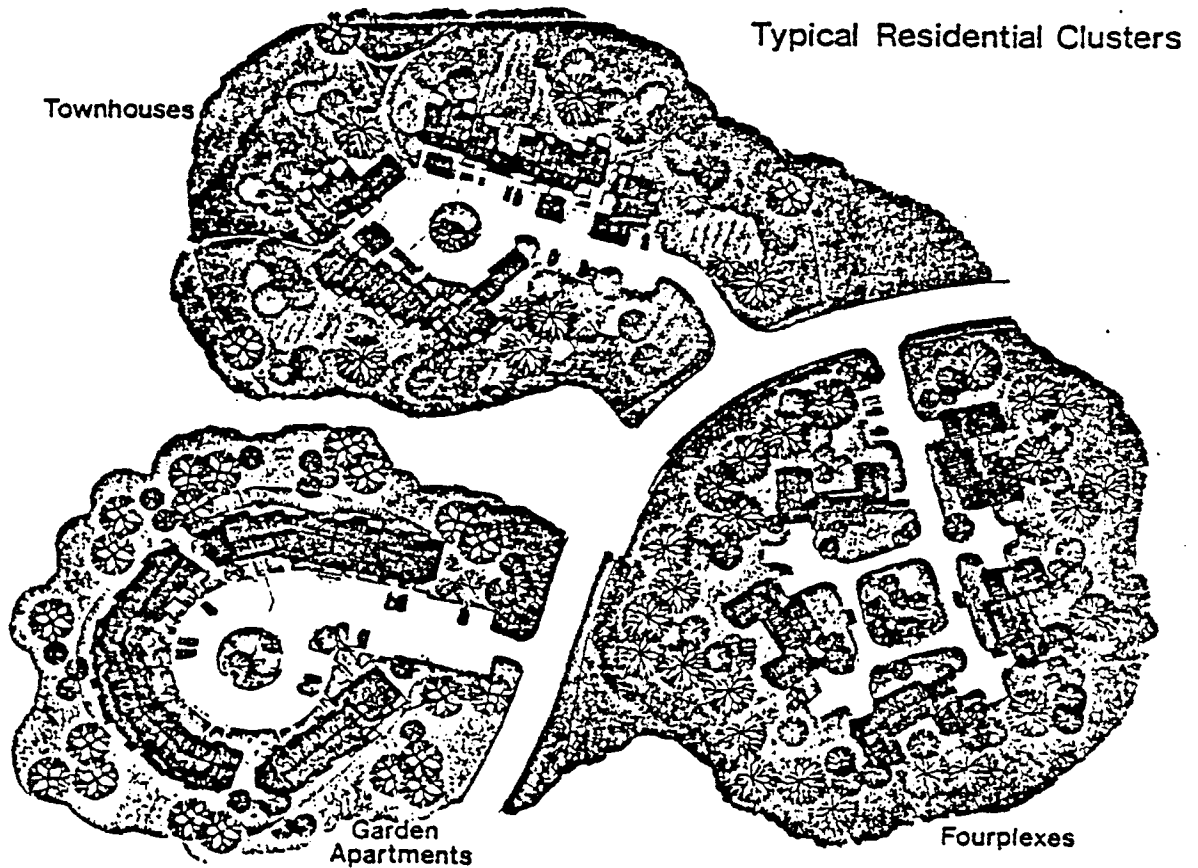
LAND USE PLANS

The land use plan must accommodate the market program and respect both visual and other environmental considerations. It must be cost-effectively phased for on and off-site infrastructure and generally enhance the marketability of the site through sensitive design.
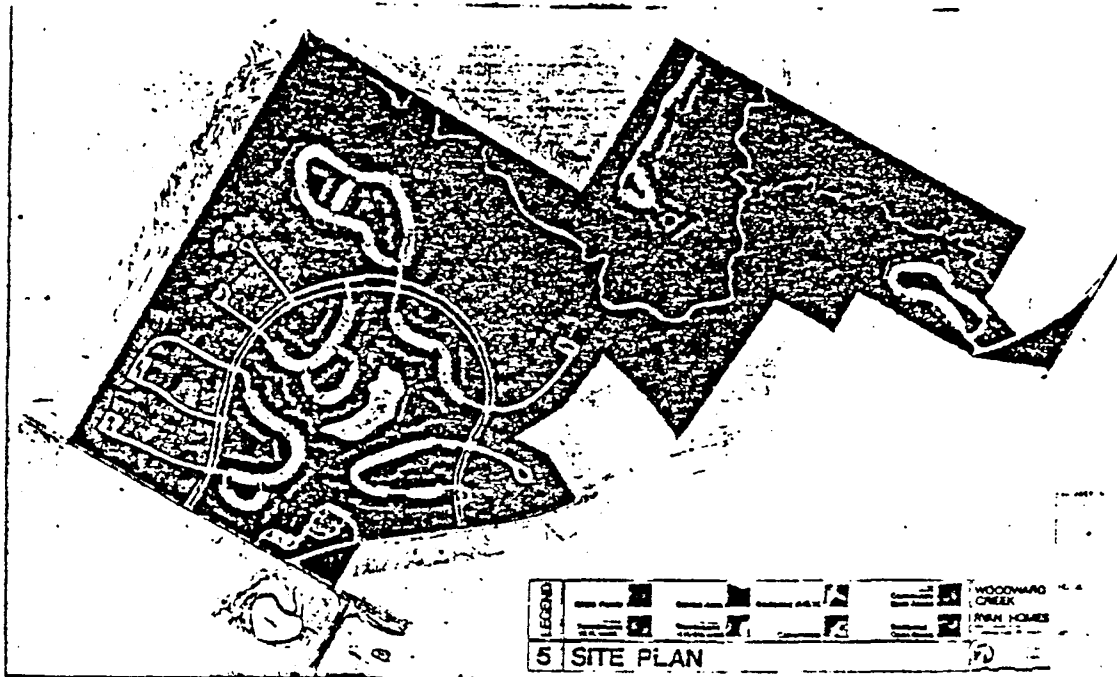
3

financial analysis

DIM DATA INPUT SHEETS

The Development Impact Model (DIM) calculates quickly and accurately the combined consequences of the market, physical and other financial data provided to it. It is used to speed up computation and to organize the output so the project can be conveniently compared to acceptable standards of performance. The general value of the computer program is the ability to make many changes without the labor of endless calculation or the danger of error.

The DIM data sheets facilitate the systematic recording of the specific data requirements of the program. Each section has an appropriate heading covering the following four areas of data:

- Market Data from the market program (modified if necessary after physical planning)

- Physical Data from the land use plan

- Public Impact Data from the political climate and code analysis

- Financial Data from the client concerning sales and overhead costs

In general, the market determines revenues; land use, the costs; and public impacts, the probability of public approval.

Attached to the data sheets are specific definitions of what is included in the number called for in each box. In some cases, checklists are provided for even finer breakdowns. These definitions and checklists provide confidence that nothing has been overlooked and that revisions can be made without disturbing other variables. The data input to DIM is thus highly explicit.

client data

CLIENT NAME	
	DNAME-1
PROJECT NAME, LOCATION	
	DNAME-2
DATE	DATE-3

site data

SITE AREA COVERAGE ALLOWABLE	A-4	GSCAP-5	
INDUSTRIAL COMMERCIAL SCHOOL SITE	AI-6	AC-6	AS-6
MAJOR ROAD (R.O.W.) OPEN SPACE	AR-6	AO-6	
RECREATIONAL FACILITY OTHER (SPECIFY)	ARC-6	AOT-6	

unit data

UNIT TYPES DUMNMS-7						
NET DENSITIES DD-8						
SALE PRICES – RESIDENTIAL ISP-9 – INDUSTRIAL SPNRI-10 – COMMERCIAL SPNRC-11						
MIX MIX-12						
NUMBER OF UNITS INU-13						
UNIT SIZE AUS-14						
NUMBER OF STORIES STORYS-15						

15

demand data

ANNUAL REGIONAL RESIDENTIAL DEMAND	RD-16
ANNUAL REGIONAL INDUSTRIAL DEMAND	RID-17
ANNUAL REGIONAL COMMERCIAL DEMAND	RCD-18

school data

SCHOOL CAPACITY NSC-19		
CONSTRUCTION COST SQUARE FOOT REQUIREMENT	CSC-20	CSC-20
SCHOOL BOND RATE SCHOOL BOND TERM	DS-21	DS-21
OPER. INC. XOY-22		
SCHOOL ENROLLMENT MSC-23		

municipal data

REAL ESTATE VALUE MMV-24		
POPULATION MUNICIPAL COSTS	NR-25	CCOMOI-26

fiscal data

ASSESSMENT FACTOR AF-27		
SCHOOL TAX MILLAGE MUNICIPAL TAX MILLAGE	STM-28	MM-29

land and development data

LAND COST - INTEREST PROFESSIONAL FEES	LC-30	INT-31	FOP-31
DEVELOPMENT COST OFF-SITE CONTRIBUTION	CA-33	DEVC-34	

	1	2	3	4	5
ANNUAL LAND EXPENDITURES LAC-35	6	7	8	9	10
ANNUAL SITE-DEVELOPMENT EXPENDITURES XPCPY-36	1	2	3	4	5
	6	7	8	9	10
ANNUAL OFF-SITE CONTRIBUTION OSC-37	1	2	3	4	5
	6	7	8	9	10

construction and management data

PERCENT LAND PRICE TO SALE PRICE PCT-38					
CONSTRUCTION COST/SQ. FT. BY UNIT TYPE ESCF-39					
LOT IMPROVEMENT COST/ UNIT TYPE CLI-40					
PERCENT SALES COST ESC-41					

TECHNICAL FEES INTEREST ON CONSTRUCTION	TECH-42	IOCC-43	
OVERHEAD EXPENSE	POHE-44		

	1	2	3	4	5
ANNUAL RESIDENTIAL CONSTRUCTION ID-45	6	7	8	9	10
ANNUAL INDUSTRIAL CONSTRUCTION IID-46	1	2	3	4	5
	6	7	8	9	10
ANNUAL COMMERCIAL CONSTRUCTION CID-47	1	2	3	4	5
	6	7	8	9	10

annual sales/revenue data

ANNUAL RESIDENTIAL SALES (UNITS) SDU-48				
1	2	3	4	5
6	7	8	9	10

ANNUAL INDUSTRIAL SALES (ACRES) SNRAI-49				
1	2	3	4	5
6	7	8	9	10

ANNUAL COMMERCIAL SALES (ACRES) SNRAC-50				
1	2	3	4	5
6	7	8	9	10

OTHER REVENUES OR-51				
1	2	3	4	5
6	7	8	9	10

OTHER EXPENSES OE-52				
1	2	3	4	5
6	7	8	9	10

18

NOTES ON INPUT CHECKLIST

KEY CODE	KEY NUMBER	DESCRIPTION
CLIENT DATA		
DNAME	(1)	CLIENT NAME
DNAME	(2)	PROJECT NAME, LOCATION: LOCATION BY MUNICIPALITY, STATE.
DATE	(3)	DATE: DATE OF CHECKLIST COMPLETION.
SITE DATA		
A	(4)	SITE AREA: TOTAL SITE ACREAGE.
GSCAP	(5)	COVERAGE ALLOWABLE: TOTAL ALLOWABLE IMPERVIOUS COVER AS DEFINED BY CODE; 30% COVERAGE MAXIMUM.
		NON-RESIDENTIAL ACREAGES
AI	(6)	INDUSTRIAL
AC	(6)	COMMERCIAL
AS	(6)	SCHOOL SITE
AR	(6)	MAJOR ROAD (RIGHT-OF-WAY)
AO	(6)	OPEN SPACE
ARC	(6)	RECREATIONAL FACILITY
AOT	(6)	OTHER (SPECIFY)
UNIT DATA		
DUMNMS	(7)	UNIT TYPES: DEFINED AS SINGLE FAMILY (SF), TOWNHOUSE (TH), GARDEN APARTMENT (GA), MID-RISE (MR), HIGH RISE (HR).
DD	(8)	NET DENSITIES: NET DENSITY PER UNIT TYPES, IN DWELLING UNITS PER ACRE.

SALE PRICES:

ISP	(9)	ESTIMATED AVERAGE SALES PRICE BY RESIDENTIAL UNIT TYPE.
SDNRI	(10)	ESTIMATED AVERAGE SALES PRICE BY INDUSTRIAL UNIT TYPE.
SPNRC	(11)	ESTIMATED AVERAGE SALES PRICE BY COMMERCIAL UNIT TYPE.
MIX	(12)	MIX: SUGGESTED RESIDENTIAL UNIT MIX AS A PERCENT OF TOTAL RESIDENTIAL UNITS (100%). SUGGESTED NON-RESIDENTIAL UNIT MIX AS A PERCENT OF TOTAL NON-RESIDENTIAL UNITS (100%).
INU	(13)	NUMBER OF UNITS: SUGGESTED NUMBER OF UNITS BY RESIDENTIAL AND NON-RESIDENTIAL TYPES.
AUS	(14)	UNIT SIZE: ESTIMATED SQUARE FOOTAGE OF LIVING AREA BY RESIDENTIAL UNIT TYPE. ESTIMATED SQUARE FOOTAGE OF GROSS LEASABLE AREA (GLA) BY NON-RESIDENTIAL UNIT TYPE.
STORYS	(15)	NUMBER OF STORIES: ESTIMATED HEIGHT OF BUILDINGS IN NUMBER OF STORIES BY RESIDENTIAL AND NON-RESIDENTIAL UNIT TYPES.

DEMAND DATA

RD	(16)	ANNUAL REGIONAL RESIDENTIAL DEMAND: TOTAL NUMBER OF RESIDENTIAL UNITS DEMANDED ANNUALLY WITHIN THE DEFINED MARKET AREA.
RID	(17)	ANNUAL REGIONAL INDUSTRIAL DEMAND: TOTAL NUMBER OF INDUSTRIAL UNITS DEMANDED ANNUALLY WITHIN THE DEFINED MARKET AREA. (1,000 SQ. FT. PER UNIT)

| RCD | (18) | ANNUAL REGIONAL COMMERCIAL DEMAND: TOTAL NUMBER OF COMMERCIAL UNITS DEMANDED ANNUALLY WITHIN THE DEFINED MARKET AREA, (1,000 SQ. FT. PER UNIT) |

SCHOOL DATA

| NSC | (19) | SCHOOL CAPACITY: TOTAL NUMBER OF SPACES AVAILABLE IN THE MUNICIPAL SCHOOL SYSTEM. (TOTAL CAPACITY OF ALL SCHOOLS MINUS CURRENT ENROLLMENT.) |

| CSC | (20) | CONSTRUCTION COST (SCHOOLS): ESTIMATED COST PER SQUARE FOOT FOR SCHOOL CONSTRUCTION. |

| CSC | (20) | SQUARE FOOT REQUIREMENT: THE NUMBER OF SQUARE FEET REQUIRED PER STUDENT BY STATE LAW OR MUNICIPAL RECOMMENDATION. |

| DS | (21) | SCHOOL BOND RATE: THE CURRENT OR PROJECTED INTEREST RATE ON SCHOOL BOND OFFERINGS. |

| DS | (21) | SCHOOL BOND TERM: THE CURRENT OR PROJECTED NUMBER OF YEARS FOR A SCHOOL BOND TO REACH MATURITY FROM ITS INITIAL OFFERING. |

| XOY | (22) | OPER. INC. THE AMOUNT OF REVENUE RAISED THROUGH LOCAL REAL ESTATE TAXES USED IN THE SCHOOL OPERATING BUDGET FOR THE CURRENT ACADEMIC YEAR. (RESIDENTIAL ONLY IF AVAILABLE) |

| MSC | (23) | SCHOOL ENROLLMENT: THE TOTAL NUMBER OF SCHOOL CHILDREN REGISTERED IN THE SCHOOL SYSTEM FOR THE CURRENT ACADEMIC YEAR (DATE). |

MUNICIPAL DATA

MMV   (24)   REAL ESTATE VALUE:
TOTAL VALUE OF ALL REAL ESTATE BEFORE THE ASSESSMENT RATIO IS APPLIED. TYPICALLY BROKEN DOWN INTO RESIDENTIAL AND NON-RESIDENTIAL USES (SUPPLY BREAKDOWN IF POSSIBLE).

NR   (25)   POPULATION:
CURRENT TOTAL POPULATION DEFINED BY THE MUNICIPALITY OR CENSUS.

CCOMOI   (26)   MUNICIPAL COSTS:
ANY EXPENDITURES REQUIRED BY THE MUNICIPALITY DUE TO THE DEMANDS OF PROJECT DEVELOPMENT.

FISCAL DATA

AF   (27)   ASSESSMENT FACTOR:
THE RATIO OF ASSESSED VALUE TO MARKET VALUE USED BY THE ASSESSOR'S OFFICE FOR DETERMINING THE VALUE OF REAL ESTATE FOR TAX PURPOSES.

STM   (28)   SCHOOL TAX MILLAGE:
THE MILLAGE RATE SET BY THE MUNICIPALITY FOR SCHOOL REVENUES RAISED FROM REAL ESTATE TAXES. (SUPPLY ITEMIZED TAX BILL.)

MM   (29)   MUNICIPAL TAX MILLAGE:
THE MILLAGE RATE SET BY THE MUNICIPALITY FOR MUNICIPAL REVENUES RAISED FROM REAL ESTATE TAXES. (SUPPLY ITEMIZED TAX BILL.)

LAND AND DEVELOPMENT DATA

LC   (30)   LAND COST:
GROSS PURCHASE PRICE OF THE LAND NET OF ANY INTEREST CHARGES. (THE ANNUAL DISTRIBUTION OF LAND AND CARRY MAY BE SUPPLIED IN # (35) IN LIEU OF (30) AND (31).)

INT	(31)	INTEREST: INTEREST RATE AT WHICH LAND FINANCING WAS/WOULD BE OBTAINED.
FOP	(32)	PROFESSIONAL FEES: TOTAL FEES TO INCLUDE ALL PLANNING AND LEGAL EXPENSES BEFORE ANY TECHNICAL FEES RELATING TO CONSTRUCTION (DEFINED BELOW).
CA	(33)	DEVELOPMENT COST: TOTAL COST OF SITE DEVELOPMENT (SEE EXHIBIT 1 FOR ITEMIZED BREAKDOWN).
DEVC	(34)	OFF-SITE CONTRIBUTION: TOTAL OFF-SITE COSTS (SEE EXHIBIT 2 FOR ITEMIZED BREAKDOWN).
LAC	(35)	ANNUAL LAND EXPENDITURES ($): ANNUAL DISTRIBUTION OF LAND AND CARRY COSTS THROUGH THE PROJECT PERIOD. (MAY BE SUPPLIED IN LIEU OF ITEMS (30) AND (31).)
XPCPY	(36)	ANNUAL SITE-DEVELOPMENT EXPENDITURES ANNUAL PERCENT DISTRIBUTION OF SITE DEVELOPMENT COSTS. THIS WILL BE RELATED TO ESTIMATED CONSTRUCTION OR PHASING PACE.
OSC	(37)	ANNUAL OFF-SITE CONTRIBUTION ($): ANNUAL DISTRIBUTION OF OFF-SITE COSTS THROUGH THE PROJECT PERIOD. (THE TOTAL SHOULD AGREE WITH EXHIBIT 2.)

CONSTRUCTION AND MANAGEMENT DATA

PCT	(38)	PERCENT LAND PRICE TO SALE PRICE: THE PERCENT OF TOTAL RESIDENTIAL UNIT SALE PRICE ATTRIBUTABLE TO LAND SALE.
ESCF	(39)	CONSTRUCTION COST/SQ. FT. BY UNIT TYPE: ESTIMATED COST PER SQUARE FOOT FOR RESIDENTIAL CONSTRUCTION (BRICKS AND MORTAR) OF LIVING AREA, BASEMENTS, AND GARAGES (SEE EXHIBIT 3 FOR ITEMIZED BREAKDOWN).

23

CLI	(40)	LOT IMPROVEMENT COST/UNIT TYPE: ESTIMATED COST FOR LOT IMPROVEMENT (WITHIN THE LOT LINE) BY RESIDENTIAL UNIT TYPE (SEE EXHIBIT 4 FOR ITEMIZED BREAKDOWN).
ESC	(41)	PERCENT SALES COST: PERCENT OF TOTAL SALE PRICE ATTRIBUTED TO SALES AND CLOSING EXPENSES.
TECH	(42)	TECHNICAL FEES: TOTAL FEES PER UNIT TO INCLUDE ARCHITECTURAL, ENGINEERING, HOOK-UP, ETC. (SEE EXHIBIT 5 FOR ITEMIZED BREAKDOWN).
IOCC	(43)	INTEREST ON CONSTRUCTION: INTEREST RATE AT WHICH CONSTRUCTION FINANCING WAS/ WOULD BE OBTAINED.
POHE	(44)	OVERHEAD EXPENSE: PERCENT OF SALE PRICE ATTRIBUTED TO GENERAL OVERHEAD EXPENSES.
ID	(45)	ANNUAL RESIDENTIAL CONSTRUCTION: ESTIMATED ANNUAL TOTAL RESIDENTIAL CONSTRUCTION BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.
IID	(46)	ANNUAL INDUSTRIAL CONSTRUCTION: ESTIMATED ANNUAL TOTAL INDUSTRIAL CONSTRUCTION BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.
CID	(47)	ANNUAL COMMERCIAL CONSTRUCTION: ESTIMATED ANNUAL COMMERCIAL CONSTRUCTION BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.

24

SALES/REVENUE DATA

SDU   (48)   ANNUAL RESIDENTIAL SALES (UNITS): ESTIMATED ANNUAL UNIT SALES BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.

SNRAI   (49)   ANNUAL INDISTRIAL SALES (ACRES): ESTIMATED ANNUAL SALE OF INDUSTRIAL ACREAGE BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.

SNRAC   (50)   ANNUAL COMMERCIAL SALES (ACRES): ESTIMATED ANNUAL SALE OF COMMERCIAL ACREAGE BEGINNING WITH YEAR ONE, RUNNING THROUGH THE TOTAL LENGTH OF THE PROJECT.

OR   (51)   OTHER REVENUES: ADDITIONAL ANNUAL REVENUES ANTICIPATED FROM THE PROJECT BY YEAR NOT INCLUDED PREVIOUSLY.

OEX   (52)   OTHER EXPENSES: ADDITIONAL ANNUAL EXPENSES ANTICIPATED FROM THE PROJECT NOT INCLUDED PREVIOUSLY.

EXHIBIT 1

DEVELOPMENT COST

(INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN
THE PROJECT'S BOUNDARIES <u>EXCLUDING</u> LOT IMPROVE-
MENTS AND BUILDING CONSTRUCTION COSTS.)

ITEM	QUANTITY	UNIT COST	ALLOW-ANCES*	TOTAL COST
A. ROADS/STREETS (1)				
1. CLEARING				
2. ROAD GRADING				
3. ROAD SURFACING				
4. CURB AND GUTTER				
5. SIDEWALK				
6. STREET LIGHTING				
7. SEEDING/SODDING (COMMON AREAS, NOT LOTS)				
8. STREET TREES/ PLANTING (COMMON AREAS)				
9. OTHER				
SUBTOTAL				

NOTES:

*   ALLOWANCES: ANY CONTINGENCIES ON ALLOWANCES FOR OVER-
    HEAD AND PROFIT NOT INCLUDED IN UNIT OR TOTAL COST.

(1) ROADS/STREETS - INCLUDE ALL NECESSARY IMPROVEMENTS, WITHIN
    DEDICATED ROAD R.O.W., REQUIRED BY ORDINANCE AND/OR CODE.

26

ITEM	QUANTITY	UNIT COST	ALLOW-ANCES	TOTAL COST
B. STORM WATER/ SEWER SYSTEM (2)				
1. PIPE				
2. CATCH BASINS				
3. CULVERTS				
4. RETENTION PONDS				
5. OTHER				
SUBTOTAL				
C. SANITARY SEWER/ SEWAGE DISPOSAL (3)				
1. SEPTIC SYSTEMS				
2. TREATMENT PLANT				
3. PUMP/LIFT STATIONS				
4. FORCE/GRAVITY MAINS				
5. MANHOLES				
6. CONNECTION CHARGES/ ASSESSMENTS				
7. OTHER				
SUBTOTAL				

NOTES:

(2) STORM WATER/SEWER SYSTEM - INCLUDE ALL REQUIRED STORM SEWER/ DRAINAGE NECESSARY TO CONTROL STORM WATER RUNOFF AS REQUIRED BY ORDINANCE AND/OR CODE.

(3) SANITARY SEWER/SEWAGE DISPOSAL - INCLUDE ALL CONSTRUCTION NECESSARY TO PROVIDE COMPLETE SEWAGE FACILITIES. DO NOT INCLUDE ON-SITE LATERAL CONNECTIONS. THESE ARE CONSIDERED ON A LOT BASIS IN EXHIBIT 4.

ITEM		QUANTITY	UNIT COST	ALLOW- ANCES	TOTAL COST
D.	WATER SYSTEM (4)				
	1. WELL				
	2. MAIN				
	3. HYDRANTS				
	4. CONNECTION CHARGES/ ASSESSMENTS				
	5. OTHER				
	SUBTOTAL				
E.	OPEN SPACE/ COMMUNITY FACILITIES (5)				
	1. CLEARING				
	2. PATHS				
	3. LIGHTING				
	4. PLAY AREAS				
	5. TENNIS COURTS OR OTHERS				
	6. SWIMMING POOL				
	7. COMMUNITY BUILDING				
	8. LANDSCAPING				
	9. OTHER				
	SUBTOTAL				
F.	TOTAL				

NOTES:

(4) WATER SYSTEM - INCLUDE ALL CONSTRUCTION NECESSARY TO PROVIDE COMPLETE WATER DISTRIBUTION SYSTEM. DO NOT INCLUDE ON-SITE LATERAL CONNECTIONS. THESE ARE CONSIDERED ON A LOT BASIS IN EXHIBIT 4.

(5) OPEN SPACE/COMMUNITY FACILITIES - INCLUDE ALL IMPROVEMENTS NECESSARY TO MEET RECREATIONAL DEMANDS OF PROJECT.

EXHIBIT 2

OFF-SITE CONTRIBUTION

(INCLUDE ALL DEVELOPMENT/IMPROVEMENTS BEYOND
THE PROJECT'S BOUNDARIES THAT ARE CONSIDERED
TO BE ESSENTIAL OR ATTRIBUTABLE TO THE PRO-
JECT'S DEVELOPMENT.)

ITEM	QUANTITY	UNIT COST	ALLOW-ANCES*	TOTAL COST
A. ROAD/STREET				
1. SURFACING				
2. CURB AND GUTTER				
3. TRAFFIC CONTROLS				
4. LIGHTING				
5. ASSESSMENTS				
6. OTHER				
SUBTOTAL				
B. STORM WATER/ SEWER SYSTEM				
1. PIPE				
2. CATCH BASINS				
3. CULVERTS				
4. CONNECTION CHARGES/ ASSESSMENTS				
5. OTHER				
SUBTOTAL				

* ALLOWANCES: ANY CONTINGENCIES ON ALLOWANCES FOR OVER-
HEAD AND PROFIT NOT INCLUDED IN UNIT OR TOTAL COST.

ITEM	QUANTITY	UNIT COST	ALLOW- ANCES	TOTAL COST

C. SANITARY SEWER/
SEWAGE DISPOSAL

    1. TREATMENT PLANT
       IMPROVEMENTS

    2. PUMP/LIFT
       STATIONS

    3. FORCE/GRAVITY
       MAINS

    4. MANHOLES

    5. CONNECTION
       CHARGES/
       ASSESSMENTS

    6. OTHER

       SUBTOTAL

D. WATER SYSTEM

    1. MAIN

    2. HYDRANTS

    3. CONNECTION
       CHARGES/
       ASSESSMENTS

    4. OTHER

       SUBTOTAL

E. OTHER COSTS/
COMMUNITY FAC.
CONTRIBUTIONS

    1. SCHOOLS

    2. PARKS

    3. OTHER

       SUBTOTAL

F. TOTAL

31

EXHIBIT 3

CONSTRUCTION COST/SQ. FT.
(FOR EACH UNIT TYPE)

(INCLUDE ALL CONSTRUCTION COSTS RELATED TO ACTUAL PRO-
DUCTION OF HOUSING/DWELLING UNIT EXCLUDING SITE AND LOT
DEVELOPMENT AND ARCHITECTURAL FEES, MARKETING COSTS, ETC.)

UNIT TYPE	ITEM	SIZE	SQ. FT. COST	TOTAL
	LIVING AREA			
	BASEMENT			
	GARAGE			
	OTHER			
	TOTAL			
	LIVING AREA			
	BASEMENT			
	GARAGE			
	OTHER			
	TOTAL			
	LIVING AREA			
	BASEMENT			
	GARAGE			
	OTHER			
	TOTAL			
	LIVING AREA			
	BASEMENT			
	GARAGE			
	OTHER			
	TOTAL			

32

EXHIBIT 4

LOT IMPROVEMENT COST
(FOR EACH UNIT TYPE)

A. SINGLE FAMILY DETACHED: INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN THE LOT AREA EXCLUDING ACTUAL BUILDING CONSTRUCTION.

B. SINGLE FAMILY ATTACHED: INCLUDE ALL DEVELOPMENT/IMPROVEMENTS WITHIN THE SITE AREA OF THE HOUSING CLUSTER/BUILDING TYPE ATTRIBUTED TO EACH INDIVIDUAL DWELLING UNIT.

C. MULTI-FAMILY: INCLUDE ALL DEVELOPMENT/ IMPROVEMENTS WITHIN THE SITE AREA OF THE BUILDING "UNIT" ATTRIBUTED TO EACH INDI- VIDUAL DWELLING UNIT (TOTAL COST DIVIDED BY NUMBER OF D.U. = COST PER D.U.).

UNIT TYPE:

ITEM	QUANTITY	UNIT COST	ALLOW- ANCES	TOTAL COST
A. CLEARING (1)				
B. GRADING AND DRAINAGE (2)				
C. SURFACING (3)				
D. SAFETY CONTROLS (4)				
E. WATER SERVICE (5)				
F. SANITARY SEWER (6)				
G. LANDSCAPING (7)				
H. FEES AND PERMITS (8)				
I. OTHER (9)				
TOTAL				

33

NOTES:

(1) CLEARING - INCLUDE TOTAL AND SELECTIVE CLEARING NECESSARY TO ACCOMMODATE CONSTRUCTION WITHIN "LOT" AREA.

(2) GRADING AND DRAINAGE - INCLUDE ALL IMPROVEMENTS NECESSARY TO PROVIDE FOR ADEQUATE DRAINAGE AND STORM WATER RUNOFF FROM "LOT."

(3) SURFACING - INCLUDE ALL DRIVES AND PARKING AREAS, WALKS AND TERRACES AND OTHER SURFACING.

(4) SAFETY CONTROLS - INCLUDE BOLLARDS, LIGHTING AND OTHER CONTROLS.

(5) WATER SERVICE - INCLUDE ALL WATER LATERALS FROM MAIN IN ROAD R.O.W. TO BUILDING.

(6) SANITARY SEWER - INCLUDE ALL SEWER LATERALS FROM SEWER MAIN TO BUILDING.

(7) LANDSCAPING - INCLUDE GRADING, TOPSOIL, SEEDING, AND LAND-SCAPE CONSTRUCTION AND PLANTING ALLOWANCE.

(8) FEES AND PERMITS - INCLUDE SEWER AND WATER HOOK-UP AND BUILDING PERMITS.

(9) OTHER.

EXHIBIT 5

TECHNICAL FEES

(INCLUDE ALL ARCHITECTURAL, ENGINEERING, LAND-
SCAPE ARCHITECTURAL, LAND SURVEYING, GRAPHIC
AND INTERIOR-DESIGN FEES FOR EACH CATEGORY ON
A UNIT BASES AS INDICATED BY THE NOTES.)

ITEM	TOTAL COST
A. ARCHITECTURAL (1)	
B. ENGINEERING (2)	
C. LANDSCAPE ARCHITECTURAL (3)	
D. LAND SURVEYING (4)	
E. GRAPHICS (5)	
F. INTERIOR DESIGN (6)	
TOTAL	

NOTES:

(1) ARCHITECTURAL

    A. BUILDING DESIGN (COMPLETE)
    B. CONSTRUCTION SPECIFICATION (BUILDING SYSTEMS)
    C. CONSTRUCTION COST ESTIMATES AND PROGRAM ($ AND SCHEDULE)
    D. CONSTRUCTION INSPECTION (PERIODIC)

(2) ENGINEERING

    A. ROAD/STREET SYSTEMS DESIGN (HORIZONTAL AND VERTICAL CURVE DATA, PROFILES)
    B. UTILITY SYSTEMS DESIGN (SEWAGE, WATER, STORM, ETC.)
    C. LOT DESIGN (LOT CLOSURE AND PLAT/SURVEY DATA)
    D. CONSTRUCTION SPECIFICATIONS (ROAD AND UTILITY SYSTEMS)
    E. CONSTRUCTION COST ESTIMATES AND PROGRAM ($ AND SCHEDULE)
    F. CONSTRUCTION INSPECTION (PERIODIC)

(3) LANDSCAPE ARCHITECTURAL

    A. LANDSCAPE CONSTRUCTION AND PLANTING DESIGN (ALL SITE IMPROVEMENTS NOT COVERED BY ARCHITECTURAL AND ENGI-NEERING, I.E. GRADING, SURFACING, RETAINMENT, LIGHT-ING, PLANTING, SPECIAL FEATURES, ETC.)
    B. CONSTRUCTION AND PLANTING SPECIFICATIONS (AS NOTED IN 3A.)
    C. CONSTRUCTION AND PLANTING COST ESTIMATES AND PROGRAM ($ AND SCHEDULE)
    D. CONSTRUCTION AND PLANTING INSPECTION (PERIODIC)

(4) LAND SURVEYING

    A. ROAD/STREET SYSTEMS LAYOUT (SEE 2A.)
    B. UTILITY SYSTEMS LAYOUT (SEE 2B.)
    C. LOT LAYOUT (BOUNDARY SURVEY AND MONUMENTS)
    D. BUILDING LAYOUT (STAKEOUT AND SET ELEVATIONS)
    E. LANDSCAPE CONSTRUCTION LAYOUT (STAKEOUT DRIVES, PARKING, ETC. AND SET ELEVATIONS)

(5) GRAPHICS

    A. SIGNAGE (PROJECT SIGNS, ETC.)
    B. P.R. LITERATURE (BROCHURES, ETC.)

(6) INTERIOR DESIGN

    A. INTERIORS (SAMPLES/MODELS)
    B. MATERIALS/COLORS (TYPICAL UNITS)

EXAMPLE: INPUT CHECKLIST
(Private Developer Data Only)

client data

CLIENT NAME	XYZ Corporation
	DNAME-1
PROJECT NAME, LOCATION	A-PUD, Akron, Ohio
	DNAME-2
DATE	9/13/79
	DATE-3

site data

SITE AREA COVERAGE ALLOWABLE	207.00	
	A-4	GSCAP-5
INDUSTRIAL COMMERCIAL SCHOOL SITE		4.79	
	AI-6	AC-6	AS-6
MAJOR ROAD (R.O.W.) OPEN SPACE	7.40	112.35
	AR-6	AO-6
RECREATIONAL FACILITY OTHER (SPECIFY)	3.30	7.58
	ARC-6	AOT-6

unit data

UNIT TYPES	SFD	TH	GA			
DUMNMS-7						
NET DENSITIES DD-8	4.42	8.75	15.20			
SALE PRICES - RESIDENTIAL ISP-9 - INDUSTRIAL SPNRI-10 - COMMERCIAL SPNRC-11	68250.	52800.	43700.			
MIX MIX-12	22.1	22.5	55.5			
NUMBER OF UNITS INU-13	141	143	354			
UNIT SIZE AUS-14	1625	1200	950			
NUMBER OF STORIES STORYS-15	2	2	2			

37

land and development data

LAND COST INTEREST PROFESSIONAL FEES	1,424,665 LC-30	0.00 INT-31	150,000 FOP-31
DEVELOPMENT COST OFF-SITE CONTRIBUTION	1,535,714 CA-33	113,000 DEVC-34	

	1	2	3	4	5
ANNUAL LAND EXPENDITURES LAC-35	250000.	413333.	386666.	374666.	
	6	7	8	9	10
ANNUAL SITE-DEVELOPMENT EXPENDITURES XPCPY-36	1 .417	2 .230	3 .275	4 .078	5 .
	6	7	8	9	10
ANNUAL OFF-SITE CONTRIBUTION OSC-37	1 113000.	2	3	4	5
	6	7	8	9	10

construction and management data

PERCENT LAND PRICE TO SALE PRICE PCT-38	14.	9.	6.		
CONSTRUCTION COST/SQ. FT. BY UNIT TYPE ESCF-39	25.	24.	22.		
LOT IMPROVEMENT COST/ UNIT TYPE CLI-40	3000.	3100.	2100.		
PERCENT SALES COST ESC-41	14	9	6		.
TECHNICAL FEES INTEREST ON CONSTRUCTION	350 TECH-42		3.0 IOCC-43		
OVERHEAD EXPENSE POHE-44	5.0				

	1	2	3	4	5
ANNUAL RESIDENTIAL CONSTRUCTION ID-45	186	190	116	146	
	6	7	8	9	10
ANNUAL INDUSTRIAL CONSTRUCTION IID-46	1	2	3	4	5
	6	7	8	9	10
ANNUAL COMMERCIAL CONSTRUCTION CID-47	1	2	3	4 4.79	5
	6	7	8	9	10

annual sales/revenue data

	1	2	3	4	5
ANNUAL RESIDENTIAL SALES (UNITS)	186	190	116	146	
SDU-48	6	7	8	9	10
ANNUAL INDUSTRIAL SALES (ACRES)	1	2	3	4	5
SNRAI-49	6	7	8	9	10
ANNUAL COMMERCIAL SALES (ACRES)	1	2.	3	4 4.79	5
SNRAC-50	6	7	8	9	10
OTHER REVENUES	1	2	3	4	5
OR-51	6	7	8	9	10
OTHER EXPENSES	1 200000.	2 200000.	3	4	5
OE-52	6	7	8	9	10

APPENDIX: DEVELOPMENT IMPACT MODEL — OPERATING PROCEDURE

The Development Impact Model is a system for analyzing development proposals to determine their economic feasibility within the constraints imposed by natural determinants, physical delivery systems, public service systems, market factors and legal requirements. The following is an outline of the procedure for using the Development Impact Model.

DATA COLLECTION

A. Site Analysis

1. Base map with location of property outbounds and important features from property survey or county tax maps.

2. Municipal zoning map and code and development codes for analysis of legal constraints.

3. Municipal and county master plans for analysis of public intentions and policy.

4. Price of land from the developer or other source for use in the feasibility analysis.

5. Legal fees, interest on land, and other miscellaneous front-end costs from the developer for use in the feasibility analysis.

B. Natural Determinants and Coverage Analysis

1. County soil survey from Soil Conservation Service for soil series types, shallow to bedrock, seasonal high water table, alluvial soils.

2. Topographic maps of site and surrounding areas from U.S. Geological Survey or site survey for slope analysis.

3. Aerial photographs of site from U.S. Department of Agriculture, Aero Service, etc., for analysis of vegetation and other physical features.

4. Hydrology and floodplain location from the U.S. Army Corps of Engineers or the Soil Conservation Service for floodplain analysis.

C. Physical Systems Analysis

1. Streets and roads from municipal or county planning department/commission or state highway department, or a traffic study by a consultant.

   a. Right-of-way and cartway dimensions, including intersection approaches.

   b. Existing traffic volumes.

   c. Design capacities. (Intersection capacities are usually critical points.)

2. Water supply information from municipality, county, or private water company(ies).

   a. Location and excess capacity of water lines near the site.

   b. Supply costs and hook-up charges.

   c. If there is no feasible public water supply, determine the ground water supply and delivery costs from the Soil Conservation Service, state department of natural resources or its equivalent, or well drilling companies.

3. Sewer service information from the municipality or county authority.

   a. Location and excess capacity of sewer lines in the area.

   b. Sewer rental rates and hook-up charges.

   c. If there is no public sewer available, contact state department of health for package plant or septic tank requirements and costs.

4. Check location of electrical supply and cost of installing lines underground with the local power company.

5. Check location of telephone lines and cost of installing lines underground with the local telephone company. Determine whether this can be coordinated with electric lines for any savings.

6. Check location and hook-up costs for gas service with the local gas company.

D. Public Services and Revenues Analysis

1. Obtain a copy of the current municipal budget.

2. Check the level of service provided for by the budget for:

   a. Police

   b. Fire

   c. Recreation, parks

   d. Road maintenance

   e. Other

3. Check sources of municipal revenue, tax base, and rate.

   a. Property tax

      (1) Total revenue

      (2) Total assessed value

      (3) Assessment rate

      (4) Tax rate

   b. Income tax

      (1) Total revenue

      (2) Total personal income (average household income times number of households)

      (3) Tax rate

   c. Per capita and other taxes

      (1) Total taxable population

      (2) Tax rate

   d. State and federal subsidy

      (1) Amount of subsidy

      (2) Basis for subsidy

   e. Municipal debt

      (1) Current municipal debt

      (2) Legislative debt limit

4. School data

   a. School taxes - Obtain school budget and supporting data to determine:

      (1) Property tax

         (a) Total revenue

         (b) Total assessed value

         (c) Assessment rate

         (d) Tax rate

      (2) Income tax

         (a) Total revenue

         (b) Total personal income

         (c) Tax rate

56

(3) Per capita and other taxes

    (a) Total taxable population

    (b) Tax rate

(4) State and federal subsidy

    (a) Amount of subsidy

    (b) Basis for subsidy

(5) School debt

    (a) Current debt

    (b) Legislative debt limit

b. School capacity/enrollment

    (1) Current enrollment

    (2) Current capacity

c. Plans for school expansion

E. Market Analysis

1. Market comparables

    a. Unit types (market mix: percent of each type available).

    b. Sale prices and rents.

    c. Unit sizes.

    d. Special features.

2. Market absorption rates

3. Cyclical construction trends. (Is the market over-built or under-built now?)

4. Neighborhood characteristics

5. Regional location factors:

    a. Access to work, shopping, recreation, etc.

    b. Special amenities.

    c. Major pollution sources, etc.

NATURAL SYSTEMS ANALYSIS

Dollar costs that may be incurred to overcome restrictions or meet performance standards should be particularly noted.

A. Analysis of Natural Restrictions

1. Vegetation

    a. Acres in each vegetation classification (wooded, non-wooded).

    b. Percentage of the site in each vegetation type.

2. Slopes

    a. Acres in each slope classification (0-3%, 3-8%, 8-15%, 15-25%, 25+%).

    b. Percentage of the site in each slope classification.

3. Seasonal high water table (SHWT)

    a. Acres in each class of SHWT.

    b. Percentage of the site in each SHWT class.

4. Shallow to bedrock

    a. Acres in each class of shallow to bedrock.

    b. Percentage of the site in each shallow to bedrock class.

5. Floodplain

    a. Acres of the site in the floodplain.

    b. Percentage of the site in the floodplain.

6. Composite development restrictions.

    a. Acres with development restrictions.

    b. Percentage of site with development restrictions.

8. Coverage Limits Analysis

This involves an analysis of the projected runoff of stormwater and the determination of impervious coverage limits or performance standard requirements.

LAND USE DESCRIPTION

Determine the types of units, market values, sizes and mix. These will be based on the developer's preferences and the market study.

SCHEMATIC SITE DESIGN

This is a blob diagram showing land use classifications (single-family, townhouses, garden apartments, commercial, open space, etc.) and the major circulation and utility lines. The amount of land shown in the various blobs should agree with the required unit mix determined in the Land Use Description phase. The schematic design should also respect the natural restrictions from the Natural Systems Analysis phase.

PHYSICAL DELIVERY SYSTEMS ANALYSIS

A. Roads

    1. Length of major access and site circulation.

    2. Cost of major access and circulation.

    3. Cost of intersection improvements.

B. Water System

    1. Length of major water lines on- and off-site.

    2. Cost of major water lines.

    3. Cost of other water system features if required (wells, pumps, storage tanks, treatment equipment, etc.)

C. Sewer System

    1. Length of major sewer lines on- and off-site.

    2. Cost of major sewer lines including manholes.

    3. Cost of other sewer system features if required (pumping station, package plant, etc.).

D. Other Utilities

    1. Length of other utility lines (telephone, electric, gas).

    2. Cost of utility lines not paid by the utility companies (placing system underground, etc.).

DENSITY FEASIBILITY ANALYSIS

A. Upper limit of development density can be determined in a number of ways:

1. Maximum density allowable from zoning or PUD code. This is the legal maximum.

2. Maximum density possible within the constraints imposed by the market mix and lot sizes from the Land Use Description phase. This can be calculated using Equation 1.

$$D_m = \frac{100}{\Sigma\ \ell_n m_n} \qquad \text{(Equation 1)}$$

where D_m is the net density based on the market study mix,
ℓ is the lot size for the unit type (acres),
m is the mix for the unit type (%), and
n is the total number of unit types.

For instance, if the market study shows that the proposed development should include 80% (m_1) single family homes on half acre lots ($\ell_1 = .5$), 10% (m_2) townhouses at 10 per acre ($\ell_2 = .1$), and 10% (m_3) garden apartments at 14 per acre ($\ell_3 = .07$), then the net density would be calculated as follows:

$$D_m = 100\ /\ \{(.5 \times 80) + (.1 \times 10) + (.07 \times 10)\}$$

$$= 100\ /\ (40 + 1 + .7)$$

$$= 100\ /\ 41.7$$

$$= 2.4\ du/acre$$

3. Maximum density determined from the coverage analysis in the Natural Systems Analysis phase and the market mix of the Land Use Description phase. Three impervious coverage (C) values are required: (a) the weighted average coverage per unit (C_X), (b) the amount of impervious coverage allowed for the site ($C\alpha$), and (c) the amount of impervious coverage per acre for all major site improvements such as community buildings, major roads, etc. ($C\delta$).

A weighted average is calculated using the following equation:

$$X = \Sigma\ \frac{v_n\ k_n}{\Sigma\ v_n} \qquad \text{(Equation A)}$$

where v is the number of each variable or element,
k is the constant value of each variable or element, and
n is the number of different variables.

This equation can then be used to calculate the weighted average coverage per unit. For instance, suppose that the following is the recommended mix from the market study:

Unit Type	Unit Area	Stories	Net Cover	Parking, Patio, etc.	Total/ Unit	Mix
SF	1700 sf	1	1700 sf	1000 sf	2700 sf	10%
TH	1400 sf	2	700 sf	600 sf	1300 sf	30%
GA2	1000 sf	3	333 sf	600 sf	933 sf	30%
GA1	800 sf	3	267 sf	600 sf	867 sf	30%

Therefore, if the percent mix is the variable value (v) and the total coverage per unit is the constant value (k), then for the four (n) unit types the weighted average coverage per unit (C_X) can be calculated as follows:

$$C_X = \frac{v_1 k_1 + v_2 k_2 + v_3 k_3 + v_4 k_4}{v_1 + v_2 + v_3 + v_4}$$

$$= \frac{(10 \times 2700) + (30 \times 1300) + (30 \times 933) + (30 \times 867)}{10 + 30 + 30 + 30}$$

$$= \frac{27000 + 39000 + 27990 + 26010}{100}$$

$$= 12000/100\ =\ 1200\ sf/du$$

The maximum density based on the cover model (D_i) can then be calculated using Equation 2 as follows:

$$D_i = \frac{(435.6 \times C_\alpha) - C_\delta}{C_x} \qquad \text{(Equation 2)}$$

As an example, assume that the allowable impervious coverage for the site based on the cover model (C_α) is 22%, the coverage per acre of all major site improvements (C_δ) is 1500 square feet per acre, and the weighted average coverage per unit is 1200 square feet per unit as above, then the maximum density would be calculated using Equation 2 as follows:

$$D_i = \frac{(435.6 \times 22) - 1500}{1200}$$

$$= \frac{9583.2 - 1500}{1200}$$

$$= 8083.2 / 1200$$

$$= 6.736 \ du/acre$$

B. Break-even Density. This is the minimum project density at which the developer will be able to meet all costs and still make an acceptable profit. This is used to determine the relationships among the total site development cost (both on- and off-site), the average market value per unit, and the density.

1. The basic break-even density equation is as follows:

$$D_e = \frac{L}{.0826 \times V \times A} \qquad \text{(Equation 3)}$$

where L is the major site development costs ($),
V is the average market value per unit ($/du), and
A is the site area in acres.

2. Variations of break-even equation.

a. To find the average market value if the density and development cost is known:

$$V = L / (.0826 \times A \times D_e) \qquad \text{(Equation 3a)}$$

b. To find the allowable development cost if the density and average market value is known:

$$L = V \times A \times D_e \times .0826 \qquad \text{(Equation 3b)}$$

3. Determination of site development cost (L). This is the total of all front-end and major improvement costs. It includes:

a. Cost of land.

b. Interest on land.

c. Planning fees.

d. Legal fees, permits, etc.

e. Sewer system.

f. Water system.

g. Roads and intersection improvements.

h. Community buildings and recreation facilities.

i. Other major site improvement costs.

4. Determination of average unit market value (V). This is the weighted average of the market value of all units.

a. V can be a one-number estimate for the whole project.

b. A more accurate method of determining V is to use a weighted average of the project value of each type of unit based on the Land Use Description analysis and the market study.

c. To find the market value for rental apartments, multiply the expected annual rent by 7.28.

d. To find the total construction cost (bricks and boards plus unit share of major site development costs) from the market value, divide the market value by 1.661.

e. To find the unit share of the major site development costs from the market value, multiply the market value by .0826.

f. To find the total construction cost (bricks and boards plus unit share of major site development improvement costs) from the annual rent, multiply the annual rent by 4.3833.

C. Equilibrium break-even density. This analysis is used when the developer and the municipality (or school district) share the cost of major site improvements. The analysis is subject to the constraints that the project must generate a positive tax surplus if the developer pays all major site development costs.

With the equilibrium analysis the municipality invests all tax surplus generated by the project in the major site development costs. When the municipality pays part of the site development cost, the break-even density for the developer is lowered because his costs are lowered. The equilibrium analysis determines the minimum breakdown density where the developer just breaks even and the municipality reinvests all tax surplus. The analysis also determines the respective shares of costs for the developer and the municipality.

The equilibrium break-even density (D_b) is calculated using the following equation:

$$D_b = \frac{L}{A \left(.0826\, V + 15 \left((V \times M \times R) + T - S\right)\right)} \qquad \text{(Equation 4)}$$

where L is the major site development costs ($),
V is the average market value per unit ($/du),
A is the site area in acres,
M is the tax millage rate,
R is the assessment factor,
T is all other taxes paid by the occupants per unit, and
S is the unit service cost.

All of the other taxes paid by the occupants of the units would include income taxes, per capita taxes, etc. This value (T) is calculated on a per unit basis for the entire project. The unit service cost (S) is based on the average cost per unit for municipal services to the project. This is based on an analysis of the municipal budget. The same procedure would be used for school budget information if the equilibrium analysis was between the developer and the school district.

For instance, suppose that each of the variables has the following values:

```
L = $1,500,000
V = $25,000
A = 120 acres
M = .025
R = .6 (60%)
T = $250/unit
S = $600
```

The equilibrium break-even density would be calculated using Equation 4 as follows:

$$D_b = \frac{1,500,000}{120 \left((.0826 \times 25,000) + 15 \left((25,000 \times .025 \times .6) + 250 - 600\right)\right)}$$

$$= \frac{1,500,000}{120 \left(2065 + 15(375 + 250 - 600)\right)}$$

$$= \frac{1,500,000}{120 \left(2065 + (15 \times 25)\right)}$$

$$= \frac{1,500,000}{120 \left(2065 + 375\right)}$$

$$= \frac{1,500,000}{120 \times 2440}$$

$$= \frac{1,500,000}{292,800}$$

$$= 5.12 \text{ du/acre}$$

To calculate the developer's share of the site development costs (L_d), use Equation 3b by substituting the equilibrium break-even density (D_b) for the break-even density (D_e) in the equation as follows:

$$L_d = V \times A \times D_b \times .0826 \qquad \text{(Equation 4a)}$$

The municipality's share of the site development costs (L_m) is simply calculated by subtracting the developer's share from the total site development costs:

$$L_m = L - L_d \qquad \text{(Equation 4b)}$$

Following through with the above example, the developer's share of the site development costs would be

$$L_d = \$25,000 \times 120 \text{ acres} \times 5.12 \text{ du/acre} \times .0826$$

$$= \$1,268,736$$

and the municipality's share would be

$$L_m = \$1,500,000 - \$1,268,736$$

$$= \$231,264$$

There are two major practical limitations on the use of the equilibrium analysis:

1. Any investment of public funds in major site development must be politically expedient. The municipality might be able to invest in intersection improvements, off-site sewer lines, and other improvements which ostensibly benefit more of the public than just the residents of the site. If the municipal share of costs at the equilibrium density is $200,000 but only $100,000 in off-site public improvements can judiciously be made, then the other $100,000 will remain as a tax surplus.

2. Separate taxing bodies normally will not and cannot exchange surplus revenues to balance out deficits. If a project is developing a $100,000 municipal tax surplus, a $100,000 school tax deficit will not be cancelled out.

DEVELOPMENT EXTERNALITIES

This section deals with costs (monetary and non-monetary) and revenues generated by a development. A detailed analysis of these externalities is often useful for planning purposes.

A. Traffic Generation

1. Daily or peak hour trip generation rates by unit type are applied to the total number of units contemplated for the project. This gives the total traffic generation.

2. Percentage allocation of the various access routes to the site is derived from origin-destination studies.

3. By combining 1 and 2 above the site-generated traffic load on any access point can be determined.

4. Comparison of existing traffic, design capacity, and site-generated traffic loads indicates the amount of anticipated congestion.

5. If a road or intersection improvement is needed to overcome the anticipated level of congestion, the cost will become part of the major site development cost. Either the municipality or the developer can pay for the improvements.

B. School Children

1. School children generation rates by unit type are applied to the total number of units contemplated to obtain an estimate of the total number of school children generated by the project.

2. The school budget will indicate the cost per student for operation. Multiply that cost by the total number of students generated for the projected school costs.

3. Project market value, property tax rates, and other tax information are used to determine the total school tax generated by the project.

4. Formulas for state and federal school subsidies are used to determine the additional subsidy created by the school children from the project.

5. The sum of items 3 and 4 above is compared to item 2 to determine the net surplus or deficit caused by the project.

C. Municipal Services

The revenue and operations structure must be investigated to find which services are supported by general taxes and which are supported by special user charges.

1. Typically sewer and water operations are separate from the general fund so that a property tax surplus cannot usually be used for sewer construction. The structure of municipal services must be investigated to sort this out.

2. Costs, revenues, and indicators of use on a per capita, per square foot, per linear foot, per dwelling, per acre, etc., basis for all municipal services should be investigated to find out which areas show a favorable balance for the proposed project (or an unfavorable balance as the case may be).

INTRODUCTION

The residential development process involves "a complex set of
decisions over time by a group of key and supporting participants or
decision agents. Key decision agents include the landowner, the
developer, and the consumer; supporting decision agents include
realtors, financiers, and public officials." (1) Once begun, the
process only continues through positive decision making by one or more
of the actors involved. (2)

The concept design for the development of Monona Woods will focus
on three actors in the development process: (1) the developer seeking a
profit, (2) the consumer seeking to affordably meet his housing require-
ments, and (3) the City of Monona seeking to implement the goals for
housing development outlined in its Master Plan of 1980. The ideal
concept design will reconcile the conflicting goals of these three
participants in the development process.

The primary issue in this residential development is how to
provide affordable housing to families with children within the City of
Monona. Monona has recognized certain demographic changes in the city;
namely that young adults and children are a decreasing portion of the
population while the elderly comprise an increasing portion. In future
years, this trend would lead to under-utilization of existing infra-
structure such as schools and could lead to deterioration of existing
housing stock as fixed-income elderly are unable to maintain their
homes. The Master Plan of 1980, through its goals and objectives for
housing development, seeks to reverse this trend by encouraging the
development of housing that the average family with children can afford
while maintaining the character of the city of primarily single-family,
owner-occupied detached residences. The objective is threefold: (1)
the development of housing that maintains the character of the City of
Monona that (2) meets the needs and budgets of young families with
children and (3) provides the developer with enough incentive to tackle

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(1) Shirley F. Weiss, et al., _Residential Developer Decisions_,
cited by _Residential Development Handbook_ (Washington: Urban Land
Institute, 1978), p. 4.

(2) _Residential Development Handbook_, p. 4.

the job. Reconciliation of the needs of the three participants in the
development process will be a trade-off among the density of develop-
ment, the size of individual dwelling units and amenities such as
garages and basements, and construction quality.

The process by which the concept design for the development of
Monona Woods evolved is outlined below:

I. City of Monona—Analysis of the impact the city's attitude as
   expressed explicitly in the 1980 Master Plan on potential
   residential development and its impact on the Monona Woods
   site.

II. Buyer Profile—Analysis of the typical buyer's needs and
    desires in terms of unit size, quality, amenities, and
    density and his ability to pay expressed as a maximum
    affordable purchase price.

III. Site Analysis—Analysis of the physical attributes of the
     site, the constraints these attributes place on develop-
     ment, and identification of site amenities that will
     enhance the marketability of the development. The form of
     an ideal design solution begins to emerge.

IV. Initial Design Scenario—The reconciliation of density, unit
    size and amenities, and quality of construction that takes
    into account the buyer's purchase budget, Monona's goals,
    site attributes, and projected absorption rate but is
    constrained by the developer's need for an acceptable
    profit.

V. Modified Design Scenario—Again a reconciliation as above but
   utilizing Tax Incremental Financing to offset some of the
   development costs to enable the developer to more closely
   meet the needs and desires of the consumer and the City of
   Monona and to be more sensitive to the natural amenities
   of the site while maintaining an acceptable profit.

SITE ANALYSIS

The site analysis portion of this report is divided into three sections: (1) a detailed analysis of the physical features of the site, (2) analysis of the linkages between the site, the City of Monona, and the greater Madison area, and (3) a summary analysis outlining some of the competitive advantages and disadvantages of the Monona Woods site for residential development and featuresof an ideal development plan suggested by the attributes of the site.

Physical Features

The physical features of the site were analized using a method similar to one outlined by Ralph Kiefer and Michael Robbins in their article "Computer-Based Land Use Suitability Maps." Briefly summarized, the methodology is to divide the site into small cells, score each cell for features and attributes affecting the design and construction of residential structures and amenities, and then derive a composite score for each cell. Those cells with the best scores will indicate the areas of the site most suitable for development while the cells with the worst scores indicate those areas of the site that should be left as open space.

To impliment this method in Monona Woods, the site wasdivided into 349 cells, each approximately 50' x 50' as shown in Exhibit 1. Each cell is about halfthe size of a residential lot. The eight attributes thought to have a major impact on development were selected and appear as follows:
1. Soil type
2. Suitability for buildings
3. Suitability for roadways
4. Slope
5. Archeological site
6. Mature tree masses
7. View
8. Protection from winter wind and solar orientation
These attributes ascribed to each cell are scored according to Kiefer's classification as described in Exhibit 2.

The soil map, Exhibit 3, shows the location of the four soils present on the site. The St. Charles silt loam is an upland prairie

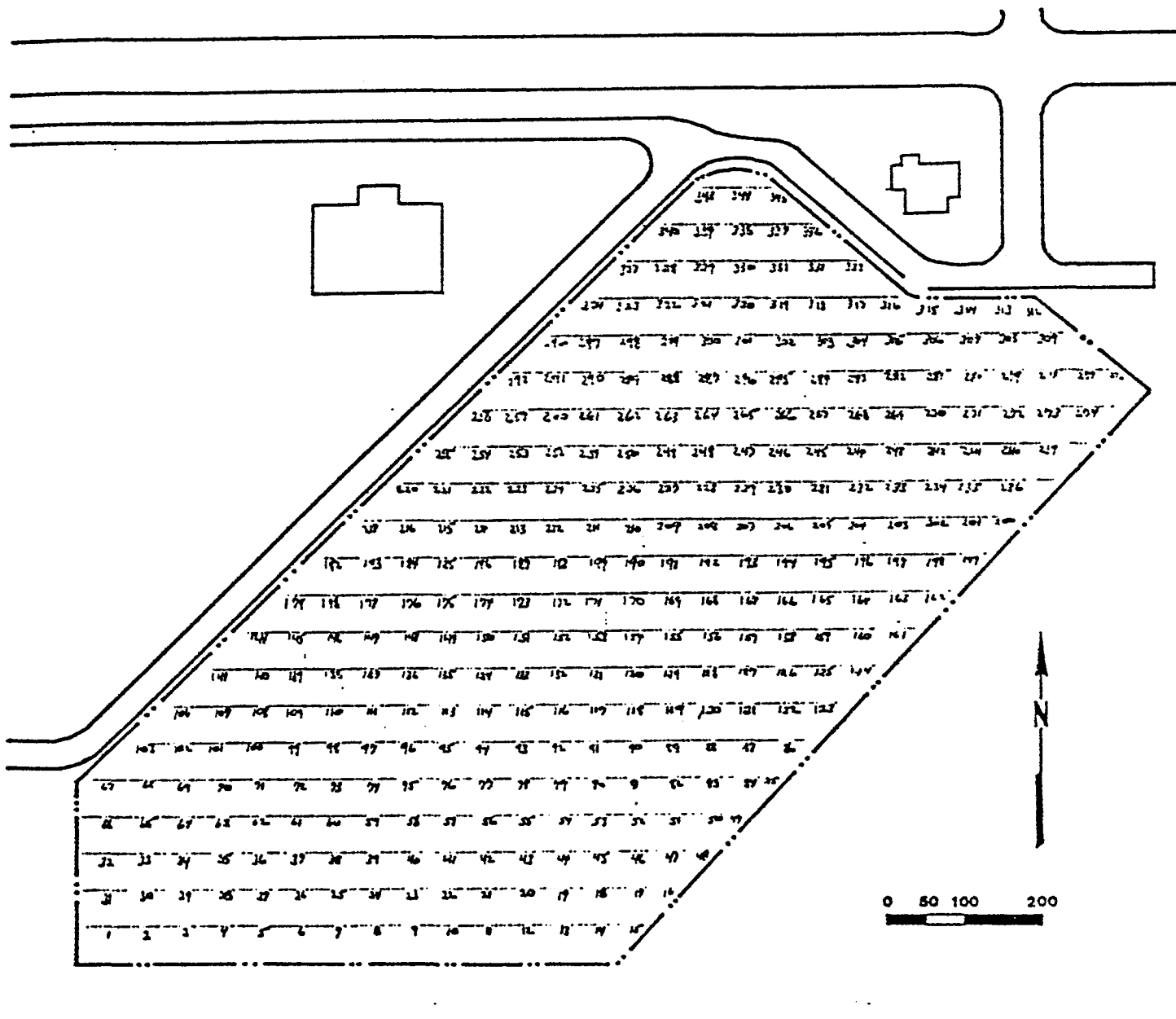# EXHIBIT 1

SITE DIVIDED INTO CELLS

EXHIBIT 2

SCORING SYSTEM

Point Score	Term	Explanation
8 - 9	Optimum	The site conditions are ideal and present no significant limitations to development.
5 - 7	Satisfactory	The site conditions are satisfactory and present no serious limitationa to development. Any limitationa presented by the site conditions should be considered, but can be overcome without great difficulty.
2- 4	Marginal	The site contains present serious limitations to development. The use of these areas may be feasible in some cases but the limitations will be difficult to correct. If the use of areas rated as "marginal" is required or contemplated, each area should be subjected to further study to determine whether or not the use of the area is feasible.
0 - 1	Unsatisfactory	The site conditions present severe limitations to development and the use of these areas is undesirable in almost all cases. If these areas are to be developed, the sites selected for use must be subjected to a through engineering site study.

Source: Kiefer and Robbins, "Computer-Based Land Use Suitability Maps"

soil fairly well suited for dwellings and roadways. The other soils are bottomland soils, generally not well drained, and less suitable for dwellings and roadways. The shaded area has been filled, but the nature of the fill is unknown. Three features associated with the soil type were evaluated: (1) soil classification on the Unified Soil Classification System, (2) suitability for buildings, and (3) suitability for roadways. The evaluations appear in Exhibit 4. Each cell was evaluated for each of the three characteristics. The soil class score for those cells in the fill area was reduced 2 points to account for the uncertainty about the nature of the fill.

The site slopes from the northwest toward Upper Mud Lake Marsh. The total elevation change is about 16' from South Towne Drive to the

EXHIBIT 3

SOIL MAP
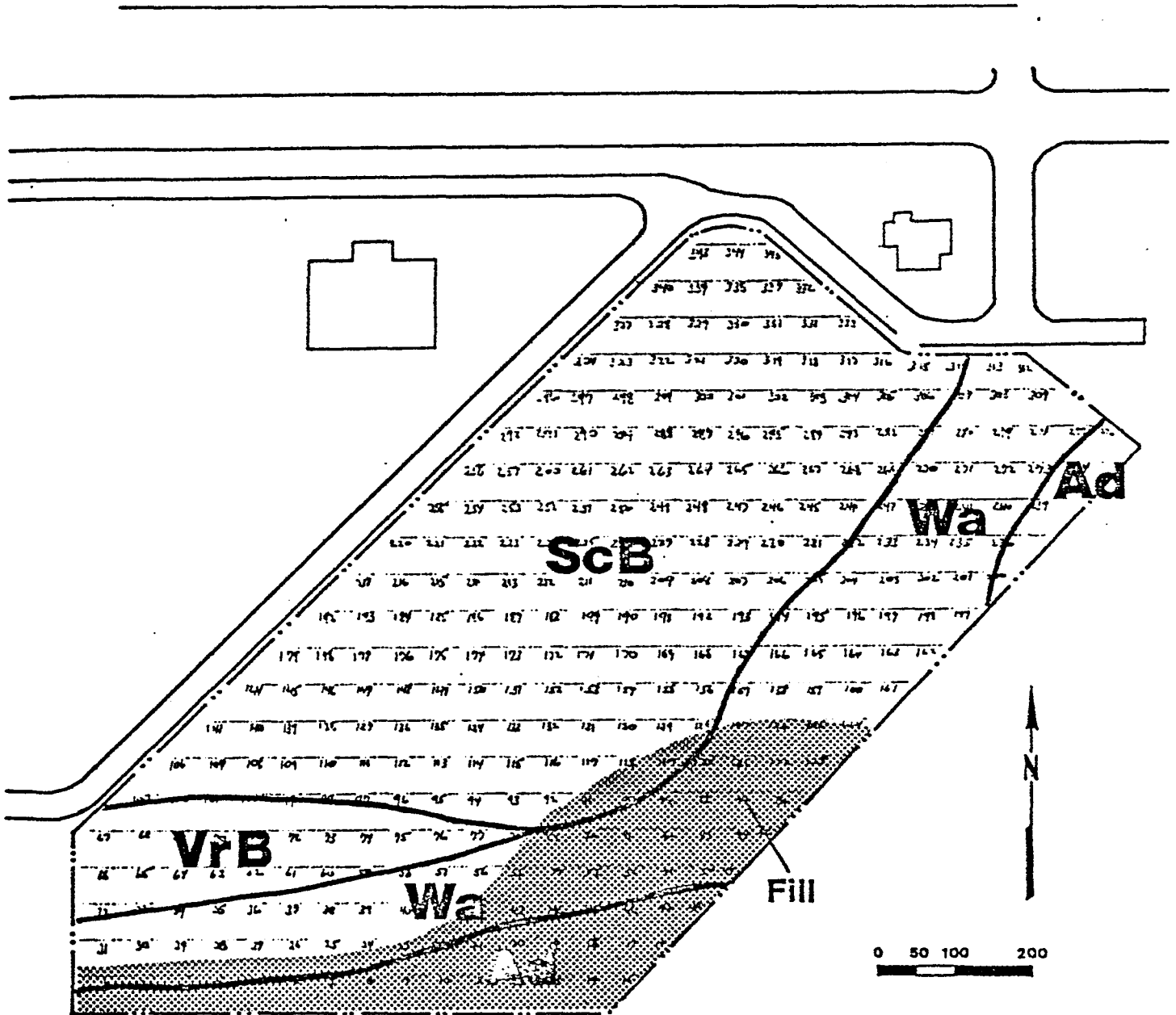
ScB — St. Charles silt loam   Wa — Wacousta silty clay loam
Ad — Adrain muck   VrB — Virgil silt loam

Source: Dane County Soil Survey

EXHIBIT 4

SCORING OF SOIL ATTRIBUTES

Soil type	ScB	Wa	Ad	VrB
USCS Class	CL,ML-CL	CL,ML,ML-CL	Pt	CL,SM
Rating	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory
Score	5	5 ·	1	5
Limitations on dwellings with basements	Slight	Very Severe	Very Severe	Severe
Rating	Optimum	Unsatisfactory	Unsatisfactory	Marginal
Score	8	1	1	3
Limitations for streets	Moderate	Very Severe	Severe	Severe
Rating	Satisfactory	Unsatisfactory	Marginal	Marginal
Score	6	1	3	3

Sources: Dane County Soil Survey
        Kiefer and Robbins

eastern boundary of the site. Slopes on the site are mapped in Exhibit 5 and the scoring is summarized in Exhibit 8. The scoring system follows Kiefer and Robbins.

Exhibit 6 shows two special features of the site, the massing of mature trees and the presence of an archeological site. The mature trees, mainly oak, are one of the unique amenities of the site and should be preserved if possible. It is likely Monona would want the trees preserved. Likewise, the archeological site, an old Indian burial ground, should be avoided. Exhibit 8 shows the scoring for these attributes. The scoring for view is also derived from Exhibit 6 and is presented in Exhibit 8.

The last attributes considered concern the orientation of the cell in relation to the tree massing that would provide protection from northerly winter winds and allow for solar orientation. Exhibit 7 shows the areas with protection and solar orientation. The scoring for these attributes appears in Exhibit 8.

A number of important attributes are included in the above list but not explicitly discussed. Depth to bedrock does not restrict development since it is over 10' for the whole site. Flood hazard considerations are incorporated into the suitability for buildings and roads attributes, as are the engineering properties of the soils.

Each cell was scored for each of the eight characteristics. The scoring is tabulated in Appendix A. A weighting was given to each attribute to reflect its relative importance in residential development. A composite score for each cell was then calculated as the Euclidean distance from the given cell to the ideal cell (ie. all characteristics score 9). The formula

$$\text{Euclidean Distance} = \sqrt{\sum (\text{Score} - 9)^2 \times \text{Weight}}$$

is used. These raw composite scores were normalized by dividing by the least score, yeilding a range of normal scores from 1.0 to 3.0. Both the raw and normalized scores are tabulated in Appendix A. Exhibit 9 shows the normalized scores plotted on a map of the site. The site was then divided into four classifications using the normal scores:

Score	Classification
1.0 - 1.5	Optimal
1.6 - 2.0	Satisfactory
2.1 - 2.5	Marginal
2.6 - 3.0	Unsatisfactory

Exhibit 10 shows this division. Overall, there is about 5.0 acres rated Optimal, 5.7 acres rated Satisfactory, 1.3 acres rated Marginal, and 8.0 acres rated Unsatisfactory. The major difference between Optimal and Satisfactory is the tree massing. The Marginal and Unsatisfactory areas are mainly due to the underlying soil conditions.

Linkages

The site is bounded on the north by the Beltline highway, on the west by South Towne Drive, and on the south and east by Upper Mud Lake Marsh. The Beltline highway and Monona Drive provide quick access to Monona and the greater Madison area. Other developments in the area are primarily strip commercial along the Beltline, Monona's commercial district north on Monona Drive, and the South Towne Shopping Center just west of the site. The Upper Mud Lake Marsh provides a natural barrier and a unique scenic quality to the site.

The public infrastructure, including water, sewer, gas, electricity, and telephone are available adjacent to the site along South Towne Drive. Capacities are adequate to support development of the subject. The 18" sewer line that runs along South Towne Drive, however,

is only about 3' below grade; much too high to serve the site. A lift
station will be necessary.

Summary Analysis

The Monona Woods site has many competitive advantages for resi-
dential development. It is a site of unique natural beauty with mature
tree cover and panoramic views of Upper Mud Lake Marsh but within
minutes of downtown Monona and Madison. The vistas to the south open
the possibility of solar heating for parts of the development. Proxi-
mity of the Beltline highway provides ready access to all parts of
Madison. The highway is screened by the trees from most of the site.
Monona is particularly interested in promoting single family residential
development, so the probability of creating a monopolistic position in
concert with he city is high.

Disadvantages of the site fall into two categories, the image of
the area and the negative aspects of some of the features discussed
above. The area currently does not have an image as a residential
neighborhood; it has mostly commercial neighbors. The Beltline highway
is associated with noise and conjestion. The marsh produces mosquitos
and sometimes unpleasnt smells. Overall, however, the negative aspects
are outweighed by their positive counterparts. Aggressive marketing and
a desirable product can impact public perception to create a residential
image.

The site analysis, and particularly Exhibit 10, begin to suggest
features to incorporate into an ideal solution. Some of these are:

- Preserving as many trees as possible and using them as a
  screen to protect from northerly winter winds and intrusion
  from the Beltline and surrounding commercial area.

- Utilize the potential for solar orentiation to incorporate
  passive solar heating into part of the design.

- Orient the dwellings and activity spaces toward the southeast
  to take advantage of the view.

- Use a high density cluster development plan to preserve as
  much open space as possible, try to maintain the "woodsy"
  atmosphere.

- Dwellings should utilize rustic materials such as rough sawn
  siding, again to maintain the "woodsy" setting.

- Dwellings should avoid open porches, etc. due to the mosquito
  problem; enclosed porches, etc. are prefered.

EXHIBIT 5

SLOPE MAP
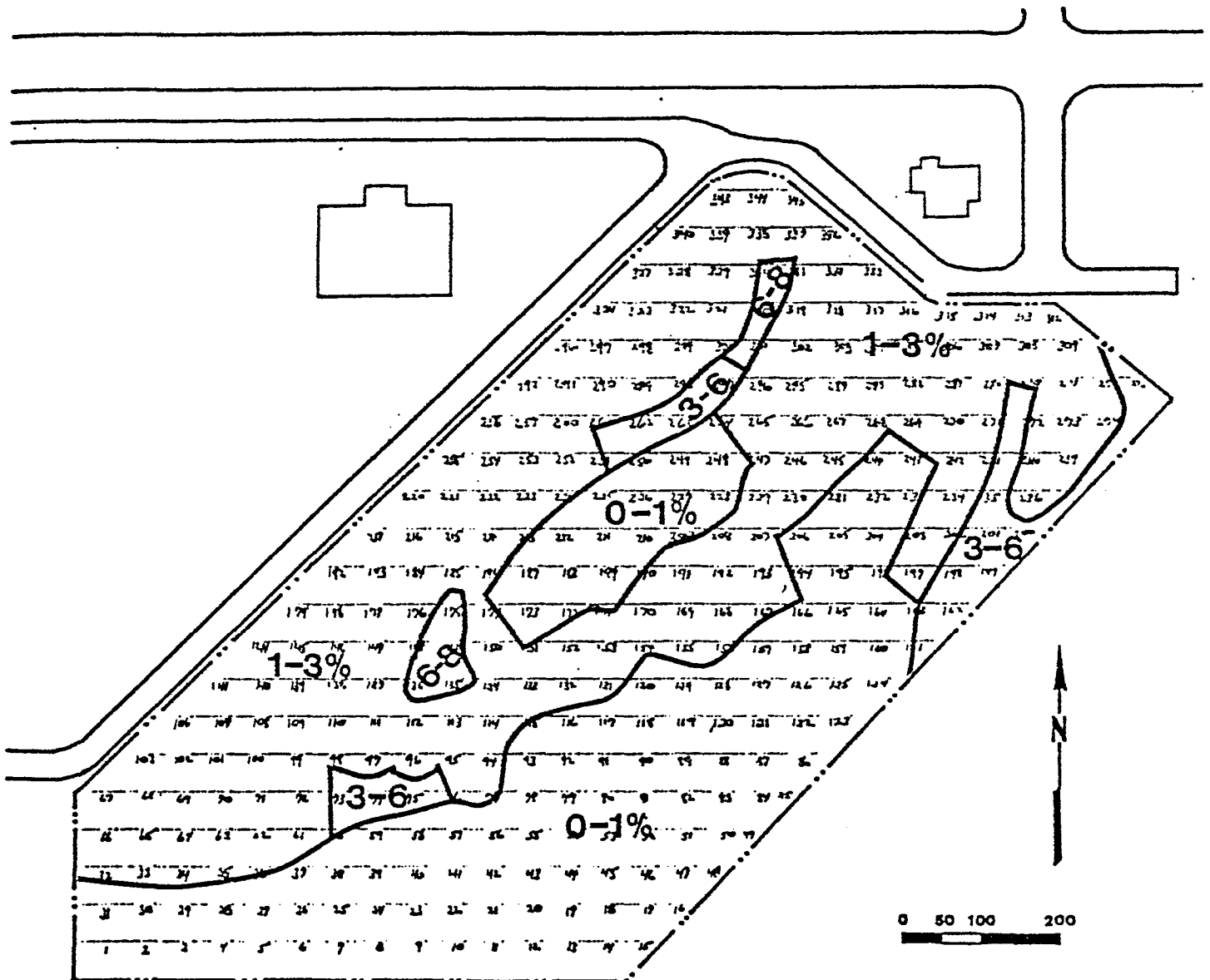
Source: Class handout, topographic map

EXHIBIT 6

TREE MASSING AND ARCHEOLOGICAL SITE
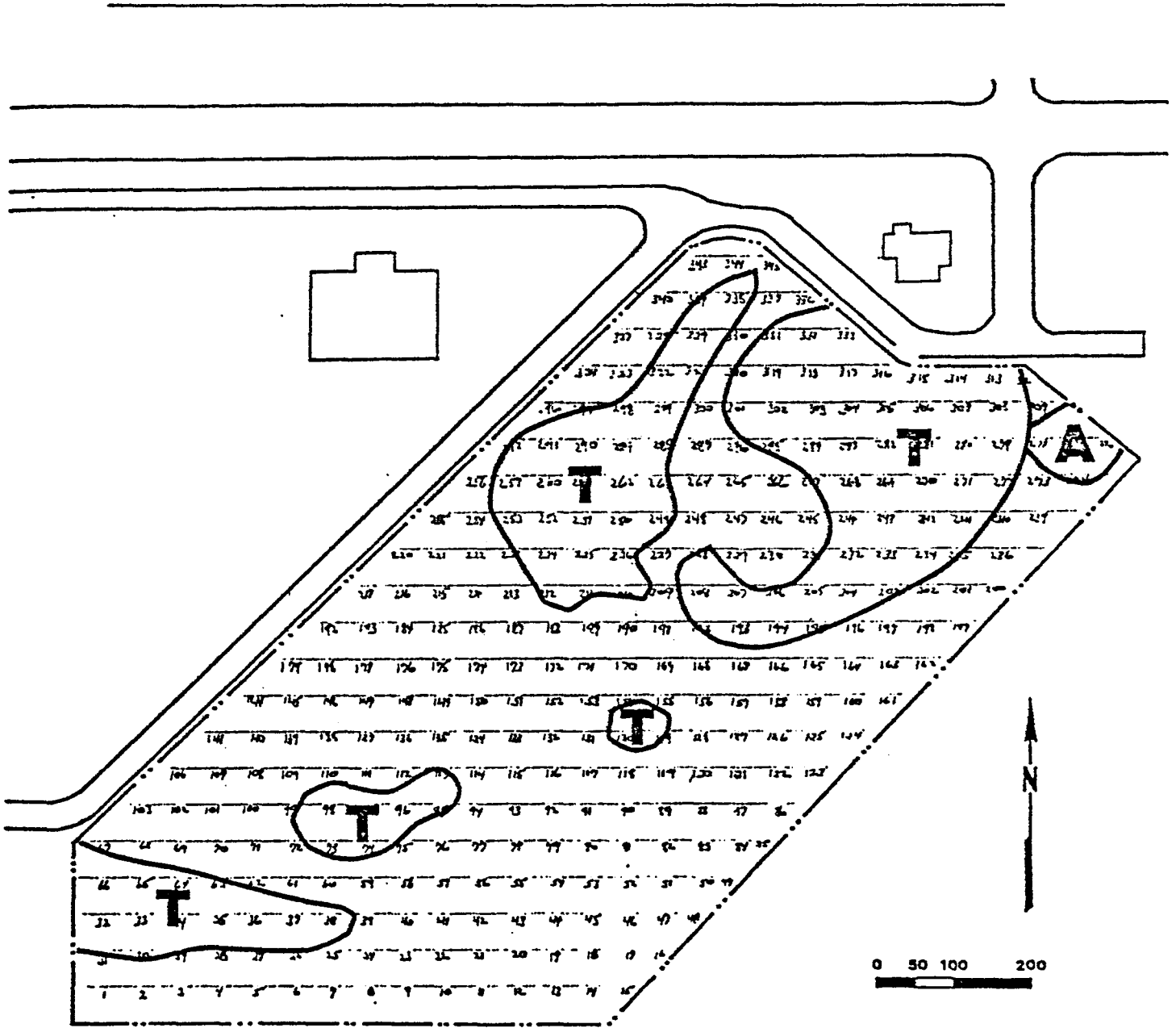
A – Archeological Site
T – Tree Massings

EXHIBIT 7

AREAS PROTECTED FROM NORTH WIND AND SOLAR ORIENTATION
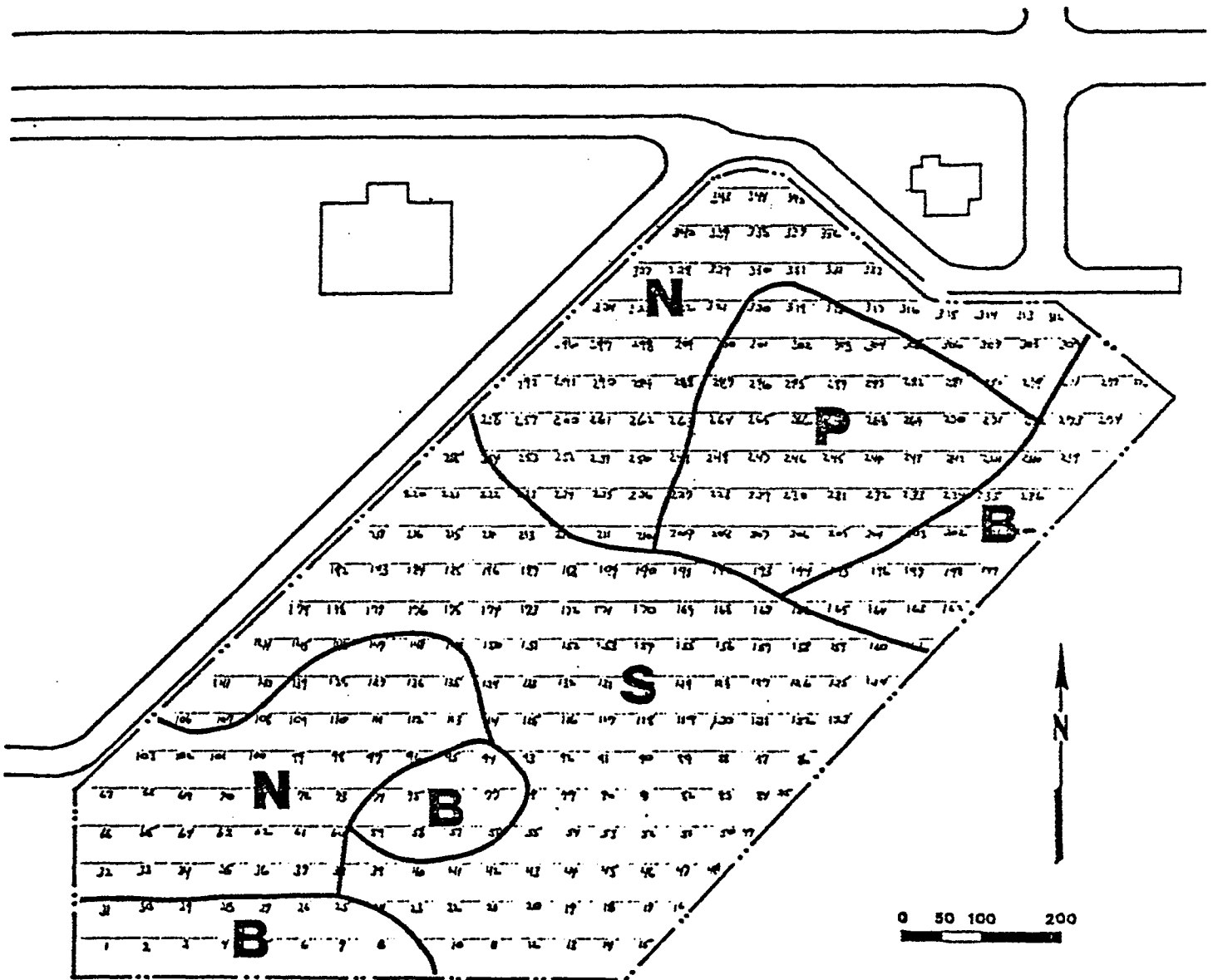
P - Protection from north wind   B - Both attributes
S - Solar orientation   N - Neither attribute

EXHIBIT 8

SCORING FOR INDIVIDUAL CELLS

Attribute	Score	Degree of the Attribute
Slope	9	3 to 6%
	7	1 to 3%
	6	0 to 1%
	5	6 to 8%
Archeological Site	9	Archeological site not present
	0	Archeological site present
Trees	8	Immature trees, bushes, and grass
	3	Mature tree masses
View	8	Toward the marsh
	6	Inward, surrounded by trees
	4	Toward the Beltline and the commercial area
Orientation	9	Protected from north winter winds and solar orientation
	7	Protected from north winter winds only
	7	Solar orientation only
	5	Neither protected from north winds nor solar orentiation

Source: Kiefer and Robbins (slope scoring only)

EXHIBIT 9

NORMALIZED CELL SCORES
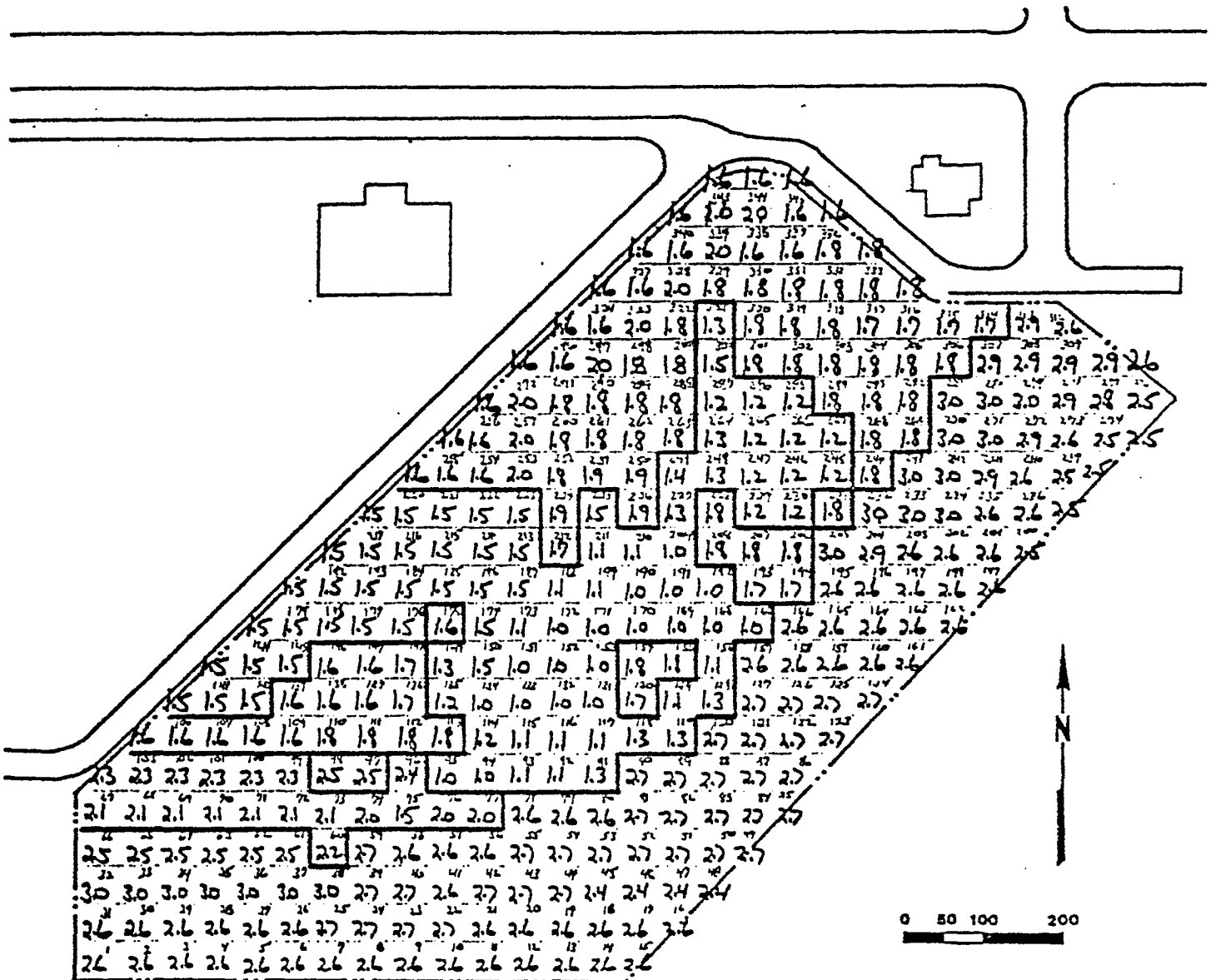
EXHIBIT 10

RELATIVE DEVELOPABILITY
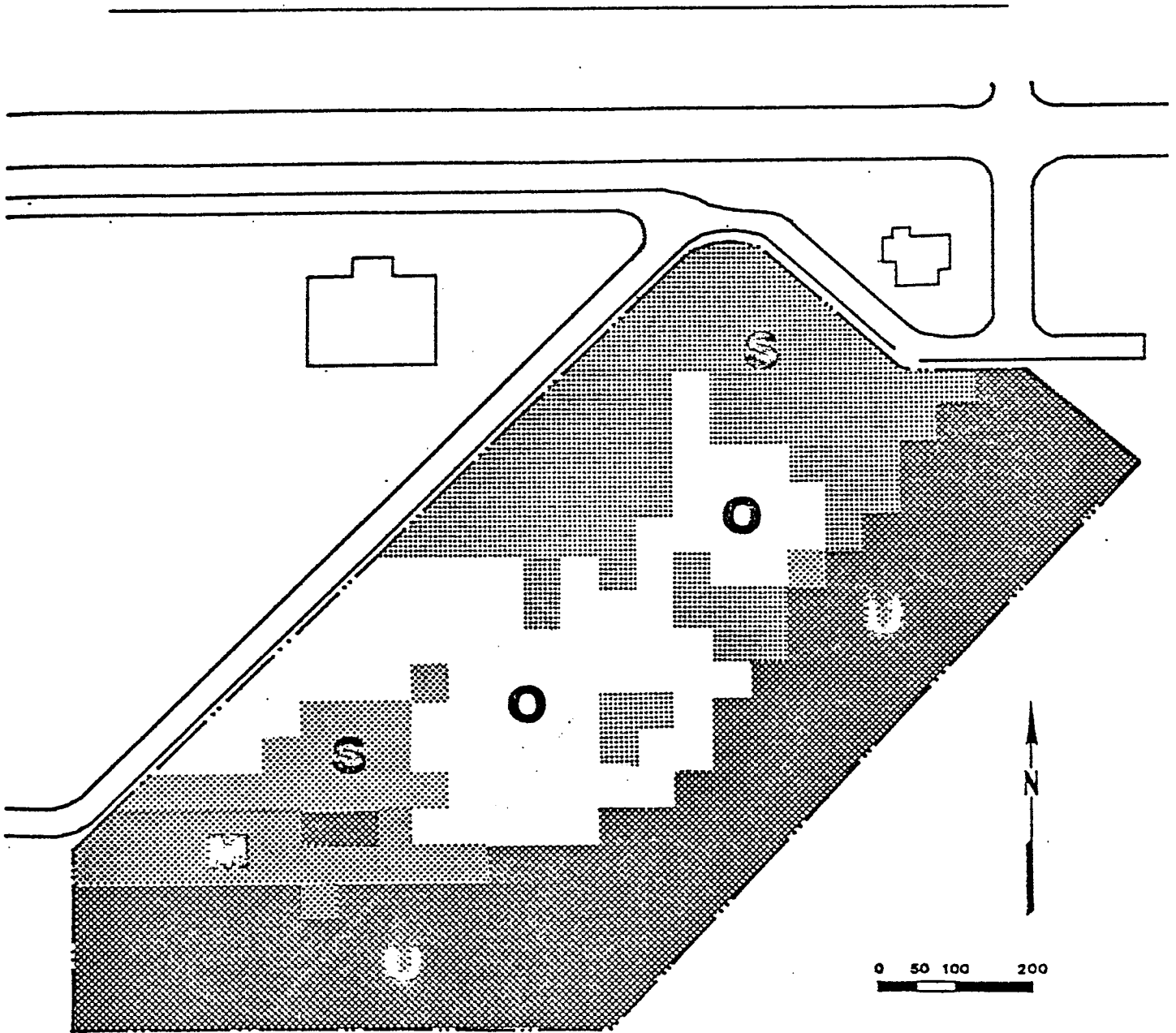
O – Optimum   M – Marginal
S – Satisfactory   U – Unsatisfactory

LINKAGES

Direct access to the site is obtained from Broadway, directly off Highway 12-18, also known as the Beltline. Three miles east of the site, the Beltline connects with the Interstate, thus providing access to Chicago, Minneapolis and Milwaukee. The subject site is served by one Madison Metro bus. But the limited mass transit connection has the potential for expansion as the area around the subject site expands. Air linkages are provided thru Madison's airport which has frequent connections to Chicago, Milwaukee and other major cities.

The vicinity of the site is characterized by a mixture of strip developments along the Beltline and Monona Drive. These include such large commercial establishments such as Shop-Ko and WPS, as well as a large number of fast food establishments and other service oriented businesses. The subject property has access not only to Monona's educational and recreational facilities but to those of Madison as well. These include the main campus of the University of Wisconsin, Edgewood College, and Madison Area Technical College (MATC).

As for employment linkages, they center mainly on public and service industries. Many area residents are employed by the state government, UW and MATC campuses, and several medical and retail facilities in the Monona and Madison areas. Generally, the area offers white collar and professional type employment opportunities.

LEGAL, REGULATORY AND POLITICAL ATTRIBUTES

The site is a densely wooded lot of about 20.4 acres. Boundaries of the site include Broadway to the north, South Towne Drive on the west and a marshy wetland area to the east. To the south there is an open and developable area. There are no legal obstacles to the development of the subject site and none can be anticipated. While there is a mortgage by the Gisholt Machine Company, there are no tax or mechanics liens against the site.

Monona's Master Plan calls for family oriented, owner occupied, single family detached units. However, the aging of the population and the high cost of providing housing under today's financial conditions is beginning to change this pattern. Moreover, since the site is in the City of Monona's TIF district, there is an excellent opportunity for public/private cooperation. This can help in achieving many of the goals and objectives of Monona's zoning and master plan, as well as its TIF district. It can be demonstrated that the only way to develop a financially solvent project of reasonably good quality and yet affordable is through some form of partial public funding. This funding can take several forms, such as public funding of the land purchase or

financing of site improvements (infrastructure) at no cost to the developer. The increased taxes paid by the developed vs. the undeveloped site ideally should cover the costs of providing assitance to the site.

DYNAMIC ATTRIBUTES

The wetlands, trees and the open areas all combine to create a very appealing visual orientation for the site. A portion of the site that is directly overlooking the wetlands has a premier psychological benefit. Other portions of the site that might be overlooking the wooded areas of the site, will enjoy the view of the trees and other vegetation covering the site, to the extent that can be preserved. So, the internal views of the site are excellent, while the external views are outstanding.

While the site has definite visual appeal, it also has some noise pollution problems. The vehicular noise produced by the surrounding roads reaches unpleasant levels in portions of the site, particularly during rush hour periods. The main source of sound pollution, on a 24 hour basis, is the Beltline Highway. South Towne Drive's sound production is disquieting, but diminishes significantly after daily rush hour. In general, the sound pollution intensifies as one moves from the southern part of the site to the northern perimeter.

ALTERNATIVE DESIGN SCENARIOS

The ultimate objective of analyzing different design scenarios is arriving at the most ideal tradeoff between an economically feasible product that also satisfies as many of the buyer's needs as possible. More specifically, the final design solution for the Monona Woods site attempts to achieve the following objectives.

1. Achieve physical economies of scale through intensive land use and cluster development plan.

2. Minimize the negative externalities of the site.

3. Preserve as many trees as possible and avoid the archaeological site.

4. Maximize solar exposure and views toward the wetlands.

5. Create a differentiated product by exploiting the monopolistic advantages of the site.

In trying to create an economically feasible project we must first determine the buyer's effective demand. This is the maximum

selling price of our units and given this price constraint, we will
try to achieve a balance among such variables as quality, size, density,
and amenities of the units.

Buyer Profile

Status: Married
Monthly Income: $2,100; growing at .09
Downpayment Amount: $15,000
Debt limit of 30% of adjusted monthly income
Adjustment .30

Debt Structure for Home Buyer

Term: 40 years
Rate: .155
Monthly Payment:
Justified Purchase Price:

        2100 x .30 x (1-.30) = $441 monthly mortgage payment
        441 x 77.25587 = 34,070   maximum mortgage
    + Downpayment   15,000
    = Purchase Price $49,070

This purchase price is the most critical limiting factor in
determining the density of the design solution and the overall quality
of the units. To begin our analysis we consider the following three
design solutions which offer different densities.

   1. Duplex/private court, 22 units on 3.23 acres, gross density
of 6.81 DU/AC.

   2. Quadplex/public cul-de-sac, 24 units on 3.05 acres, gross
denisty of 7.87 DU/AC.

   3. Quadplex/private court, 44 units on 4.66 acres, gross density
of 9.44 DU/AC.

As we move from design one to three, denser development is pos-
sible as follows:

   Plan 1: $\frac{20.4 \text{ AC}}{3.23}$ = 6.32 ≈ 6 modules x 22 = <u>132</u> total units

   Plan 2: $\frac{20.4 \text{ AC}}{3.05}$ = 6.69 ≈ 6 modules x 24 = <u>144</u> total units

   Plan 3: $\frac{20.4 \text{ AC}}{4.66}$ = 4.38 ≈ 4 modules x 44 = <u>176</u> total units

Source: Cost Effective Site Planning

Also, we use a denser design, the site development costs per unit drop as follows:

Plan 1: $5176/DU x 1.51 = $6306/DU
Plan 2: $3138/DU x 1.51 = $4738/DU
Plan 3: $2918/DU x 1.51 = $4406/DU

Source: Cost Effective Site Planning

To obtain the maximum construction budget per unit under each design solution, we subtract land and site improvement costs from the justified purchase price.

$$\text{land cost/DU} = \frac{\text{land price + initial site improvements}}{\text{\# of units in the design}}$$

$$= \frac{20.4 \text{ AC} \times \$39,000/\text{AC} + \$25,400}{\text{\# of units}}$$

$$\text{Plan 1 land cost/DU} = \frac{821,000}{132} = \$6,220$$

$$\text{Plan 2 land cost/DU} = \frac{821,000}{144} = \$5,701$$

$$\text{Plan 3 land cost/DU} = \frac{821,000}{176} = \$4,666$$

	Private Court Duplex 6.8 DU/AC	Quadplex Cul-de-Sac 7.87 DU/AC	Quadplex Private Court 9.44 DU/AC
Price	$49,070	$49,070	$49,070
- land cost/DU	$ 6,220	$ 5,701	$ 4,666
- site improvement/DU	$ 6,306	$ 4,738	$ 4,406
Construction budget	$36,544	$38,631	$40,000

Given the construction budget under each scenario, we can use the Marshall & Swift cost program to explore the tradeoffs of size, quality and amenities. The results are summarized in Exhibit 11.

Exhibit 11

Living Area in Square Feet

Private Court Duplex - 6.8 DU/AC   Construction Budget $36,544

Quality of Construction	W/G&B	W/B Only	W/G Only	WO/G&B
Fair	1011	1076	1235	1315
Average	859	922	1037	1114
Good	694	753	821	891
Very Good	604	664	712	782

Quadplex Cul-De-Sac - 7.87 DU/AC   Construction Budget $38,631

Fair	1244	1310	1389	1462
Average	1067	1132	1186	1258
Good	866	926	952	1018
Very Good	755	815	827	893

Quadplex - Private Court - 9.44 DU/AC   Construction Budget $40,000

Fair	1290	1356	1441	1514
Average	1108	1172	1231	1303
Good	899	958	988	1054
Very Good	784	844	859	925

Notes to Exhibit 11

    1. W = with, WO = without, B = basement, G = garage
    2. For method of calculation refer to Appendix E.

    The numbers in Exhibit 11 are arrived at under a static analysis. The "real" numbers will be somewhat lower due to holding costs in the project and also an allowance for development profit. These "static" figures are meant as an approximate indication of the magnitude of effect as we change variables. In other words, as we change the quality of construction from fair to very good, we are forced to reduce the size of the units. Otherwise, the cost of construction will rise above budget. Also, adding a basement and a garage would mean either a reduction in the size of the unit or in the quality of its construction.

    Design solution 3 will provide for the largest units given the same quality of construction and such things as garage and basement. Given the buyer profile (married and 3 children), his need for living space is probably greater than the need to live in a less dense development. So, of the three alternative designs the 3rd one seems to be the most desirable one for our purposes.

Before proceeding with a detailed cash solvency test, the exact number of units to be built must be determined. This is primarily a function of five factors.

1. The shape of the site
2. The dimension of the site
3. The dimensions of the design modules
4. The necessity to avoid the archeological site located on the northwest corner of the site.
5. The necessity to avoid the southwest corner of the site because of its highly unsuitable soil.

Since the width of each module is 382 feet and the length of the site is about 1200 feet (on the South Towne Drive side), the best "fit" will allow for just 3 modules as shown in Figure A. However, the width of the site allows for a longer than standard module, such that instead of having 44 units (11 quadplexes) we can build 52 units.. This is done by adding a quadplex to each side of the module as shown. So, 2 modules (clusters) contain 52 units each. But, since the site is not a perfect rectangle, we need to modify the number of units in the third cluster by eliminating 2 quadplexes and thus making it a 44 unit module. Therefore, the total number of units is 148 (52 + 52 + 48). This particular "fit" accommodates all five factors mentioned above.

A more systematic way of arriving at the number of units to be built is as follows:

Purchase price (sales)	$49,070
Land cost & improvement (%)	.2
	$ 9,814
Less site improvement/unit	$ 4,606
Equals land cost/unit	$ 5,408

$$\frac{\text{total land cost}}{\text{land cost/unit}} = \frac{\$795,600}{\$\ 5,408} = 148 \text{ units to develop}$$

CASH SOLVENCY TEST

The Land Development Cash Flow Model (CMF 554 Version 1.10) is used for the solvency test. To create the input for the model we need to decide on a staging strategy and also on a schedule of construction costs, site improvement costs and sales prices. Site improvement cost (infrastructure)/module = $4406 x 52 units = $229,112

Figure A
FINAL DESIGN SOLUTION WITHOUT TIF MONEY
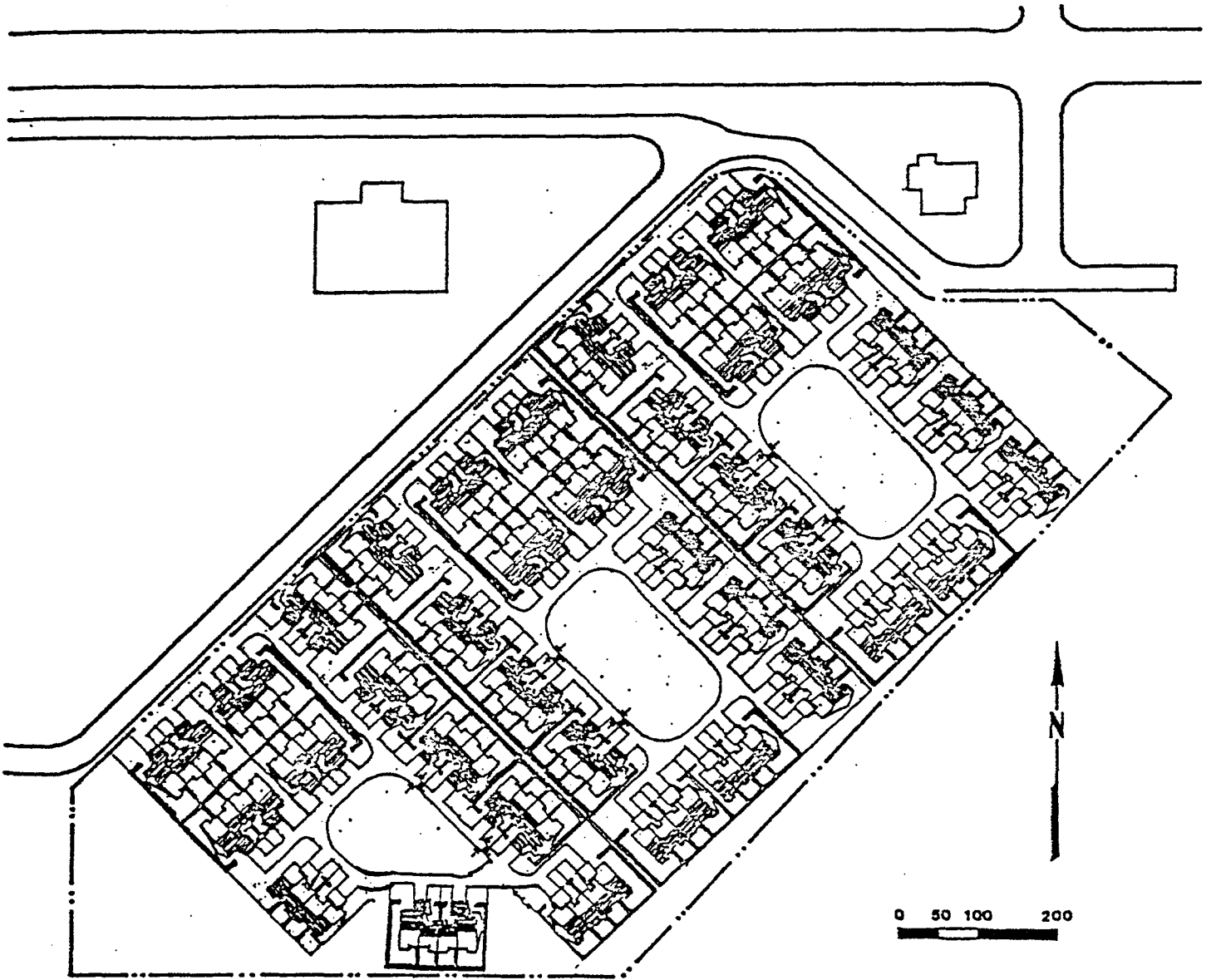
	justified sales price	$49,070
less	land cost/unit ($\frac{821,000}{148}$)	$ 5,547
less	site improvement cost/unit	$ 4,406
		$39,117
less	profit & holding costs (20%)	$ 1,823
=	construction budget	$31,200

Exhibit 12 shows the quarterly change in construction costs and sales prices per unit. It also includes the cost of putting in the site improvements per module.

Exhibit 12

Year	Quarter	Construction Cost Per Unit	Site Improvement Cost/Module	Sales/Price Unit
1	1	$31,200	$229,112	$49,070
	2	31,902	234,840	50,297
	3	32,620	240,710	51,554
	4	33,354	246,729	52,843
2	1	34,104	252,897	54,164
	2	34,872	259,219	55,518
	3	35,656	265,700	56,906
	4	36,458	272,342	58,329
3	1	37,279	279,151	59,787
	2	38,118	286,129	61,282
	3	38,975	293,283	62,814
	4	39,852	300,615	64,384
4	1	40,749	308,130	65,994
	2	41,666	315,833	67,644
	3	42,603	323,729	69,335
	4	43,562	331,822	71,068
5	1	44,542	340,118	72,845
	2	45,544	348,621	74,666
	3	46,569	357,337	76,532
	4	47,617	366,270	78,446

Note: At the end of year 5, the buyer can still afford the units. See Appendix F.

Note: Construction cost, cost of site improvement, and sales prices are all going up at 9% a year or 2.25% per quarter.

Using the figures from Exhibit 12, we can prepare the input for the cash flow model. The staging of the development project is such that there are no site improvement costs during the first year. The reasoning behind such staging is that since there are 9 quadplexes located along the South Towne Drive and thus have the needed infrastructure already in place, this is where the development should begin. This decision saves a substantial sum due to reduced holding costs.

Exhibit 13 contains the data for our first run of the cash flow model.

Exhibit 13

Year	Quarter	Site Improvement Costs $	Construction Costs $	Units Built	Sales Amount	Units Sold
1	1	0	0	0	0	0
	2	0	511,680	16	0	0
	3	0	262,234	8	721,756	14
	4	0	268,794	8	422,744	8
2	1	0	0	0	216,656	4
	2	259,219	423,600	12	333,108	6
	3	0	0	0	569,060	10
	4	0	296,698	8	116,658	2
3	1	0	304,115	8	298,835	5
	2	0	155,859	4	612,820	10
	3	293,283	479,261	12	314,070	5
	4	0	163,747	4	643,840	10
4	1	0	503,530	12	329,970	5
	2	0	516,115	12	676,440	10
	3	0	176,339	4	693,350	10
	4	0	0	0	355,340	5
5	1	0	555,802	12	145,690	2
	2	348,621	949,488	20	746,660	10
	3	0	389,293	8	1,913,300	25
	4	0	0	0	549,122	7

Note: Absorption period of 5 years with sales percent per years of .15, .15, .20, .20, .30.

Starting with a construction cost/unit budget of $31,200 and then increasing it by 5% and then again by 2%, we get the following results.

Results of Cash Flow Model Solvency Tests

Construction Cost/Unit $	Yield %
$31,200	67
$32,840	50
$33,497	39

To compare the potential trade-offs under alternative yield scenarios, we use the Marshall & Swift Cost Program. The sensitivity analysis involves the use of such variables as quality of construction, existence or lack of basement, existence or lack of garage, existence or lack of both garage and basement. The results are in Exhibit 14.

Exhibit 14

Living Area (Square Feet)

$31,200 and 67% Yield

Quality of Construction	W/G&B	W/B Only	W/G Only	WO/G&B
Fair	992	1058	1108	1181
Average	850	914	944	1016
Good	688	748	756	822
Very Good	594	658	655	721

$32,840 and 50% Yield

Fair	1046	1112	1168	1241
Average	897	961	997	1068
Good	727	787	799	865
Very Good	632	693	693	759

$33,497 and 39% Yield

Fair	1070	1135	1195	1268
Average	917	982	1019	1091
Good	743	803	816	882
Very Good	646	706	709	774

Choosing 50% as a desirable rate of return, we proceed to make the appropriate trade off of the variables in Exhibit 14.

Comparison to the Target Market

The target market is a family with 2 adults and 3 children. So, space requirement would most likely have priority over quality of construction and existence of basement or garage. Although basement would be desirable for storage and/or conversion to family rooms, it is not essential. Garage too, is not a critical requirement.

Criteria for Trade-Offs

A living area of at least 1100 square feet is desired for a family of 5. Looking at Exhibit 14(50% yield) this can only be achieved

with fair quality construction. Furthermore, either the basement or the garage must be sacrificed. Ideally, market forces should determine which of the two is in more demand. However, from a design point of view, eliminating the basement would be best for a number of reasons.

1. Since some of the soil is poor and wet, we might have problems of wet or flooded basements.

2. Visual appeal of the project would be improved if automobiles could be taken out of site.

3. The garages can be enlarged to allow for extra storage while still being able to build at least 1100 square feet of living area.

Final Proposal

The units to be built are of fair quality of construction with a living area 1150 square feet, no basement, but a garage of 360 square feet (12 x 30). The cost of construction would be as follows:

Fair quality construction 1150 x $26.42/SF	=	$30,383
No basement		--
Garage (360 SF x 7.32/SF	=	2,635
Total cost/unit		$33,018

Note: Cost figures/SF from Marshall & Swift.

Thus, the construction costs would be spread throughout the phasing of the project as in Exhibit 15. The yield would be an acceptable 46.8%.

Exhibit 15

Construction Cost

Year	Quarter			
	1	2	3	4
1	0	541,495	277,514	284,456
2	0	448,282	0	313,982
3	321,836	164,941	507,187	173,288
4	532,870	546,189	186,614	0
5	588,188	1,004,814	411,977	0

Note: The above costs don't include the additional cost of building on unsuitable soil. So, the actual costs of construction may be higher thus lowering the projected profit. (Part of the additional cost may be recovered thru the sale of lumber on the site.)

TIF FUNDING

The availability of $1,000,000 in TIF money will allow for drastic alterations in the development of the site. The bulk of this money will be used for land acquisition. The developer will only contribute $6,000 towards land cost. So, the TIF money will be utilized as follows:

Total TIF funding		$1,000,000
Land cost	$795,600	
Less developer's contribution	$ 6,000	
TIF contribution	$789,600	- $ 789,600
Available TIF for other uses		$ 210,400

The $210,400 in TIF money will be used to cover the site improvement costs as will be explained later.

Under TIF funding, there is almost no land cost, so the developer is not hard pressed to build a very high density project. Although profitability remains a major concern, achieving economies of scale becomes less critical. The TIF money will make the achievement of the following possible:

1. Reducing the overall density of the development project
2. Preserving the majority of trees
3. Avoiding construction on the undesirable areas
4. Improving the quality of construction of the units
5. Minimizing the negative externalities of the site
e.g., northern winds and noise pollution.
6. Improving the solar orientation of the design.

As for selecting the right design, the following factors are to be considered.

1. While the number of units to be built is somewhat arbitrary, the general guidelines of the Master Plan and the physical limitations of the site will prevent us from building either a very low or a very high density project..

2. The modules must have a relatively high net density, such that minimum clearing of trees would be needed.

3. Site development costs/DU must be kept low, to allow for a good quality of construction of the units.

Taking the above 3 criteria into account and following a somewhat subjective thought process, we chose a quadplex design with public

cul-de-sac, and a net density of 8.25 DU/AC. Each module contains 24 units on 2.91 acres. Thus, by building 3 modules we will have 72 units on about 9 acres. This leaves about 11 acres (over 55%) of the site as open space.

To test the solvency and profitability of the design solution, we use the data in Exhibit 17 and run the cash flow program (actual run in Appendix F). The result is that by allowing $37,168 for construction cost/unit, we will have a return on equity of 1.44, which is acceptable. The site improvement costs were calculated as follows.

Site development cost/unit ($3138) x (1.51) = $4738.38 SI/unit
Site improvement costs/module = $4738.38 x 24 (units/module)
                              = $113,721
Plus pump station $ 45,000
SI cost of 1st module $158,721

Leftover TIF funds after land purchase $210,400
Less TIF use for 1st module SI costs   158,721
TIF available for 2nd module SI costs $ 51,679

SI cost of 2nd module (4738.38 x 24 x 1.1685) = $132,883
Less TIF funds   51,679
SI cost 2nd module in CF model $ 81,204

SI cost of 3rd module (4738.38 x 24 x 1.3354) = $151,863

Exhibit 16

Cost Increase Factors

Year	Quarter	Cost Increase Factor
1	1	1
	2	1.0225
	3	1.0455
	4	1.0690
2	1	1.0931
	2	1.1177
	3	1.1428
	4	1.1685
3	1	1.1948
	2	1.2217
	3	1.2492
	4	1.2773
4	1	1.3061
	2	1.3354
	3	1.3655
	4	1.3962
5	1	1.4276
	2	1.4597
	3	1.4926
	4	1.5262

Exhibit 17

Data For CF Model with TIF

Year	Quarter	SI Cost	Construction Cost	Units Built	Sold Units	Sales Amount
1	1	0	0	0	0	0
	2	0	327,200	8	0	0
	3	0	334,560	8	8	410,421
	4	0	171,040	4	4	209,823
2	1	0	0	0	2	107,277
	2	0	0	0	2	109,691
	3	0	182,848	4	4	224,309
	4	81,204	186,960	4	4	229,353
3	1	0	0	0	2	117,258
	2	0	195,472	4	4	239,295
	3	0	199,872	4	5	306,491
	4	0	408,738	8	5	313,386
4	1	0	0	0	2	128,181
	2	151,863	213,664	4	2	131,056
	3	0	218,480	4	4	268,020
	4	0	446,784	8	4	274,046
5	1	0	0	0	4	280,209
	2	0	467,104	8	6	429,765
	3	0	238,816	4	4	292,968
	4	0	0	0	6	449,344

Note: Sales % per year, .15, .15, .20, .20, .30.

Given the construction budget fund of $47,168, we can build units of average quality construction, with garage, but no basement. Cost data are from Appendix E.

Construction budget/unit	$37,168
Garage cost/units (average quality)	$ 2,197
Equals - per unit cost - garage	$34,971
Cost/SF of average quality construction	+ 30.71
SF of living area possible	1,139 SF

Final Proposal with TIF Funding

The final decision is to build 72 units of average quality construction, living area of 1,139 square feet, with garage and without basement. Exhibit 18 shows the fit of the 3 modules on the site.

EXHIBIT 18
FINAL DESIGN WITH TIF AVAILABILITY
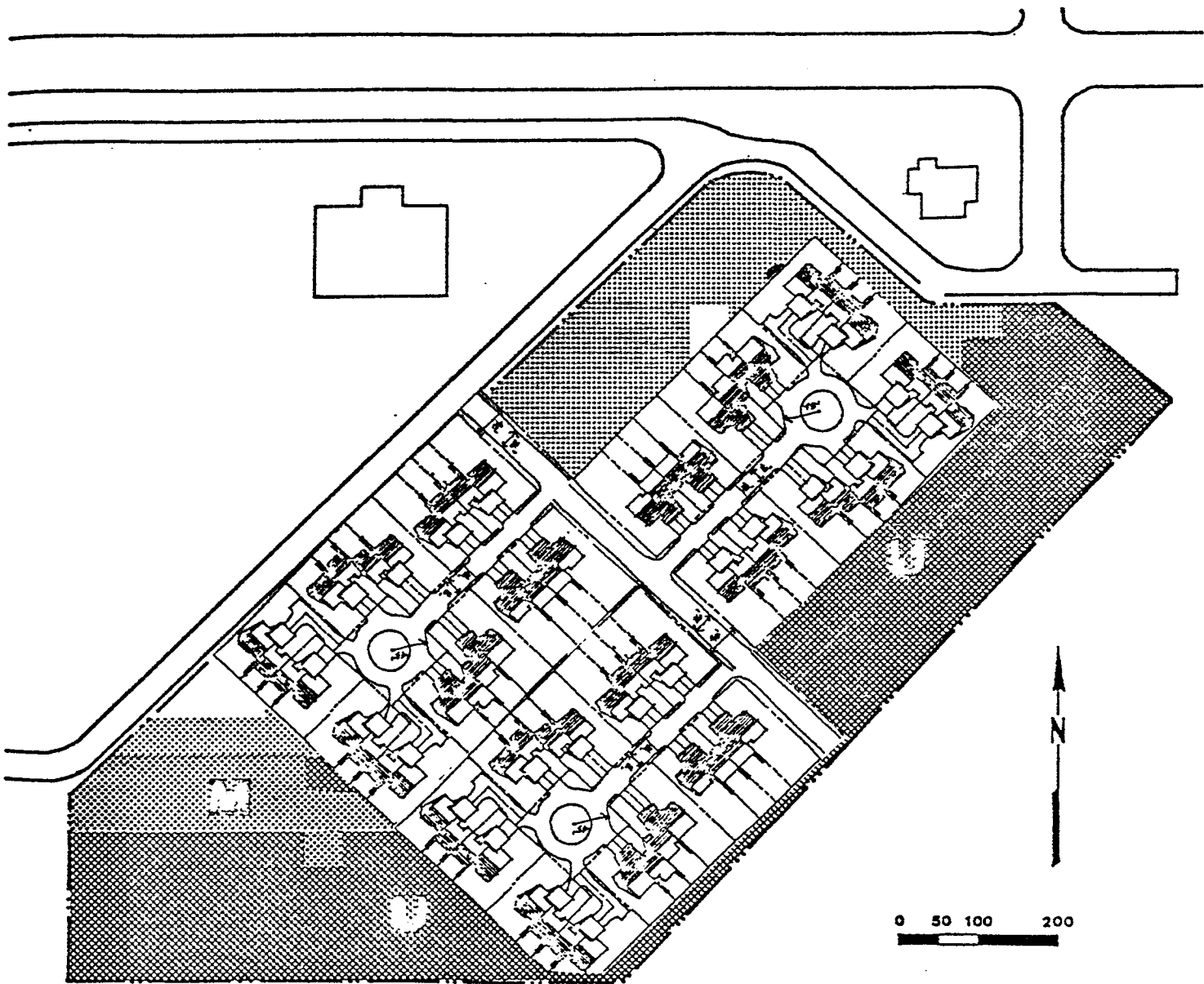
O – Optimum   M – Marginal
S – Satisfactory   U – Unsatisfactory

APPENDIX A

SCORING OF INDIVIDUAL CELLS

Cell Number	Soil Type	Build. Suit.	Road Suit.	Slope	Arch. Site	Trees	View	P. & O.	Euc. Dist.	N. Euc. Dist.
Weight	10%	15%	15%	10%	10%	15%	15%	10%		
1	0	1	3	6	9	8	8	9	1.8	2.6
2	0	1	3	6	9	8	8	9	1.8	2.6
3	0	1	3	6	9	8	8	9	1.8	2.6
.4	0	1	3	6	9	8	8	9	1.8	2.6
5	0	1	3	6	9	8	8	9	1.8	2.6
6	0	1	3	6	9	8	8	9	1.8	2.6
7	0	1	3	6	9	8	8	9	1.8	2.6
8	0	1	3	6	9	8	8	9	1.8	2.6
9	0	1	3	6	9	8	8	9	1.8	2.6
10	0	1	3	6	9	8	8	7	1.8	2.6
11	0	1	3	6	9	8	8	7	1.8	2.6
12	0	1	3	6	9	8	8	7	1.8	2.6
13	0	1	3	6	9	8	8	7	1.8	2.6
14	0	1	3	6	9	8	8	7	1.8	2.6
15	0	1	3	6	9	8	8	7	1.8	2.6
16	0	1	3	6	9	8	8	7	1.8	2.6
17	0	1	3	6	9	8	8	7	1.8	2.6
18	0	1	3	6	9	8	8	7	1.8	2.6
19	0	1	3	6	9	8	8	7	1.8	2.6
20	0	1	3	·6	9	8	8	7	1.8	2.6
21	0	1	3	6	9	8	8	7	1.8	2.6
22	3	1	1	6	9	8	8	7	1.8	2.7
23	3	1	1	6	9	8	8	7	1.8	2.7
24	3	1	1	6	9	8	8	9	1.8	2.7
25	3	1	1	6	9	8	8	9	1.8	2.7
26	5	1	1	6	9	8	8	9	1.8	2.6
27	5	1	1	6	9	8	8	9	1.8	2.6
28	5	1	1	6	9	8	8	9	1.8	2.6

Column Headings:
    Cell Number
    Soil Type
    Build. Suit.   = Suitability of the soils for buildings.
    Road Suit.   = Suitability of the soils for roads.
    Slope
    Arch. Site   = Archeological site.
    Trees
    View
    P. & O.   = Protection from winter wind and solar orientation.
    Euc. Dist.   = Euclidean distance of cell scores from ideal.
    N. Euc. Dist   = Normalized Euclidean distance.

APPENDIX B

MARSHALL & SWIFT COST PROGRAM

```
USER NAME:WI125
PASSWORD :
WI125 LOGGED IN AT 22:06 TUE, JAN 25 1983
 JOBNAME ABH0877
PROGRAM NAME OR LOG:>RE2

MARSHALL & SWIFT RESIDENTIAL COST PROGRAM 01/83

C>INPUT
 1:>4,000 SQUARE FOOT QUADPLEX
 2:>MONONA WOODS PROJECT
 3:>MONONA, WI
 4:>ABAJELO & HILLIARD
 5:>1/83
 6:>53713
 7:>0
 8:>4
 9:>3
10:>2
11:>4
12:>4000
13:>2
14:>1
15:>1
16:>24
17:>0
18:>3 1056 44
19:>2000 0
20:>240
21:>0
```

APPENDIX B—Continued

MARSHALL & SWIFT COST PROGRAM

C>REPORT

SURVEY FOR: 4,000 SQUARE FOOT QUADPLEX
PROPERTY OWNER: MONONA WOODS PROJECT
ADDRESS: MONONA, WI
SURVEYED BY: ABAJELO & HILLIARD
TYPE: TOWN HOUSE-DUPLEX   FLOOR AREA: 4,000 SQUARE FEET
QUALITY: 2.0 FAIR   EXTERIOR WALLS: SIDING
EFFECTIVE AGE: 0 YEARS   CONDITION: GOOD
STYLE: END ROW TWO STORY   DATE OF SURVEY: 1/83
                                 COST AS OF: 01/83

BASIC STRUCTURE COST	UNITS	COST OR ADJUSTMENT	
BASIC SQUARE FOOT COST.............	4,000	$19.24	$76,960
INCLUDING 24 PLUMBING FIXTURES			
SQUARE FOOT ADJUSTMENTS:			
ASPHALT SHINGLE ROOFING.........	4,000	0.37	1,480
FORCED AIR HEATING..............	4,000	1.44	5,773
FLOOR COVER....................	4,000	1.39	5,552
WOOD SUBFLOOR..................	4,000	3.18	12,720
LUMP SUM ADJUSTMENTS:			
APPLIANCE ALLOWANCE.............	4,000	0.69	2,760
SUBTOTAL BASIC STRUCTURE COST.....	4,000	26.31	105,245
PORCH OPEN SLAB.................	240	1.80	432
SUBTOTAL RESIDENTIAL COST.........	4,000	26.42	105,677
BASEMENT:			
UNFINISHED AREA.................	2,000	6.16	12,320
SUBTOTAL BASEMENT COST...........	2,000	6.16	12,320
GARAGE:			
ATTACHED GARAGE................	1,056	9.09	9,599
DEDUCT FOR COMMON WALL..........	44	-42.48	-1,868
SUBTOTAL GARAGE..................	1,056	7.32	7,731
BUILDING IMPROVEMENTS NEW..........	4,000	31.43	125,728
TOTAL DEPRECIATION......(0.0%)....			0
TOTAL................................			125,728

COST DATA BY MARSHALL AND SWIFT

APPENDIX B—Continued

MARSHALL & SWIFT COST PROGRAM

C>10:3
C>REPORT

SURVEY FOR: 4,000 SQUARE FOOT QUADPLEX
PROPERTY OWNER: MONONA WOODS PROJECT
ADDRESS: MONONA, WI
SURVEYED BY: ABAJELO & HILLIARD
TYPE: TOWN HOUSE–DUPLEX   FLOOR AREA: 4,000 SQUARE FEET
QUALITY: 3.0 AVERAGE   EXTERIOR WALLS: SIDING
EFFECTIVE AGE: 0 YEARS   CONDITION: GOOD
STYLE: END ROW TWO STORY   DATE OF SURVEY: 1/83
                                       COST AS OF: 01/83

BASIC STRUCTURE COST	UNITS	COST OR	ADJUSTMENT
BASIC SQUARE FOOT COST............	4,000	$22.57	$90,280
INCLUDING 24 PLUMBING FIXTURES			
SQUARE FOOT ADJUSTMENTS:			
ASPHALT SHINGLE ROOFING.........	4,000	0.39	1,560
FORCED AIR HEATING..............	4,000	1.60	6,381
FLOOR COVER....................	4,000	1.75	7,016
WOOD SUBFLOOR..................	4,000	3.47	13,880
LUMP SUM ADJUSTMENTS:			
APPLIANCE ALLOWANCE............	4,000	0.81	3,254
SUBTOTAL BASIC STRUCTURE COST.....	4,000	30.59	122,371
PORCH OPEN SLAB.................	240	1.94	466
SUBTOTAL RESIDENTIAL COST.........	4,000	30.71	122,837
BASEMENT:			
UNFINISHED AREA................	2,000	6.81	13,620
SUBTOTAL BASEMENT COST...........	2,000	6.81	13,620
GARAGE:			
ATTACHED GARAGE................	1,056	10.34	10,919
DEDUCT FOR COMMON WALL..........	44	−48.46	−2,131
SUBTOTAL GARAGE.................	1,056	8.32	8,788
BUILDING IMPROVEMENTS NEW..........	4,000	36.31	145,245
TOTAL DEPRECIATION......(0.0%)....			0
TOTAL.........................			145,245

COST DATA BY MARSHALL AND SWIFT

APPENDIX B—Continued

MARSHALL & SWIFT COST PROGRAM

C>10:4
C>REPORT

```
SURVEY FOR: 4,000 SQUARE FOOT QUADPLEX
PROPERTY OWNER: MONONA WOODS PROJECT
ADDRESS: MONONA, WI
SURVEYED BY: ABAJELO & HILLIARD
TYPE: TOWN HOUSE-DUPLEX              FLOOR AREA:      4,000 SQUARE FEET
QUALITY: 4.0 GOOD                    EXTERIOR WALLS: SIDING
EFFECTIVE AGE:   0 YEARS             CONDITION: GOOD
STYLE: END ROW TWO STORY            DATE OF SURVEY: 1/83
                                     COST AS OF: 01/83
```

BASIC STRUCTURE COST	UNITS	COST OR	ADJUSTMENT
BASIC SQUARE FOOT COST............	4,000	$28.55	$114,200
INCLUDING 24 PLUMBING FIXTURES			
SQUARE FOOT ADJUSTMENTS:			
ASPHALT SHINGLE ROOFING.........	4,000	0.42	1,680
FORCED AIR HEATING..............	4,000	1.76	7,039
FLOOR COVER.....................	4,000	2.21	8,832
WOOD SUBFLOOR...................	4,000	3.78	15,120
LUMP SUM ADJUSTMENTS:			
APPLIANCE ALLOWANCE.............	4,000	1.11	4,448
SUBTOTAL BASIC STRUCTURE COST.....	4,000	37.83	151,319
PORCH OPEN SLAB.................	240	2.10	504
SUBTOTAL RESIDENTIAL COST.........	4,000	37.96	151,823
BASEMENT:			
UNFINISHED AREA.................	2,000	7.53	15,060
SUBTOTAL BASEMENT COST...........	2,000	7.53	15,060
GARAGE:			
ATTACHED GARAGE.................	1,056	11.77	12,429
DEDUCT FOR COMMON WALL..........	44	-55.27	-2,431
SUBTOTAL GARAGE.................	1,056	9.47	9,998
BUILDING IMPROVEMENTS NEW...........	4,000	44.22	176,881
TOTAL DEPRECIATION......(0.0%)....			0
TOTAL................................			176,881

COST DATA BY MARSHALL AND SWIFT

APPENDIX B—Continued

MARSHALL & SWIFT COST PROGRAM

C>10:5
C>REPORT

SURVEY FOR: 4,000 SQUARE FOOT QUADPLEX
PROPERTY OWNER: MONONA WOODS PROJECT
ADDRESS: MONONA, WI
SURVEYED BY: ABAJELO & HILLIARD
TYPE: TOWN HOUSE-DUPLEX   FLOOR AREA: 4,000 SQUARE FEET
QUALITY: 5.0 VERY GOOD   EXTERIOR WALLS: SIDING
EFFECTIVE AGE: 0 YEARS   CONDITION: GOOD
STYLE: END ROW TWO STORY   DATE OF SURVEY: 1/83
                            COST AS OF: 01/83

BASIC STRUCTURE COST	UNITS	COST OR	ADJUSTMENT
BASIC SQUARE FOOT COST.............	4,000	$32.51	$130,040
INCLUDING 24 PLUMBING FIXTURES			
SQUARE FOOT ADJUSTMENTS:			
ASPHALT SHINGLE ROOFING...:......	4,000	0.44	1,760
FORCED AIR HEATING..............	4,000	1.95	7,799
FLOOR COVER.....................	4,000	2.80	11,192
WOOD SUBFLOOR...................	4,000	4.12	16,480
LUMP SUM ADJUSTMENTS:			
APPLIANCE ALLOWANCE.............	4,000	1.31	5,231
SUBTOTAL BASIC STRUCTURE COST.....	4,000	43.13	172,502
PORCH OPEN SLAB.................	240	2.26	542
SUBTOTAL RESIDENTIAL COST.........	4,000	43.26	173,044
BASEMENT:			
UNFINISHED AREA.................	2,000	8.32	16,640
SUBTOTAL BASEMENT COST...........	2,000	8.32	16,640
GARAGE:			
ATTACHED GARAGE.................	1,056	13.40	14,150
DEDUCT FOR COMMON WALL..........	44	-63.05	-2,773
SUBTOTAL GARAGE.................	1,056	10.77	11,377
BUILDING IMPROVEMENTS NEW..........	4,000	50.27	201,061
TOTAL DEPRECIATION......(0.0%)....			0
TOTAL.............................			201,061

COST DATA BY MARSHALL AND SWIFT

APPENDIX B—Continued

MARSHALL & SWIFT COST PROGRAM

C>1:2,000 SQUARE FOOT DUPLEX
C>10:2
C>12:2000
C>13:1
C>16:12
C>18:3 528 22
C>20:120
C>REPORT

SURVEY FOR: 2,000 SQUARE FOOT DUPLEX
PROPERTY OWNER: MONONA WOODS PROJECT
ADDRESS: MONONA, WI
SURVEYED BY: ABAJELO & HILLIARD
TYPE: TOWN HOUSE-DUPLEX   FLOOR AREA: 2,000 SQUARE FEET
QUALITY: 2.0 FAIR   EXTERIOR WALLS: SIDING
EFFECTIVE AGE: 0 YEARS   CONDITION: GOOD
STYLE: END ROW ONE STORY   DATE OF SURVEY: 1/83
                                        COST AS OF: 01/83

BASIC STRUCTURE COST	UNITS	COST OR	ADJUSTMENT
BASIC SQUARE FOOT COST.............	2,000	$20.20	$40,400
INCLUDING 12 PLUMBING FIXTURES			
SQUARE FOOT ADJUSTMENTS:			
ASPHALT SHINGLE ROOFING.........	2,000	0.78	1,560
FORCED AIR HEATING..............	2,000	1.44	2,886
FLOOR COVER.....................	2,000	1.39	2,776
WOOD SUBFLOOR...................	2,000	3.18	6,360
LUMP SUM ADJUSTMENTS:			
APPLIANCE ALLOWANCE.............	2,000	0.69	1,380
SUBTOTAL BASIC STRUCTURE COST.....	2,000	27.68	55,362
PORCH OPEN SLAB.................	120	2.02	242
SUBTOTAL RESIDENTIAL COST.........	2,000	27.80	55,604
BASEMENT:			
UNFINISHED AREA.................	2,000	6.16	12,320
SUBTOTAL BASEMENT COST...........	2,000	6.16	12,320
GARAGE:			
ATTACHED GARAGE.................	528	10.16	5,365
DEDUCT FOR COMMON WALL..........	22	-42.48	-934
SUBTOTAL GARAGE.................	528	8.39	4,431
BUILDING IMPROVEMENTS NEW..........	2,000	36.18	72,355
TOTAL DEPRECIATION......(0.0%)....			0
TOTAL.............................			72,355

COST DATA BY MARSHALL AND SWIFT

APPENDIX B—Continued

MARSHALL & SWIFT COST PROGRAM

C>10:3
C>REPORT

SURVEY FOR: 2,000 SQUARE FOOT DUPLEX
PROPERTY OWNER: MONONA WOODS PROJECT
ADDRESS: MONONA, WI
SURVEYED BY: ABAJELO & HILLIARD
TYPE: TOWN HOUSE-DUPLEX   FLOOR AREA: 2,000 SQUARE FEET
QUALITY: 3.0 AVERAGE   EXTERIOR WALIS: SIDING
EFFECTIVE AGE: 0 YEARS   CONDITION: GOOD
STYLE: END ROW ONE STORY   DATE OF SURVEY: 1/83
                                 COST AS OF: 01/83

BASIC STRUCTURE COST	UNITS	COST OR	ADJUSTMENT
BASIC SQUARE FOOT COST............	2,000	$24.22	$48,440
INCLUDING 12 PLUMBING FIXTURES			
SQUARE FOOT ADJUSTMENTS:			
ASPHALT SHINGLE ROOFING.........	2,000	0.83	1,660
FORCED AIR HEATING..............	2,000	1.60	3,190
FLOOR COVER.....................	2,000	1.75	3,508
WOOD SUBFLOOR...................	2,000	3.47	6,940
LUMP SUM ADJUSTMENTS:			
APPLIANCE ALLOWANCE.............	2,000	0.81	1,627
SUBTOTAL BASIC STRUCTURE COST.....	2,000	32.68	65,365
PORCH OPEN SLAB..................	120	2.18	262
SUBTOTAL RESIDENTIAL COST.........	2,000	32.81	65,627
BASEMENT:			
UNFINISHED AREA.................	2,000	6.81	13,620
SUBTOTAL BASEMENT COST...........	2,000	6.81	13,620
GARAGE:			
ATTACHED GARAGE.................	528	11.57	6,109
DEDUCT FOR COMMON WALL..........	22	-48.46	-1,065
SUBTOTAL GARAGE..................	528	9.55	5,044
BUILDING IMPROVEMENTS NEW..........	2,000	42.15	84,291
TOTAL DEPRECIATION......(0.0%)....			0
TOTAL...............................			84,291

COST DATA BY MARSHALL AND SWIFT

APPENDIX B—Continued

MARSHALL & SWIFT COST PROGRAM

C>10:4
C>REPORT

SURVEY FOR: 2,000 SQUARE FOOT DUPLEX
PROPERTY OWNER: MONONA WOODS PROJECT
ADDRESS: MONONA, WI
SURVEYED BY: ABAJELO & HILLIARD
TYPE: TOWN HOUSE-DUPLEX   FLOOR AREA: 2,000 SQUARE FEET
QUALITY: 4.0 GOOD   EXTERIOR WALLS: SIDING
EFFECTIVE AGE: 0 YEARS   CONDITION: GOOD
STYLE: END ROW ONE STORY   DATE OF SURVEY: 1/83
              COST AS OF: 01/83

BASIC STRUCTURE COST	UNITS	COST OR	ADJUSTMENT
BASIC SQUARE FOOT COST............	2,000	$31.14	$62,280
INCLUDING 12 PLUMBING FIXTURES			
SQUARE FOOT ADJUSTMENTS:			
ASPHALT SHINGLE ROOFING.........	2,000	0.88	1,760
FORCED AIR HEATING..............	2,000	1.76	3,519
FLOOR COVER.....................	2,000	2.21	4,416
WOOD SUBFLOOR...................	2,000	3.78	7,560
LUMP SUM ADJUSTMENTS:			
APPLIANCE ALLOWANCE.............	2,000	1.11	2,224
SUBTOTAL BASIC STRUCTURE COST.....	2,000	40.88	81,759
PORCH OPEN SLAB.................	120	2.36	283
SUBTOTAL RESIDENTIAL COST.........	2,000	41.02	82,042
BASEMENT:			
UNFINISHED AREA.................	2,000	7.53	15,060
SUBTOTAL BASEMENT COST............	2,000	7.53	15,060
GARAGE:			
ATTACHED GARAGE.................	528	13.18	6,959
DEDUCT FOR COMMON WALL..........	22	-55.27	-1,215
SUBTOTAL GARAGE...................	528	10.88	5,744
BUILDING IMPROVEMENTS NEW..........	2,000	51.42	102,846
TOTAL DEPRECIATION......(0.0%)....			0
TOTAL.............................			102,846

COST DATA BY MARSHALL AND SWIFT

APPENDIX B—Continued

MARSHALL & SWIFT COST PROGRAM

C>10:5
C>REPORT

SURVEY FOR: 2,000 SQUARE FOOT DUPLEX
PROPERTY OWNER: MONONA WOODS PROJECT
ADDRESS: MONONA, WI
SURVEYED BY: ABAJELO & HILLIARD
TYPE: TOWN HOUSE-DUPLEX   FLOOR AREA: 2,000 SQUARE FEET
QUALITY: 5.0 VERY GOOD   EXTERIOR WALLS: SIDING
EFFECTIVE AGE: 0 YEARS   CONDITION: GOOD
STYLE: END ROW ONE STORY   DATE OF SURVEY: 1/83
               COST AS OF: 01/83

BASIC STRUCTURE COST	UNITS	COST OR	ADJUSTMENT
BASIC SQUARE FOOT COST............	2,000	$35.49	$70,980
INCLUDING 12 PLUMBING FIXTURES			
SQUARE FOOT ADJUSTMENTS:			
ASPHALT SHINGLE ROOFING.........	2,000	0.93	1,860
FORCED AIR HEATING..............	2,000	1.95	3,899
FLOOR COVER.....................	2,000	2.80	5,596
WOOD SUBFLOOR...................	2,000	4.12	8,240
LUMP SUM ADJUSTMENTS:			
APPLIANCE ALLOWANCE.............	2,000	1.31	2,616
SUBTOTAL BASIC STRUCTURE COST.....	2,000	46.60	93,190
PORCH OPEN SLAB.................	120	2.54	305
SUBTOTAL RESIDENTIAL COST........	2,000	46.75	93,495
BASEMENT:			
UNFINISHED AREA.................	2,000	8.32	16,640
SUBTOTAL BASEMENT COST...........	2,000	8.32	16,640
GARAGE:			
ATTACHED GARAGE.................	528	15.02	7,931
DEDUCT FOR COMMON WALL..........	22	-63.05	-1,386
SUBTOTAL GARAGE.................	528	12.40	6,545
BUILDING IMPROVEMENTS NEW..........	2,000	58.34	116,680
TOTAL DEPRECIATION......(0.0%)....			0
TOTAL.............................			116,680

COST DATA BY MARSHALL AND SWIFT
C>LOG
WI125 LOGGED OFF AT 22:26 TUE, JAN 25 1983
CONNECT HOURS= 0.333
 8 RES Reports
 $12.98 Estimated session charge for job ABH0877
 Please hangup.

APPENDIX C

INITIAL SCENARIO -- FIRST CASH FLOW RUN

RUN CFM554.BAS

CFM554   VERSION 1.10
LAND DEVELOPMENT CASH FLOW MODEL
BUSINESS 554

1. ABSORPTION TERM IN YEARS? 5
2. LAND COST, DOWN PAYMENT, LAND CONTRACT INTEREST RATE
? 795600,79560,.115
3. DEVELOPMENT LOAN INTEREST RATE? .22
4. INITIAL SITE IMPROVEMENTS? 25400
5. TOTAL UNITS IN PROJECT? 148
6. REAL ESTATE TAX RATE? .01837
7. ENTER SITE IMPROVEMENTS PER QUARTER ($)
        1ST Q, 2AND Q, 3RD Q, 4TH Q
YEAR   1 ? 0,0,0,0
YEAR   2 ? 0,259219,0,0
YEAR   3 ? 0,0,293283,0
YEAR   4 ? 0,0,0,0
YEAR   5 ? 0,348621,0,0
8. ENTER CONSTRUCTION COST PER QUARTER ($)
        1ST Q, 2AND Q, 3RD Q, 4TH Q
YEAR   1 ? 0,511680,262234,268794
YEAR   2 ? 0,423600,0,296698
YEAR   3 ? 304115,155859,479261,163747
YEAR   4 ? 503530,516115,176339,0
YEAR   5 ? 555802,949488,389293,0
9. ENTER UNITS BUILT PER QUARTER
        1ST Q, 2AND Q, 3RD Q, 4TH Q
YEAR   1 ? 0,16,8,8
YEAR   2 ? 0,12,0,8
YEAR   3 ? 8,4,12,4
YEAR   4 ? 12,12,4,0
YEAR   5 ? 12,20,8,0
10. ENTER SALES PER QUARTER ($)
        1ST Q, 2AND Q, 3RD Q, 4TH Q
YEAR   1 ? 0,0,721756,422744
YEAR   2 ? 216656,333108,569060,116658
YEAR   3 ? 298935,612820,314070,643840
YEAR   4 ? 329970,676440,693350,355340
YEAR   5 ? 145690,746660,1913300,549122
11. ENTER UNITS SOLD PER QUARTER
        1ST Q, 2AND Q, 3RD Q, 4TH Q
YEAR   1 ? 0,0,14,8
YEAR   2 ? 4,6,10,2
YEAR   3 ? 5,10,5,10
YEAR   4 ? 5,10,10,5
YEAR   5 ? 2,10,25,7
ENTER 0 TO SKIP OUTPUT DETAIL
ENTER 1 TO PRINT OUTPUT DETAIL
? 1

CHANGE DATA (Y OR N)? N

APPENDIX C—Continued

DATA SUMMARY

ABSORPTION TERM:	5 YEARS
LAND COST:	$795600
DOWN PAYMENT ON LAND:	$79560
LAND CONTRACT INTEREST RATE:	0.1150
DEVELOPMENT LOAN INTEREST RATE:	0.2200
INITIAL SITE IMPROVEMENTS:	$25400
TOTAL UNITS IN PROJECT:	148
REAL ESTATE TAX RATE:	0.0184

CASH FLOWS IN YEAR 1

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. SALES (DOLLARS)	$0	$0	$721756	$422744
2. SALES (UNIT)	0	0	14	8
3. CUM SALES (UNIT)	0	0	14	22
4. SITE IMPS.	$0	$0	$0	$0
5. CONST. COSTS	$0	$511680	$262234	$268794
6. UNITS BUILT	0	16	8	8
7. CUM UNITS BUILT	0	16	24	32
8. LAND - INT.	$20586	$20586	$20586	$18639
9. LAND - PRIN.	$0	$0	$67734	$38705
10. LAND - BAL. DUE	$716040	$716040	$648307	$609602
11. DEV. LOAN - INT.	$1598	$31297	$48844	$31737
12. DEV. LOAN - BAL.	$51238	$620921	$303482	$243366
13. RE TAX	$3654	$6120	$4919	$4753
14. RES FOR NXT PART	$0	$0	$0	$0
15. CASH THROW OFF	$0	$0	$0	$0
16. CURRENT VALUE	$821000	$1332680	$1071130	$1034950
17. D LOAN:VAL RATIO	0.062409	0.465919	0.283329	0.235147
18. % SOLD IN QTR	0.000000	0.000000	0.094595	0.054054
19. % SOLD - TOTAL	0.000000	0.000000	0.094595	0.148649

APPENDIX C—Continued

CASH FLOWS IN YEAR 2

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. SALES (DOLLARS)	$216656	$333108	$569060	$116658
2. SALES (UNIT)	4	6	10	2
3. CUM SALES (UNIT)	26	32	42	44
4. SITE IMPS.	$0	$259219	$0	$0
5. CONST. COSTS	$0	$423600	$0	$296698
6. UNITS BUILT	0	12	0	8
7. CUM UNITS BUILT	32	44	44	52
8. LAND - INT.	$17526	$16970	$16135	$14744
9. LAND - PRIN.	$19352	$29029	$48381	$9676
10. LAND - BAL. DUE	$590249	$561221	$512839	$503163
11. DEV. LOAN - INT.	$13607	$42292	$28994	$19377
12. DEV. LOAN - BAL.	$81229	$524131	$51606	$279455
13. RE TAX	$4034	$4901	$3025	$4012
14. RES FOR NXT PART	$0	$0	$0	$0
15. CASH THROW OFF	$0	$0	$0	$0
16. CURRENT VALUE	$878366	$1067090	$658614	$873617
17. D LOAN:VAL RATIO	0.092478	0.491180	0.078355	0.319883
18. % SOLD IN QTR	0.027027	0.040541	0.067568	0.013514
19. % SOLD - TOTAL	0.175676	0.216216	0.283784	0.297297

CASH FLOWS IN YEAR 3

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. SALES (DOLLARS)	$298935	$612820	$314070	$643840
2. SALES (UNIT)	5	10	5	10
3. CUM SALES (UNIT)	49	59	64	74
4. SITE IMPS.	$0	$0	$293283	$0
5. CONST. COSTS	$304115	$155859	$479261	$163747
6. UNITS BUILT	8	4	12	4
7. CUM UNITS BUILT	60	64	76	80
8. LAND - INT.	$14466	$13771	$12380	$11684
9. LAND - PRIN.	$24191	$48381	$24191	$48381
10. LAND - BAL. DUE	$478973	$430592	$406401	$358020
11. DEV. LOAN - INT.	$32341	$28550	$42729	$38988
12. DEV. LOAN - BAL.	$360075	$0	$542114	$164087
13. RE TAX	$4443	$3162	$4341	$3013
14. RES FOR NXT PART	$0	$3022	$0	$0
15. CASH THROW OFF	$0	$0	$0	$0
16. CURRENT VALUE	$967341	$691555	$945234	$656120
17. D LOAN:VAL RATIO	0.372232	0.000000	0.573523	0.250087
18. % SOLD IN QTR	0.033784	0.067568	0.033784	0.067568
19. % SOLD - TOTAL	0.331081	0.398649	0.432432	0.500000

CASH FLOWS IN YEAR 4

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. SALES (DOLLARS)	$329970	$676440	$693350	$355340
2. SALES (UNIT)	5	10	10	5
3. CUM SALES (UNIT)	79	89	99	104
4. SITE IMPS.	$0	$0	$0	$0
5. CONST. COSTS	$503530	$516115	$176339	$0
6. UNITS BUILT	12	12	4	0
7. CUM UNITS BUILT	92	104	108	108
8. LAND - INT.	$10293	$9598	$8207	$6816
9. LAND - PRIN.	$24191	$48381	$48381	$24191
10. LAND - BAL. DUE	$333830	$285449	$237067	$212877
11. DEV. LOAN - INT.	$36953	$51366	$30043	$106
12. DEV. LOAN - BAL.	$413347	$366833	$0	$0
13. RE TAX	$4263	$4466	$3070	$1931
14. RES FOR NXT PART	$0	$0	$60477	$322297
15. CASH THROW OFF	$0	$0	$0	$0
16. CURRENT VALUE	$928254	$972434	$729057	$742717
17. D LOAN:VAL RATIO	0.445295	0.377232	0.000000	0.000000
18. % SOLD IN QTR	0.033784	0.067568	0.067568	0.033784
19. % SOLD - TOTAL	0.533784	0.601351	0.668919	0.702703

CASH FLOWS IN YEAR 5

	1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. SALES (DOLLARS)	$145690	$746660	$1913300	$549122
2. SALES (UNIT)	2	10	25	7
3. CUM SALES (UNIT)	106	116	141	148
4. SITE IMPS.	$0	$348621	$0	$0
5. CONST. COSTS	$555802	$949488	$389293	$0
6. UNITS BUILT	12	20	8	0
7. CUM UNITS BUILT	120	140	148	148
8. LAND - INT.	$6120	$5842	$4451	$974
9. LAND - PRIN.	$9676	$48381	$120953	$33867
10. LAND - BAL. DUE	$203201	$154820	$33867	$0
11. DEV. LOAN - INT.	$30792	$97070	$85832	$0
12. DEV. LOAN - BAL.	$460748	$1169540	$0	$0
13. RE TAX	$4048	$6048	$1743	$0
14. RES FOR NXT PART	$0	$0	$141491	$0
15. CASH THROW OFF	$0	$0	$0	$514282
16. CURRENT VALUE	$881422	$1316900	$520954	$0
17. D LOAN:VAL RATIO	0.522733	0.888100	0.000000	10.000000
18. % SOLD IN QTR	0.013514	0.067568	0.168919	0.047297
19. % SOLD - TOTAL	0.716216	0.783784	0.952703	1.000000

SUMMARY

	TOTAL	PER UNIT
REVENUE		
LAND DOWN PMT:	$79,560	$538
SALES:	$9,659,520	$65,267
TOTAL REVENUE:	$9,739,080	$65,805
EXPENSES		
LAND COST:	$795,600	$5,376
INTL SITE IMPRV:	$25,400	$172
SITE IMPROVEMENTS:	$901,123	$6,089
CONSTRUCTION:	$5,956,550	$40,247
LAND INTEREST:	$250,372	$1,692
DEV LN INTEREST:	$692,516	$4,679
RE TAXES:	$75,945	$513
TOTAL EXPENSES:	$8,697,510	$58,767
CASH THROW OFF:	$1,041,570	$7,038
RETURN ON EQUITY:	1.6726	

```
ENTER 'C' TO CHANGE DATA AND RERUN
ENTER 'Q' TO QUIT
ENTER '1' TO ALTER SITE IMPROVEMENT COSTS
ENTER '2' TO ALTER CONSTRUCTION COSTS
ENTER '3' TO ALTER SALES AMOUNT
? 2
ENTER PERCENT ALTERATION   ? .05
```

DATA SUMMARY

ABSORPTION TERM:	5 YEARS
LAND COST:	$795600
DOWN PAYMENT ON LAND:	$79560
LAND CONTRACT INTEREST RATE:	0.1150
DEVELOPMENT LOAN INTEREST RATE:	0.2200
INITIAL SITE IMPROVEMENTS:	$25400
TOTAL UNITS IN PROJECT:	148
REAL ESTATE TAX RATE:	0.0184

TRENDS ON CURRENT APPRAISAL TECHNIQUES
AND BUSINESS PRACTICE

Presented by

Professor James A. Graaskamp, Ph.D., CRE, SREA
University of Wisconsin, School of Business

INTRODUCTION

A. Changing Markets for Appraisal Services

Real estate appraisal is a pivotal benchmark for decisions involving
social equity, validation for regulatory purposes, benchmarking for
management performance commitments. (See Exhibit 1.)

B. Appraisal is a specialty in the rapidly evolving information business.
Appraisers systematically collect information, organize and analyze the
data, and reach decisions about value while communicating essential
information to a client. This is similar to the work of:

1. Accountants
2. Insurance managers
3. Security and investment counselors
4. Lawyers

C. Unlike accountants and others , appraisers receive little help from
their professional organizations in the form of position papers which
define appropriate methods for a particular question.

1. Accounting has the FASB, Financial Accounting Standards Board
    that continually modifies generally accepted accounting principles
    to fit new problems such as mergers, current values of fixed
    assets, accounting for real estate operations, etc.
2. Securities people have the Midwest Securities Association
3. The insurance education program is controlled by two independent
    organizations, the American College of Life Underwriters and the
    American College of Property and Casualty Underwriters.
4. Appraisers have no such independent fixed point. Even the
    eighth edition of the Institute textbook disclaims any respon-
    sibility for being a standard. The flyleaf of the eighth edition
    says: "FOR EDUCATION PURPOSES ONLY
            The opinions and statements set forth herein are those
            of the individual members of the Institute's editorial
            staff and do not necessarily reflect the viewpoint of
            the American Institute of Real Estate Appraisers or its
            individual members."

D. As a result, most disputes about appraisal and the misuse of appraisal
occurs on four simple basics:

1. Definition of real estate interests to be appraised
2. Definition of highest and best use
3. Definition of market value
4. Definition of what constitutes market comparison

E. Because professional appraisal organizations make no effort to defend
    a standard and will define real estate and value any way desired by
    the client while hiding behind limiting conditions appraisal has
    become synonomous with disinformation.

    1. Disinformation is military intelligence in providing information
        which appears to be correct in form and terminology so that the
        reader rationalizes to the wrong conclusion.

    2. Disinfomation in appraisal is a conspiracy of cooperation between
        the appraiser and his client to satisfy regulators, provide cover
        against future charges of incompetence or achieve other objectives
        in terms of income taxes, real estate taxes, divorce settlements,
        etc.

F. The information business has been further altered by low cost micro-
    computers which permit development of large data banks of unknown
    quality and word processing which carries boilerplate prose to
    industrial production standards.

    1. Data banks lead to tempting misuse of statistics and software puts
        statistics in the hands of everybody.
    2. The Home Loan Bank disallowed appraisal by regression because:

        a. The subject property was compared to the mean of the data
            base rather than a specific subset of comparables.
        b. The appraiser had not personally inspected the properties or
            confirmed terms of sale with grantor/grantee.
        c. Appraiser was not personally responsible for adjustments.

    3. The information business requires careful definition of the problem
        for which information must be collected, organized, and reduced
        to a conclusion.

G. The professional appraiser must push his organizations to define basic
    standards and must push his client to define the basic problem in order
    that contemporary appraisal can utilize modern information techniques.

    1. The alternative is to allow the client to name the number and the
        appraiser names and unique set of limiting conditions under which
        the number might be true.
    2. The name the number approach is what we see in syndication, asset
        allocation and much litigation and it will destroy the image of
        independent appraisal while permitting the accountants to take
        over as truly independent arbiters of value.

TRENDS ON CURRENT APPRAISAL TECHNIQUES
AND BUSINESS PRACTICE

Presented By

James A. Graaskamp, Ph.D., CRE, SREA
University of Wisconsin, School of Business

FIRST HOUR

I. The basic premises of the contemporary approach stem
    from the fundamental belief that pricing is a
    behavioral science, that analysis should be inductive
    rather than deductive wherever possible, and that
    appraised values are intended to serve as a benchmark
    for some decision process.

    A. A price is a social transaction and the behavior
        of the parties and configuration of the
        transaction reflects a consensus at some point in
        time between external market forces sufficiently
        strong to impose on the outcome and internal
        forces on the supply side sufficiently strong to
        pursue their own self-perceived interests.

        Notice that the above does not presume:

        1. Both demand and supply forces to have
            alternatives of equal indifference.

        2. Negotiation abilities of equal force, or

        3. Cash maximization as their sole criteria - all
            of which characterize the traditional
            approach.

    B. The contemporary view sees appraisal as a limited
        and fictional case of feasibility analysis which,
        in turn, is a limited case in problem solving
        which, in turn, is part of a larger planning
        framework.

    C. Appraisal as a fictional feasibility study is a
        model of a decision process and, therefore, like
        all models is constrained by the following
        elements:

1. What is the nature of the question?

2. What quantity and quality of data may be available?

3. What theory or hypothesis may edit and focus the available data as a tentative answer to the question?

4. What techniques and data management can be used reliably by the analysts?

5. What techniques and data management have credibility with the ultimate decision maker hiring the analyst?

6. What techniques and data management are cost effective in terms of the dollar consequences of the decision?

D. Functions of appraisal differ dramatically and lead to multiple definitions of value.

1. Validation (mortgage loans)

2. Benchmarking performance (pension funds)

3. Confrontation (legal cases)

4. Counseling (investment decisions)

II. In that light, the sequence of steps required of the contemporary/appraisal process referred to by Wisconsin students as RATGRAM is as follows:

A. What is the issue for which the appraisal is sought as a benchmark?

B. What are the attributes of the property in terms of alternative courses of action for their productive use?

C. Given the alternatives, what is the most probable use?

D. Given the most probable use, who is the most probable buyer in terms of class, motivation profile, or market position? (See Exhibit 1.)

E. Given the most probable use and most probable buyer assumptions, there are three approaches to predicting most probable price:

1. Inference from past transactions involving properties of similar potential and buyers of similar motivation.

2. Failing adequate transaction data, it is then acceptable to simulate the pricing methods of the most probable buyer.

3. Failing to find either similar properties or articulate buyers, the appraiser is then permitted to use normative methods which indicate what might happen if buyer and seller were as smart as the appraiser.

F. With an initial estimate of value, it may then be modified for external conditions unique to the parties, the place, or the time.

G. The adjusted value must then be tested to demonstrate that results at that price would be consistent with the minimum goals of all major parties to the transaction.

H. Since the appraiser is predicting price under conditions of uncertainty and many different market terms, the appraisal conclusion must be expressed as a central tendency within a transaction zone which is qualified by financial terms and/or critical assumptions about unknowable facts.

1. Although the Institute uses fair market value and most probable price interchangeably, that is a travesty on the work of modern theorists and a deliberate attempt to confuse or negate the implied criticism of traditional ways by contemporary analysts. See Exhibits 2 & 3.

Critical Issues That Define Appraisal Process

Function of the Appraisal	Property Rights	Relevant Definition of Value	Allocation of Productivity	Buyer Motivation Presumed
Tax assessment	Fee simple private rights unencumbered	Cash market present value (As opposed to most probable selling price)	Present value income attributable to land and structures only	Purchase of economic productivity
Mortgage loan (nonparticipating)	Encumbered fee simple private rights plus additional rights pledged	Regulations - market value Underwriting - solvency price or liquidating value	Fixed income pledged from all sources less costs of creative management	Share of economic productivity contributed by capital
Mortgage loan (participatory)	Encumbered title plus nonvested interest in selected future revenues	Present value of all future cash flows	Variable income pledged plus share of reversionary interest	Share of economic productivity contributed by capital plus share in selected management returns plus positioning against devaluation due to changing conditions
Sale of an Investment	Encumbered title plus vested entitlements plus going concern profit center opportunities	Most probable price above minimum acceptable alternative opportunity	Returns from land, structures, personalty, and selected entitlements	Increase in spendable cash Increase in liquidity value of estate Positioning to maximize probability of survival of benefits despite changing conditions
Purchase of Investments	Encumbered title plus positioning for access to entitlements	Most probable price within perceived peril point limit	Land, structure, personalty, and intangible assets less profit centers for management	Increase in spendable cash Increase in liquidity value of estate Positioning to maximize probability of survival of benefits despite changing conditions
Going concern purchase of a business	Encumbered title plus positioning for access to entitlements plus reduction in risk for business start-up plus control of monopolistic market position controls	Most probable sales price within perceived costs of creating an alternative	Land, structure, personalty, and intangible assets and good will plus artifactual profit centers for management	Increase in spendable cash Increase in liquidity value of estate Positioning to maximize probability of survival of benefits despite changing conditions

EXHIBIT 1

5

EXHIBIT 2

FAIR MARKET VALUE DEFINITION

A current definition of market value is

The most probable price in cash, terms equivalent to cash, or in other precisely revealed terms, for which the appraised property will sell in a competitive market under all conditions requisite to fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress.

Fundamental assumptions and conditions presumed in this definition are

1. Buyer and seller are motivated by self-interest.

2. Buyer and seller are well informed and are acting prudently.

3. The property is exposed for a reasonable time on the open market.

4. Payment is made in cash, its equivalent, or in specified financing terms.

5. Specified financing, if any, may be the financing actually in place or on terms generally available for the property type in its locale on the effective appraisal date.

6. The effect, if any, on the amount of market value of atypical financing, services, or fees shall be clearly and precisely revealed in the appraisal report.

Source: American Institute of Real Estate Appraisers, The Appraisal of Real Estate, Eighth Edition, Chicago, IL, 1983, p. 33.

EXHIBIT 3

The most probable price is that selling price which
is most likely to emerge from a transaction involving
the subject property if it were to be exposed for
sale in the current market for a reasonable time at
terms of sale which are currently predominant for
properties of the subject type.

Source: P. 8, The_Appraisal_of_25_N._Pinckney, Editor
         James A. Graaskamp.

2. Contemporary theory recognizes explicitly the errors in forecasting, the role of financial terms, and the reality of bargaining position.

I. These general precepts are then expanded into an appraisal report outline of the general type included in Exhibit 4.

J. Upon review of the more detailed outline and the limited time that we have, I would like to demonstrate a manual market inference system, an automated market comparison system, an income simulation method, and a computer test model.

III. Three Basic Methods of Appraisal

Ratcliff concludes that most appraisals are concerned with prediction of a future event, a transaction price. Since an appraisal method is a forecasting tool, forecasting is best done with some past experience. Failing that, the best method is simulation of the real estate market process.

A. Given reliable information on past market behavior, the preferred method of appraisal is to process the data, statistically if possible, to derive a prediction of future price behavior under given conditions and with means for estimating the reliability of the prediction.

1. Statistical prediction if possible.

2. Statistical rules for defintiion of a data set at the least.

B. Should market data be unavailable or inconclusive, the appraiser is forced to resort to the second method of appraisal, namely the construction of a real estate market model of factors which reflect his understanding of how buyers and sellers might behave.

1. The income approach and the cost approach are submodels of how an investor is supposed to behave.

EXHIBIT 4

CONTEMPORARY REAL ESTATE APPRAISAL REPORT OUTLINE

Letter of Transmittal

  1. Brief statement of appraisal issue
  2. Definition of value aplied
  3. Value conclusion (qualified by financing, terms of sale, and range of probable transaction zone as appropriate)
  4. Sensitivity of conclusion to critical assumptions
  5. Property observations or recommendations
  6. Incorporation by reference of limiting assumptions and conditions

Table of Contents

List of Exhibits

Digest of Facts, Assumptions, and Conclusions

  1. Property type
  2. Property location
  3. Property ownership
  4. Determinant physical attributes
  5. Controlling legal-political attributes
  6. Pivotal linkage attributes
  7. Marketable dynamic attributes
  8. Most probable use conclusion
  9. Most probable buyer profile assumed
  10. Initial probable price prediction and central tendency
  11. Adjustment of preliminary value estimate for external factors or market position of parties
  12 Testing of corrected probable price for consistency with most probable buyer objectives
  13. Final value conclusion and range of error estimate as appropriate

  I. Appraisal Problem Assignment

      A. Statement of issue or circumstances for which appraisal is intended to serve as a decision benchmark and date of valuation

      B. Special problems implicit in property type or issue that affect appraisal methodology and definition of value

EXHIBIT 4 (continued)

C. Special assumptions or instructions that are provided by others

D. Definition of value, which is the objective of appraisal analysis and disciplines appraisal process

1. Selected definition and source
2. Implicit conditions of the definition
3. Assumptions required by relevant legal rulings

E. Definition of legal interests to be appraised

1. Legal description and source
2. Permits, political approvals, and other public use entitlements
3. Fixtures or personalty to be included with sale
4. Specific assets or liabilities excluded as inconsistent with issue or premise of appraisal

II. Property Analysis to Determine Alternative Uses

A. Site Analysis

1. Physical (static) site attributes (size, shape, geology, slope, soil hydrology, etc.)
2. Special site improvements (wells, bulkheads, irrigation systems, parking surfaces with unique salvage or re-use characteristics, etc.)
3. Legal-political attributes (applicable federal, state and local zoning, convenants, easements, special assessments, or other land use codes and ordinances, etc.)
4. Linkages of site (key relationships to networks, populations, or activity centers that might generate need for subject property)
5. Dynamic attributes of site (perceptual responses of people to site in terms of anxiety, visibility, prestige, aesthetics, etc.)
6. Environmental attributes of site as related to off-site systems or impact areas.

B. Improvement Analysis

1. Physical (static) attributes of improvements, cataloged by type, construction, layout, condition, structural flaws, etc.
2. Mechanical attributes (brief sttement of heating, ventilating, air conditioning, electrical, plumbing, and fire or safety-systems in terms of limitations on use or efficiency)

EXHIBIT 4 (continued)

3. In short, it is useful to subdivide improvements into subsystems:

    a. Foundation system
    b. Structural system
    c. Vertical circulation
    d. Horizontal circulation
    e. Floor system
    f. Ceiling system
    g. Roof system
    h. Internal wall system
    i. External wall system
    j. HVAC system
    k. Communications system
    l. Traffic separation system
    m. Security system
    n. Life safety system
    o. Waste removal system

4. Special structural linkages to off-site elements (tunnels, bridges, adjoining structures, etc.)
5. Legal-political constraints on use of existing improvements (federal, state and local building codes, fire codes, conditional use procedures, neighborhood associations, and inspection liens of record for violations).
6. Dynamic attributes of existing improvements (impressions created by type, bulk, texture, previous uses, past history, or functional efficiency)
7. Current uses and tenancies of improvements, if any
8. Environmental impact attributes of improvements on environs

C. Identification of Alternative Use Scenarios for Subject Property

1. Marketing existing uses of property as is
2. Renovation of existing property and marketing improved space
3. Redirection of existing property to alternaitve tenancies and uses
4. Replacement of existing improvements or program with new uses

EXHIBIT 4 (continued)

III.   Selection of Most Probable Use

A. Comparative Analysis of Alternative Uses

1. Testing and ranking alternative use strategies for legal-political compatibility
2. Testing alternative use scenarios for fit to physical property attributes within reasonable cost to cure
3. Selection of scenarios that justsify market research

B. Analysis of Effective Demand for Selected Uses

1. Search for rents and income potentials of scenario space-time products
2. Screen and rank market targets
3. Apply income-justified residual investment approach to rank economic power of alternative market scenarios
4. Evaluate marginal revenue, marginal investment risk trade-offs

C. Summary Matrix for Selection of Most Probable Use Scenario

1. Physical fit
2. Legal-political risk
3. Strength of market demand
4. Adequacy of available financing
5. Revenue and cost assumptions risk

IV.   Prediction of Price for Subject Property

A. Specification of Most Probable Buyer Type Implied by Most Probable Use

1. Criteria motivations of alternative buyer types
2. Selection of most probable buyer type as basis for prediction
3. Specification of essential site, improvement, financial, or key decision criteria of principal alternative buyer types

EXHIBIT 4 (continued)

B. Explanation of Appraisal Methodology for Prediction of Probable Purchase Price

    1. Preferred method: to infer buyer behavior from actual market transaction and market data available from sales by comparable buyers of acceptable alternative properties

    2. In the absence of adequate market sales data, the alternative method selected for simulation of probable buyer decision process

    3. If market influence of simulation is impossible, select normative model such as investment value, or cost to replace

C. Search for Comparable Market Sales Transactions

    1. Unit of comparison

    2. Method of comparison

    4. Investigation of sale transaction circumstances

    5. Evaluation for comparability

    6. Definition of predominant terms of sale

    7. Source of comparative adjustments

D. Determination of Suitability of Existing Market Data for Inference of Value for Subject Property

    1. Where data is adequate, selection of market comparison method to estimate value

    2. Where data is lacking or misleading, selection of method leads to simulation in E or normative methods in F

E. Simulation of Probable Buyer Decision Process if Market Comparison Approach is Inconclusive or Impossible

    1. Source and explanation of simulation model

    2. Schedules of simulation assumptions

    3. Range of alternative simulation value predictions (sensitivity analysis)

(OR) F. Selection of Normative Model of Buyer Behavior

    1. Investment model

    2. Cost-to-replace model

    3. Nonquantitative decision models

G. Computation of Most Probable Price and Standard Error of Prediction

EXHIBIT 4 (continued)

H. Correction of Preliminary Value Estimate for External
    Factors

    1. Identification of conditions relative to date of
        appraisal not present in market comparison
        assumptions
    2. Specification of political contingencies that
        might upset normal appraisal assumptions of sub-
        stitution
    3. Identification of any violation of conditions in
        the definition of value by the appraisal method-
        ology
    4. Indication of adjustment necessary to preliminary
        probable price estimate or
    5. Explicit statement that no adjustment is necessary

I. Test of Most Probable Price or Value Conclusion by
    Means of:

    1. Comparison to values derived from selected alter-
        native appraisal methodology
    2. Demonstration of achievement of objectives of most
        probable buyer minimum selection criteria
    3. Measurement of fit of financial cash requirements
        to market rents, lender ratios, or other relevant
        constraints
    4. Comparison to decision criteria appropriate to
        issue (financial ratios required by mortgage
        lender, comparative assessments of similar property
        for the tax appeal board, rates of return in
        alternative investments, construction prices for
        similar property, or whatever demonstrates
        consistency with statement of the issue)

V. Appraisal Conclusion and Limiting Conditions

    A. Definition of Value and Value Conclusion of the Report
    B. Certification of Independent Appraisal Judgment
    C. Statement of Limiting Conditions that Establish:

        1. Contributions of other professionals on which
            report relies
        2. Facts and forecasting under conditions of uncertainty
        3. Critical assumptions provided by the appraiser
        4. Assumptions provided by the client
        5. Controls on use of appraisal imposed by the appraiser

EXHIBIT 4 (continued)

Appendices

    Maps, data sets, only if referred to in the text. These
data collections would slow down the reader if included as
an exhibit and are secondary to the argument in the body
of the report.

2. After-tax investment models are another submodel of market behavior, but while these may measure demand from the buyer's viewpoint, it may not measure the minimum price expected by the seller who also has a tax model to consider. In using the second approach, the appraiser must be very careful to indicate price on the supply side representing minimum expectations (Vs) of the seller.

C. Should there be no sales and no way to verify how buyers would review the specific property (utility case - rate base or kilowatt production?), then the appraiser falls back to normative methods.

1. Normative means what the buyer would do if he were as smart as the appraiser and motivated only by a desire to maximize wealth.

2. The traditional income approach or the cost approach are normative models unless it can be proven buyers behave accordingly.

3. After-tax cash flow models are normative models until it can be shown how these models value property.

D. Highest and best use or most probable use in order to identify most probable user and buyer, requires analysis and explicit recognition of possible uses which are:

1. Legal/political acceptability

2. Physical/technical feasibility

3. Effective demand and marketability

4. Financial viability

5. Community compatibility

(See Exhibit 5.)

EXHIBIT 5

DEFINITION OF HIGHEST AND BEST USE

That reasonable and probable use that will support the highest
present value, as defined, as of the effective date of the
appraisal.

Alternatively, that use, from among reasonably probable and
legal alternative uses, found to be physically possible,
appropriately supported, financially feasible, and which
results in highest land value.

The definition immediately above applies specifically to the
highest and best use of land. It is to be recognized that in
cases where a site has existing improvements on it, the highest
and best use may very well be determined to be different from
the existing use. The existing use will continue, however,
unless and until land value in its highest and best use exceeds
the total value of the property in its existing use. See
Interim Use.

Implied within these definitions is recognition of the
contribution of that specific use to community environment or
to community development goals in addition to wealth
maximization of individual property owners. Also implied is
that the determination of highest and best use results from the
appraiser's judgment and analytical skill, i.e., that the use
determined from analysis represents an opinion, not a fact to
be found. In appraisal practice, the concept of highest and
best use represents the premise upon which value is based. In
the context of most probable selling price (market value)
another appropriate term to reflect highest and best use would
be most probable use. In the context of investment value an
alternative term would be most profitable use.

Source: Byrl N. Boyce, Real Estate Appraisal Terminology,
Revised Edition, AIREA, SREA, Ballinger, Cambridge,
Mass., 1981, p. 107-108.

IV. New Issues and New Appraisal Techniques

It is generally recognized that the real estate market is dependent upon substantial amounts of credit to support effective demand so that real estate prices and perhaps values vary with the terms and supply of credit generally available in the marketplace. Indeed the old timers have seen the definition of fair market value gradually move away from the firm premise of cash to the seller to a somewhat more subjective condition of terms generally available in the market.

A. The pressure of double digit inflation is eroding many of the appraisers' favorite simplifications of the market model:

1. The long-term fixed interest mortgage, amortized from property productivity is gone.

2. The simple division of income between the mortgage and the equity component is smothered in participating mortgages, limited partnerships, convertible mortgages and seller financing.

3. As the government had removed general subsidies to real estate finance such as regulation Q, it has made greater use of specific interest subsidies to selected special groups.

4. Real estate markets must be defined not only in terms of use, age, income, but also access to capital.

5. Moreover, most properties exist in a 3-tier market, utility to house to activity, commodity and money speculation, and as part of a going concern.

6. The 3-tier market can be further subdivided by the nature of permits or other entitlements that are site specific and define risk of a vested or non-vested opportunity.

B. Volatile money market conditions and the widespread use of creative financing leave the appraiser in considerable difficulty in defining typical market terms, cash equivalent prices or the relationship of fair market value to transaction price. Does the client want fair market price, most probable price, going concern value, contributory value, investment value, or liquidating value in event of delinquency and foreclosure?

C. The impact of these elements is significantly different for problems involving:

1. Income investment properties

2. Economic development properties

3. Multi-family residential properties

4. Single family residential properties

D. The impact of financing in each situation requires that we go back to basics. The appraiser or his client must define:

1. What is the function of the appraisal?

2. Which rights are to be appraised? People buy interests in real estate income, entitlements to business opportunities as well as fee simple title.

3. Eighth edition definition of value in Exhibit 2 requires specificity of financial terms and value increment assigned to financing.

4. Where is the definition explicit about value impact of leases in place?

5. How is productivity allocated to the agents of production?

EXHIBIT 7

LOAN TO COST RATIO APPROACH

Assorted numbering systems used for the exhibits which follow

	80,000 sq. ft. land
SITE ACQUISITION COST 100,000	
+	32,000 X $30/sq. ft.
CONSTRUCTION BUDGET 960,000	
+	
INDIRECT COST AND DEVELOPMENT FEES 180,000	fees, interest, etc.
=	
TOTAL CAPITAL BUDGET	
1,240,000	

	x	
1- LOAN TO COST RATIO .2		LOAN TO COST RATIO .8
=		=
CASH EQUITY REQUIRED 248,000		MORTGAGE LOAN 992,000
x		x
REQUIRED PRE-TAX CASH DISTRIBUTION RATE 6%	20 yr. 11½% monthly pay →	DEBT SERVICE CONSTANT 127968
=		=
CASH THROW OFF REQUIRED FOR EQUITY 14,880	▷ 141,824 ◁ ▽	CASH REQUIRED FOR MORTGAGE LENDER 126,944

| NET OPERATING INCOME |
| ÷ |
| OPERATING EXPENSES 80,000 | $2.50 X 32,000 |
| + |
| REAL ESTATE TAXES 32,176 |
| + |
| CASH REPLACEMENTS 1,000 |
| = |
| EFFECTIVE GROSS REVENUE 255,000 REQUIRED ▷ | $255,000 |
| ÷ |
| 1- VACANCY LOSS 5% = .95 |
| = |
| GROSS POTENTIAL REVENUE = $268,421 |
| ÷ |
| NET LEASABLE UNITS = 27,200 GLA |
| = |
| RENT REQUIRED PER UNIT = $9.87/sq. ft. GLA ◁ |

Default ratio:

$$\frac{\text{Op. Exp.} + \text{R.E. Tax} + \text{Debt Ser.}}{\text{Gross Rent}}$$

$$\frac{80,000 + 32,176 + 126,944}{268,421} = .89$$

Debt cover ratio:

$$\frac{\text{Net Op. Inc.}}{\text{Debt Ser.}}$$

$$\frac{141,824}{126,944} = 1.11 \text{ (too low)}$$

DEBT COVER RATIO APPROACH

GROSS RENT POTENTIAL 251,600   27,200 GLA X $9.25

−

VACANCY LOSS 5 % 12,600

=

EFFECTIVE GROSS REVENUE 239,000

−

OPERATING EXPENSES 80,000

−

REAL ESTATE TAXES 32,000

−

CASH REPLACEMENTS 1,000

=

NET OPERATING INCOME AVAILABLE
126,000
FOR DEBT PAYMENT, INCOME TAX, CASH DIVIDENDS

−   ÷

105,000 DEBT SERVICE CASH   DEBT COVER RATIO 1.2
                                     REQUIRED BY LENDERS

=   =

CASH AVAILABLE FOR
21,000   CASH AVAILABLE FOR
INCOME TAX AND INVESTORS   105,000
                                     DEBT SERVICE

÷   ÷

REQUIRED PRE-TAX CASH
  6 % DISTRIBUTION RATE   DEBT SERVICE CONSTANT. 127968

=   =

JUSTIFIED CASH   JUSTIFIED MORTGAGE
350,000   LOAN 820,500
EQUITY INVESTMENT   ▷ 1,170,500 ◁

▽

TOTAL JUSTIFIED INVESTMENT

−

EXISTING CLAIMS OR PLANNED
280,000   Land & Indirect Costs
IMPROVEMENT BUDGET

=

▷ PROCEEDS AVAILABLE FOR
890,500 ◁   Funds for Construction Budget
PROPERTY PURCHASE AS IS

$$\frac{890,500}{32,000} = \$27.80/sq. \ ft. \ justified \ building \ budget$$

DEFAULT RATIO APPROACH

GROSS RENT POTENTIAL

$251,600

	x			x	
.15		1-DEFAULT RATIO	DEFAULT RATIO	.85	

=

RISK VARIABLES AND		CASH BUDGET OUTLAY	213,860
37,740	EQUITY CASH		

−

5 % 12,580	VACANCY LOSS	OPERATING EXPENSES	80,000

−

−0−	RISK RESERVE	REAL ESTATE TAXES	32,000

=

25,160	CASH AVAILABLE FOR INVESTORS	CASH REPLACEMENTS	1,000

+

REQUIRED PRE-TAX CASH		CASH AVAILABLE FOR DEBT SERVICE	$100,860
6 %	DISTRIBUTION RATE		

=

+

DEBT SERVICE CONSTANT .127968

=

419,333	JUSTIFIED CASH EQUITY INVESTMENTS	▷ 1,207,499 ◁	JUSTIFIED MORTGAGE LOAN	788,166

▽

TOTAL JUSTIFIED INVESTMENT

−

EXISTING CLAIMS OR PLANNED IMPROVEMENT BUDGET	280,000	Land & Indirect Costs

=

▷ **PROCEEDS AVAILABLE FOR PROPERTY PURCHASE "AS IS"** 927,500 ◁   Available for Construction Budget

$37/sq. ft. of gross area for justified bldg. budget

35

Market Comparison Matrix

Sale #	1	2	3	4	5
Price/Acre	$1,751.00	$1,567.00	$1,015.00	$1,594.00	$1,344.00
Topo/Tillable (15%)	5	5	1	3	5
Irr Eqpmnt (30%)	3	5	3	1	5
Financing (10%)	1	3	1	3	1
Sellr Strngth (40%)	5	1	3	5	1
Buyer Proximity(5%)	5	5	3	5	5
Wtd Points	4	3.2	2.5	3.3	3
$/Points/Acre	$437.75	$489.69	$406.00	$483.03	$448.00

Market Comparison Matrix

Sale #	6	Subject
Price/Acre	$1,086.00	
Topo/Tillable (15%)	3	5
Irr Eqpmnt (30%)	3	5
Financing (10%)	5	1
Sellr Strngth (40%)	1	3
Buyer Proximity(5%)	5	3
Wtd Points	2.5	3.7
$/Points/Acre	$434.40	
Mean $/Pnts/Acre	$449.81	
Std Deviation	$31.61	
Coeff of Variation	.07	
Sbjct Wtd Pts x Mean		$1,664.30
Std Dev		$116.96
Range of Value		$1,547.34--$1,781.26

Potato Farm--Wisconsin

POINT RATING SYSTEM--APPLIED TO WISCONSIN POTATO FARM

**** Potato Farm-Wisconsin ****

ATTRIBUTES = 5

ATTRIBUTE NAMES, PRELIM WEIGHTS
Topo/Tillbl 15
Irr Equipt 30
Financing 10
Sellr Strngth 40
Buyer Proxmty 5

OF OBSERVATIONS = 6

OBSERV. # 1 A PRICE 1751 SIZE 1
        Topo/Tillbl 5
        Irr Equipt 3
        Financing 1
        Sellr Strngth 5
        Buyer Proxmty 5
OBSERV. # 2 B PRICE 1567 SIZE 1
        Topo/Tillbl 5
        Irr Equipt 5
        Financing 3
        Sellr Strngth 1
        Buyer Proxmty 5
OBSERV. # 3 C PRICE 1015 SIZE 1
        Topo/Tillbl 1
        Irr Equipt 3
        Financing 1
        Sellr Strngth 3
        Buyer Proxmty 3
OBSERV. # 4 D PRICE 1594 SIZE 1
        Topo/Tillbl 3
        Irr Equipt 1
        Financing 3
        Sellr Strngth 5
        Buyer Proxmty 5
OBSERV. # 5 E PRICE 1344 SIZE 1
        Topo/Tillbl 5
        Irr Equipt 5
        Financing 1
        Sellr Strngth 1
        Buyer Proxmty 5
OBSERV. # 6 F PRICE 1086 SIZE 1
        Topo/Tillbl 3
        Irr Equipt 3
        Financing 5
        Sellr Strngth 1
        Buyer Proxmty 5

Notes on Mkt Comp & Fuzzy

Ratings	Points	Equiv Fuzzy Rtg	Rough age guideline absent remod, deterior
Excellent	26	1.00	0
Good	20	.75	5
Average	15	.60	10
Fair	13	.50	15
Poor	10	.40	20

Weights:

Office, restaurant

Eff Age	.20
Space Quality	.50
Marketability factors & amenities	.30

Sq ft bldg only--plus land

Apartments

Eff Age	.20
Space Quality	.30
Amenities (pool, tenn, applia)	.20
Marketability & Location factors (D.T., emplyt ctrs, view)	.30

The sales were analyzed, using a procedure proposed by Dr. Richard U. Ratcliff, elaborated and implemented by Dr. James A. Graaskamp, with modifications by Gene Dilmore.

The comparison procedure is basically as follows: First, land value is calculated as of the sale date for each comparable property. The indicated land value is then deducted from the sale price, eliminating this major element from the price differentials. Then the remainder price, for improvements only, is reduced to price per square foot of net rentable area.

Next, the analyst acknowledges that many of the comparison factors to be considered, are qualitative in nature, and cannot, in the present state of the art, be, precisely quantified. Therefore, a procedure is utilized which converts these subjective, or qualitative judgments to a quantitative basis:

1

In this step, the properties are assigned comparative quality points for the major property attributes. Points are in accordance with qualitative ratings, as follows:

Rating	Points
Excellent	26
Good	20
Average	15
Fair	13
Poor	10

The major categories of property attributes considered, and the relative weights assigned to each were as follows:

Effective Age	20%
Space Quality (Construction, Design, Finish)	50%
Marketability (Accessibility, linkages to clients & customers, amenities)	30%
	100%

Each assignment of quality points is given its appropriate weight, and the weighted quality points totaled. For example, a rating of Fair in regard to Age (13 points, x 20% weight); a rating of Fair in regard to space quality (13 points, x 50% weight); and a rating of Average in regard to Marketability Factors (15 points, x 30% weight) gives, for Sale #1, a total of 13.60 quality points.

Next, for each property, we divide the "Price Per Square Foot for Improvements" by the number of quality points, in order to reduce the comparisons to a common denominator. In the case of Sale #1, the price of improvements of $33.86 per square foot, divided by 13.60 quality points, yields an indicator of a price of $2.49 per quality point/per square foot. Note that these comparative ratings are thus independent of subject property, which is then assigned quality ratings in the same manner.

Finally, we examine the central tendency of these 13 indicators, for a value indication for subject improvements, and add subject land value for an indication of most probable selling price for the total property.

The analysis is summarized in the following matrix:

Comparable Sales Analysis Matrix

Sale #	Ident.	Price	Land	Improvements	Imps Sq Ft
1	Crnshw	800,000	220,500	579,500	$33.86
2	3700 4 Av	250,000	74,000	176,000	$25.14
3	1732 Ox	105,000	40,000	65,000	$32.57
4	1210 S 20	680,000	248,500	431,500	$36.08
5	201 Vulc	819,484	228,000	591,484	$36.07
6	3500 Mont	191,200	58,500	132,700	$32.37
7	3100 Ind	360,000	75,000	285,000	$60.25
8	2717 19 Pl	101,750	28,000	73,750	$29.50
9	11 Off Pk	265,000	147,000	118,000	$32.78
10	3499 Montg	265,000	63,000	202,000	$29.71
11	2720 S 19 St	100,000	24,500	75,500	$28.49
12	1200 S 17 St	250,000	105,000	145,000	$33.72
13	3928 Montcl	950,000	168,500	781,500	$37.61

Comparable Sales Analysis Matrix--Cont'd

Sale #	Age Rating	Sp Qual Rating	Mktblty Rating	Quality Points	Price Per Point/SF
1	13x.2	13x.5	15x.3	13.60	$2.49
2	13x.2	13x.5	15x.3	13.60	$1.85
3	10x.2	15x.5	20x.3	15.50	$2.10
4	12x.2	15x.5	18x.3	15.30	$2.36
5	10x.2	20x.5	15x.3	17.50	$2.06
6	14x.2	15x.5	13x.3	14.20	$2.28
7	20x.2	23x.5	23x.3	22.40	$2.69
8	15x.2	13x.5	15x.3	14.00	$2.11
9	13x.2	20x.5	20x.3	18.60	$1.76
10	13x.2	15x.5	13x.3	14.00	$2.12
11	15x.2	14x.5	13x.3	13.90	$2.05
12	15x.2	15x.5	10x.3	13.50	$2.50
13	15x.2	15x.5	20x.3	16.50	$2.28

Median	$2.12
Mean	$2.20
Standard Deviation	$0.26

Most probable price for subject from this approach is indicated as follows:

Effective Age rating is assigned a Poor rating, of 8 points. Space Quality is assigned a Fair rating, at 13 points, and Marketability Factors are assigned a Fair rating, at 13 points. Therefore, 8 points x 20%, plus 13 points x 50%, plus 13 points x 30% = 12.00 points. Multiplying x $2.20 per square foot per point = $26.40 per sq. ft. x NRA of 11,640 sq. ft. = indicated value of improvements: (R) $307,000

        Plus Land $225,000
Probable Price Indication $532,000

A standard deviation for subject is computed as follows: standard deviation of $0.26 x 12.00 points = $3.12 x 11,640 sq. ft. = a standard deviation for subject, in dollars, of plus of minus (R) $36,500.

Applying the standard deviation gives a 68% confidence interval of plus or minus one standard deviation, of:

$495,500 to $568,500, with most probable figure of $532,000

6

The sales were analyzed, using a procedure proposed by Dr. Richard U. Ratcliff, elaborated and implemented by Dr. James A. Graaskamp, with modifications by Gene Dilmore.

The comparison procedure is basically as follows: First, the price is reduced to a price per square foot of improvements (including land).

Next, the analyst acknowledges that many of the comparison factors to be considered, are qualitative in nature, and cannot, in the present state of the art, be precisely quantified. Therefore, a procedure is utilized which converts these subjective, or qualitative judgments to a quantitative basis:

In this step, the properties are assigned comparative quality points for the major property attributes. Points are in accordance with qualitative ratings, as follows:

Rating	Points
Excellent	26
Good	20
Average	15
Fair	13
Poor	10

The major categories of property attributes considered, and the relative weights assigned to each were as follows:

Effective Age	20%
Space Quality (Construction, Design, Finish)	30%
Amenities (Pool, Tennis Ct, extra applia.)	20%
Marketability Factors (Accessibility to DT & emplmt ctrs, View, Location desirability)	30%
	100%

Each assignment of quality points is given its appropriate weight, and the weighted quality points totaled. For example, for Sale #1, a rating of Good in regard to Age (20 points, x 20% weight); a rating of Average in regard to space quality (15 points, x 30% weight); a rating of Average in regard to Amenities (15 points, x 20% weight), and a rating of Good in regard to Marketability Factors (20 points, x 30% weight) gives a total of 17.50 quality points.

Next, for each property, we divide the "Price Per Square Foot of Improvements" by the number of quality points, in order to reduce the comparisons to a common denominator. In the case of Sale #1, the price of $24.69 per square foot of building, divided by 17.50 quality points, yields an indicator of a price of $1.41 per quality point/per square foot. Note that these comparative ratings are thus independent of subject property, which is then assigned quality ratings in the same manner.

Finally, we examine the central tendency of these indicators, for a value indication for subject improvements, and add subject land value for an indication of most probable selling price for the total property.

The analysis is summarized in the following matrix:

Comparable Sales Analysis Matrix

Sale #	Ident.	Price	Sq Ft Imps	Price Sq Ft
1	1521 S 17 St	391,495	15,855	$24.69
2	630 Idlwld	245,000	13,086	$18.72
3	1504 S 14 Av	530,000	20,363	$26.03
4	1512 S 13 Av	270,000	14,412	$18.73
5	3512 Clairmnt	490,500	19,360	$25.34
6	2905 Rhodes	700,000	30,640	$22.85
7	3400 S 8 Av	653,000	28,704	$22.75
8	2316 S 10 Ct	381,500	16,270	$23.45
9	634 Idlwld	315,000	14,430	$21.83
10	1316 S 33 St	214,000	9,000	$23.78
11	1320 S 18 Av	761,250	33,324	$22.84
12	1540 S 29 Ct	575,000	26,786	$21.47

Comparable Sales Analysis Matrix--Cont'd

Sale #	Age Rating	Sp Qual Rating	Amenty Rating	Mktblty Rating	Quality Points	Price Per Point/SF
1	20x.2	15x.3	15x.2	20x.3	17.50	$1.41
2	13x.2	15x.3	15x.2	20x.3	16.10	$1.16
3	20x.2	15x.3	15x.2	20x.3	17.50	$1.49
4	13x.2	15x.3	15x.2	20x.3	16.10	$1.16
5	10x.2	17x.3	15x.2	23x.3	17.00	$1.49
6	13x.2	17x.3	20x.2	23x.3	18.60	$1.23
7	12x.2	15x.3	20x.2	20x.3	16.90	$1.35
8	10x.2	15x.3	20x.2	20x.3	16.50	$1.42
9	15x.2	15x.3	15x.2	20x.3	16.50	$1.32
10	13x.2	15x.3	15x.2	20x.3	16.10	$1.48
11	13x.2	15x.3	15x.2	17x.3	15.20	$1.41
12	13x.2	15x.3	20x.2	20x.3	17.10	$1.34

Median $1.38

Mean $1.36

Standard Deviation $0.12

Most probable price for subject from this approach is indicated as follows:

Comparable Sales Analysis Matrix

Sale #	Ident.	Price	Sq Ft Imps	Price Sq Ft
1	Jacksn Tr	1,472,074	60,720	$24.24
2	Clubvw	277,500	15,424	$17.99
3	Shadowwd	1,545,000	75,712	$20.41
4	Warrior Rd	360,000	13,680	$26.32

Comparable Sales Analysis Matrix--Cont'd

Sale #	Age Rating	Sp Qual Rating	Amenity Rating	Mktblty Rating	Quality Points	Price Per Point/SF
1	20x.2	15x.3	15x.2	15x.3	16.00	$1.52
2	15x.2	13x.3	13x.2	13x.3	13.40	$1.34
3	15x.2	15x.3	20x.2	15x.3	16.00	$1.28
4	20x.2	15x.3	13x.2	13x.3	15.00	$1.75

Median	$1.43
Mean	$1.47
Standard Deviation	$0.21

Most probable price for subject from this approach is
indicated as follows:

Subject is 16 years old. Effective Age rating is assigned a Fair rating, 13 points. Space Quality is assigned a Fair rating, 13 points. The Amenities factor is assigned a rating of Fair, or 13 points. Marketability factors are rated Average, with 15 points.

Therefore, 13 points x 20%, plus 13 points x 30%, plus 13 points x 20%, plus 15 points x 30% = 13.60 points. Multiplying x $1.47 per point per square foot = $19.99 per sq. ft. x building area of 20,422 sq. ft. =

Probable Price Indication   (R) $408,000

A standard deviation for subject is computed as follows: standard deviation of $0.21 x 13.60 points = $2.86 x 20,422 sq. ft. = a standard deviation for subject, in dollars, of plus of minus (R) $58,300.

Applying the standard deviation gives a 68% confidence interval of plus or minus one standard deviation, of:

$349,700 to $466,300, with most probable figure of $408,000

```
FUZZY DECISION MAKING OUTPUT: Oakwood Apartments
NO. OF ALTERNATIVES:   5
NO. OF CRITERIA FOR THE DECISION:  4

RATINGS OF THE ALTERNATIVES
*******************************

Eff Age              RATING FOR 1          .75
Eff Age              RATING FOR 2          .60
Eff Age              RATING FOR 3          .60
Eff Age              RATING FOR 4          .75
Eff Age              RATING FOR Subject    .50
SpceQual             RATING FOR 1          .60
SpceQual             RATING FOR 2          .50
SpceQual             RATING FOR 3          .60
SpceQual             RATING FOR 4          .60
SpceQual             RATING FOR Subject    .50
Aments               RATING FOR 1          .60
Aments               RATING FOR 2          .50
Aments               RATING FOR 3          .75
Aments               RATING FOR 4          .50
Aments               RATING FOR Subject    .50
Mktblty              RATING FOR 1          .60
Mktblty              RATING FOR 2          .50
Mktblty              RATING FOR 3          .60
Mktblty              RATING FOR 4          .50
Mktblty              RATING FOR Subject    .60
```

RATINGS OF THE CRITERIA
****

FOR EACH PAIR OF THE CRITERIA ENTER 1 OR 2 TO INDICATE WHICH IS
MORE IMPORTANT, FOLLOWED BY A COMMA, FOLLOWED BY A NUMBER BETWEEN
1 AND 9 TO INDICATE HOW MUCH MORE IMPORTANT. DEFINITIONS FOR SOME
OF THE VALUES ARE:

    1 - EQUAL IMPORTANCE
    3 - WEAK IMPORTANCE OF ONE OVER THE OTHER
    5 - STRONG IMPORTANCE OF ONE OVER THE OTHER
    7 - DEMONSTRATED IMPORTANCE OF ONE OVER THE OTHER
    9 - ABSOLUTE IMPORTANCE OF ONE OVER THE OTHER

USE 2,4,6 & 8 WHEN THE DEGREE OF IMPORTANCE FALLS BETWEEN
THE VALUES DEFINED ABOVE.

(1) Eff Age	--	(2) SpceQual 2		5
(1) Eff Age	--	(2) Aments 1	1	
(1) SpceQual	--	(2) Aments 1	5	
(1) Eff Age	--	(2) Mktblty 2		5
(1) SpceQual	--	(2) Mktblty 1		1
(1) Aments	--	(2) Mktblty 2		5

PROGRAM OUTPUT
****

CONSISTENCY OF THE PAIRED MATRIX= 0

DECISION VALUES ...

1	- .426827
2	- .31498
3	- .426827
4	- .31498
Subject	- .31498

PRICE SQ FT PER RATING:
 56.7911
 57.1147
 47.818
 83.5608
MEAN = 61.3212
STD DEV = 15.4397

INDICATION FOR SUBJECT:
IMPROVEMENTS $394,450
    LAND $0
                     _____
                      $394,450

TRENDS ON CURRENT APPRAISAL TECHNIQUES
AND BUSINESS PRACTICE

Presented By

James A. Graaskamp, Ph.D., CRE, SREA
University of Wisconsin, School of Business

SECOND HOUR

I. Traditional techniques of market comparison and
    capitalized income lack reliable data or fail to
    represent market behavior, leading to greater reliance
    on discounted cash flows for large income properties.

    A. Sales prices are engineered by accountants to some
        degree to shift asset values among various
        classifications for land, structure, personalty,
        intangibles, capital gains and losses and ordinary
        gains and losses, making market comparison
        anything but objective (not to mention adjustments
        for non-market financing discussed in second day).

    B. Similarly, the income approach has great
        difficulty in applying the truism that income
        value is the present value of income plus the
        present value of reversion.

        1. There is the problem of defining net operating
            income in terms of what is attributable to the
            real estate (aside from financing effect on
            cash throw off).

        2. There is the problem of defining the net
            reversion to equity in an uncertain future
            (aside from financing effect on mortgage
            balance).

        3. There is the problem of selecting a conversion
            process which reduces income cash flows and
            reversionary cash flows to a single present
            value.

C. Neither revenue, nor expenses, nor debt service
    are constant over time anymore, so that NOI/OAR is
    no longer a useful valuation model. Instead rents,
    vacancies, expenses, and financing must be staged
    using a spread sheet for both income and the
    reversion. Lenders may share in appreciation and
    owner and lender may share the risk of variable
    interest and the first principal payment.

D. The problem of defining real property as tangible
    or intangible.

    1. Property refers to things and objects capable
        of ownership.

    2. Real property refers to the legal rights,
        interests, and benefits inherent in the
        ownership of real estate.

    3. What is inherent?

    4. Is the residual claim the right to receive
        cash flow from income property subject to any
        prior claims?

    5. How is cash flow allocated among land, labor,
        capital, and management...and public licenses?

E. The definition of economic rent attributable to
    the real estate:

    1. Is income attributable to entitlements that go
        with fee simple title to the land and are
        point specific or to transportable permits?

        a. For example--does liquor license go with
            the building? Is permit to build or
            maintain a dam assignable? Does right to
            management fee and brokerage fee go with
            general partnership or property?

    2. Is the real estate income from retailing of
        space or from wholesaling of space?

        a. Parking ramp lease versus parking space by
            the hour, observation deck versus ticket,
            condominium conversion fee versus
            apartment project investment.

3. Is the income for extraordinary services or intangible assets rather than customary?

    a. Maid service versus janitorial, shopping center premium for proximity or for joint merchandising and risk management.

4. Ancillary to rather than integral with the project.

    a. Can services be acquired off premises such as janitorial or utilities?

5. IRS classification as 1250 property (real) or 1231 property (personalty) and Section 453, 453A and B, or Section 38 (tangible) or Section 45 (intangible).

6. Is income attributable to governmental agencies in exchange for contractual entitlements of control or use to the public interest for the term of the contract?

F. Problem of defining or forecasting a reversion:

1. Pricing real estate for utilitarian purpose, to buy access to service sales, or speculate in long term demand/supply commodity relationships or long term commodity/money ratios.

2. Can the appraiser prove presence of necessary conditions for appreciation and amount of depreciation?

    a. Rising net income
    b. Falling interest rates
    c. Falling investor expectations

3. When is appreciation speculative, non-vested, and excluded from fair market value?

4. Can the appraiser simulate alternative speculative gains for most probable price?

5. When a premium is paid anticipating syndication of condominium conversion, should there be an adjustment for purchase of a business opportunity? Does fair market value include management fees for conversion?

G. Referring back to functions and the accounting/ appraisal interface, consider that accounting theory distinguishes values according to the following in order to fit the function of the accounting task:

1. Exit value assuming completion of normal business cycle in an orderly fashion (benchmarking).

2. Exit value assuming abrupt liquidation (construction loan validation).

3. Replacement value with asset of current technology.

4. Reproduction value of asset at original state of technology.

5. Market value in an organized market for tangible goods.

6. Current value as original cost indexed for dollar devaluation.

7. Discounted value of future receipts at interest factor.

8. Value of asset not yet charged to consumption or production.

II. Case Study of an appraisal of a 50-year old high
     rise office building in the CBD with vacancy
     problems, utility problems, and management
     problems. (See Exhibits 1 through 9.)

     A. Revenues reflected loss of a major tenant
         (State of Wisconsin), lack of demand for
         retail space on the first floor, a soft market
         for B-class space, and a reluctance of
         management and tenants to use pass-throughs
         for operating costs.

     B. It was necessary to do a spread sheet
         indicating a gradual reduction of vacancy
         loss, a gradual updating of existing leases
         with pass-through clauses, and investment in
         critical energy conservation.

     C. Resale price is tied to projected net income
         and gross with a debt cover ratio and a
         cash-on-cash yield. Loan-to-value ratio is
         irrelevant. (See The Appraisal Journal,
         January 1981, "DCR/RE Cap Rate Tables for
         Today's Financing," p. 15.)

EXHIBIT 1

6

CASE STUDY - SEMINAR
EXCERPTED FROM APPRAISAL OF OFFICE BUILDING

LIST OF EXHIBITS

Page

EXHIBIT 1 (Continued)   7

LIST OF EXHIBITS -- Continued

SCALE FOR SCORING COMPARABLES ON IMPORTANT INVESTOR CONSIDERATIONS
FOR OFFICE/RETAIL SPACE IN MADISON C-4 ZONE

Parking
25%

5 = Ample private parking on site or available on contract within the same block.
3 = Limited parking on premises
0 = Little or no surface parking on premises.

Location
20%

5 = In the blocks of East and West Mifflin St. or North and South Carroll St., across from the Capitol Square
3 = In the blocks of North and South Pinckney St., across from the Capitol Square, or in the 100 block of West Washington, or adjacent to General Executive Facilities.
1 = Off of the Capitol Square

First Floor Retail
Lease in Place at
Time of PUrchase
15%

5 = Strong lease in place.
3 = Strong lease in place for part of first floor.
0 = Lease expires in less than 6 months or vacant.

Need for Renovation
of Office Space at
Time of Purchase
15%

5 = No renovation required.
3 = Modest renovation required.
1 = Intensive renovation required.

Visual Quality of
Office Entrance
10%

5 = Excellent design and location.
3 = Indifferent design and/or location.
1 = Poorly defined and/or adjacent to incompatible uses.

Vacancies in Existing
Office Space at Time
of Purchase
15%

5 = Less than 10% of net rentable area (NRA).
3 = More than 10% of NRA.
0 = Vacant

WEIGHTED MATRIX FOR COMPARABLE PROPERTIES

EXHIBIT 2

FEATURE/ WEIGHT	#1 30 W. Mifflin	#2 50 E. Mifflin	#3 16 N. Carroll	#4 123 W. Washington	#5 102 N. Hamilton	#6 212 E. Washington	Subject 110 E. Main
				Rating/Weighted Rating			
Parking 25%	5/1.25	3/.75	0/0	0/0	3/.75	3/.75	3/.75
Location 20%	5/1.00	5/1.00	5/1.00	3/.60	1/.20	3/.60	3/.60
First Floor Retail Lease In Place 15%	5/.75	5/.75	0/0	3/.45	3/.45	0/0	1/.15
Need for Renovation 15%	5/.75	1/.15	3/.45	5/.75	1/.15	1/.15	3/.45
Visual Quality of Office Entrance 10%	5/.50	3/.30	3/.30	5/.50	3/.30	3/.30	1/.10
Vacancies In Existing Office Space 15%	5/.75	0/0	5/.75	5/.75	0/0	0/0	1/.15
Total Weighted Score	5.00	2.95	2.50	3.05	1.85	1.80	2.20
Selling Price	$2,555,500	$850,000	$615,270	$2,896,000	$330,000	$472,000	X
Total Net Rentable Area (NRA)	65,000 sq. ft.	38,500 sq. ft.	35,725 sq. ft.	138,000 sq. ft.	28,000 sq. ft.	38,000 sq. ft.	74,000 sq. ft.
Price Per Square Foot (NRA)	$39.30	$22.10	$17.20	$21.00	$11.80	$12.40	
Price Per Square Foot of NRA / Total Weighted Score	7.86	7.49	6.88	6.89	6.38	6.89	

9

EXHIBIT 3

CALCULATION OF MOST PROBABLE PRICE USING MEAN PRICE PER POINT EQUATION METHOD
(With Standardized Weighted Point Scores)

Comparable Property	Selling Price per NRA	Weighted Point Score	$\frac{\text{Price per NRA}}{\text{Weighted Point Score}}$ (x)
1	$39.30	5.00	7.86
2	22.10	3.45	7.49
3	17.20	2.50	6.88
4	21.00	3.05	6.89
5	11.80	1.85	6.38
6	12.40	1.80	6.89
		TOTAL	42.39

$$\frac{\text{Central Tendency}}{(\text{Mean} = \bar{x})} = \frac{\sum x}{n} = \frac{42.39}{6} = 7.07$$

$$\frac{\text{Dispersion}}{(\text{Standard deviation} = s)} = \sqrt{\frac{\sum(x-\bar{x})^2}{n-1}} = \sqrt{\frac{1.38}{5}} = .525$$

where:

x	$\bar{x}$	$/(x-\bar{x})/$	$\sum(x-\bar{x})^2$	n	$n-1$
7.86	7.07 =	.79	.62	6	5
7.49	7.07 =	.42	.18		
6.88	7.07 =	.19	.04		
6.89	7.07 =	.18	.03		
6.38	7.07 =	.69	.48		
6.89	7.07 =	.18	.03		
			1.38		

Value Range: $\bar{x} \pm s = 7.07 \pm .53$

Estimate of Value of Subject Property =

NRA of subject * Weighted point score of subject *
(74,000 S.F.)   (2.2)

[Sample mean of price per NRA per total
weighted score = (Dispersion ± t value)]
[7.07 ± (.53 * t value)]

	Confidence Level	
	68% (t = 1.000)	@ n-1 = 5: 90% (t = 2.015)
High Estimate:[1]	$1,240,000	$1,320,000
Central Tendency:	1,150,000	1,150,000
Low Estimate:	1,060,000	980,000

[1] All value estimates are rounded.

SCHEDULE OF RENTAL REVENUES[1] FOR THE PERIOD OF APRIL 30, 1980 THROUGH APRIL 29, 1985

Occupancy as of April 30, 1980	Space Sq. Ft.	Annual Rent per Sq. Ft.[2]	Lease Terms as of 4/30/80[3]	Annualized Gross Rental Revenues				
				4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Lower Level & Roof								
B Level Vault-Vacant	700	3.00	--	$ 2,100	$ 2,100	$ 2,270	$ 2,270	$ 2,450
B Level-Showroom & Office	4000	3.00	--	12,000	12,000	12,960	12,960	14,000
A Level-Storage	400	4.00	6/30/80	1,600	2,400	2,600	2,800	3,000
Honeywell Phone Box	--	--	--	600	600	600	650	650
Total-Lower Level	5100			$16,300	$17,100	$18,430	$18,680	$20,100
First Floor								
Chez Vous-112	454	4.80	10/1/76 - 9/30/81	$ 2,180	$ 2,290	$ 2,360	$ 2,360	$ 2,360
Chez Vous-114	1000	4.80	10/1/76 - 9/30/81	4,810	5,030	5,200	5,200	5,200
North Entry	2000	9.00	--	18,000	19,500	21,000	22,500	24,000
South Entry-Leaf & Ladle[4]	3500	9.00	1/1/80 - 12/30/84	31,500	33,130	33,950	36,670	39,600
Total-First Floor	6954			$56,490	$59,950	$62,510	$66,730	$71,160
Second Floor								
201 Vacant	150	6.50	--	$ 970	$ 970	$ 1,050	$ 1,050	$ 1,140
202 State[5]	600	6.70	7/1/79 - 6/30/80	4,020	4,320	4,320	4,670	4,670
203-4 Vacant[5]	543	6.20	9/1/78 - 8/31/79	3,370	3,640	3,640	3,640	3,930
205-6 State	506	7.00	3/1/78 - 5/31/80	3,540	3,820	3,820	4,120	4,120
207-8 Ikmucrafts	386	7.20	1/1/79 - 12/31/81	2,780	2,850	3,000	3,000	3,080
209-10 State[5]	451	6.25	11/1/79 - 5/31/80	2,820	3,040	3,040	3,280	3,280
211 Dr. Reyez	219	7.00	--	1,600	1,730	1,730	1,870	1,870
212-14 Dr. Wierwill	700	6.50	4/1/78 - 3/31/81	4,570	4,900	4,900	4,900	5,210
215 Vacant	415	6.75	7/1/78 - 6/30/79	2,800	3,020	3,020	3,270	3,270
216 UPI	500	7.50	5/1/80 - 4/30/81	3,750	4,050	4,050	4,370	4,370
218-19 Rape Crisis Center	816	7.00	1/1/80 - 12/31/81	5,840	6,120	6,260	6,530	6,690
220-21 State[5]	1400	6.25	12/1/79 - 5/31/80	8,750	9,450	9,450	10,200	10,200
Total-Second Floor	6686			$44,810	$47,910	$48,280	$50,900	$51,830

EXHIBIT 4

Occupancy as of April 30, 1980	Space Sq. Ft.	Annual Rent per Sq. Ft.[2]	Lease Terms as of 4/30/80[3]	Annualized Gross Rental Revenues				
				4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Third Floor								
301 Vacant	150	5.75	--	$ 860	$ 860	930	930	$ 1,000
302-3 State[5]	1179	5.75	--	6,780	7,320	7,320	7,900	7,900
304 State[5]	230	6.70	--	1,540	1,660	1,660	1,800	1,800
305-8 State[5]	942	6.70	--	6,300	6,800	6,800	7,360	7,360
309 The Journal Co.	232	7.20	9/1/79 - 8/31/80	1,810	1,880	1,970	2,030	2,120
310-11 State[5]	456	6.70	--	3,050	3,300	3,300	3,560	3,560
312 Vacant	234	5.75	--	1,340	1,450	1,450	1,570	1,570
313-14 Dr. R. Meng	482	7.20	6/1/79 - 5/31/80	3,490	3,730	3,750	4,000	4,030
315 Vacant	711	6.70	10/1/79 - 9/30/80	5,000	5,000	5,310	5,480	5,630
316-19 Misc. Builders Assoc.	1091	7.00	1/1/80 - 12/31/80	7,810	8,180	8,360	8,730	8,940
320-24 Vacant	1363	7.00	--	9,540	10,300	10,300	11,130	11,130
Total-Third Floor	7090			$47,520	$50,560	$51,150	$54,490	$55,040
Fourth Floor								
401 Vacant	150	6.40	--	$ 960	$ 960	$ 1,040	$ 1,040	$ 1,120
402 Furst, Carlson Inc.	648	6.40	5/1/79 - 4/30/80	4,350	4,370	4,700	4,730	5,090
403-11 State	2147	6.75	1/1/80 - 12/31/81	14,500	14,880	15,670	16,100	16,960
412 Vacant	202	6.40	--	1,290	1,290	1,400	1,400	1,500
413-14 Wisconsin Alliance of Cities	679	6.80	--	4,980	5,020	5,420	5,420	5,850
415 State[5]	259	7.00	3/1/79 - 2/28/81	1,810	1,940	1,970	2,100	2,130
416-19 State[5]	1370	6.00	vacated 6/30/80	8,220	8,880	8,880	9,590	9,590
420-20a State[5]	560	6.70	vacated 6/30/80	3,750	3,750	4,050	4,050	4,370
421-22 State	300	6.70	vacated 6/30/80	2,010	2,010	2,170	2,170	2,340
423-24 Ed Konkol	340	6.60	9/1/79 - 8/31/80	2,240	2,240	2,420	2,420	2,620
Total-Fourth Floor	6655			$44,130	$45,340	$47,720	$49,020	$51,570

EXHIBIT 4 (Continued)

SCHEDULE OF RENTAL REVENUES[1] FOR THE PERIOD OF APRIL 30, 1980 THROUGH APRIL 29, 1985

Occupancy as of April 30, 1980	Space Sq. Ft.	Annual Rent per Sq. Ft.[2]	Lease Terms as of 4/30/80[3]	Annualized Gross Rental Revenues				
				4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Fifth Floor								
501 E. C. Barton	150	7.60	--	$ 1,240	$ 1,270	$ 1,270	$ 1,380	$ 1,380
502 Vacant	842	7.50	--	6,310	6,820	6,820	7,360	7,360
503-5 Vacant	810	7.50	--	6,070	6,070	6,440	6,800	6,800
506-19 State	3922	6.25	11/1/79 - 10/31/83	24,500	24,500	24,500	30,590	31,770
520 State-Bd. of Aging	555	6.70	7/1/79 - 6/30/81	3,950	4,000	4,270	4,330	4,940
521-22 Dr. Coryell	339	7.20	7/1/79 - 6/30/80	2,440	2,690	2,740	2,920	2,950
523-24 Green Bay Press Gazette	337	7.60	9/1/79 - 8/31/82	2,560	2,690	2,760	2,760	2,760
Total-Fifth Floor	6955			$47,070	$48,040	$48,800	$56,140	$57,960
Sixth Floor								
601 Vacant	150	6.70	--	$ 1,000	$ 1,000	$ 1,080	$ 1,080	$ 1,170
602-4 State[5]	1473	6.00	vacated 6/30/80	8,840	9,540	9,540	10,300	10,300
605 Vacant	204	6.40	--	1,300	1,300	1,410	1,410	1,520
606-10 State	1000	6.70	to 6/30/80 then mo. - mo.	7,370	7,500	7,500	8,100	8,100
611 The Evjue Foundation	286	7.00	vacated 11/30/80	2,000	2,000	2,160	2,160	2,330
612-14 State	647	7.50	11/1/79 - 10/31/83	4,850	4,850	4,850	5,080	5,240
615 Tenney Bldg.	344	7.00	--	2,400	2,400	2,600	2,600	2,800
616 John Barsness	850	6.00	3/1/79 - 2/28/81	5,170	5,520	5,590	5,950	6,020
617 Bill Ward	250	6.70	vacated 5/31/80	1,940	2,120	2,120	2,300	2,300
618-19 State	494	8.00	vacated 5/31/79	3,950	3,950	4,270	4,270	4,610
620-24 Vacant	1262	6.70	--	8,450	9,130	9,130	9,860	9,860
Total-Sixth Floor	6960			$47,270	$49,310	$50,250	$53,110	$54,250
Seventh Floor								
701 Lawton & Cates	150	5.75	6/1/79 - 5/31/83	$ 930	$ 970	$ 1,100	$ 1,050	$ 1,090
702-19 Lawton & Cates	5417	5.75	6/1/79 - 5/31/83	33,600	35,100	36,450	37,850	39,160
720-24 Vacant	1106	7.00	--	7,740	7,740	8,360	8,360	9,030
Total-Seventh Floor	6673			$42,270	$43,810	$45,910	$47,260	$49,280

EXHIBIT 4 (Continued)

13

Occupancy as of April 30, 1980	Space Sq. Ft.	Annual Rent per Sq. Ft.[2]	Lease Terms. as of 4/30/80[3]	Annualized Gross Rental Revenues				
				4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Eighth Floor								
801 Wisconsin Radio News	150	7.00	to 6/30/80	$ 1,050	$ 1,050	$ 1,130	$ 1,130	$ 1,220
802-5 State	1536	7.55	to 10/31/83	11,600	11,600	11,600	12,060	12,520
816-7 Dr. Hannis	470	7.50	9/1/79 - 8/31/80	3,840	4,000	4,000	4,210	4,320
808-22 State	4580	6.00	7/1/79 - 6/30/80	27,480	36,620	37,100	37,100	39,580
823-24 Dr. Boyle	319	7.60	9/1/79 - 8/31/80	2,780	2,880	3,040	3,120	3,120
Total-Eighth Floor	7015			$46,750	$56,150	$56,870	$57,620	$60,760
Ninth Floor								
901 Hillman & Robertson	150	8.00	1/1/80 - 12/31/80	$ 1,230	$ 1,300	$ 1,340	$ 1,400	$ 1,400
902 Wisc. Ins. Alliance	864	7.00	6/1/79 - 5/31/80	6,400	6,480	6,910	7,000	7,000
903-6 Mulcahy & Wherry	980	8.00	1/1/79 - 12/31/81	8,070	8,530	8,750	9,210	9,210
907 Robert Wehling	225	8.00	4/1/80 - 3/31/81	1,810	1,960	1,980	2,110	2,110
909-10 Larry Hall	700	6.00	6/1/79 - 5/31/80	4,520	4,550	4,870	4,900	4,900
911 Dr. Schultz	248	7.75	1/1/79 - 12/31/80	1,920	1,970	2,060	2,140	2,230
912-19 Devine Insurance	2580	7.00	4/1/80 - 3/31/83	18,060	18,060	18,180	19,350	19,350
921 State	575	7.00	vacated 7/1/80	4,020	4,350	4,350	4,700	4,700
922-23 Judicial Commission	355	6.50	5/1/79 - 4/30/81	2,300	2,500	2,500	2,700	2,700
924-25 Dr. Rundell	339	7.20	6/1/79 - 5/31/80	2,650	2,600	2,860	2,880	2,880
Total-Ninth Floor	7016			$50,980	$52,300	$53,800	$56,390	$56,480
Tenth Floor								
1001 Victor Lind	150	6.80	11/1/79 - 10/31/80	$ 1,050	$ 1,200	$ 1,250	$ 1,300	$ 1,350
1002 Wisc. Assoc. of Indep. Colleges	864	6.50	1/1/80 - 12/31/80	5,760	6,050	6,190	6,480	6,650
1003-4 Wisc. Canners & Freezers	756	8.00	5/1/79 - 4/30/80	6,050	6,050	6,530	6,530	7,050
1005-8 Boelter Co.	911	6.80	12/1/79 - 11/30/80	6,370	6,650	6,880	7,200	7,400
1009-10 Vacant	455	6.50	--	2,950	3,190	3,190	3,450	3,450
1011-13 Dr. Boll	727	6.65	6/1/79 - 5/31/80	5,230	5,270	5,640	5,670	6,100
1014 Vacant	229	6.25	--	1,430	1,430	1,540	1,540	1,670
1015-18 State	1616	7.50	11/1/79 - 10/31/83	12,120	12,120	12,120	12,600	13,090
1019-21 Vacant	680	6.70	vacated 2/29/80	5,180	5,440	5,870	5,910	6,350
1022 Herb Walsh	171	8.00	12/1/79 - 11/30/80	1,420	1,490	1,490	1,540	1,600
1023-24 Dane Co. Advocate for Battered Women	331	7.20	8/1/79 - 7/31/80	2,610	2,680	2,840	2,900	3,070
Total-Tenth Floor	6890			$50,370	$51,570	$53,540	$55,120	$57,780
Annual Totals for	74,054 sq. ft.			$493,960	$522,120	$537,260	$565,460	$586,210

EXHIBIT 4 (Continued)

NOTES TO SCHEDULE OF RENTAL REVENUES FOR THE
PERIOD OF APRIL 30, 1980 THROUGH APRIL 29, 1985

EXHIBIT 4 (Continued)

[1] The annualized gross rental revenue for the period from April 30, 1980 through April 29, 1981 is consistent with the actual lease terms, if at market rents, as of April 30, 1980. Increases in rents are assumed to take place according to lease terms and conditions; an increase of 8 percent is used at lease renewal dates. This factor was taken from a survey of office rent increases in Class B buildings on and near the Capitol Square in Madison and is the current rate used by the Tenney Building manager.

[2] The annual rental market rate is given as of April 30, 1980. Only one tenant in Rooms 909-10 is considered to be below market rent at $4.73/square foot; therefore the rent for this space is calculated at a market rate of $6.00/square foot. Market rents are also imputed to spaces used by the building owner.

[3] Of the 87 rental space units in the Tenney Building as of April 30, 1980, there are 62 leases in place, but 54 of those terminate between 1980 and 1982. Only eight have leases that extend beyond April 30, 1982.

[4] The Leaf and Ladle Restaurant began its lease of 3500 sq. ft. of the first floor retail space on January 1, 1980. The restaurant had closed its door by October 1, 1980, and the remodeled space is once again on the market. The rental rate of $9.00 with an annual escalator of 8% per year commencing in the second year is considered comparable for the area. A most probable investor might consider an escalator based upon a percentage of gross sales to encourage rental of this space if restaurant use is most likely; the projected revenues probably would not increase as rapidly as forecast.

[5] The state has given notice that it will vacate these spaces by June 30, 1980.

SCHEDULE OF VACANCIES BY FLOOR AND BY LEASE TERMS FOR
THE PERIOD OF APRIL 30, 1980 THROUGH APRIL 29, 1985

	Space Sq. Ft.[2]	% Vacant	Annual Rental Rate Per. Sq. Ft.	# of Months Vacant	Projection Period				
					4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Lower Level & Roof[1]									
B Level - Vault	700	100	3.00	12	$ 2,100				
	700	100	3.00	12		$ 2,100			
	700	100	3.25	12			$ 2,270		
	700	50	3.25	6				$ 1,140	
	700	50	3.50	6					$ 1,140
B Level Showroom and Office	4,000	100	3.00	12	12,000				
	4,000	100	3.00	6		6,000			
	4,000	50	3.25	6			3,250		
	4,000	50	3.25	6				3,250	
	4,000	50	3.50	3					1,750
A Level - Storage	400	100	7.00	6				1,400	
	400	100	7.50	9					2,250
Total - Lower level					$14,100	$ 8,100	$ 5,520	$ 5,790	$ 5,140
First Floor 112 East Main	454	100	5.20	8		$ 1,570			
	454	100	5.20	12			$ 2,360		
	454	100	5.20	4				$ 780	
114 East Main	1,000	100	5.20	8		3,480			
	1,000	50	5.20	12			2,600		
	1,000	50	5.20	4				860	
Leaf & Ladle	3,500	100	9.00	7	18,370				
	3,500	100	9.50	3		8,310			
	3,500	100	10.50	3				9,190	
	3,500	100	11.30	3					$ 9,890
North Entry	2,000	100	9.00	9	13,500				
Total - First Floor					$31,870	$13,360	$ 4,960	$10,830	$ 9,890

16

SCHEDULE OF VACANCIES BY FLOOR AND BY LEASE TERMS FOR
THE PERIOD OF APRIL 30, 1980 THROUGH APRIL 29, 1985

	Space Sq. Ft.[2]	% Vacant	Annual Rental Rate Per Sq. Ft.	# of Months Vacant	Projection Period				
					4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Second Floor[3]									
201	150	100	6.50	12	$ 900				
	150	100	6.50	12		$ 900			
	150	100	7.00	12			$ 1,050		
	150	100	7.00	12				$ 1,050	
	150	100	7.60	12					$ 1,140
202	600	100	6.70	6	2,010				
	600	50	7.20	12		2,160			
	600	50	7.20	12			2,160		
	600	50	7.80	6				1,170	
	600	50	7.80	3					580
203-4	543	100	6.20	12	3,370				
	543	50	6.70	12		1,820			
	543	50	6.70	12			1,820		
	543	50	6.70	9				1,360	
205-6	506	100	7.00	6	1,770				
	506	50	7.50	12		1,900			
	506	50	7.50	12			1,900		
	506	50	8.15	9				1,550	
	506	50	8.15	6					1,030
209-10	451	100	6.25	6	1,410				
	451	50	6.75	12		1,520			
	451	50	6.75	12			1,520		
	451	50	7.30	9				1,230	
215	415	100	6.75	12	2,800				
	415	100	7.30	6		1,510			
	415	100	7.30	3			760		
218-19	816	100	8.00	8				4,370	
	816	100	8.20	12					6,690
220-21	1,400	100	6.25	6	4,370				
	1,400	50	6.75	12		4,720			
	1,400	50	6.75	6			2,360		
	1,400	50	7.30	6				2,560	
Total - Second Floor					$16,630	$14,530	$11,570	$13,290	$ 9,440

17

	Space Sq. Ft.[2]	% Vacant	Annual Rental Rate Per Sq. Ft.	# of Months Vacant	4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Third Floor[3]									
301	150	100	5.75	12	$ 860				
	150	100	5.75	12		$ 860			
	150	100	6.20	12			$ 930		
	150	100	6.20	12				$ 930	
	150	100	6.70	12					$ 1,000
302-3	1,179	100	5.75	6	3,390				
	1,179	50	6.20	12		3,650			
	1,179	50	6.20	12			3,650		
	1,179	50	6.70	6				3,950	
304	230	100	6.70	6	770				
	230	100	7.20	12		1,660			
	230	100	7.80	6					900
305-8	942	100	6.70	6	3,150				
	942	50	7.20	12		3,390			
	942	50	7.20	12			3,390		
	942	50	7.80	3					1,830
310-11	456	100	6.70	6	1,530				
	456	50	7.20	12		1,640			
	456	50	7.20	12			1,640		
312	234	100	5.75	12	1,340				
	234	100	6.20	12		1,450			
	234	100	6.20	12			1,450		
	234	100	6.70	12				1,570	
	234	100	6.70	12					1,570
315	731	100	6.70	4	1,610				
320-24	1,363	100	7.00	12	9,540				
	1,363	100	7.60	6		5,150			
Total - Third Floor					$22,190	$17,800	$11,060	$ 6,450	$ 5,300

SCHEDULE OF VACANCIES BY FLOOR AND BY LEASE TERMS FOR
THE PERIOD OF APRIL 30, 1980 THROUGH APRIL 29, 1985

	Space Sq. Ft.²	% Vacant	Annual Rental Rate Per Sq. Ft.	# of Months Vacant	Projection Period				
					4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Fourth Floor									
401	150	100	6.40	12	$ 960				
	150	100	6.40	12		$ 960			
	150	100	6.90	12			$ 1,040		
	150	100	6.90	12				$ 1,040	
	150	100	7.45	12					$ 1,120
412	202	100	6.40	12	1,290				
	202	100	6.40	12		1,290			
	202	100	6.90	12			1,400		
	202	100	6.90	12				1,400	
	202	100	7.40	12					1,500
416-19	1,370	100	6.00	6	4,110				
	1,370	50	6.50	12		4,450			
	1,370	50	6.50	12			4,450		
	1,370	50	7.00	12				4,800	
	1,370	50	7.00	6					2,400
420-20a	560	100	6.70	6	1,880				
	560	50	6.70	12		1,870			
	560	50	7.20	9			1,520		
Total - Fourth Floor					$ 8,240	$ 8,570	$ 8,410	$ 7,240	$ 5,020
Fifth Floor									
502	842	100	7.50	12	$ 6,310				
	842	50	8.00	12		$ 3,410			
	842	50	8.00	12			$ 3,410		
	842	50	8.75	6				$ 3,410	
520	555	100	7.70	6			2,130		
	555	50	7.80	12				2,160	
	555	50	8.90	9					$ 1,850
Total - Fifth Floor					$ 6,310	$ 3,410	$ 5,540	$ 5,570	$ 1,850

SCHEDULE OF VACANCIES BY FLOOR AND BY LEASE TERMS FOR
THE PERIOD OF APRIL 30, 1980 THROUGH APRIL 29, 1985

EXHIBIT 5 (Continued)

	Space Sq. Ft.[2]	% Vacant	Annual Rental Rate Per Sq. Ft.	# of Months Vacant	Projection Period				
					4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Sixth Floor									
601	150	100	6.70	12	$ 1,000				
	150	100	6.70	12		$ 1,000			
	150	100	7.20	9			$ 810		
602-4	1,473	100	6.00	6	4,420				
	1,473	50	6.50	12		4,770			
	1,473	50	6.50	12			4,770		
	1,473	50	7.00	9				$ 3,870	
	1,473	50	7.00	6					$ 2,580
605	204	100	6.40	12	1,300				
	204	100	6.40	12		1,300			
	204	100	6.90	12			1,410		
	204	100	6.90	9				1,060	
617	250	100	7.75	4	640				
620-24	1,262	100	6.70	12	8,450				
	1,262	100	7.20	6		4,540			
	1,262	100	7.20	6			4,540		
	1,262	50	7.80	9				3,690	
Total - Sixth Floor					$15,810	$11,610	$11,530	$ 8,620	$ 2,580
Seventh Floor **No Vacancies Projected**									
Eighth Floor									
801	150	100	7.00	10	$ 880				
	150	100	7.00	12		$ 1,050			
	150	100	7.50	6			$ 560		
Total - Eighth Floor					$ 880	$ 1,050	$ 560	0	0

SCHEDULE OF VACANCIES BY FLOOR AND BY LEASE TERMS FOR
THE PERIOD OF APRIL 30, 1980 THROUGH APRIL 29, 1985

EXHIBIT 5 (Continued):

	Space Sq. Ft.[2]	% Vacant	Annual Rental Rate Per Sq. Ft.	# of Months Vacant	Projection Period				
					4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Ninth Floor									
909-10	700	100	6.50	6		$ 2,280			
	700	100	7.00	6			$ 2,440		
922-23	355	100	7.00	12			2,500		
	355	100	7.60	6				$ 1,350	
Total - Ninth Floor					0	$ 2,280	$ 4,940	$ 1,350	0
Tenth Floor									
1009-10	455	100	6.50	12	$ 2,950				
	455	100	7.00	12		$ 3,190			
	455	100	7.00	9			$ 2,390		
1014	229	100	6.25	12	1,430				
	229	100	6.25	12		1,430			
	229	100	6.70	6				770	
1019-20	680	100	6.70	1	380				
Total - Tenth Floor					$ 4,760	$ 4,620	$ 2,390	$ 770	0
TENNEY BUILDING TOTALS[4]					$120,790	$85,330	$66,480	$59,910	$39,220

21

NOTES TO SCHEDULE OF VACANCIES BY FLOOR AND BY LEASE TERMS
FOR THE PERIOD OF APRIL 30, 1980 THROUGH APRIL 29, 1985

EXHIBIT 5 (Continued)

[1]The lower level space has a continued record of vacancy; it is assumed that until the space is made more marketable by remodeling, rents will not keep pace with the market. Uses other than a showroom for the 4000 sq. ft. will need to be explored; subdividing the larger space for office space and/or storage space are possibilities.

[2]It is assumed that the smaller office spaces from 200-500 square feet will experience less overall vacancy than the larger spaces. There appears to be a trend toward several small independent businessmen sharing a common secretarial staff; some of the larger vacant suites could be remodeled for this type of use.

[3]The second and third floors have the greatest amount of vacancy due to the exodus of State tenants. By the end of June, 1980, the State's move alone will cause 44% of the second floor vacancies; the third floor will experience a vacancy rate of 39.5% due to loss of State tenants; the State related vacancy rates on the fourth and sixth floors will be 29% and 21% respectively. A most probable buyer will have to anticipate a large capital investment in 1980 to remodel and refurbish the   Building to make it competitive in the Class B office market that already has a large supply of space available on and near the Square.

[4]Vacancies are assumed to gradually decrease between 1981 and 1983; a most probable buyer will institute a vigorous marketing program which will involve research of space needs in the area and remodeling which will be targeted to those needs.

Schedule of Projected Revenues and Expenses From
April 30, 1980 Through April 29, 1985

	4/30/80-4/29/81	4/30/81-4/29/82	4/30/82-4/29/83	4/30/83-4/29/84	4/30/84-4/29/85
Revenues:					
Gross Income	$493,960	$522,120	$537,260	$565,460	$586,210
Less: Vacancies	(120,790)(24.5%)	(85,330)(16.3%)	(66,480)(12.4%)	(59,910)(10.6%)	(39,220)(6.7%)
Effective Gross	373,170	436,790	470,780	505,550	546,990
Parking Rentals	12,960	12,960	12,960	14,000	14,000
Total Revenues	$386,130	$449,750	$483,740	$519,550	$560,990
Expenses:[1]					
Accounting & Legal	4,200	4,640	5,120	5,650	6,240
Building Security[2]	21,840	24,100	26,620	29,390	32,440
Insurance	7,000	7,730	8,530	9,420	10,400
Maintenance[3]	28,850	31,850	35,160	38,820	42,860
Wage & Salaries	60,000	66,240	73,130	80,730	89,130
Payroll Taxes	11,500	12,700	14,020	15,470	17,080
Repairs	14,880	16,430	18,130	20,020	22,100
Telephone	1,600	1,770	1,950	2,150	2,380
Utilities[4]	90,600	101,470	107,560	114,380	122,020
Office Expenses[5]	7,040	7,520	8,250	8,840	9,690
Management[6]	22,390	26,320	27,540	30,200	32,570
Concourse Special Assessment	2,360	2,410	2,630	2,550	2,480
Total Operating Expenses Before R.E. Taxes[7]	($272,260)	($303,180)	($328,640)	($357,700)	($389,390)
Net Operating Income Before R.E. Taxes	$113,870	$146,570	$155,100	$161,850	$171,600
Real Estate Taxes[8]	(26,680)	(28,000)	(29,400)	(30,880)	(32,420)
Net Operating Income	$ 87,190	$118,570	$125,700	$130,970	$139,180

EXHIBIT 5 (Continued)

23

Notes to Schedule of Projected Revenues and Expenses
From April 30, 1980 Through April 29, 1985

EXHIBIT 5 (Continued)

[1]**Expenses**

In general, expenses are projected to increase according to the average annual change of 10.4% in the All Item Consumer Price Index over the past five years. (See amended Exhibit 27).

[2]**Building Security**

Security personnel is hired from 10 P.M. to 6 A.M. on weekdays with 24 hour coverage on the weekends. The building is open to the public from 6 A.M. to 6 P.M. each weekday. The continuing problems created by the presence of bars and adult entertainment places across the street make this security protection mandatory.

[3]**Maintenance**

This account includes an elevator maintenance contract at $9,060 a year.

[4]**Utilities**

At present the Tenney Building consumes approximately 55,000 to 70,000 gallons of No. 2 fuel oil per year depending upon the weather. The cost of fuel has increased as follows:

January 12, 1979	.43/gallon
October 1, 1979	.77/gallon
February 1, 1980	.95/gallon

In thirteen months the cost has risen 121%. Though the Tenney Building is converting to natural gas on its primary boiler, the cost of natural gas is also volatile. Over the past five years natural gas has had an average annual increase of 17.6% for the commercial time-of-use consumer, according to Milton Spiros, Madison Gas & Electric Co.

The installation of combination storm windows throughout the building should help to conserve fuel costs. To stabilize utility costs it is assumed management will place energy cost escalators in renewed leases; therefore in the pro forma income statement utility costs are escalated at 12 percent annually with 50 percent of the increase passed through to the tenant after year 2.

[5]Office expenses include rental of space in the Tenney Building for management operations.

[6]Management costs are computed as 6% of effective gross office revenue with 4% allowed for management and 2% for leasing commissions for space turnover.

Notes to Schedule of Projected Revenues and Expenses
From April 30, 1980 Through April 29, 1985

[7]Total operating expenses are calculated before including real estate taxes for ease in using the HRCAP discounted cash flow program.

[8]Real estate taxes are calculated as 5.4% of gross revenues in the first year and increased at 5% per annum thereafter. These calculations are based on the following fact and assumptions:

1. The assessed value as of 1/1/80 is $1,200,000.
2. The mill rate is assumed to increase slightly (approximately 1%) after several years of decrease.
3. Taxes will continue to increase due to inflated city budgets and decreasing state aids.

EXHIBIT 5 (Continued)

EXHIBIT 6

26

REVENUE JUSTIFIED CAPITAL BUDGET
DEBT COVER RATIO APPROACH

GROSS RENT POTENTIAL

−

VACANCY LOSS

=

EFFECTIVE GROSS REVENUE

−

OPERATING EXPENSES

−

REAL ESTATE TAXES

−

CASH REPLACEMENTS

=

NET OPERATING INCOME AVAILABLE

FOR DEBT PAYMENT, INCOME TAX, CASH DIVIDENDS

− ÷

| DEBT SERVICE CASH | DEBT COVER RATIO |
| REQUIRED BY LENDERS |

=

| CASH AVAILABLE FOR | CASH AVAILABLE FOR |
| INCOME TAX AND INVESTORS | DEBT SERVICE |

÷ ÷

| REQUIRED PRE-TAX CASH | DEBT SERVICE CONSTANT |
| DISTRIBUTION RATE |

= =

| JUSTIFIED CASH | JUSTIFIED MORTGAGE |
| EQUITY INVESTMENT | LOAN |

+

TOTAL JUSTIFIED INVESTMENT

−

EXISTING CLAIMS OR PLANNED

IMPROVEMENT BUDGET

=

PROCEEDS AVAILABLE FOR

PROPERTY PURCHASE AS IS

EXHIBIT 7

4. Conversion of Net Income to Present Value

The MRCAP program from the National EDUCARE library of programs, previously described, is used to convert net income to a present value after taxes as of April 30, 1980, for the Tenney Building at the end of a five-year holding period.

C. Assumptions Used in MRCAP

The MRCAP discounted cash flow program can solve for a justified project value by specifying the ratio of net income to debt service acceptable to an institutional mortgage lender. Given the interest rate and term available as of April 30, 1980, the program will solve for the justified amount of mortgage and for justified cash equity, assuming typical before-tax cash-on-cash investor requirements for office buildings, with potential for inflation sensitive rents. Exhibit 28 is a simplified flow chart depicting the steps in solving for the justified project budget.

On April 30, 1980, prudent lenders will require a minimum debt cover ratio of 1.3 and equity investors expect no less than 6 percent cash-on-cash.

    1. Inputs into MRCAP Program

        a. Debt cover ratio = 1.3

        b. Before tax cash-on-cash requirements = 6%

        c. Project holding period = 5 years

d. Real estate taxes = historical pattern suggests
real estate taxes at 5.4 percent of first year's
gross with an annual inflation factor of 5% (see
assumptions discussed below)

e. Discount rate = 13% (present value factor used
to discount cash flow)

f. Reinvestment rate = 6% after tax rate applied
to after tax cash flow

g. Resale price = 10 times net operating income in
year of sale

h. Resale cost rate = 4%

i. Working capital reserves from equity to cover
one month's expenses = $30,000

j. Investor marginal income tax rate = 50%

k. Land = $340,000, as of most recent appraisal for
IRS

l. Buildings = 60% of total improvement value

m. Mechanicals and site improvements = 40% of total
improvement value

n. Elevators = remaining book value of $73,000

o. Improvements for Energy Conservation = a total
of $54,000 which includes $43,000 for storm windows
and $11,000 for natural gas conversion unit.

p. Tenant Improvements = $50,000 for carpeting and
partitions as needed to upgrade vacant office space

q. Investment Credit Dummy = to allow for tax benefit
of investment credit in first year for capital improvement
for energy conservation

r. Mortgage = principal amount determined by debt
cover ratio; interest rate a minimum of 12% with a
20-year term, paid monthly, on the first mortgage and
13% interest and an 8-year term for the second mortgage

EXHIBIT 7 (Continued)

2. Real Estate Tax Assumptions

Real estate taxes are a function of assessed value (or fair market value when assessed value is 100 percent of market value) and the net mill rate; therefore, real estate taxes are estimated as a function of gross rental income. During the past two years, real estate taxes have been between 5 percent and 6 percent of the   Building's potential gross rental income. As a result of tests of several values between 5 percent and 6 percent, it is determined that 5.4 percent of gross rental revenues best represents the historical pattern of the   Building's real estate taxes. MRCAP is programmed to use 5.4 percent of the first year's gross rental income to compute the first year's real estate taxes and then provides for a growth factor of 5 percent to increase the taxes each year thereafter.

D. Analysis of Test Results

Four runs of the MRCAP program were done using different assumptions about the amount of real estate taxes that would be paid on the subject property. Taxes and net mill rates for the past three years on the subject property have been:

Year	1977	1978	1979
Real Estate Taxes	$33,118.75	$29,951.95	$25,340.93
Net Mill Rate	.026495	.024153	.022036

Real estate taxes estimated at various percentages of the first year's projected gross and inflated 5 percent a year gave these results in the MRCAP runs:

EXHIBIT 7 (Continued)

30

Percentage of First Year's Gross Rental Revenue	Real Estate Taxes				
	1980	1981	1982	1983	1984
5.0	$24,698	$25,933	$27,230	$28,591	$30,021
5.4	$26,674	$28,008	$29,408	$30,878	$32,422
5.8	$28,650	$30,082	$31,586	$33,166	$34,824
6.0	$29,638	$31,119	$32,675	$34,309	$36,025

The real estate taxes estimated at 5.4 percent of the first year's gross rent best approximates the shift from a decreasing to an increasing net mill rate that can now be expected due to an anticipated decrease in state aids to cities. Rising costs of local government can be expected to be borne by the local taxpayer.

The input and output for the MRCAP program using real estate taxes estimated at 5.4 percent of gross rental revenue are found in Exhibit 29.

If taxes are a conservative 5.4 percent of gross rental revenue, MRCAP substantiates the fair market value of $1,150,000 estimated by the market comparison approach to value.

EXHIBIT 8.   31

MRCAP INPUT AND OUTPUT--
JUSTIFIED CAPITAL BUDGET WITH
REAL ESTATE TAXES AT 5.4% OF
FIRST YEAR'S GROSS RENT

MRCAP   09:49CST   12/20/80

ENTER INPUT FILE NAME?TENNEY

THE PROGRAM MRCAP IS THE PROPERTY OF
MICHAEL L. ROBBINS
C/O REAL ESTATE DYNAMICS INC.
4701 WINNEQUAH RD.
MONONA. WISC.

USER NO. 36

(608)-221-1120

NO REPRESENTATION IS MADE THAT THE ASSUMPTIONS OR
COMPUTATIONAL FORMAT USED IN THIS PROJECTION WILL
BE ACCEPTABLE TO TAXING AUTHORITIES.

*$10.00 LIB CHG APPLIED

R E P O R T   S E C T I O N   N U M B E R   1   PAGE 1
==

* GROSS RENT	$ 554378.	* RATE OF GROWTH OF GROSS RENT	0.0432
* EXPENSES	$ 330234.	* RATE OF GROWTH OF EXPENSES	0.0930
* R E TAXES	$ 29478.	* RATE OF GROWTH OF R E TAXES	0.0500
INCOME TAX RATE	0.5000	PROJECT VALUE GROWTH OF	2.0000
* VACANCY RATE	0.1375	WORKING CAPITAL LOAN RATE	0.1400
EQUITY DISCOUNT	0.1300	EXTRAORDINARY EXPENSES $	0.
RESALE COST	0.0400	REINVESTMENT RATE	0.0600
WKG CAPITAL RS $	30000.	CAPITAL RESER INTEREST RATE	0.
INITIAL COST $	1091502.	INITIAL EQUITY REQUIRED $	486009.

ALL '*' VALUES ARE AVERAGE AMOUNTS FOR HOLDING PERIOD. OF 5 YRS.

INITIAL COST DERIVED THROUGH SHCHDUUR TYPE 3 USING 2 MORTGAGES

P R O   F O R M A

INVESTMENT ANALYSIS OF

BUILDING

FOR

R E P O R T   S E C T I O N   N U M B E R   2   PAGE 1
==

C O M P O N E N T   S U M M A R Y

TITLE	PCT. DEPR	BEGIN USE	USEFUL LIFE	DEPR METHOD		COST	SCH
1 LAND	9.	1	25.	0	$	340000.	0
BUILDING	0.80	1	29.	2	$	358221.	0
HVAC	0.90	1	9.	2	$	225481.	0
ELEVATORS	0.90	1	4.	2	$	73000.	0
ENERGY CONSERVATION	0.90	1	5.	2	$	54000.	0
TENANT IMPROVEMENTS	0.90	1	10.	4	$	50000.	0
INVESTMENT CREDIT BU	1.00	1	1.	2	$	10800.	0

M O R T G A G E   S U M M A R Y

TITLE	INTR RATE	BEGIN TR.	END TR.	TERM		ORIG BALC	PCT VALUE
FIRST MORTGAGE	0.1200	1	20	20	$	531493.	0.487
SECOND MORTGAGE	0.1300	1	8	8	$	104000.	0.095

EXHIBIT 8 (Continued)

P R O   F O R M A

INVESTMENT ANALYSIS OF

BUILDING

FOR

R E P O R T   S E C T I O N   N U M B E R   3   PAGE 1
===

CASH FLOW ANALYSIS

		1980	1981	1982	1983	1984
1	GROSS INCOME	506920.	535080.	550220.	579460.	600210.
2	LESS VACANCY	120790.	85330.	66480.	57919.	49820.
3	LESS REAL ESTATE TAXES	26674.	28008.	29408.	30879.	32422.
4	LESS EXPENSES	272260.	303180.	328640.	357700.	389390.
5	NET INCOME	87196.	118562.	125692.	130972.	139178.
6	LESS DEPRECIATION	76323.	64398.	63442.	62629.	45513.
7	LESS INTEREST	76472.	74515.	72298.	69785.	66938.
8	TAXABLE INCOME	-65599.	-20351.	-10048.	-1443.	26726.
9	PLUS DEPRECIATION	76323.	64398.	63442.	62629.	45513.
10	LESS PRINCIPAL PAYMENTS	14730.	16687.	18904.	21417.	24263.
11	CASH THROW-OFF	-4006.	27361.	34490.	39770.	47976.
12	LESS TAXES	0.	0.	0.	0.	13363.
13	LESS RESERVES	0.	0.	0.	0.	0.
14	CASH FROM OPERATIONS	0.	27361.	34490.	39770.	34613.
15	WORKING CAPITAL LOAN	0.	0.	0.	0.	0.
16	DISTRIBUTABLE CASH AFR TAX	0.	27361.	34490.	39770.	34613.
17	TAX SAVING ON OTHER INCOME	32799.	10175.	5024.	721.	0.
18	SPENDABLE CASH AFTER TAX	32799.	37536.	39514.	40491.	34613.

EXHIBIT 8 (Continued)

MARKET VALUE & REVERSION
==========================

CASH FLOW ANALYSIS
====================

		1980	1981	1982	1983	1984
19	END OF YEAR MARKET VALUE	871962.	1185625.	1256921.	1309717.	1391778.
20	LESS RESALE COST	34873.	47425.	50277.	52389.	55671.
21	LESS LOAN BALANCES	620764.	604077.	585173.	563756.	539493.
22	PLUS CUM. CASH RESERVES	25994.	25994.	25994.	25994.	25994.
23	BEFORE TAX NET WORTH	242314.	560117.	647466.	719566.	822608.
24	CAPITAL GAIN (IF SOLD)	-181096.	182544.	313511.	426719.	551596.
25	CAPITAL GAINS TAX	-36219.	36509.	62702.	85344.	110319.
26	MINIMUM PREF. TAX	0.	0.	0.	0.	0.
27	INCOME TAX ON EXCESS DEP.	1500.	2438.	2897.	2950.	2657.
28	TOTAL TAX ON SALE	-16610.	38746.	65599.	88294.	112977.
29	AFTER TAX NET WORTH	258924.	521171.	581867.	631273.	709632.

BEFORE TAX RATIO ANALYSIS
===========================

CASH FLOW ANALYSIS
====================

		1980	1981	1982	1983	1984
30	RETURN ON NET WORTH B/4 TAX	-0.5014	1.4245	0.2175	0.1728	0.2099
31	CHANGE IN NET WORTH B/4 TAX	-243696.	317803.	87349.	72100.	103042.
32	ORIG EQUITY CASH RTNB/4 TAX	-0.0082	0.0563	0.0710	0.0818	0.0987
33	ORIG EQUITY PAYBACK B/4 TAX	0.0000	0.0563	0.1273	0.2091	0.2903
34	B/4 TAX PRESENT VALUE	846386.	1092030.	1126006.	1142995.	1174189.

AFTER TAX RATIO ANALYSIS
==========================

CASH FLOW ANALYSIS
====================

		1980	1981	1982	1983	1984
35	RETURN ON NET WORTH AFR TAX	-0.3998	1.1578	0.1923	0.1545	0.1768
36	CHANGE IN NET WORTH AFR TAX	-227086.	262248.	60696.	49406.	78359.
37	ORIG EQUITY CASH RTNAFR TAX	0.0673	0.0772	0.0813	0.0833	0.0712
38	ORIG EQUITY PAYBACK AFR TAX	0.0673	0.1447	0.2260	0.3093	0.3806
39	AFTER TAX PRESENT VALUE	893655.	1102039.	1124561.	1133307.	1150092.

CASH FLOW ANALYSIS
====================

		1980	1981	1982	1983	1984
40	NET INCOME-MARKET VALUE RTO	0.1000	0.1000	0.1000	0.1000	0.1000
41	LENDER BONUS INTEREST RATE	0.0000	0.0000	0.0000	0.0000	0.0000
42	DEFAULT RATIO	0.7696	0.7894	0.2165	0.8250	0.8547

EXHIBIT 9

36

V A L T E S T

A DEMONSTRATION PACKET

PREPARED BY

LANDMARK RESEARCH, INC.

MADISON, WISCONSIN

PREPARED FOR

THE REAL ESTATE ANALYSTS NORTHSTAR USERS GROUP

SEPTEMBER 24 AND 25, 1982

COSTA MESA, CALIFORNIA

EXHIBIT 9 (Continued)

37

V A L T E S T

DEMONSTRATION 1

INPUT ASSUMPTIONS
****

1. ENTER PROJECT NAME ? J
2. ENTER PROJECTION PERIOD ? 5
3. DO YOU WANT TO ENTER EFFECTIVE GROSS REVENUE INSTEAD OF NOI? N
   TO REPEAT PREVIOUS YEAR'S NOI/EGR FOR BAL OF PROJECTION ENTER 0
   N.O.I. YEAR 1? 5000
   N.O.I. YEAR 2? 5000
   N.O.I. YEAR 3? 6000
   N.O.I. YEAR 4? 6000
   N.O.I. YEAR 5? 7000
4. ACQUISITION COST: ? 50000
5. DO YOU WANT TO USE STANDARD FINANCING? Y OR N?Y
   MTG. RATIO OR AMOUNT, INT., TERM, NO PAY/YR ? .8, .12, 25, 12
6. ENTER RATIO OF IMP #1/TOTAL VALUE, LIFE OF IMP #1? .8, 15
   IS THERE A SECOND IMPROVEMENT? Y OR N? N
7. DEPRECIATION METHOD, IMPROVEMENT #1 ? 2
   ENTER D.B. %: ? 175
   IS PROPERTY SUBSIDIZED HOUSING ? Y OR N ?N
   IS PROPERTY RESIDENTIAL? Y OR N? Y
8. IS OWNER A TAXABLE CORPORATION? Y OR N ?Y
   CORPORATE FEDERAL ORDINARY TAX RATE COULD BE :
              17% - 46% (1978 LAW, EFFECTIVE 1979)
              16% - 46% (1981 LAW, EFFECTIVE 1982)
              15% - 46% (1981 LAW, EFFECTIVE 1983 & THEREAFTER)
   MAXIMUM CORPORATE CAPITAL GAIN ALTERNATIVE TAX RATE IS 28%

              (PLUS STATE RATE)

   ENTER:
    1) EFFECTIVE ORDINARY RATE 2) EFFECTIVE ORDINARY RATE (YEAR OF SALE)
   ? .46, .46
9. RESALE PRICE (NET OF SALE COSTS) ? 60000
10. IS THERE LENDER PARTICIPATION ?N
11. ENTER OWNER'S AFTER TAX REINVESTMENT RATE (%)? 9
12. ENTER OWNER'S AFTER TAX OPPORTUNITY COST OF EQUITY FUNDS (%)? 9

EXHIBIT 9 (Continued)   38

DEMONSTRATION 1 (Cont.)

AFTER TAX CASH FLOW PROJECTION
J
DATE 9/14/82

DATA SUMMARY
****

ACQUISTN COST: $50,000.   MTG. AMT.: $40,000.
NOI 1ST YR: $5,000.   MTG. INT.:   12%
ORG. EQUITY: $10,000.   MTG. TERM: 25. YRS
CTO 1ST YEAR: $-55.   DEBT SERVICE 1ST YEAR: $5,055.
                             MTG. CONST.: .1263869
IMP. #1 VALUE: $40,000.   IMP. #1 LIFE: 15.
INC. TX RATE: 46%
SALE YR RATE: 46%   OWNER: CORPORATION

DEPRECIATION IMPROVEMENT #1 : 175% D.B.
RESIDENTIAL PROPERTY

LENDER PARTICIPATION: CASH THROW-OFF: NONE   REVERSION: NONE

NO REPRESENTATION IS MADE THAT THE ASSUMPTIONS PROVIDED BY JEAN
ARE PROPER OR THAT THE CURRENT TAX ESTIMATES USED IN THIS
PROJECTION WILL BE ACCEPTABLE TO TAXING AUTHORITIES. NO ESTIMATE
HAS BEEN MADE OF MINIMUM PREFERENCE TAX. CAPITAL LOSSES IN YEAR OF
SALE ARE TREATED AS ORDINARY LOSSES (SECTION 1231 PROPERTY) AND
ARE CREDITED AGAINST TAXES PAID AT   ·   THE
ORDINARY RATE AT THE TIME OF SALE.
FOR THE PURPOSE OF THE MODIFIED INTERNAL RATE OF RETURN (M.I.R.R.)
CALCULATION, NEGATIVE CASH IN ANY ONE PERIOD IS COVERED
BY A CONTRIBUTION FROM EQUITY IN THAT PERIOD

YEAR	NOI	MTG INT & LENDERS %	TAX DEP	TAXABLE INCOME	INCOME TAX	AFTER TAX CASH FLOW
1.	5000.	4785.	4667.	-4453.	-2049.	1994.
2.	5000.	4751.	4122.	-3874.	-1783.	1728.
3.	6000.	4713.	3641.	-2355.	-1084.	2029.
4.	6000.	4669.	3216.	-1857.	-860.	1814.
5.	7000.	4620.	2641.	-462.	-214.	2159.
	$29000.	$23539.	$18488.	$-13031.	$-5999.	$9722.

EXHIBIT 9 (Continued)

DEMONSTRATION 1 (Cont.)

RESALE PRICE:	$60,000.	1ST YR B4 TAX EQ DIV:	-.5548%
LESS MORTGAGE BALANCE:	$38,261.	AVG DEBT COVER RATIO:	1.1473
PROCEEDS BEFORE TAXES:	$21,739.		
LESS LENDER'S %:	$0.		
NET SALES PROCEEDS			
BEFORE TAXES:	$21,739.		

```
RESALE PRICE:            $60,000.
LESS LENDER'S %:              $0.
NET RESALE PRICE:        $60,000.
LESS BASIS:              $31,512.
TOTAL GAIN:              $28,488.
EXCESS DEPRECIATION:      $5,155.
CAPITAL GAIN:            $23,333.
ORDINARY GAIN:           $5,155.
```

```
TAX ON ORDINARY GAIN:     $2,371.
TAX ON CAPITAL GAIN:      $6,533.
PLUS MORTGAGE BAL:       $38,261.
TOTAL DEDUCTIONS FROM
NET RESALE PRICE:        $47,166.
```

```
NET SALES PROCEEDS
AFTER TAX:               $12,834.
```

IF PURCHASED AS ABOVE, HELD 5 YEARS & SOLD FOR $60,000.
THE MODIFIED I.R.R. BEFORE TAXES IS 20.6487% AND AFTER TAXES IS 19.5605%
ASSUMING AN AFTER TAX REINVESTMENT RATE OF 9%, AND OPPORTUNITY COST OF 9%

EXHIBIT 9 (Continued)

DEMONSTRATION 1 (Cont.)

MORTGAGE ANALYSIS
J
****

YEAR	NOI	MORT INT.	MORT AMORT	DEBT SERV	DCR	MTG. BAL.
1.	5000.	4785.	270.	5055.	.989	39730.
2.	5000.	4751.	304.	5055.	.989	39426.
3.	6000.	4713.	343.	5055.	1.187	39083.
4.	6000.	4669.	386.	5055.	1.187	38697.
5.	7000.	4620.	435.	5055.	1.385	38261.
AVG	$5,800.				1.147	

DISTRIBUTION OF CASH THROW-OFF
J

YEAR	CASH THROW-OFF TOTAL	CASH THROW-OFF TO EQUITY	CASH BONUS TO LENDER
1.	-55.	-55.	0.
2.	-55.	-55.	0.
3.	945.	945.	0.
4.	945.	945.	0.
5.	1945.	1945.	0.
	3723.	3723.	0.

RESALE PRICE: $60,000.
LESS MORTGAGE BALANCE: $38,261.
PROCEEDS BEFORE TAXES: $21,739.
LESS LENDER'S %: $0.
NET SALES PROCEEDS
BEFORE TAXES: $21,739.

CASH THROW-OFF = 0%   REVERSION = 0%

EXHIBIT 9 (continued) 41

DEMONSTRATION 1 (Cont.)

DEPRECIATION SCHEDULE
J
IMPROVEMENT # 1
175% D.B.
RESIDENTIAL
****

YEAR	TAX DEP.	S.L. DEP.	EXCESS DEP	BALANCE
1.	4666.7	2666.7	2000.0	35333.3
2.	4122.2	2666.7	1455.6	31211.1
3.	3641.3	2666.7	974.6	27569.8
4.	3216.5	2666.7	549.8	24353.3
5.	2841.2	2666.7	174.6	21512.1
	========	========	========	
TOTAL	18487.9	13333.3	5154.6	

EQUITY ANALYSIS
J
****

BEFORE TAX EQUITY DIVIDEND

YR	NOI	YR END EQUITY	AMOUNT	CASH RETURN ORG EQ	CUR EQ
1.	$5,000.	$10,325.	$-55.	-.0055	-.0054
2.	5,000.	10,685.	-55.	-.0055	-.0052
3.	6,000.	11,028.	945.	.0945	.0856
4.	6,000.	11,414.	945.	.0945	.0827
5.	7,000.	11,850.	1,945.	.1945	.1641

ORIGINAL EQUITY: $ 10000

EXHIBIT 9 (Continued)   42

V A L T E S T

DEMONSTRATION 2

INPUT ASSUMPTIONS
****

1. ENTER PROJECT NAME ? CARDINAL-2
2. ENTER PROJECTION PERIOD ? 5
3. DO YOU WANT TO ENTER EFFECTIVE GROSS REVENUE INSTEAD OF NOI? N
   TO REPEAT PREVIOUS YEAR'S NOI/EGR FOR BAL OF PROJECTION ENTER 0
   N.O.I. YEAR 1? 81745
   N.O.I. YEAR 2? 81920
   N.O.I. YEAR 3? 98910
   N.O.I. YEAR 4? 108800
   N.O.I. YEAR 5? 119680
4. ACQUISITION COST: ? 1007000
5. DO YOU WANT TO USE STANDARD FINANCING? Y OR N?Y
   MTG. RATIO OR AMOUNT, INT., TERM, NO PAY/YR ? 647000, .15236, 30, 12
6. ENTER RATIO OF IMP #1/TOTAL VALUE, LIFE OF IMP #1? .149, 15
   IS THERE A SECOND IMPROVEMENT? Y OR N? Y
   ENTER RATIO OF IMP #2/TOTAL VALUE, LIFE OF IMP #2? .781, 15
   ENTER REHABILITATION TAX CREDIT FOR IMP #2: 196625
   IS STRUCTURE A CERTIFIED HISTORICAL LANDMARK? Y OR N?Y
7. DEPRECIATION METHOD, IMPROVEMENT #1 ? 1
   DEPRECIATION METHOD, IMPROVEMENT #2 ? 1
   IS PROPERTY SUBSIDIZED HOUSING ? Y OR N ?N
   IS PROPERTY RESIDENTIAL? Y OR N? Y
8. IS OWNER A TAXABLE CORPORATION? Y OR N ?N
   THE MAXIMUM FEDERAL INDIVIDUAL ORDINARY RATE COULD BE:
            70% (PRE-1981 LAW)
            50% (1981 LAW, EFFECTIVE 1982)

            (PLUS STATE RATE)

   ENTER:
   1) EFFECTIVE ORDINARY RATE 2) EFFECTIVE ORDINARY RATE (YEAR OF SALE)
   ? .5, .5
9. RESALE PRICE (NET OF SALE COSTS) ? 1258750
10. IS THERE LENDER PARTICIPATION ?N
11. ENTER OWNER'S AFTER TAX REINVESTMENT RATE (%)? 11
12. ENTER OWNER'S AFTER TAX OPPORTUNITY COST OF EQUITY FUNDS (%)? 11

EXHIBIT 9 (Continued)

DEMONSTRATION 2 (Cont.)

AFTER TAX CASH FLOW PROJECTION
CARDINAL-2
DATE 9/14/82

DATA SUMMARY
****

ACQUISTN COST: $1,007,000.   MTG. AMT.: $647,000.
NOI 1ST YR: $81,745.   MTG. INT.:   15.236%
ORG. EQUITY: $360,000.   MTG. TERM: 30. YRS
CTO 1ST YEAR: $-17,893.   DEBT SERVICE 1ST YEAR: $99,638.
                               MTG. CONST.:   .15400037
IMP. #1 VALUE: $150,043.   IMP. #1 LIFE: 15.
IMP. #2 VALUE: $786,467.   IMP. #2 LIFE: 15.
INC. TX RATE: 50%
SALE YR RATE: 50%   OWNER: INDIVIDUAL

DEPRECIATION IMPROVEMENT #1 : STRAIGHT LINE
DEPRECIATION IMPROVEMENT #2 : STRAIGHT LINE
RESIDENTIAL PROPERTY
CERTIFIED HISTORICAL STRUCTURE
LENDER PARTICIPATION: CASH THROW-OFF: NONE   REVERSION: NONE

NO REPRESENTATION IS MADE THAT THE ASSUMPTIONS PROVIDED BY JEAN
ARE PROPER OR THAT THE CURRENT TAX ESTIMATES USED IN THIS
PROJECTION WILL BE ACCEPTABLE TO TAXING AUTHORITIES. NO ESTIMATE
HAS BEEN MADE OF MINIMUM PREFERENCE TAX. CAPITAL LOSSES IN YEAR OF
SALE ARE TREATED AS ORDINARY LOSSES (SECTION 1231 PROPERTY) AND
ARE CREDITED AGAINST TAXES PAID AT   THE
ORDINARY RATE AT THE TIME OF SALE.
FOR THE PURPOSE OF THE MODIFIED INTERNAL RATE OF RETURN (M.I.R.R.)
CALCULATION, NEGATIVE CASH IN ANY ONE PERIOD IS COVERED
BY A CONTRIBUTION FROM EQUITY IN THAT PERIOD

YEAR	NOI	MTG INT & LENDERS %	TAX DEP	TAXABLE INCOME	INCOME TAX	AFTER TAX CASH FLOW
1.	81745.	98500.	62434.	-79190.	-236221.	218328.
2.	81920.	98313.	62434.	-78828.	-39415.	21697.
3.	98910.	98097.	62434.	-61622.	-30812.	30084.
4.	108800.	97845.	62434.	-51480.	-25741.	34903.
5.	119680.	97552.	62434.	-40307.	-20154.	40196.
	$491055.	$490307.	$312170.	$-311427.	$-352343.	$345207.

NOTE: 1ST YEAR'S TAX REDUCED BY $196,625. FOR TAX CREDIT (IMP #2)

EXHIBIT 9 (Continued)

DEMONSTRATION 2 (Cont.)

RESALE PRICE:	$1,258,750.	1ST YR B4 TAX EQ DIV: -4.9703%
LESS MORTGAGE BALANCE:	$639,115.	AVG DEBT COVER RATIO: .9857
PROCEEDS BEFORE TAXES:	$619,635.	
LESS LENDER'S %:	$0.	
NET SALES PROCEEDS		
BEFORE TAXES:	$619,635.	

RESALE PRICE:	$1,258,750.
LESS LENDER'S %:	$0.
NET RESALE PRICE:	$1,258,750.
LESS BASIS:	$694,830.
TOTAL GAIN:	$563,920.
EXCESS DEPRECIATION:	$0.
CAPITAL GAIN:	$563,920.
ORDINARY GAIN:	$0.

TAX ON ORDINARY GAIN:	$0.
TAX ON CAPITAL GAIN:	$112,784.
PLUS MORTGAGE BAL:	$639,115.
TOTAL DEDUCTIONS FROM	
NET RESALE PRICE:	$751,899.

NET SALES PROCEEDS	
AFTER TAX:	$506,851.

IF PURCHASED AS ABOVE, HELD 5 YEARS & SOLD FOR $1,258,750.
THE MODIFIED I.R.R. BEFORE TAXES IS 10.5005% AND AFTER TAXES IS 22.2744%
ASSUMING AN AFTER TAX REINVESTMENT RATE OF 11%, AND OPPORTUNITY COST OF 11%

EXHIBIT 9. (Continued)   45

DEMONSTRATION 2 (Cont.)

DISTRIBUTION OF CASH THROW-OFF
CARDINAL-2

YEAR	CASH THROW-OFF TOTAL	CASH THROW-OFF TO EQUITY	CASH BONUS TO LENDER
1.	-17893.	-17893.	0.
2.	-17718.	-17718.	0.
3.	-728.	-728.	0.
4.	9162.	9162.	0.
5.	20042.	20042.	0.
	-7136.	-7136.	0.

RESALE PRICE:	$1,258,750.
LESS MORTGAGE BALANCE:	$639,115.
PROCEEDS BEFORE TAXES:	$619,635.
LESS LENDER'S %:	$0.
NET SALES PROCEEDS BEFORE TAXES:	$619,635.

CASH THROW-OFF = 0%   REVERSION = 0%

MORTGAGE ANALYSIS
CARDINAL-2
****

YEAR	NOI	MORT INT.	MORT AMORT	DEBT SERV	DCR	MTG. BAL.
1.	81745.	98500.	1139.	99638.	.820	645861.
2.	81920.	98313.	1325.	99638.	.822	644537.
3.	98910.	98097.	1541.	99638.	.993	642995.
4.	108800.	97845.	1793.	99638.	1.092	641202.
5.	119680.	97552.	2086.	99638.	1.201	639115.
AVG	$96,211.				.986	

EQUITY ANALYSIS
CARDINAL-2
****

BEFORE TAX EQUITY DIVIDEND

YR	NOI	YR END EQUITY	AMOUNT	CASH RETURN ORG EQ	CUR EQ
1.	$81,745.	$379,032.	$-17,893.	-.0497	-.0472
2.	81,920.	398.075.	-17,718.	-.0492	-.0445
3.	98,910.	400,345.	-728.	-.0020	-.0018
4.	108,800.	402,138.	9,162.	.0254	.0228
5.	119,680.	404,224.	20,042.	.0557	.0496

ORIGINAL EQUITY: $ 360000

EXHIBIT 9 (Continued)

DEMONSTRATION 2 (Cont.)

DEPRECIATION SCHEDULE
CARDINAL-2
IMPROVEMENT # 1
STRAIGHT LINE
RESIDENTIAL
****

YEAR	TAX DEP.	S.L. DEP.	EXCESS DEP	BALANCE
1.	10002.9	10002.9	.0	140040.1
2.	10002.9	10002.9	.0	130037.3
3.	10002.9	10002.9	.0	120034.4
4.	10002.9	10002.9	.0	110031.5
5.	10002.9	10002.9	.0	100028.7
SUB-TOTAL	50014.3	50014.3	.0	

DEPRECIATION SCHEDULE
CARDINAL-2
IMPROVEMENT # 2
STRAIGHT LINE
RESIDENTIAL
****

YEAR	TAX DEP.	S.L. DEP.	EXCESS DEP	BALANCE
1.	52431.1	52431.1	.0	734035.9
2.	52431.1	52431.1	.0	681604.7
3.	52431.1	52431.1	.0	629173.6
4.	52431.1	52431.1	.0	576742.5
5.	52431.1	52431.1	.0	524311.3
SUB-TOTAL	262155.7	262155.7	.0	
TOTAL	312170.0	312170.0	.0	

EXHIBIT 9 (Continued)

V A L T E S T - DEMONSTRATION 3   47

INPUT ASSUMPTIONS
****

1. ENTER PROJECT NAME ? SELL AT LOSS TEST
2. ENTER PROJECTION PERIOD ? 5
3. DO YOU WANT TO ENTER EFFECTIVE GROSS REVENUE INSTEAD OF NOI? Y
   TO REPEAT PREVIOUS YEAR'S NOI/EGR FOR BAL OF PROJECTION ENTER 0

   EFFECTIVE GROSS REVENUE YEAR   1? 13800
   EFFECTIVE GROSS REVENUE YEAR   2? 14210
   EFFECTIVE GROSS REVENUE YEAR   3? 1000
   EFFECTIVE GROSS REVENUE YEAR   4? 15080
   EFFECTIVE GROSS REVENUE YEAR   5? 15530

   VAR OP EXPENSE (%) YEAR   1? 6
   VAR OP EXPENSE (%) YEAR   2? 5
   VAR OP EXPENSE (%) YEAR   3? 0

   FIXED OP EXPENSE YEAR   1? 3700
   FIXED OP EXPENSE YEAR   2? 3920
   FIXED OP EXPENSE YEAR   3? 4160
   FIXED OP EXPENSE YEAR   4? 4410
   FIXED OP EXPENSE YEAR   5? 4670
4. ACQUISITION COST: ? 66000 .
5. DO YOU WANT TO USE STANDARD FINANCING? Y OR N?Y
   MTG. RATIO OR AMOUNT, INT., TERM, NO PAY/YR ? 49500, .18, 25, 12
6. ENTER RATIO OF IMP #1/TOTAL VALUE, LIFE OF IMP #1? .25, 15
   IS THERE A SECOND IMPROVEMENT? Y OR N? Y
   ENTER RATIO OF IMP #2/TOTAL VALUE, LIFE OF IMP #2? .55, 15
   ENTER REHABILITATION TAX CREDIT FOR IMP #2: 9075
   IS STRUCTURE A CERTIFIED HISTORICAL LANDMARK? Y OR N?Y *
7. DEPRECIATION METHOD, IMPROVEMENT #1 ? 2
   ENTER D.B. %: ? <u>175</u>*
   DEPRECIATION METHOD, IMPROVEMENT #2 ? 2
   ENTER D.B. %: ? <u>175</u>*   *For Illustrative
   IS PROPERTY SUBSIDIZED HOUSING ? Y OR N ?N   Purposes Only
   IS PROPERTY RESIDENTIAL? Y OR N? N
8. IS OWNER A TAXABLE CORPORATION? Y OR N ?Y
   CORPORATE FEDERAL ORDINARY TAX RATE COULD BE :
           17% - 46% (1978 LAW, EFFECTIVE 1979)
           16% - 46% (1981 LAW, EFFECTIVE 1982)
           15% - 46% (1981 LAW, EFFECTIVE 1983 & THEREAFTER)
   MAXIMUM CORPORATE CAPITAL GAIN ALTERNATIVE TAX RATE IS 28%

           (PLUS STATE RATE)

   ENTER:
   1) EFFECTIVE ORDINARY RATE 2) EFFECTIVE ORDINARY RATE (YEAR OF SALE)
   ? .4, .4
9. RESALE PRICE (NET OF SALE COSTS) ? 60000
10. IS THERE LENDER PARTICIPATION ?)
    ENTER CASH THROW-OFF (%), PROCEEDS BEFORE TAXES (%): 5, 5
11. ENTER OWNER S AFTER TAX REINVESTMENT RATE (%)? 9
12. ENTER OWNER S AFTER TAX OPPORTUNITY COST OF EQUITY FUNDS (%)? 9

EXHIBIT 9 (Continued)   48

DEMONSTRATION 3 (Cont.)

```
AFTER TAX CASH FLOW PROJECTION
      SELL AT LOSS TEST
       DATE 9/14/82

        DATA SUMMARY
    **********************
```

ACQUISTN COST:	$66,000.	MTG. AMT.:		$49,500.
NOI 1ST YR:	$9,272.	MTG. INT.:	18%	
ORG. EQUITY:	$16,500.	MTG. TERM:	25. YRS	
CTO 1ST YEAR:	$258.	DEBT SERVICE 1ST YEAR:		$9,014.
		MTG. CONST.:	.1820916	
IMP. #1 VALUE:	$16,500.	IMP. #1 LIFE:	15.	
IMP. #2 VALUE:	$36,300.	IMP. #2 LIFE:	15.	
INC. TX RATE:	40%			
SALE YR RATE:	40%	OWNER: CORPORATION		

DEPRECIATION IMPROVEMENT #1 : 175% D.B.
DEPRECIATION IMPROVEMENT #2 : 175% D.B.
NON-RESIDENTIAL PROPERTY
CERTIFIED HISTORICAL STRUCTURE
LENDER PARTICIPATION: CASH THROW-OFF: 5%   REVERSION: 5%

NO REPRESENTATION IS MADE THAT THE ASSUMPTIONS PROVIDED BY JEAN
ARE PROPER OR THAT THE CURRENT TAX ESTIMATES USED IN THIS
PROJECTION WILL BE ACCEPTABLE TO TAXING AUTHORITIES. NO ESTIMATE
HAS BEEN MADE OF MINIMUM PREFERENCE TAX. CAPITAL LOSSES IN YEAR OF
SALE ARE TREATED AS ORDINARY LOSSES (SECTION 1231 PROPERTY) AND
ARE CREDITED AGAINST TAXES PAID AT   THE
ORDINARY RATE AT THE TIME OF SALE.
FOR THE PURPOSE OF THE MODIFIED INTERNAL RATE OF RETURN (M.I.R.R.)
CALCULATION, NEGATIVE CASH IN ANY ONE PERIOD IS COVERED
BY A CONTRIBUTION FROM EQUITY IN THAT PERIOD

YEAR	NOI	MTG INT & LENDERS %	TAX DEP	TAXABLE INCOME	INCOME TAX	AFTER TAX CASH FLOW
1.	9272.	8914.	6160.	-5803.	-11397.	11643.
2.	9580.	8907.	5441.	-4770.	-1909.	2447.
3.	-3210.	8953.	4807.	-16870.	-6749.	-5475.
4.	9916.	8866.	4246.	-3197.	-1280.	2137.
5.	10084.	8837.	3750.	-2505.	-1003.	2019.
	$35641.	$44377.	$24404.	$-33145.	$-22338.	$12771.

NOTE: 1ST YEAR'S TAX REDUCED BY $9,075. FOR TAX CREDIT (IMP #2)

EXHIBIT 9 (Continued)

DEMONSTRATION 3 (Cont.)

RESALE PRICE:	$60,000.		1ST YR B4 TAX EQ DIV:	1.4881%
LESS MORTGAGE BALANCE:	$48,670.		AVG DEBT COVER RATIO:	.7908
PROCEEDS BEFORE TAXES:	$11,330.		AVG DEFAULT RATIO:	1.1581
LESS LENDER'S %:	$567.			
NET SALES PROCEEDS				
BEFORE TAXES:	$10,764.			

```
RESALE PRICE:          $60,000.
LESS LENDER'S %:          $567.
NET RESALE PRICE:      $59,433.
LESS BASIS:            $41,596.
TOTAL GAIN:            $17,838.
TAX DEPRECIATION:      $24,404.
CAPITAL GAIN:              $0.
ORDINARY GAIN:         $17,838.
```

```
TAX ON ORDINARY GAIN:   $7,135.
TAX ON CAPITAL GAIN:        $0.
PLUS MORTGAGE BAL:     $48,670.
TOTAL DEDUCTIONS FROM
NET RESALE PRICE:      $55,805.
```

```
NET SALES PROCEEDS
AFTER TAX:              $3,629.
```

IF PURCHASED AS ABOVE, HELD 5 YEARS & SOLD FOR $60,000.
THE MODIFIED I.R.R. BEFORE TAXES IS -12.4777% AND AFTER TAXES IS   5.4951%
ASSUMING AN AFTER TAX REINVESTMENT RATE OF 9%, AND OPPORTUNITY COST OF 9%

EXHIBIT 9 (Continued)

50

DEMONSTRATION 3 (Cont.)

DISTRIBUTION OF CASH THROW-OFF
SELL AT LOSS TEST

YEAR	CASH THROW-OFF TOTAL	CASH THROW-OFF TO EQUITY	CASH BONUS TO LENDER
1.	258.	246.	13.
2.	566.	538.	28.
3.	-12224.	-12224.	0.
4.	902.	857.	45.
5.	1070.	1016.	53.
	-9427.	-9567.	140.

RESALE PRICE:	$60,000.
LESS MORTGAGE BALANCE:	$48,670.
PROCEEDS BEFORE TAXES:	$11,330.
LESS LENDER'S %:	$567.
NET SALES PROCEEDS BEFORE TAXES:	$10,764.

CASH THROW-OFF = 5%   REVERSION = 5%

EQUITY ANALYSIS
SELL AT LOSS TEST
****************+++++

BEFORE TAX EQUITY DIVIDEND

YR	NOI	YR END EQUITY	AMOUNT	CASH RETURN ORG EQ	CUR EQ
1.	$9,272.	$16,613.	$246.	.0149	.0148
2.	9,580.	16,747.	538.	.0326	.0321
3.	-3,210.	29,131.	-12,224.	-.7408	-.4196
4.	9,916.	29,324.	857.	.0520	.0292
5.	10,084.	29,554.	1,016.	.0616	.0344

ORIGINAL EQUITY: $ 16500

EXHIBIT 9 (Continued)

DEMONSTRATION 3 (Cont.)

MORTGAGE ANALYSIS
SELL AT LOSS TEST
****

YEAR	NOI	MORT INT.	MORT AMORT	DEBT SERV	DCR	MTG. BAL.	DEFAULT RATIO
1.	9272.	8901.	113.	9014.	1.029	49387.	.981
2.	9580.	8879.	135.	9014.	1.063	49253.	.960
3.	-3210.	8853.	161.	9014.	-.356	49092.	13.224
4.	9916.	8821.	192.	9014.	1.100	48900.	.940
5.	10084.	8784.	230.	9014.	1.119	48670.	.931
AVG	$7,128.				.791		1.158

REVENUE AND EXPENSE REPORT
SELL AT LOSS TEST
DATE 9/14/82
****

YEAR	EFF GROSS REV	% RATE	% VAR OP	$ FIXED OP	NOI
1.	$13,800.	6.%	$828.	$3,700.	$9,272.
2.	$14,210.	5.%	$711.	$3,920.	$9,580.
3.	$1,000.	5.%	$50.	$4,160.	$-3,210.
4.	$15,080.	5.%	$754.	$4,410.	$9,916.
5.	$15,530.	5.%	$777.	$4,670.	$10,084.
	$59,620.		$3,119.	$20,860.	$35,641.

EXHIBIT 9 (Continued)

DEMONSTRATION 3 (Cont.)

DEPRECIATION SCHEDULE
SELL AT LOSS TEST
IMPROVEMENT # 1
175% D.B.
NON-RESIDENTIAL
****

YEAR	TAX DEP.	S.L. DEP.	TAX DEP	BALANCE
1.	1925.0	1100.0	1925.0	14575.0
2.	1700.4	1100.0	1700.4	12874.6
3.	1502.0	1100.0	1502.0	11372.5
4.	1326.8	1100.0	1326.8	10045.8
5.	1172.0	1100.0	1172.0	8873.7
SUB-TOTAL	7626.3	5500.0	7626.3	

DEPRECIATION SCHEDULE
SELL AT LOSS TEST
IMPROVEMENT # 2
175% D.B.
NON-RESIDENTIAL
****

YEAR	TAX DEP.	S.L. DEP.	TAX DEP	BALANCE
1.	4235.0	2420.0	4235.0	32065.0
2.	3740.9	2420.0	3740.9	28324.1
3.	3304.5	2420.0	3304.5	25019.6
4.	2919.0	2420.0	2919.0	22100.7
5.	2578.4	2420.0	2578.4	19522.2
SUB-TOTAL	16777.8	12100.0	16777.8	
TOTAL	24404.0	17600.0	24404.0	

TRENDS ON CURRENT APPRAISAL TECHNIQUES
AND BUSINESS PRACTICE

Presented by

Professor James A. Graaskamp, Ph.D., CRE, SREA
University of Wisconsin, School of Business

THIRD HOUR

I. Inference from Weighted Point System
    Comparisons

    Application from Market Comparison Approach requires
    correct definition of a common denominator to be used
    as a unit of comparison to establish degree of
    sameness before adjusting for less significant
    differences.

    A. Selection of a comparable unit as the basis for
        comparison; should reflect user or investor
        viewpoint as to source of productivity.

        1. Conventional physical units should be tested
            or compared to see which one explains the
            greatest percentage of variance.

        2. Adjusted prices should be tested to see if
            variance is greater or less on the average per
            unit after adjustments.

    B. In The Appraisal of 25 N. Pinckney sales
        demonstrated that shop keepers purchased per unit
        of first floor space while real estate developers
        purchased per unit of gross floor area.

    C. The computer makes it possible to test a single
        linear regression comparing adjusted sales price
        to a number of alternative independent variables
        to select the one unit which reduces the variance
        between sales the most. (See Exhibit 1.)

EXHIBIT 1

CORRELATION COEFFICIENTS AND R^2 OF SALES PRICE

Space Unit	Correlation	R^2
First floor frontage (frt)	0.745	55.5%
Lot area	0.908	82.4
First floor (1st fl)	0.790	62.4
First floor + Upper floors (upp fl)	0.933	87.0
1st fl + .05 (upp fl)	0.919	84.5
2(1st fl) + upp fl	0.919	84.5
(1st fl) x (frt)	0.784	61.5
[1st fl + 0.5 (upp fl)] x (frt)	0.864	74.6
[2(1st fl) + upp fl)] x (frt)	0.864	74.6
(1st fl + upp fl) x (frt)	0.874	76.4

D. Linear regression has more everyday application to
    appraisal than multiple regression. In the U.S.
    regression is used for intermediate analysis
    rather than for setting price as the dependent
    variable. It has limited use for pricing because:

    1. Theory:

        a. Violation of data requirements of
            independence, normally distributed error,
            degrees of freedom, etc.

        b. Comparison of subject to mean of set

        c. Where market comparison is sameness or set
            theory, not statistical variance within a
            heterogeneous group

        d. Responsibility of appraiser to select
            comps and make specific adjustments

    2. Practice:

        a. Lack of adequate comparables

        b. Failure of appraiser to view all
            properties and set adjustments

        c. Inability to communicate with credibility
            to property owner to jury

E. Basic steps for market comparison approach using
    price per point per unit

    1. Define the unit of comparison

    2. Set up an ordinal scale for property variables
        of importance to the buyer

    3. Convert ordinal scale for each variable to a
        cardinal scale, using common denominator of
        100 percent to determine weighted point score
        for property.

    4. Establish weighted price per point per unit
        for each comparable and the subject

5. Divide dollars per unit by point score

6. Determine mean price per point per unit using linear and straight averaging techniques

F. Some case examples:

1. Burned-out hotel (See Exhibit 2).

2. Large acreage site (See Exhibit 3).

3. Industrial site (See Exhibit 4).

FEASIBILITY OF ALTERNATIVE USES

Feasibility Factor	Scenario 1 Return to Former Use	Scenario 2 Purchase by Welfare Agency	Scenario 3 Conversion to Class B/C Office	Scenario 4 Conversion to Apartments with Office on 1st Floor	Scenario 5 Conversion to Apartments with Existing Bar	Scenario 6 Demolition and Sale of Site
Market Demand Risks	Demand very elastic relative to price unless room rates subsidized by welfare agencies	Welfare agencies lack capital resources to purchase and remodel facilities, given the absence of government funding	Office market becoming more price sensitive; would not accept neighborhood and lack of parking unless rents were lower than necessary to support remodeling	Strong demand for spacious two bedroom units in CBD area	Though there is a strong demand for affordable downtown housing, consumer survey shows tenant reluctance to live above noisy/potentially malodorous bar-restaurant	Soft market for vacant sites which cannot be assembled into larger plottage; parking revenues from 20 spaces inadequate to carry clearance costs
Legal/Political Acceptability	Inconsistent with long term City goals for Olin Place	Mixed acceptability as interim use as housing for transient males by some groups; favored by welfare advocates and disfavored by local residents	Neighborhood resistance to increased demand for street parking	Preferred use, given need for downtown housing and political statements by alderpersons for reduction of bar business in residential neighborhoods	Preferred use for housing is compromised by existing bar management agreement	Inconsistent with constituency favoring landmark designation
Technical Construction Problems and Capital Cost Risks	Failure to repair within one year may have jeopardized grandfathered non-conforming building conditions. Otherwise this use has lowest construction risks of Scenarios 1 through 5	Capital costs of renovation to state standards excessive for short term use	Variance needed for parking requirement of 1 stall per 300 SF to 1 stall per 2,500 SF of office space	Spacious apartments with views provide favorable rent/cost per SF ratio—housing code creates more remodeling risk than commercial code	Apartment mix cheapened by retaining existing bar operation—smaller units require more plumbing and bring less favorable rent/cost per SF ratio	None
Relative Investment Power Based Upon Revenue Generation Potential	$192,765	$120,380	$80,331	$103,220	($10,513)	$13,778
Special Income Tax Advantages or Public Subsidies Available	None	None	Rehabilitation tax credit of 20% for older commercial building conversion plus possible industrial bond financing	Possible historic landmark status for 25% rehabilitation tax credit plus tax incremental financing (TIF) assistance	Possible historic landmark status for 25% rehabilitation tax credit. TIF less likely because increase in tax is smaller	None
Real Estate Tax Consequences to City	Modest increase in assessed value	Loss of $194,300 tax base with tax-exempt agency as owner	Real estate tax base would be multiplied approximately 3 times the present assessment	Real estate tax base would be multiplied approximately 3 1/2 times the present assessment	Real estate tax base would be multiplied approximately 2 1/2 times the present assessment	Loss of approximately $140,000 of tax base

EXHIBIT 2 (Continued)

SCALE FOR SCORING COMPARABLE SALE ATTRIBUTES

Location
15%

5 = Corner lot with high visibility on major traffic artery
3 = Inside lot with low visibility on major traffic artery
1 = Inside lot with low visibility on secondary street

Investor Perception of
Neighborhood Image
15%

5 = Strong identification with Square (within 1 block) or established commercial or residential area
3 = Neutral investor attitude
1 = General identification with deteriorated neighborhood

Structural Condition
of Improvements
25%

5 = Fire-resistant construction, well maintained, operational, marketable
3 = Ordinary mill construction (brick bearing walls-wood beams), poorly maintained, needs mechanical work
1 = Boarded up and/or partially damaged or vandalized

Reuse Potential
30%

5 = Dominant commercial/retail reuse potential with anticipation of Landmark designation with 1981 tax laws applied
4 = Dominant commercial/retail reuse potential with anticipation of Landmark designation prior to 1981 tax law
3 = Residential reuse potential with 1981 tax laws applied
2 = Residential reuse potential prior to 1981 tax law
1 = Warehouse
0 = Improvements demolished leaving land only

EXHIBIT 2 (Continued)

Bargaining Position
of Seller
15%

5 = Income adequate to carry property
or seller with strong asset
position
3 = Little or no steady income but
seller not known to be under
financial pressures
1 = Building owner known to have
financial pressures or multiple
liens on property

WEIGHTED MATRIX FOR COMPARABLE PROPERTIES

		#1 Frautschi 215-219 King	#2 Sutherland Elec. 323 E. Wilson	#3 Fess Hotel 123 E. Doty	#4 Miller Horne 714 Williamson	#5 Miller Horne 722 Williamson	#6 Atrium 25 N. Pinckney	#7 Old Sorority 10 Langdon	Cardinal Hotel SUBJECT
FEATURE	**WEIGHT**				Rating/Weighted Rating				
Location	15%	3/ .45	5/ .75	5/ .75	3/ .45	3/ .45	1/ .15	3/ .45	5/ .75
Investor Perception of Neighborhood Image	15%	3/ .45	3/ .45	5/ .75	1/ .15	1/ .15	5/ .75	5/ .75	1/ .15
Structural Condition of Improvements at Time of Sale	25%	3/ .75	5/1.25	1/ .25	5/1.25	5/1.25	3/ .75	1/ .25	1/ .25
Reuse Potential	30%	4/1.2	1/ .30	4/1.2	2/ .60	4/1.2	4/1.2	4/1.2	5/1.5
Bargaining Position of Seller	15%	5/ .75	3/ .45	1/ .15	3/ .45	1/ .15	1/ .15	1/ .15	3/ .45
Total Point Score		3.6	3.2	3.1	2.9	3.2	3.0	2.8	3.1

EXHIBIT 2 (Continued)

EXHIBIT 2 (Continued)

	#1 Frautschi 215-219 King	#2 Sutherland Elec. 323 E. Wilson	#3 Fess Hotel 123 E. Doty	#4 Miller Horne 714 Williamson	#5 Miller Horne 722 Williamson	#6 Atrium 25 N. Pinckney	#7 Old Sorority 10 Langdon
Nominal Sale Price	$320,000	$165,000	$120,000	$148,000	$300,000	$150,000	$91,000
Date of Sale	November 1978	July 1979	January 1975	January 1979	November 1981	April 1977	July 1981
Terms of Sale	Land contract $50,000 - down 270,000 - 2 yrs 10% Year 1 6% Year 2	Cash to seller	Land contract	Land contract $23,000 down 125,000 @ 9 3/4% - 5 years	Land contract	$100,000 cash 50,000 seller 2nd subordinated to construction loan	Cash to seller
Adjustment for:							
Terms of Sale	Discount 10%	No adjustment	5% Finder's fee for $320,000 construction loan	Reduce to $140,000	Discount 20% for creative financing	Discount 2nd-20%	None
Time of Sale (5%/year from 1/1/79 on)	Appreciate 17.5%	Appreciate 15%	Appreciate 17.5%	Appreciate 17.5%	Appreciate 2.5%	Appreciate 17.5%	Appreciate 5%
Adjusted Price for Terms and Time	$338,400	$189,750	$121,500	$164,500	$246,000	$164,500	$95,550
Land Area	21,728 SF	8,221 SF	8,712 SF	8,712 SF	17,424 SF	8,712 SF	6,720 SF
Adjustment for Land Area Differences @ $5.00/SF	($108,640)	($41,105)	($43,560)	($43,560)	($87,120)	($43,560)	($33,600)
Adjusted Price less Allowance for Land Value	$229,760	$148,645	$77,940	$120,940	$158,880	$120,940	$61,950
Gross Building Area (GBA) (Square Feet)	21,000 SF	17,790 SF	9,330 SF	28,000 SF	30,000 SF	16,060 SF	10,500 SF
Adjusted Price per Square Foot of GBA	$10.94/SF of GBA	$8.36/SF of GBA	$8.35/SF of GBA	$4.32/SF of GBA	$5.30/SF of GBA	$7.53/SF of GBA	$5.90/SF of GBA
Total Point Score	3.6	3.2	3.1	2.9	3.2	3.0	2.8
Price per Square Foot/Point Score	$3.04	$2.61	$2.69	$1.49	$1.66	$2.51	$2.11

EXHIBIT 2 (Continued)

CALCULATION OF MOST PROBABLE PRICE USING
MEAN PRICE PER POINT EQUATION METHOD

Comparable Property	Adjusted Selling Price per SF of GBA	Weighted Point Score	$\dfrac{\text{Price per SF}}{\text{Weighted Point Score}}$ (x)
1	$10.94	3.6	$3.04
2	8.36	3.2	2.61
3	8.35	3.1	2.69
4	4.32	2.9	1.49
5	5.30	3.2	1.66
6	7.53	3.0	2.51
7	5.90	2.8	2.11
		TOTAL	$16.11

$$\text{Central Tendency} = \frac{\Sigma x}{n} = \frac{16.11}{7} = 2.30$$

$$\text{Dispersion} = \sqrt{\frac{\Sigma(x-\bar{x})^2}{(n-1)}} = \sqrt{\frac{1.9417}{6}} = .569$$

where:

x		$\bar{x}$		$/(x-\bar{x})/$	$(x-\bar{x})^2$	n	n-1
3.04	−	2.30	=	.74	.5476	7	6
2.61	−	2.30	=	.31	.0961		
2.69	−	2.30	=	.39	.1521		
1.49	−	2.30	=	.81	.6561		
1.66	−	2.30	=	.64	.4096		
2.51	−	2.30	=	.21	.0441		
2.11	−	2.30	=	.19	.0361		
			$\Sigma(x-x)^2$ =		1.9417		

EXHIBIT 2 (Continued)

Value range: x ± dispersion = 2.30 ± .57

Gross   Weighted
Building x Point   x (Central Tendency ± Dispersion) =
  Area   Score

17,900 SF x 3.1   x   (2.30 ± .57)   =

              High Estimate of $159,256 or $160,000

              Central Tendency of $127,627 or $130,000

              Low Estimate of $95,998 or $100,000

_____

All value estimates are rounded

EXHIBIT 3

COMPARABLE VACANT LARGE LOT LAND SALES

12

SALE NUMBER	LOCATION	AVAILABILITY OF SEWER AND WATER	ZONING	SALE DATE	GRANTOR	GRANTEE	PRICE	ACRES	PRICE PER ACRE
8	Highway 50	No	Ag	12/76	Rudy Industrial Park, Inc.	Wis. Electric Power Company	$700,475	155.66	$ 4,500
5	Highway 158	No	Ag	6/79	Pitts	City of Kenosha	$696,920	133.00	$ 5,240
19	Highway G	No	Ag	11/77		Thomas Campbell	$188,373	53.87	$ 3,500
32	Highway 158	Yes	Comm	1980		Shopko	$415,800	75.60	$ 5,500

ATTRIBUTE	WEIGHT	#4 WEPCO (HWY 50)	#5 KENOSHA INDUSTRIAL PARK	#19 CAMPBELL (HWY Q)	#32 SHOPKO	SUBJECT (COMMERCIAL/ RETAIL)
Physical Attributes		[1]				
Size of Site	20%	1/ .20	1/ .20	5/1.00	3/ .60	1/ .20
Site Topography	10%	3/ .30	3/ .30	3/ .30	1/ .10	5/ .50
Linkage						
Highway Frontage	30%	5/1.50	5/1.50	1/ .30	5/1.50	5/1.50
Availability of Rail	10%	5/ .50	5/ .50	1/ .10	1/ .10	1/ .10
Availability of Utilities	20%	1/ .20	5/1.00	1/ .20	5/1.00	1/ .20
Use	10%	1/ .10	1/ .10	5/ .50	3/ .30	3/ .30
TOTAL POINT SCORE	100%	2.80	3.60	2.40	3.60	2.80
Sale Price		$700,475	$696,920	$188,375	$415,800	----
Date of Sale		12/76	6/79	11/77	6/76	----
Time Adjustment [2]		+ 2%	- 2%	0%	+ 4%	----
Adjusted Sale Price		$609,413 [3]	$648,136 [4]	$188,373	$432,432	1,655,280
Acres		155.66	133	53.87	75.6	127
Adjusted Price per Acre		$3,915	$4,873	$3,500	$5,720	----
Total Point Score		2.80	3.60	2.40	3.60	2.80
Price per Acre Point Score		$1,398	$1,354	$1,458	$1,589	----

EXHIBIT 3 (Continued)

POINT SCORE ADJUSTMENT PROCESS -
LARGE SITE LAND SALES

MOST PROBABLE PRICE COMPUTATION USING MEAN PRICE PER POINT EQUATION METHOD

Number of sales = 4
Subject Size = 154.5

		SUBJECT	COMPARABLE SALES -- POINT SCORES			
			4	5	19	32
$ PRICE/ACRE --->			3915.00	4873.00	3500.00	5720.00
FACTORS	WEIGHTS					
1 UTILITIES	.2	1	1	5	1	5
2 FRONTAGE	.3	5	5	5	1	5
3 SIZE	.2	1	1	1	5	3
4 RAIL	.1	1	5	5	1	1
5 TOPOG	.1	5	3	3	3	1
6 USE	.1	3	1	1	5	3
7						
8						
9						
10						
		1				

FACTORS x WEIGHTS	SUBJECT	COMPARABLE SALES			
		4	5	19	32
1 UTILITIES	.2	.2	1	.2	1
2 FRONTAGE	1.5	1.5	1.5	.3	1.5
3 SIZE	.2	.2	.2	1	.6
4 RAIL	.1	.5	.5	.1	.1
5 TOPOG	.5	.3	.3	.3	.1
6 USE	.3	.1	.1	.5	.3
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
TOTAL SCORE	2.8	2.8	3.6	2.4	3.6

EXHIBIT 3 (Continued)

CALCULATION OF MOST PROBABLE PRICE
USING MEAN PRICE PER POINT EQUATION METHOD

COMPARABLE SALE NUMBER	ADJUSTED SELLING PRICE PER ACRE	WEIGHTED POINT SCORE	PRICE PER ACRE PER WEIGHTED POINT SCORE
1	3915	2.8	1398.21
2	4873	3.6	1353.61
3	3500	2.4	1458.33
4	5720	3.6	1588.89
5	0	.00001	.00
6	0	.00001	.00
7	0	.00001	.00
8	0	.00001	.00
9	0	.00001	.00
10	0	.00001	.00
			5799.05

Central Tendency (Mean):

The mean price per acre per point (x) $= \dfrac{5799.048}{4} = 1449.762$

Where:

x	$\bar{x}$	$(x-\bar{x})$	$(x-\bar{x})^2$	n	$n-1$
1398.214	1449.762	-51.5476	2657.157	4	3
1353.611	1449.762	-96.1508	9244.975		
1458.333	1449.762	8.571429	73.46939		
1588.889	1449.762	139.1270	19356.32		
0	1449.762	0	0		
0	1449.762	0	0		
0	1449.762	0	0		
0	1449.762	0	0		
0	1449.762	0	0		
0	1449.762	0	0		
			31331.92		

Dispersion about the mean = the square root of $\dfrac{(x - \bar{x})^2}{n - 1}$ = 102.1958

Therefore,

The Value Range is :   1449.762   +/-   102.1958

                      or   1347.566   to   1551.958

Since the subject's point score is: 2.8

Score	x	Value	=	$/ACRE
2.8		1347.566		3773.19
2.8		1449.762		4059.33
2.8		1551.958		4345.48

Since the acreage of the subject is: 154.5

It follows that:

	$/ACRE	x	ACRES	=	Estimated Value		
Low Estimate	3773.19	x	154.5	=	582957.9	or	583000
Central Tendency	4059.33	x	154.5	=	627166.5	or	627000
High Estimate	4345.48	x	154.5	=	671376.7	or	671000

EXHIBIT 3 (Continued)

EXHIBIT 3 (Continued)

Computation of Least Squares Fit of Sales Price and Property Score
==

[STEP 1]

Sale	Y	X	Y^2	X^2	XY
1	3915	2.8	15327225	7.840000	10962
2	4873	3.6	23746129	12.96000	17542.8
3	3500	2.4	12250000	5.760000	8400
4	5720	3.6	32718400	12.96000	20592
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0
9	0	0	0	0	0
10	0	0	0	0	0
	18008	12.4	84041754	39.52000	57496.8

[STEP 2]

$$\bar{Y} = \frac{\text{The sum of Y's}}{n} = 4502$$

$$\bar{X} = \frac{\text{The sum of X's}}{n} = 3.1$$

[STEP 3]

The sum of y^2's = (The sum of Y^2's) − $n(\bar{Y})^2$

$\qquad$ = 2969738.

The sum of x^2's = (The sum of X^2's) − $n(\bar{X})^2$

$\qquad$ = 1.080000

The sum of xy = (The sum of XY) − $n(\overline{XY})$

$\qquad$ = 1672

EXHIBIT 3 (Continued)

[STEP 4]

b = slope of price point relationship

$$= \frac{\text{The sum of } xy}{\text{The sum of } x^2} = 1548.148$$

[STEP 5]

a = intercept

$$= \bar{Y} - b\bar{X} = -297.259$$

[STEP 6]

$$Syx = \text{The square root of } \frac{(\text{The sum of } y^2\text{'s}) - b(\text{The sum of } xy)}{n - 2}$$

$$= 1524.011$$

[STEP 7]

$$r = \frac{\text{The sum of } xy}{\text{The square root of } (\text{The sum of } x^2\text{'s}) \times (\text{The sum of } y^2\text{'s})}$$

$$= .9336096$$

$$r^2 = .8716270$$

EXHIBIT 3 (Continued)

[STEP 8]

Subject
Value =   3988.67 Estimated by Regression Equation: y = a + bX

COMPARABLE NUMBER	WEIGHTED POINT SCORE	ESTIMATED PRICE PER ACRE	ACTUAL PRICE PER ACRE	RESIDUAL ERROR
4	2.8	3988.67	3915	73.67
5	3.6	5064.22	4873	191.22
19	2.4	3450.89	3500	-49.11
32	3.6	5064.22	5280	-215.78
	0	.00	0	.00
	0	.00	0	.00
	0	.00	0	.00
	0	.00	0	.00
	0	.00	0	.00
	0	.00	0	.00
		NET ERROR		.00

EXHIBIT 4

EXCERPTED FROM APPRAISAL OF INDUSTRIAL SITE

C. Adjustments_for_Differences_to_Relate_the
    Comparables_to_the_Subject_Property

To estimate the fair market value of the subject property, based upon the sale prices of the comparables, adjustments are made to account for the differences in the price sensitive attributes of the comparables and the subject propery. The comparable properties and the subject property are scored according to the scale detailed in Exhibit 9.

The subject site, which contains 2.5 acres, receives a score of 3 because it is an average sized lot. Since it does not command a more highly visible corner location, a score of 1 is given.

Linkages are extremely sensitive to price. Sites located in major retail areas command higher prices than do warehouses and light manufacturing sites. No retail uses are in sight of the subject so a score of 1 is given. International Lane, a traffic collector, feeds into Packers Avenue, a major arterial, so the subject receives a score of 3. A bus line on Packers Avenue is within two to three blocks of the subject to yield a score of 3. Electricity, telephone, and natural gas lines are available in the general area, but there are no curbs, gutters,

EXHIBIT 4 (Continued)

EXHIBIT 9 (Continued)

SCALE FOR SCORING COMPARABLE SALES
BASED UPON PRICE SENSITIVE ATTRIBUTES

PHYSICAL ATTRIBUTES = 35%

Size 20%	5 = Less than 1 acre 3 = 1 to 4 acres 1 = Greater than 4 acres
Corner Location 15%	5 = Yes 3 = Next to corner on a major road 1 = No

LINKAGES = 50%

Proximity to Major Retail Area 20%	5 = Near a shopping center 3 = Near strip retail area 1 = No retail uses in sight
Access to Major Highways 15%	5 = On a major boulevard or highway 3 = On a traffic collector 1 = On a side street
Availability of Madison Metro 5%	5 = On a bus line 3 = Within 2-3 blocks of bus line 1 = None
Availability of Utilities 10%	5 = Water, sewer, gas, curb, and gutter 3 = Water, sewer, gas 1 = None

EXHIBIT 4 (Continued)

EXHIBIT 9 (Continued)

DYNAMIC ATTRIBUTES = 15%

Positive Public Recognition of Street/Location 5%	5 = 3 = 1 =	High visibility or recognition of location Average Relatively unknown
Perceived Adverse Influences 5%	5 = 3 = 1 =	None Noise/Odor/Visual Problems Physically threatening
Immediate View from Property Frontage 5%	5 = 3 = 1 =	Well-landscaped office, shops, and residential Office/warehouses well-screened and partially landscaped Assortment of office/warehouse uses with inadequate screening and/or poorly maintained or vacant

EXHIBIT 4 (Continued)

or sidewalks. A score of 3 is given the subject for the availability of utilites.

Dynamic attributes, (the public's perceptions of the property's attributes) contribute to value. Since International Lane is a well-known location with positive public recognition, the subject is given a score of 5. Since the noise from planes landing and taking off could be disruptive, the subject receives a 3. The view from the subject is marred by old barracks converted to offices and warehouse buildings that would no longer meet the more stringent architectural controls now in existence in Truax Air Park West, so the subject receives a score of 1.

Each comparable is scored in a similar manner; the weighted point score matrix which details the calculation of a total point score for both the comparable and the subject is found in Exhibit 10.

The price per square foot for each comparable is divided by its point score and the results are also found in Exhibit 10.

The mean point score per square foot is applied to the point score of the subject to indicate a central tendency value of $111,000, or $1.01 per square foot. These calculations are detailed in Exhibit 11.

The range of estimates yields a high of $123,500, or $1.13 per square foot and a low of $98,000, or $0.90 per square foot.

EXHIBIT 4 (Continued)

EXHIBIT 9 (Continued)

WEIGHTED POINT SCORE MATRIX FOR COMPARABLE SALES
BASED UPON PRICE SENSITIVE ATTRIBUTES

ATTRIBUTE	WEIGHT	#1 1905 ABERG AVENUE	#2 1801 COMMERCIAL AVENUE
Physical Attributes		[1]	
Size of Site	20%	3/ .60	1/ .20
Corner Location	15%	1/ .15	1/ .15
Linkages			
Proximity to Retail	20%	3/ .60	1/ .20
Access to Major Roads	15%	5/ .75	3/ .45
Availability of City Bus	5%	3/ .25	5/ .25
Availability of Utilities	10%	5/ .50	5/ .50
Dynamic Attributes			
Public Recognition	5%	5/ .25	3/ .15
Perceived Adverse Factors	5%	3/ .15	5/ .25
View from Site	5% / 100%	1/ .05	1/ .05
TOTAL POINT SCORE		3.30	2.20

	#1 1905 ABERG AVENUE	#2 1801 COMMERCIAL AVENUE
Sale Price	$80,000	$181,150
Date of Sale	8/82	10/80
Land Area (SF)	53,426 (1.23 A)	175,547 (4.03 A)
Price per Square Foot	$1.50	$1.03
Total Point Score	3.30	2.20
Price per SF/Point Score	$0.45	$0.47

[1] Explanation of weighted score: point score/score x weight

EXHIBIT 9 (Continued)

ATTRIBUTE	WEIGHT	#3 3520 PACKERS AVENUE	#4 814 ATLAS AVENUE (Backs on to Cottage Grove Rd.)	#5 LOT 1, BLK. 7, MADISON INDUSTRIAL SUB., #1	#6 2447 ADVANCE (a.k.a. 4701 Pflaum Road)	#7 LOT 6, BLK. 3, MADISON INDUSTRIAL SUB., #1
Physical Attributes		[1]				
Size of Site	20%	5/1.00	3/ .60	3/ .60	3/ .60	5/1.00
Corner Location	15%	5/ .75	1/ .15	1/ .15	5/ .75	1/ .15
Linkages						
Proximity to Retail	20%	3/ .60	3/ .60	1/ .20	1/ .20	1/ .20
Access to Major Roads	15%	3/ .45	5/ .75	1/ .15	3/ .45	1/ .15
Availability of City Bus	5%	5/ .25	5/ .25	1/ .05	1/ .05	1/ .05
Availability of Utilities	10%	5/ .50	5/ .50	5/ .50	5/ .50	5/ .50
Dynamic Attributes						
Public Recognition	5%	1/ .05	3/ .15	1/ .05	5/ .25	1/ .05
Perceived Adverse Factors	5%	3/ .15	5/ .25	5/ .25	5/ .25	5/ .25
View from Site	5% 100%	1/ .05	3/ .15	3/ .15	3/ .15	3/ .15
TOTAL POINT SCORE		3.80	3.40	2.10	3.20	2.50
Sale Price		$30,000	$125,000	$70,000	$60,000	$20,900
Date of Sale		2/79	6/83	9/82	9/82	9/82
Land Area (SF)		21,747 (0.50)	80,613 (1.85 A)	73,109 (1.68 A)	45,472 (1.04 A)	22,997 (0.53 A)
Price per Square Foot		$1.55 [2]	$1.55	$0.96	$1.32	$0.91
Total Point Score		3.80	3.40	2.10	3.20	2.50
Price per SF/Point Score		$0.41	$0.46	$0.46	$0.41	$0.36

[1] Explanation of weighted score: point score/score x weight
[2] This older sale is adjusted upward 12 percent for time. (1.12 x $1.38 = $1.55)

EXHIBIT 4 (Continued)

EXHIBIT 9 (Continued)

ATTRIBUTE	WEIGHT	#8 LOT 2, BLK. 6. MADISON INDUSTRIAL SUB., #1	#9 4484 ROBERTSON ROAD MADISON IND. SUB., #1	SUBJECT LOT 2, CSM 928
Physical Attributes		[1]		
Size of Site	20%	5/1.00	3/ .60	3/ .60
Corner Location	15%	1/ .15	1/ .15	1/ .15
Linkages				
Proximity to Retail	20%	1/ .20	1/ .20	1/ .20
Access to Major Roads	15%	1/ .15	1/ .15	3/ .45
Availability of City Bus	5%	1/ .05	1/ .05	3/ .15
Availability of Utilities	10%	5/ .50	5/ .50	3/ .30
Dynamic Attributes				
Public Recognition	5%	1/ .05	1/ .05	5/ .25
Perceived Adverse Factors	5%	5/ .25	5/ .25	3/ .15
View from Site	5% / 100%	3/ .15	3/ .15	1/ .05
TOTAL POINT SCORE		2.50	2.10	2.30
Sale Price		$32,000	$98,600	N/A
Date of Sale		2/82	1/82	N/A
Land Area (SF)		24,975 (0.57)	98,600 (2.26 A)	109,493 (2.51 A)
Price per Square Foot		$1.28	$1.00	N/A
Total Point Score		2.50	2.10	2.30
Price per SF/Point Score		$0.51	$0.48	N/A

[1] Explanation of weighted score: point score/score x weight

EXHIBIT 4 (Continued)

26

EXHIBIT 4 (Continued)

EXHIBIT 9 (Continued)

CALCULATION OF MOST PROBABLE PRICE USING
MEAN PRICE PER POINT EQUATION METHOD

Comparable Property	Adjusted Selling Price per SF	Weighted Point Score	Price per SF / Weighted Point Score
1	$1.50	3.30	$0.45
2	1.03	2.20	0.47
3	1.55	3.80	0.41
4	1.55	3.40	0.46
5	0.96	2.10	0.46
6	1.32	3.20	0.41
7	0.91	2.50	0.36
8	1.28	2.50	0.51
9	1.00	2.10	0.48
		TOTAL	$4.01

Central Tendency [1] $= \dfrac{\Sigma x}{n} = \dfrac{4.01}{9} = .44$

Dispersion $= \sqrt{\dfrac{\Sigma (x-\bar{x})^2}{(n-1)}} = \sqrt{\dfrac{.0168}{8}} = .05$

[1]   x = Sum of $\dfrac{\text{Price per SF}}{\text{Weighted Point Score}}$

     n = Number of Observations

     $\bar{x}$ = Average $\dfrac{\text{Price per SF}}{\text{Weighted Point Score}}$

EXHIBIT 4 (Continued)

EXHIBIT 9   (Continued)

where:

x	$\bar{x}$	$/(x-\bar{x})/$	$(x-\bar{x})^2$	n	$n-1$
.42	.44	.02	.0004	9	8
.47	.44	.03	.0009		
.41	.44	.03	.0009		
.46	.44	.02	.0004		
.46	.44	.02	.0004		
.41	.44	.03	.0009		
.36	.44	.08	.0064		
.51	.44	.07	.0049		
.48	.44	.04	.0016		

$$\Sigma(x-\bar{x})^2 = .0168$$

Value range for subject property:

$$\bar{x} \pm \text{dispersion} = \$0.44 \pm .05$$

Square
Footage of x Weighted x (Central Tendency ± Dispersion) =
Subject   Point Score

   109,493 x   2.30   x ($0.44 ± .05) =

   High Estimate of $123,500 or $1.13 per square foot

   Central Tendency of $111,000 or $1.01 per square foot

   Low Estimate of $98,000 or $0.90 per square foot

EXHIBIT 4 (Continued)

As a check on the appropriateness of the appraiser's selection and weighting of price sensitive factors, the point scores calculated for each comparable is multiplied by the mean price per square foot per point score to predict or estimate the actual selling price of each comparable. The results are as follows:

COMPARABLE NUMBER	WEIGHTED POINT SCORE	ESTIMATED PRICE/SF	ACTUAL PRICE/SF	RESIDUAL ERROR
1	3.30	1.45	1.50	-.05
2	2.20	0.96	1.03	-.07
3	3.80	1.67	1.55 (adj.)	+.12
4	3.40	1.50	1.55	-.05
5	2.10	0.92	0.96	-.04
6	3.20	1.41	1.32	+.09
7	2.50	1.10	0.91	+.19
8	2.50	1.10	1.28	-.18
9	2.10	0.92	1.00	+.08

NET RESIDUAL ERRORS +.09

There appears to be a tight fit between the estimated and the actual price; so it can be concluded that the selection and weighing of the price sensitive factors successfully reflected buyer behavior.

EXHIBIT 4 (Continued)

The market comparable approach is sensitive to the appraiser's ability to predict buyer perceptions in a changing market. The weighted point scores are an attempt to capture these perceptions. Consequently, this calculated value is only the initial step in determining the final price estimate. This initial transaction zone must be adjusted in light of certain external factors such as the buyer's alternative option to lease surrounding land from Dane County instead of buying in fee which, in turn, will be affected by the current cost of financing land purchases, the income tax consequences of buy versus lease decision, and the effect of the Consumer Price Index (CPI) escalator upon rental rates for leased land. Other external factors include the effect of the Truax Air Park covenants upon the quality of future development in the area, and the future expansion of the Dane County Regional Airport.

TRENDS ON CURRENT APPRAISAL TECHNIQUES
AND BUSINESS PRACTICE

Presented By

James A. Graaskamp, Ph.D., CRE, SREA
University of Wisconsin, School of Business

FOURTH HOUR

I. Support for the appraiser's judgment as to highest and
    best use requires far more detail than before,
    particularly for properties in transition or
    candidates for rehabilitation, industrial bonding as
    blighted, or special tax treatment.

    A. The approved definition of highest and best use
        requires recognition (Exhibit 1) of alternative
        courses of action which are legal, plausible,
        technically doable, and financially viable at a
        proven level of effective demand. Moreover, the
        use must be consistent with community plans and
        objectives, particularly community fiscal plans.

    B. Review the selection of a most probable use for a
        flophouse hotel in Exhibit 2.

    C. Consider the demonstration and discussion of best
        use provided from an actual appraisal (Exhibits 3
        and 4).

    D. Cash equivalency to be consistent with the
        definition of fair market value is the subject of
        major debate (see Exhibit 5):

        1. Strictly enforced, it tends to over-discount
            prices to a point where the seller would not
            have sold.

        2. Typically represents sale of financing to
            benefit both parties.

        3. There is growing evidence that in many cases
            the buyer and seller have shared the costs of
            seller financing so that fair market value is
            closer to the midpoint between nominal sales
            price and deferred points discounted for
            institutional interest rates.

EXHIBIT 1

"Highest and best use: That reasonable and probable
use that will support the highest present value, as
defined, as of the effective date of the appraisal.
Alternatively, that use, from among reasonably probable
and legal alternative uses, found to be physically
possible, appropriately supported, financially
feasible, and which results in highest land value. The
definition immediately above applied specifically to
the highest and best use of land. It is to be
recognized that in cases where a site has existing
improvements on it, the highest and best use may very
well be determined to be different from the existing
use. The existing use will continue, however, unless
and until land value in its highest and best use
exceeds the total value of the property in its existing
use. Implied within these definitions is recognition
of the contribution of that specific use to community
environment or to community development goals in
addition to wealth maximization of individual property
owners. Also implied is that the determination of
highest and best use results from the appraiser's
judgment and analytical skill, i.e., that the use
determined from analysis represents an opinion, not a
fact to be found. In appraisal practice, the concept
of highest and best use represents the premise upon
which value is based. In the context of most probable
selling price (market value) another appropriate term
to reflect highest and best use would be most probable
use. In the context of investment value an alternative
term would be most profitable use.

Real Estate Appraisal Terminology, Edited by Byrl N.
Boyce, Ph.D., SRPA, Ballinger Publishing Co.,
Cambridge, Mass., 1975. (Emphasis added.)

FEASIBILITY OF ALTERNATIVE USES

EXHIBIT 2

Feasibility Factor	Scenario 1 Return to Former Use	Scenario 2 Purchase by Welfare Agency	Scenario 3 Conversion to Class B/C Office	Scenario 4 Conversion to Apartments with Office on 1st Floor	Scenario 5 Conversion to Apartments with Existing Bar	Scenario 6 Demolition and Sale of Site
Market Demand Risks	Demand very elastic relative to price unless room rates subsidized by welfare agencies	Welfare agencies lack capital resources to purchase and remodel facilities, given the absence of government funding	Office market becoming more price sensitive; would not accept neighborhood and lack of parking unless rents were lower than necessary to support remodeling	Strong demand for spacious two bedroom units in CBD area	Though there is a strong demand for affordable downtown housing, consumer survey shows tenant reluctance to live above noisy/potentially malodorous bar-restaurant	Soft market for vacant sites which cannot be assembled into larger plottage; parking revenues from 20 spaces inadequate to carry clearance costs
Legal/Political Acceptability	Inconsistent with long term City goals for Olin Place	Mixed acceptability as interim use as housing for transient males by some groups; favored by welfare advocates and disfavored by local residents	Neighborhood resistance to increased demand for street parking	Preferred use, given need for downtown housing and political statements by alderpersons for reduction of bar business in residential neighborhoods	Preferred use for housing is compromised by existing bar management agreement	Inconsistent with constituency favoring landmark designation
Technical Construction Problems and Capital Cost Risks	Failure to repair within one year may have jeopardized grandfathered nonconforming building conditions. Otherwise this use has lowest construction risks of Scenarios 1 through 5	Capital costs of renovation to state standards excessive for short term use	Variance needed for parking requirement of 1 stall per 300 SF to 1 stall per 2,500 SF of office space	Spacious apartments with views provide favorable rent/cost per SF ratio—housing code creates more remodeling risk than commercial code	Apartment mix cheapened by retaining existing bar operation—smaller units require more plumbing and bring less favorable rent/cost per SF ratio	None
Relative Investment Power Based Upon Revenue Generation Potential	$192,765	$120,380	$80,331	$103,220	($10,513)	$13,778
Special Income Tax Advantages or Public Subsidies Available	None	None	Rehabilitation tax credit of 20% for older commercial building conversion plus possible industrial bond financing	Possible historic landmark status for 25% rehabilitation tax credit plus tax incremental financing (TIF) assistance	Possible historic landmark status for 25% rehabilitation tax credit. TIF less likely because increase in tax is smaller	None
Real Estate Tax Consequences to City	Modest increase in assessed value	Loss of $194,300 tax base with tax-exempt agency as owner	Real estate tax base would be multiplied approximately 3 times the present assessment	Real estate tax base would be multiplied approximately 3 1/2 times the present assessment	Real estate tax base would be multiplied approximately 2 1/2 times the present assessment	Loss of approximately $140,000 of tax base

EXHIBIT 3

DEMONSTRATION OF SELECTION OF BEST USE SCENARIO FOR
VACANT OFFICE TOWER REQUIRING
COMPLETE MECHANICAL RENOVATION

B. Alternative Uses for Pyare Square

A combination of the physical characteristics of the property and the
general demand characteristics of the Hilldale area suggest the following
alternative scenarios for use of the subject property (Appendix D):

Scenario #1: The building would be remodeled into multi-tenant office
space of class A on floors 4 to 14 and class B on floors 1 to 3.

Scenario #2: The building would be modified into residential apart-
ments on floors 4 to 14 and class B office space on floors 1 to 3.

Scenario #3: The building would be modified into residential condomin-
iums on floors 4 to 14 and class B office space on floors 1 to 3.

Scenario #4: The building would be modified into a hotel facility
with hotel rooms on floors 4 to 14, a restaurant on floor 3, and
seminar and office space on the remainder.

C. Economic Ranking of Alternatives

The alternative uses that might be plausible for the subject property
can first be ranked in terms of the general budget parameters inherent in
revenues and expenses for each. The best financial alternatives must then
be screened for effective demand, political acceptability, and risk. In order
to reveal the general range of justified investment on the existing property,
the appraiser developed a logic of converting rents to justified investment
by determining a market rent for each use and assuming an acceptable cash
breakeven point[1] for financial planning and budgeting. This process capital-
izes funds available for debt service or cash dividends into amounts of justified
investment. This residual approach can be misleading if there are small errors
in the cash-flow forecast, but if estimating bias is consistent when applied
to the alternative uses, it does rank the alternatives in terms of their ability
to pay for the subject property as is. The logic of this process is provided
in Exhibit 15; the cost assumptions and calculations are provided in Appendix D.

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[1] The ratio of cash expenses, real estate taxes, and debt service to
potential gross income.

EXHIBIT 3 (Continued)   5

EXHIBIT 15

BASIC LOGIC FOR RANKING ALTERNATIVE PROGRAM SCENARIOS BY JUSTIFIED PURCHASE BUDGET

Rent/Unit		Rent/Unit		Rent/Unit
×	+	×	+	×
Number of Units		Number of Units		Number of Units

=

Potential Gross Income	×	Default Point	=	Cash for Operations

×   −

| 1-Default Point | | Operating Expenses |
|---| |---|

=   −

| Equity Cash Margin | | Capital Replacement |
|---| |---|

−   =

| Vacancy Loss | | Real Estate Taxes |
|---| |---|

−   =

| Reserve for Contingency | | Cash Available for Debt Service |
|---| |---|

=   +

| Cash Throw-Off (B/4 Tax) | | Mortgage Constant |
|---| |---|

+   =

Equity Cash Constant

Justified Equity (B/4 Tax Effect)	+	Justified Mortgage

=

Total Justified Project Budget

−

Construction Outlays

=

Budget for Purchase

EXHIBIT 3 (Continued)

6

A summary of these calculations from the Appendix are provided in Exhibit 16. A preliminary ranking based on a cash-justified investment (Line 3, Exhibit 16), without regard to future reversion value, demonstrates that Scenario 1 is the preferable use of the structure as is.

D. Ranking of Alternatives

In terms of estimating risks, Scenario 1 offers more certainty in regard to construction budget because multi-tenant office use is more similar to the previous use. Less extensive remodeling plans imply that fewer problems will arise. In Scenarios 2, 3, and 4, all new plumbing facilities and windows are required for floors 4 to 14. The same improvements simply need refurbishing if the building remains office use. In addition, the market for a high-rise residential or hotel facility is largely untested in the Hilldale area, but office use has been expanding. A change from office use of Pyare Square carries business risks that are difficult to ascertain, and the costs incurred in those risks could be great.

E. Political Compatibility of Alternatives

According to the village administrator of Shorewood Hills, all four of the scenarios would be politically acceptable because the village wants to see improvement of the building. However, Scenarios 2, 3, and 4 require a zoning change that must be approved by the village—an effort that is likely to be more time-consuming than futile.

Although condominiums are a relatively new idea to Shorewood Hills, the community boasts of being a residential suburb, and so a well-conceived plan should pass the board. A hotel use, however, is questionable and would be subject to serious scrutiny because demand is not evident. Office use appears to be most probable in light of the fact that costs are lower, zoning is proper, and demand is evident.

F. Conclusions

Since the estimated residual justified purchase prices of Scenarios 1 and 3 are fairly close, the choice in determining the most probable fitting use relates to the higher costs of converting to residential coupled with the risks involved in tapping an untested market. A prudent investor would seek to stabilize his income by choosing the less speculative scenario. A review of the summary feasibility data in Exhibit 17 supports the conclusion that the most probable use of the subject property in the opinion of the appraiser is Scenario 1.

> The most probable use of the subject property would be renovation to a multi-tenant office building.

EXHIBIT 16

SUMMARY OF BUDGETS FOR ALTERNATIVE USE SCENARIOS

Budget Stem	Scenario #1	Scenario #2	Scenario #3	Scenario #4
1. Cost to construct	(2,509,975)	(2,414,225)	(2,668,140)	(2,569,600)
2. Justified investment for property as is	2,897,566	1,409,513	2,868,983	(4,662,172)
3. Total justified investment in subject property as is	387,591	(1,004,712)	200,843	(7,231,772)

EXHIBIT 3 (Continued)

7

EXHIBIT 17

SUMMARY MATRIX OF FEASIBILITY OF ALTERNATIVE USES

Feasibility Factor	Scenario #1	Scenario #2	Scenario #3	Scenario #4
Justified Investment in subject	387,600	Negative	200,843	Negative
Remodeling Risks	Moderate	Significant	Significant	Serious
Effective Market demands	Positive	Positive	Questionable	Soft
Political acceptability	Strong	Strong	Strong	Mixed
Financial Risk	Depends on marketing ability in projecting new image for the building	Depends on desire to live in a high-rise	Depends on desire to own a home in a high-rise	Financial risk is great-- Hilldale is not a major office center nor a stop for travellers.

EXHIBIT 3 (Continued)

EXHIBIT 4

B. Most Probable Price

A number of transactions involving the sale and purchase of multi-story office facilities have occurred in the greater Madison metropolitan area. This makes it possible to infer from past transactions the probable price and range of sales price involving the subject property and the most probable buyer defined above. In order to reconcile the important differences between the subject property and past transactions, a ranking system will be used. This system, shown in Exhibit 13, yields a weighted score point total for each property. The weighting of the features distinguishes the most probable buyer. The point totals are a measure of the desirability of the given property to the most probable buyer. The time-adjusted cash equivalent price of each comparable can then we weighted for a property point total that provides a common denominator for comparison purposes. The common denominator can be further refined by weighting it for net rentable area. The result is a cash equivalent dollar/point square foot figure, which is then related to the cash equivalent sales price by computing the mean price per point. This statistical process produces the predicted price per unit, or central tendency, and therefore a means to estimate the range and reliability of the sale price prediction, or standard error.

SCALE FOR SCORING COMPARABLES ON PROBABLE BUYER CONSIDERATIONS

Location	5 = Neighborhood of stable or increasing prices
	3 = Neighborhood of stagnant prices
	1 = Neighborhood of declining or deteriorating prices
Vacancy at sale	5 = Mostly occupied, 10% or less vacancy
	3 = Partially occupied
	1 = Vacant at time of sale
Building condition and remodeling required	5 = Minimal improvements required, good condition
	3 = Average renovation, fair condition
	1 = Empty shell, major renovation required, poor condition
Accessibility	5 = Easily accessible, visible entrance or entrances
	3 = Some accessibility problems
	1 = Very difficult access, one-way streets or no islands
Parking	5 = Adequate, available parking
	3 = Limited, expensive parking
	1 = No parking

EXHIBIT 4 (Continued)

10

C. Market Comparison Approach to Probable Price

The first problem in real estate market comparison is to define the unit by which the comparison proceeds. Recent comparable sales that were arm's-length transactions, located in office or retail nodes, ordinary mid/high-rise construction types, and preferably sold as vacant shells were collected. Exhibit 14 summarizes the comparable sales selected for use in predicting the most probable price for the subject property. Of the eight sales, one was for cash, the balance required some type of nonmarket seller-financing.

SUMMARY OF COMPARABLE SALES

Property	Date of Sale	Terms of Sale
110 E. Main	10/76	land contract
149 E. Wilson	8/78	seller-financing
16 N. Carroll	9/74	installment
137 E. Wilson	10/78	cash
301 N. Broom	11/79	land contract
212 E. Washington	12/77	seller-financing
102-110 N. Hamilton	7/77	land contract
202 N. Henry	3/79	land contract

For each of the eight selected comparables, shown in Exhibits 15 to 22, attributes thought to greatly influence buyer behavior were scored. Location in a neighborhood of stable or increasing prices was believed to be desired by the prudent investor. Vacancy presented a depressing effect on price and was therefore viewed as a negative factor. The amount of renovation required to bring the building into compliance with codes was recognized as a negative influence on price. Well-maintained, concrete structures were preferred over those with poor maintenance or ordinary construction. Accessibility also affects price with a negative influence recognized for those buildings with difficult access paths, constrained by poor visibility. Inadequate on-site or off-site parking is an important factor that impacts on price. The final weighted matrix is presented in Exhibit 23.

Exhibit 24 displays the calculations used to obtain the predicted price for the subject property and an estimate of the reliability of the prediction.

EXHIBIT 23

WEIGHTED MATRIX FOR COMPARABLE PROPERTIES OF 4610 UNIVERSITY AVENUE

| Feature | Weight | Weight/Weighted Ratings | | | | | | | | |
		110 E. Main	149 E. Wilson	16 N. Carroll	137 E. Wilson	301 N. Broom	212 E. Washington	102-110 Hamilton	202 Henry	Pyare Square
Location	.10	3/.3	3/.3	3/.3	3/.3	5/.5	3/.3	3/.3	5/.5	5/.5
Vacancy	.20	3/.6	1/.2	5/1.0	1/.2	1/.2	1/.2	3/.6	1/.2	1/.2
Building condition & remodeling required	.35	3/1.15	1/.35	3/1.15	1/.35	1/.35	1/.35	3/1.15	1/.35	1/.35
Accessibility	.15	1/.15	1/.15	1/.15	1/.15	1/.15	3/.45	1/.15	1/.15	3/.45
Parking	.20	1/.2	1/.2	1/.2	1/.2	5/1.0	5/1.0	1/.2	1/.2	3/.6
Total weighted score	100%	2.4	1.2	2.8	1.2	2.2	2.3	2.4	1.4	2.1
Time-adjusted cash equivalent (TACE) price[1]		$1,391,008	$270,694	$781,741	$271,200	$96,570	$574,209	$395,464	$262,933	...
Total net rentable area (NRA)		76,000	32,000	35,725	25,500	5,760	38,000	28,000	24,000	84,969
TACE price per sq.ft.(NRA)		$18.30	$8.46	$21.88	$10.64	$16.77	$15.11	$14.12	$10.96	...
Mean price per point per sq. ft.		$7.63	$7.05	$7.82	$8.86	$7.62	$6.57	$4.88	$7.82	...

[1]See Appendix F for cash equivalency calculations.

EXHIBIT 4 (Continued)

11

EXHIBIT 4 (Continued)

EXHIBIT 24

CALCULATION OF MOST PROBABLE PRICE USING
MEAN PRICE PER POINT EQUATION METHOD

Comparable Property	Selling Price per NRA	Weighted Point Score	$\dfrac{\text{Price per NRA}}{\text{Weighted Point Score}} = (x)$
1	$18.30	2.4	$7.63
2	8.46	1.2	7.05
3	21.88	2.8	7.82
4	10.64	1.2	8.86
5	16.77	2.2	7.62
6	15.11	2.3	6.57
7	14.12	2.4	5.88
8	10.96	1.4	7.82
		Total	$59.25

Central tendency $(\bar{x}) = \dfrac{\Sigma x}{n} = \dfrac{59.25}{8} = 7.41$

Dispersion (std. dev.$= s$) $= \sqrt{\dfrac{\Sigma(x-\bar{x})^2}{n-1}} = \sqrt{\dfrac{5.71}{7}} = .90$

where:

x	$\bar{x}$	$\lvert(x-\bar{x})\rvert$	$(x-\bar{x})^2$	n	$n-1$
7.63	− 7.41 =	.22	.05	8	7
7.05	7.41	.36	.13		
7.82	7.41	.41	.17		
8.86	7.41	1.45	2.10		
7.62	7.41	.21	.04		
6.57	7.41	.84	.71		
5.88	7.41	1.53	2.34		
7.82	7.41	.41	.17		
			5.71		

Value range: $\bar{x} \pm s = 7.41 \pm .90$ [8.31, 6.51]

Estimate of value of subject property =

NRA of subject × Weighted point score × [Sample mean of price per NRA per total weighted score = s]

(84,969) × (2.1) × [7.41 ± .90]

High estimate:[1] $1,480,000
Central tendency: $1,320,000
Low estimate: $1,160,000

_____

[1]All value estimates are rounded.

EXHIBIT 5

NET PRESENT VALUE UNDER
L.C. FINANCING AND BALLOON PAYOUT
ACCORDING TO CONTRACT ON 12/31/85

	1979	1980	1981	1982 - 84
				4 years
Down Payment	$500,000	$250,000	$250,000	
	3,576 (2A)	5,364 (3A)	11,145 (3B)	$ 67,710 (12C)
	$503,576	33,435 (9B)	50,787 (9C)	
		$288,799	$311,932	
				Balance 2,450,000
				$2,517,710

NET PRESENT VALUE CONVENTIONAL LOAN

	1979		
Down Payment	$862,000		Balance 2,404,000
	--		

Cash year 1	$503,576	$288,799	$311,932
		.884666	.796455
Cash year 2	255,491	$255,491	
Cash year 3	248,440		248,440
Cash year 4	48,551		
Cash year 5	43,710		$67,710
Cash year 6	39,351		67,710
Cash year 7	$1,317,332		67,710
	$2,456,451		$2,517,710

Total Cash Equivalency
(Versus $3,450,000 nominal selling price)

INCOME PREPORTED	GROSS INCOME	$499,249
(Contract)	NET INCOME	196,548

MARKET RENT LEVELS

At least gross	$450,000
Less 40% expense	180,000
NOI	$270,000

$$OAR = \frac{270,000}{2,456,451} = .109915$$

$$SP/Unit = \frac{2,456,451}{168} = 14,622$$

EXHIBIT 5 (Continued)   14

Example Problem: Cash Equivalent Price - Existing Mortgage plus
                   Purchase Money Mortgage

Given the following information, determine the cash equivalent
price of the transaction:

Sale Price $1,000,000

Existing Mortgage (assumed)   Balance $682,052
                                        Mo. Pmt. $6,039.20
                                        Contract rate 8.5%
                                     * Expired Term 6 years
                                        Remaining Term 19 years

Purchase Money Mortgage $200,000 @ 10%
                                        Amortization over 20
                                        years, balloon in 10 years

Current Financing   14.5%, 20 year
                                        amortization with
                                        10 year balloon

A.   What is the equity investment?
B.   What is the balance outstanding on the existing (assumed)
     mortgage in 10 years?
C.   What is the payment on the PMM?
     What is the balance outstanding EOY 10?
D.   What is the cash equivalent price of the transaction?

Suggested Solution - II
Existing Mortgage plus PMM

A. $117,948   •

B. $454,781

C. $ 1,930
     $146,049

D.   Equity $117,948

     Assumed Existing Mortgage
        PW $6,039.20, 120 mos.
              @ 14.5% $381,535
        PW $454,781, EOY 10
              @ 14.5%
     Purchase Money Mortgage
        PW $1,930, 120 mos. $121,931
              @ 14.5%
        PW $146,049, EOY 10
              @ 14.5% $ 34.558

     Total (Cash Equivalent Price) $763,581

* Courtesy of Byrl Boyce

EXHIBIT 5 (Continued)

15

IX. PROBLEM (CASH EQUIVALENCY)*
    *Courtesy of A. Robert Parente, SREA, MAI.

An income producing property (special purpose) was resold by the
Midland National Bank on a "workout." The terms of the sale were
as follows:

Sale Price:	$1,178,808, no cash by purchaser, i.e., 100% debt financing
Terms of Financing:	First year - interest only at a rate of 4-1/2% and payable monthly
	Second year - interest only at a rate of 6% and payable monthly
	For the next 23 years - principal and interest at 8-1/2%, payable monthly

The property (a 12,000 sq. ft., 3-year old restaurant building)
was purchased on November 10, 1977 for $1,178,808. Typical terms
of financing at that time (11/77) were 9-3/4% interest for 25 years
on a 75% loan-to-value ratio. It is estimated that equity required
a 12-15% return.

Questions:

A. What are the monthly interest costs in years 1 and 2?

B. What is the constant on the amortized portion of the mortgage?

C. What is the monthly payment on the mortgage?

D. What is the unadjusted sales price per square foot for use in the
   DSC approach?

E. What is the cash equivalent price assuming 100% financing were
   typical in the market?

F. What is the cash equivalent price assuming an equity yield require-
   ment of 12% 15%?

G. What is the adjusted sales price per square foot under each of the
   conditions set forth above?

EXHIBIT 5 (Continued)   16

Suggested Solution - IX
Problem (Cash Equivalency)

A. Year 1: $4,420.53
    Year 2: $5,894.04

B. f = .09913

C. $9,737.97

D. $1,178,808 ÷ 12,000 = $98.23/sq. ft.

E. PW i Costs Year 1 @ 9-3/4% = $ 50,347.92
    PW i Costs Year 2 @ 9-3/4% =   60,918.28
    PW Amortization payments
            Years 3-25 @ 9-3/4% = 881,198.63

    Cash Equivalent Price
      (100% Financing)   = $992,464.83*

    *$186,343.17 less than face value of note

    $992,464.83 ÷ 12,000 = $82.71/sq. ft.

F. Discount Rates given Y = 12%, Y = 15%, m = 75% i = 9.75%

                Y = 12%   Y = 15%

    Mortgage .75 x .0975 = .073125   .75 x .0975 = .073125
    Equity   .25 x .12   = .03   .25 x .15   = .0375

    Discount Rate (r) = .103125   Discount rate (r) = .110625

              PWCF @ 10.3125%   PWCF @ 11.0625%

        Year 1 $ 50,198.33 $ 49,999.88
        Year 2   60,399.42   59,715.07
        Years 3-25   835,796.73   780,188.86

                    $946,394.48** $889,903.81***

    $232,413.52 below face   *$288,904.19 below face

G. $946,394.48 ÷ 12,000 = $78.87/sq. ft.

    $889,903.81 ÷ 12,000 = $74.16/sq. ft.

* Courtesy of Byrl Boyce

II. Critique of a Real Estate Appraisal requires some understanding of the institutions of appraisal, the normative economic logic of appraisal, and the elements of reform of the appraisal process already at work.

   A. Political compromises in the 1930s led to the appraisal doctrine which defined fair market value as that which results from synthesis of three normative approaches to value based on the economics of before tax income.

   B. Marshallian economics presumes stability of currency and interest rates. Appraisers and their customers confuse normative models to establish a fair price with behavior models that would predict the most probable price at which a property would sell.

   C. Normative methods are not predictive of price but nine times out of ten appraisers are supposed to predict the price at which a property would sell under specific circumstances.

   D. If the appraisal is to serve as a benchmark for a decision under specific circumstances, or purposes, then it should not be governed by conditions characteristic of an efficient market since real estate is not known for market efficiency.

   E. Widespread acceptance of appraisal models is a function of the cost of reeducation, on-the-job training, word processing, and data processing, and that is being drastically altered by electronics and communication advances.

   F. A consistent theory for reconstructing appraisal has been prepared by Professor R. U. Ratcliff but its tenets are being adapted at the grassroots level by individuals rather than considered by the controlling committee of the professional societies.

G. Factors which have delayed appraisal reforms
    include:

    1. Compensation system which separates
        responsibility for payment of appraisal fee
        from beneficiary of objective useful analysis
        with a corresponding decline on reliance by
        financial institutions in the lending
        process, etc.

    2. Lack of understanding of the variety of
        services in terms of appraisal, feasibilty
        analysis, or consulting which a professionally
        designated appraiser might offer. The right
        product depends on asking the right questions.

    3. Fear of appraisal societies that a retreat
        from old principles will discredit appraisal
        designations and existing regulatory
        monopolies and therefore contribute toward
        further competitive erosion by the accountants
        and the engineers and the investment bankers.

    4. Postponement of reform pending merger of the
        major appraisal societies, an effort recently
        frustrated by a membership vote which will
        trigger significant competition and public
        efforts which lack the benefit of significant
        reform of the profession and its out-of-date
        educational programs.

H. A common sense appraisal outline representing the
    Ratcliff approach would be as follows:

    1. What is the issue?

    2. What are the basic appraisal problems in the
        issue?

    3. What definition of value is most appropriate?

    4. What implicit assumptions are inherent in the
        value definitions?

    5. What explicit assumptions are provided by
        others?

    6. What is the most probable use of the property?

7. What is a profile of the most probable buyer of the property?

8. What level of behaviorial transaction forecasting can be applied?

    a. Inference from market sales
    b. Simulation from actual buyer calculus
    c. Standard normative models for prudent buyers

9. What externalities should be considered as modifying the expected transaction range?

10. How does the most probable price test in light of criteria presumed in the buyer profile?

I. To critique an appraisal provided as a benchmark of a mortgage loan and to classify the appraiser as contemporary or old guard, the reader should look to the following elements.

    1. Definition of value - is the classic definition or defined as the most probable price at which it would sell subject to specific financing terms?

    2. Does the interest to be appraised represent fee title encumbered or does it include entitlement to the financing requested or subject to financing appropraite to regulated institutional standard?

    3. For a proposed project does the appraisal assume completion and therefore a future appraisal date and does it assume absorption of the units into the market in a stated period of time? If so, it must prove absorption, capture rate, and construction as reasonable assumptions or it has sidestepped the critical issue of indirect cost.

    4. Does it discard any of the three approaches at the outset as inappropriate or does it wait until the report reaches the section called synthesis?

5. In using the market approach for an appraisal, does the report indicate buyer motivation on comparable sales or current status of the comparable? Does the appraiser use basic statistics for adjustment or arbitrary percentage or flat dollar shifts in value? Does it provide the standard error of the investment or the mean price?

6. In using the market approach for an appraisal, does the report indicate buyer motivation on comparable sales or current status of the comparable? Does the appraiser use basic statistics for adjustment or arbitrary percentage of flat dollar shifts in value? Does it provide the standard error of the investment or the mean price?

7. In doing the income approach, does the appraiser use normalized income or cash flows over time, and in capitalizing the income does he use market rates, Ellwood rates, or cash on cash mortgage equity? Only the latter is reliable for mortgage loan purposes.

8. In doing the cost approach, does the appraiser show the entrepreneurial compensation or is that buried in over-estimated construction costs? Hard dollar costs should be the lowest of three estimates, not the highest as advocated by appraisal textbooks. The spread is the developer's fee for the entrepreneurial contribution to land, labor, and capital.

9. Does the appraiser provide a test on the after tax basis of either his resale assumptions on which his income appraoch depends or his conclusion as to most probable price at which it would sell? These tests might include something like VALTEST. The resulting financial ratios discussed previously, or a front door approach to demonstrate the rents implied by a given cost of acquisition.

10. Check the statement of limiting conditions to see what applies relative to underlying assumptions and limitations on use.

III. Because the client of the appraiser faces unique liabilities in the United States as a pension fund trustee (Employees Retirement Securities Act) or as a party to a partial sale of a real estaet interest under the Securities Act of 1983, appraisal assignments are becoming the subject of highly detailed contract negotiations. These contracts specify appraisal content and method.

   A. Example of contract with specified format for information contained (PMI Exhibit 6).

   B. Example of contract controlling methods and assumptions (FARA Exhibit 7).

   C. Appraisal reform is occurring because customers contract for it rather than because of leadership from the professional society.

   D. Cash flow models predominate for pension fund work where each lease is detailed (Exhibit 8).

EXHIBIT 7   35

**First Asset
Realty
Advisors**

First Bank Place
Minneapolis. MN 55480

APPRAISAL ENGAGEMENT LETTER

TO:

RE: Property Identification

Dear _____:

On behalf of First Asset Realty Advisors (FARA), we would like to engage
your services for the appraisal of the above property to determine the
fair market value of the legal interests owned by a Commingled Fund as
of (date of appraisal)   . To that end and before accepting the
assignment, the appraiser should consider the following requirements as
to definition and procedure:

1. Fair market value shall be defined as the most probable price
    at which the property would sell to a knowledgeable buyer on
    a given date if placed on the market for a reasonable length
    of time by a well informed seller assuming:

    a. Cash to the seller or cash plus debt owed or assumed by the
        buyer, where appropriate.
    b. Fee title will be encumbered by leases in place and possible
        other covenants. Appraiser must indicate remaining market
        value of these other leasehold or non-possessory interests.
    c. The appropriate exposure on the market has occurred prior
        to the date of sale.

2. Fee title may be encumbered by leases, mortgages, as well as
    possible conditional use permits and private covenants. FARA
    is obligated to provide access to all of the appropriate documents
    at the office of _____._____ located at _____
    during normal business hours. The appraiser is expected to read
    the leases, mortgage instruments and other encumbrances and relate
    to them appropriately. If existing debt is assumable by another
    buyer, then the appraiser can value the sale as cash to the seller
    with the buyer accepting the mortgage(s) already in place if that
    would be consistent with the most probable buyer's self interest.
    Otherwise the trustees of the Commingled Fund management (FARA)
    are interested in a value which is the most probable cash price
    to the seller and with the buyer accepting the existing encumbrances
    in terms of leases and covenants, etc.

EXHIBIT 7 (Continued)

3. When using the market comparison approach, the appraiser must document each comparable sale as to grantor, grantee, public record, plot plan and photograph as well as basic details of construction and existing encumbrances, terms of sale, and seller motivation. Buyer motivation is profiled as an assumption by the appraiser. All calculations necessary to adjust engineered prices to cash equivalencies must be documented and explained as well as any and all adjustments to relate the comparable price to the subject property must be itemized and explained so that the reader can repeat the mathematical adjustments.

4. The income approach must use discounted cash flow from a ten-year forecast (and your own forecast, if different) in which all the property's existing leases are detailed individually. The rationale for roll-over vacancies, absorptions, and expense projections must be itemized with a series of footnotes in the manner of a fully detailed accounting income and balance sheet statement. Income projections should account for current market lease rates with explanations of all assumptions used. Normalized income methods including investment bond, Ellwood or net income multipliers are not acceptable.

5. The appraiser must document his opinion as to the appropriate discount rate applied to each segment of the cash throw-off and after tax cash flow as appropriate, together with financing terms assumed.

6. A cost approach based upon a responsible service or professional should be supplied with the initial appraisal. If it is not used in the final valuation, then a discussion on why it is not used is required. The appraiser is expected to carefully inspect the property and report his own independent views on the quality of maintenance, deferred maintenance, and tenant housekeeping.

7. The appraiser is regarded as the eyes and property inspector of FARA. To put the property in context, the appraiser must supply a separate market analysis section to include current market conditions, an evaluation of projects which are competitive alternatives in the market area of the appraiser, an indication of rent structures, vacancy and absorption rates, and in the case of a new building, some indication as to rentup success and source of tenants. Wherever possible, the appraiser is to indicate the ownership and character of investment position in competitive properties and the property management or leasing term involved with each. The appraiser should include in his market analysis section an evaluation of the future projected market conditions over the ten-year holding period.

Following the initial appraisal at the time of acquisition, the appraiser will be asked to submit a letter of review 180 days after the date of the original appraisal indicating if he would modify any of his critial

EXHIBIT 7 (Continued)

37

-3-

assumptions at that time and, if so, indicating how this might affect his original value estimate as a specific dollar adjustment, up or down.

At the end of 360 days, the appraiser would be expected to perform a thorough review of his original appraisal, specifically focusing on the market approach (item 3), adjustments indicated for the income approach (items 4 and 5), and additions and amendments to market data (item 7). Aside from the specific instructions provided in paragraphs 1-7 above, it is anticipated that all work will be done according to the standards of the American Institute of Real Estate Appraisers, and it is further understood that the client for whom the appraisal is done for purposes of professional accountability is both First Asset Realty Advisors, Inc., and its operations agent, The Center Companies of Minneapolis, Minnesota. Purpose of the appraisal is to meet the asset valuation requirements of an open-ended, commingled real estate fund suitable for investment by pension fund programs subject to ERISA.

Please return both copies of this letter together with an indication of your fee for the appraisal services above by __(date)__ with a separate quote for the initial appraisal, the 180 day review, and a 360 day reappraisal and an estimate of the date the appraisal will be completed. If this is your first assignment for FARA, please include a sample of your work, preferably of a similar property, in which you have provided for the necessary cash flow projections.

Yours very truly,

Space No.	Tenant	No. of Twin City Stores	Tenant Rating	GLA Sq. Ft.	Lease Term From	To	Year		Base Rental	Base Rental/ Sq. Ft.	% Rent Formula	/Sq. Ft.
14.	Total Sports	3	National	10,000	11/1/78	1/11/94	15 yrs. 3 mo.	Yr. 1-3 Yr. 4-7 Yr. 8-10 Yr. 11-15	$50,000 $60,000 $70,000 $80,000	$5.00 $6.00 $7.00 $8.00	4% over $1,250,000 4% over $1,500,000 4% over $1,750,000 4% over $3,000,000	($125) ($150) ($175) ($200)
17.	Oriental Arts, Inc.	1	Local	1,066	2/1/81	1/31/83	2 yrs.	Yr. 1 Yr. 2	$ 8,925 $ 9,575	$8.37 $9.35	6% over $148,750 1% over $161,250	($140) ($151)
18.	Unassigned	--	--	(1,232)	--	--	--	--	$ 9,856	$8.00	1% over $166,250 6% over $164,267	($156) ($133)
19.	Unassigned	--	--	(449)	--	--	--	--	$ 7,000	$15.59	10% over $70,000	($156)
20.	Unassigned	--	--	(873)	--	--	--	--	$12,000	$11.75	5% over $170,000	($275)
21.	Photomill (3)	5	Local	1,536	10/1/78	1/31/89	10 yrs. 3 mos.	Yr. 1-3 Yr. 4-7 Yr. 8-10	$ 6,144 $12,288 $18,432	$4.00 $8.00 $12.00	6% over $102,400 6% over $204,800 6% over $307,200	($671) ($133) ($200)
22.	Hurrah	8	National	1,632	2/1/79	1/31/89	10 yrs.	--	$11,424	$7.00	6% over $190,400	($177)
23.		24	Reg.	4,966	11/1/78	1/31/94	15 yrs. 3 mos.	--	$32,279	$6.50	6% over $537,983	($108)
24.	Great	5	National	1,037	10/1/78	1/31/84	5 yrs. 3 mos.	Yr. 1 Yr. 2-5	$10,000 $15,000	$9.64 $14.46	8% over $125,000 8% over $187,500	($121) ($181)
25.	The Book Center	1	Reg.	1,201	6/1/79	1/31/87	7 yrs. 8 mos.	Yr. 1-2 Yr. 3-8	$ 9,608 $12,010	$8.00 $10.00	6% over $160,133 6% over $200,167	($100) ($167)
27.	Imports	1	Local	788	12/1/80	1/31/84	3 yrs. 2 mos.	--	$10,200	$12.00	6% over $170,000	($261)
	Total			66,142								

(3) Assigned to Photomill as of April 1, 1981

Rental Summary

	G.L.A. - S.F.	
Leased Space	56,364	(85.2%)
Unassigned Space	9,778	(14.8%)
Totals	66,142	(100.0%)

EXHIBIT 8

EXHIBIT 8 (Continued)

MALL

Tenant by Tenant Base Rent Projections
Including Lease Step-ups (1) and Reletting Activity (2)

Space No.	Tenant	Area Sq.Ft.	1982 6 mos.	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 6 mos.
1.	Footwear	5,745	$ 19,964	$ 39,927	$ 39,927	$ 39,927	$ 39,927	$ 45,816	$ 51,705	$ 51,705	$ 51,705	$ 51,705	$ 25,835
2.	Fabric	10,179	$ 27,993	$ 55,985	$ 55,985	$ 55,985	$ 55,985	$ 55,985	$ 55,985	$ 55,985	$ 55,985	$ 55,985	$ 27,993
3.	Unassigned	813	$ 3,862	$ 7,724	$ 7,724	$ 7,724	$ 7,724	$ 7,724	$ 9,858	$ 9,858	$ 9,858	$ 9,858	$ 4,929
4.	Cedrica	1,586	$ 5,155	$ 10,309	$ 11,895	$ 11,895	$ 11,895	$ 11,895	$ 11,895	$ 18,083	$ 18,083	$ 18,083	$ 9,042
5.	Unassigned	2,100	$ 7,875	$ 15,750	$ 15,750	$ 15,750	$ 15,750	$ 20,101	$ 20,101	$ 20,101	$ 20,101	$ 20,101	$ 12,827
6.	Unassigned	4,288	$ 11,528	$ 23,056	$ 23,056	$ 23,056	$ 23,056	$ 30,897	$ 30,897	$ 30,897	$ 30,897	$ 30,897	$ 19,717
7.	Northwestern Book	5,495	$ 13,738	$ 27,475	$ 27,475	$ 27,475	$ 33,068	$ 38,660	$ 38,660	$ 38,660	$ 38,660	$ 38,660	$ 24,670
8.	Body Shoppe	1,795	$ 14,360	$ 14,360	$ 17,950	$ 17,950	$ 17,950	$ 20,635	$ 20,635	$ 20,635	$ 20,635	$ 20,635	$ 13,238
9.	Richards	1,612	$ 6,045	$ 12,090	$ 12,090	$ 12,090	$ 15,430	$ 15,430	$ 15,430	$ 15,430	$ 15,430	$ 19,693	$ 9,846
10.	Unassigned	1,255	$ 4,993	$ 8,785	$ 8,785	$ 8,785	$ 8,785	$ 11,772	$ 11,772	$ 11,772	$ 11,772	$ 11,772	$ 7,512
11.	House of Large Sizes	1,332	$ 4,329	$ 8,658	$ 9,990	$ 9,990	$ 9,990	$ 9,990	$ 9,990	$ 11,322	$ 11,322	$ 11,322	$ 5,661
12.	Video	2,186	$ 8,744	$ 17,488	$ 19,674	$ 19,674	$ 19,674	$ 26,365	$ 26,365	$ 26,365	$ 26,365	$ 26,365	$ 16,824
13.	Pizza	2,976	$ 8,793	$ 17,586	$ 17,586	$ 20,832	$ 20,832	$ 20,832	$ 20,832	$ 20,832	$ 20,832	$ 33,656	$ 16,928
14.	Total Sports	10,000	$ 30,000	$ 60,000	$ 60,000	$ 60,000	$ 70,000	$ 70,000	$ 70,000	$ 80,000	$ 80,000	$ 80,000	$ 40,000
17.	Oriental	1,066	$ 4,988	$ 10,412	$ 10,412	$ 10,412	$ 10,412	$ 10,412	$ 13,290	$ 13,290	$ 13,290	$ 13,290	$ 6,645
18.	Unassigned	1,232	$ 4,928	$ 9,856	$ 9,856	$ 9,856	$ 9,856	$ 13,208	$ 13,208	$ 13,208	$ 13,208	$ 13,208	$ 8,428
19.	Shirt	449	$ 3,500	$ 7,000	$ 8,934	$ 8,934	$ 8,934	$ 8,934	$ 8,934	$ 11,402	$ 11,402	$ 11,402	$ 5,701

EXHIBIT 8 (Continued)

MALL

— Tenant by Tenant Base Rent Projections
Including Lease Step-ups (1) and Reletting Activity (2)

Space No.	Tenant	Area Sq.Ft.	1982 6 mos.	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992 6 mos.
20.	Diamond Center	873	$ 6,000	$ 12,000	$ 12,000	$ 12,000	$ 16,885	$ 16,885	$ 16,885	$ 16,885	$ 16,885	$ 23,759	$ 11,880
21.	Photomill	1,536	$ 6,144	$ 12,288	$ 12,288	$ 12,288	$ 12,288	$ 18,432	$ 18,432	$ 20,016	$ 20,016	$ 20,016	$ 10,008
22.	Hurrah	1,632	$ 5,712	$ 11,424	$ 11,424	$ 11,424	$ 11,424	$ 11,424	$ 11,424	$ 18,608	$ 18,608	$ 18,608	$ 9,304
23.		4,966	$ 16,140	$ 32,279	$ 32,279	$ 32,279	$ 32,279	$ 32,279	$ 32,279	$ 32,279	$ 32,279	$ 32,279	$ 16,140
24.	Great	1,037	$ 7,500	$ 15,000	$ 17,868	$ 17,868	$ 17,868	$ 17,868	$ 17,868	$ 22,804	$ 22,804	$ 22,804	$ 11,400
25.	Book Center	1,201	$ 6,005	$ 12,010	$ 12,010	$ 12,010	$ 12,010	$ 18,347	$ 18,347	$ 18,347	$ 18,347	$ 18,347	$ 11,700
27.	Imports	788	$ 5,100	$ 10,200	$ 11,807	$ 11,807	$ 11,807	$ 11,807	$ 11,807	$ 13,669	$ 13,669	$ 13,669	$ 6,835
		66,142	$233,396	$451,662	$466,765	$470,011	$493,829	$545,698	$556,599	$592,153	$592,153	$616,314	$333,063

(1) Most lease anniversaries end 1/31 of any particular year. For cash flow projection purposes, we've assumed lease anniversary dates to be 12/31 of the preceding year. No material change results from this minor timing adjustment.

(2) Relet rental rates assume a 5% annual growth over the average rent currently generated from the existing tenant.

EXHIBIT 8 (Continued)

41

MALL
% Rent Computations

Tenant	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Fabrics	840	--	622	3,192	5,967	8,965	7,701	11,198	14,975	19,052	23,546
Northwestern Book	--	--	--	551	1,396	--	--	--	2,500	5,813	--
Pizza	--	--	1,309	--	1,207	2,971	4,875	6,911	--	--	1,119
House of Large Sizes	--	--	--	--	--	578	1,424	2,337	1,991	3,056	4,206
Hurrah	--	--	707	1,678	2,726	3,858	5,081	--	643	2,183	3,846
	--	--	1,793	4,518	7,462	10,642	14,075	17,784	21,789	26,114	30,785
Great	3,420	4,894	3,617	5,337	7,193	9,197	11,363	13,701	16,227	18,955	22,296

EXHIBIT 8 (Continued)

Revenues	7/1 to 12/31 1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1/1 to 6/30 1992
Base Rents (1)	$233,396	$451,662	$466,765	$470,011	$493,029	$545,698	$556,599	$592,153	$ 592,153	$ 616,314	$ 333,063
Ground Rent (2)	$ 14,453	$ 28,907	$ 28,907	$ 33,243	$ 33,243	$ 33,243	$ 38,229	$ 38,229	$ 38,229	$ 43,964	$ 21,982
% Rent (3)	$ 10,593	$ 13,660	$ 19,116	$ 28,830	$ 34,046	$ 47,074	$ 58,515	$ 67,783	$ 77,572	$ 98,565	$ 56,601
Real Estate Tax Recovery (4)	$ 69,741	$115,300	$121,400	$133,000	$139,800	$146,300	$157,300	$165,200	$ 173,300	$ 182,000	$ 95,600
Recovered Exp. (5)	$ 45,310	$ 95,100	$ 99,800	$104,800	$110,000	$115,600	$121,300	$127,400	$ 133,700	$ 140,400	$ 73,700
Total Gross Revenue	$373,493	$704,629	$735,988	$769,884	$810,918	$887,915	$931,943	$990,765	$1,014,954	$1,081,243	$ 581,026
Less Vacancy (6)	$ 43,935	$ 59,307	$ 61,775	$ 42,566	$ 44,889	$ 50,081	$ 39,200	$ 41,900	$ 44,500	$ 45,500	$ 24,700
Percentage	(17%)	(12%)	(12%)	(8%)	(8%)	(8%)	(6%)	(6%)	(6%)	(6%)	(6%)
Effective Gross Revenue	$329,558	$645,322	$674,213	$727,318	$766,029	$837,834	$892,743	$948,865	$ 970,454	$1,035,743	$ 556,326

Expenses

Expenses											
Real Estate Taxes (7)	$ 84,000*	$153,000**	$138,000	$144,500	$152,000	$159,000	$167,300	$175,700	$ 184,400	$ 193,700	$ 101,700
Recoverable Exp. (8)	$ 39,400	$ 82,700	$ 86,800	$ 91,100	$ 95,700	$100,500	$105,500	$110,800	$ 116,300	$ 122,100	$ 64,100
Mgmt. (5%) (9)	$ 12,900	$ 24,700	$ 25,700	$ 26,600	$ 28,000	$ 31,300	$ 32,700	$ 34,500	$ 35,400	$ 37,900	$ 20,600
Reserves for Tenant Work (12)	0	$ 3,300	$ 1,500	0	$ 6,700	$ 4,600	$ 800	$ 6,600	0	$ 3,200	$ 7,500
Reserves for Repairs (10)	$ 3,500	$ 7,300	$ 7,700	$ 8,100	$ 8,400	$ 8,900	$ 9,300	$ 9,800	$ 10,300	$ 10,800	$ 17,500
Leasing Fees (11)	0	$ 10,300	$ 4,500	0	$ 20,800	$ 14,200	$ 2,200	$ 19,700	0	$ 9,000	$ 21,200
Total Expenses	$139,800	$281,300	$264,200	$270,200	$311,400	$318,400	$317,800	$357,500	$ 346,400	$ 376,700	$ 232,600
Net Operating Income	$189,758	$364,022	$410,013	$457,118	$454,429	$519,334	$574,943	$591,365	$ 624,054	$ 659,043	$ 323,726

* Includes specials of $21,604.82
** Includes specials of $22,000.00

EXHIBIT 8 (Continued)   43

1982 RECOVERABLE EXPENSES ANNUALIZED

For   Mall.

Recoverable expenses for 1982 are shown below in the 1982 annualized budget:

Recoverable Expenses

Insurance		$ 8,400
Utilities		
Electric	$19,900	
Water and Sewer	$ 3,200	
Gas	$ 3,200	
		$26,300
Maintenance Services		
Snow Removal	$10,500	
Janitorial	$12,600	
Parking Lot Sweep	$ 3,000	
Trash	$ 400	
Rodent Control	$ 1,100	
Landscaping	$ 3,800	
Mall Music	$ 300	
		$31,700
Overload Security		$ 1,300
Supplies		
Maintenance	$ 3,000	
Electric	$ 600	
Landscaping	$ 1,300	
		$ 4,900
Repairs		
Electricity	$ 3,100	
Equipment	$ 2,500	
Plumbing	$ 600	
		$ 6,200
TOTAL RECOVERABLES		$78,800

Recoverable expenses have been increased at 5% per year, compounded.

EXHIBIT 8 (Continued)

BASIC ASSUMPTIONS TO CASH FLOW PROJECTIONS

Revenues

1. In completing the financial analysis, we projected a ten-year (from July 1, 1982 to July 1, 1992) cash flow projection. Rental revenues are based upon actual leases giving full recognition to all step-up rental provisions. For vacant space, economic rents were estimated based upon rent levels at competitive properties. Upon releasing, rental rates are projected as increasing 5% per year over current levels. A five-year term was assumed for all new leases.

2. The ground rent is adjusted according to the CPI change for all cities every three years. For example, the 1982 rent is based upon the CPI change from February 1978 to February 1981 (see Exhibit D in addenda). A 5% annual rate of inflation is assumed for each subsequent rental adjustment.

3. For   : tenants in occupancy for a year or more, historical sales were used as a benchmark for projected sales. For tenants, the calendar years 1982 through 1992 sales volumes were escalated at 8% per year. Percentage rent was calculated on a tenant-by-tenant and year-by-year basis using the percentage rent formula outlined in each lease.

4. The standard lease provides for all tenants to pay their pro-rata share of taxes. Since the projected vacancy allowance varies, tenant reimbursement is as follows:

	Vacancy	Tax Reimbursement
1982 (6 mos)	17	83%
1983-84	12	88%
1984-87	8	92%
1988-91	6	94%

5. The standard lease provides for 100% of all recoverable expenses to be reimbursed to the landlord by the tenants, collectively. Unlike the tax clause, the pro-rata share each tenant contributes is allocated between the gross leased and occupied space; consequently 100% of all recoverable expenses are paid collectively by the existing tenants. A 15% administrative charge is added to all reimbursable expenses (per the leases). Furthermore, based upon   experience, 75% of the "Reserves for Structural Repairs" are reimbursable expenses.

6. A discussion for vacancy allowance is detailed in Item #4.

EXHIBIT 8 (Continued)   45

Basic Assumptions to Cash Flow Projections - Continued

Expenses

7. Real estate taxes for 1982 are detailed on page 1 of this report.
    For 1983 and thereafter, taxes have been escalated at a 5% annual
    rate of increase.

    Finally, in 1982 about $43,000 of special assessments will be billed
    to Burnhaven, including interest payable at 8%. Approximately
    one-half of the $43,000 is to be paid in 1982 and the balance in
    1983 as scheduled in the cash flow projection.

8. Recoverable expenses for 1982 are shown in the 1982 annualized
    budget on the following page.

9. Property management expense is 5% of base, ground and percentage
    rents.

10. As per our discussions with   properties, reserves for
    structural repairs are estimated at $.10 per square foot for the
    first three years and are increased at 5% per year thereafter.

11. For 1982, leasing fees are $2.25 per square foot of leased space.
    The fee is increased 5% per year, consistent with the increase in
    base rents. Leasing fees are expensed in the year incurred.

12. According to   properties, tenant work is minimal for
    this type of mall. The cost is estimated at $.70 per square foot
    for 1982 and escalated at 8% per year thereafter. Tenant work is
    expensed in the year incurred.

Discounted Cash Flow Analysis - Continued

		Annual Cash Flow		Discount @ 17%		Present Worth
Last 6 mos.	1982	$ 189,758	x	.924500	=	$ 175,431
	1983	$ 364,022	x	.790171	=	$ 287,640
	1984	$ 410,013	x	.675360	=	$ 276,906
	1985	$ 457,118	x	.577230	=	$ 263,862
	1986	$ 454,429	x	.493359	=	$ 224,197
	1987	$ 579,334	x	.421674	=	$ 244,290
	1988	$ 574,943	x	.360405	=	$ 207,212
	1989	$ 591,365	x	.308039	=	$ 182,163
	1990	$ 624,054	x	.263281	=	$ 164,302
	1991	$ 659,043	x	.225026	=	$ 148,302
1st 6 mos.	1992	$ 323,726	x	.208037	=	$ 67,347
	*Rev.	$4,839,000	x	.208037	=	$1,006,000
						$3,247,652
						Rounded to
						$3,200,000

*   Projected 1992 Resale Price

    The 1992 resale price was estimated by adding the last six months
    income of 1991 and the first six months income of 1992 and capitalizing
    the total income at 13-1/2%.

        $329,522 - 1991 (last six months)
        $323,726 - 1992 (first six months)

        $653,248 - Capitalized @ 13-1/2% $4,838,866
                  · Estimated 1992 Sale Price $4,838,900

IDENTIFICATION AND DELINEATION

OF REAL ESTATE MARKET RESEARCH

I. INTRODUCTION

Every real estate project is a cash cycle enterprise which depends on customers willing to spend dollars in their own self interest. Not only is each real estate project an individual enterprise, it is also a subsystem within a network of collective interdependent enterprises, each of which must be persuaded that their own needs and goals are furthered by interfacing with certain real estate.

In the broadest sense, market research investigates any factor influencing communication, persuasion, or recognition of needs and motivations in the transactional interface of enterprises in the real estate network. The network of forces includes local political controls on entitlement to new entrants, the bargaining power of customers and suppliers, and changing land use patterns and technologies affecting land use. [1]

In the narrower sense, market research is concerned with securing a customer's commitment to the enterprise with a high degree of predictability to control the variance in cash flows, growth in values, and other indices of financial performance derivative of a customer. To paraphrase Peter Drucker, once business has created a customer, everything else it does may be redundant. Certainly the critical element of a business strategy is coping with competition.

A. Market Enterprise and Monopoly

In a market system, free enterprise is the art of creating one's own monopoly, at least for a moment, in the mind of the customer, for partial protection against price competition and the necessity of sharing a limited market. Free enterprise as the art of creating one's own monopoly leads to the following premises for this essay:

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[1] Michael E. Porter, "How Competitive Forces Shape Strategy," *Harvard Business Review*, 57:2 (March/April 1979).

1. For products, monopoly requires at least one element of control in terms of raw material, location and political entitlement, relevant design, unique service, control of distribution channels, or good timing.

2. For services, monopoly requires control of the customer through behavioral conditioning, or consumer inertia toward an opportunity to change habits.

3. Real estate is a combination of product and service, and therefore real estate monopoly has the greatest number of options to exploit when shaping marketing efforts of the firm.

4. The long lead time required to change supply to meet demand creates unique opportunity for creating a monopoly by decision-making finesse relative to politics of location, timing of financing and delivery, and forecasting of demographic shifts and changing consumer preference.

Marketing research involves any investigation that permits focusing of a real estate project on selected segments of consumers with a unique unfilled product and location requirement (market gap) and a point in time when supply alternatives are limited (market window). Because discount rates contain a lower load for market risk, the ultimate objective is to stabilize cash flows and maximize values.

B. The Real Estate Enterprise

The goal of imperfect competition is consistent with an enterprise management and systems view of the real estate process, and the appeal of real estate to the entrepreneurial mind--particularly if one believes the firm should prevail to some degree over socializing and collectivist forces in the environment. In general, abstract characteristics of an enterprise are that it is an organized undertaking with rational goals and standards which continually screen opportunities consistent with goals, focus limited resources on selected opportunities, and formulate, implement, and operate

3

programs to capture the perceived opportunities. In the dynamic process one writer [2] has postulated that:

1. The form of an enterprise, in terms of both its physical configuration and social behavior, eventually represents a negotiated consensus between two general sources of power--the power of the environment to dictate form and behavior of the organization on the one hand, and, on the other hand, power of the organization to decide for itself what its characteristics and behavior will be.

2. Real estate is a space-time unit with physical form and a service enterprise with intangible formats intended to enclose a social activity so as to minimize the adverse influence of external forces and maximize the internal goals of the activity to be accommodated. Parameters of space and time are set by political entitlement.

3. External forces determining the configuration and behavior of the real estate are goals of the collective political forces, anticipations of future users, motivations of producer groups, and preferences of those controlling infrastructure enterprises. These forces define the context within which requirements of potential real estate occupancies can be met. These forces limit both the choices of the ultimate consumer and the ultimate solutions put forward by the real estate enterprise responding knowledgeably and sensibly to a group decision process.

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[2] For a thorough introduction to enterprise systems and management concepts that have contributed to the author's own thought development, see John A. Beckett, Management Dynamics: The New Synthesis, (New York: McGraw-Hill, 1971).

C. Market Research - The Intelligence Gathering Unit

Real estate market research is therefore called to
provide information for real estate enterprise
decision making in the general areas of:

1. Definition of the framework of external factors
    having ascertainable influence on the generation
    of customers and revenues for the enterprise,
    i.e., power to shape product/service/price.

2. Inventory of strengths and weaknesses of the
    decision-making enterprise which must influence
    the enterprise deciding for itself what its
    product characteristics and marketing behavior
    will be.

3. Classification of factors having influence on
    customers and revenues as controllable or
    uncontrollable because of the presence or
    absence of skills available to the enterprise to
    manipulate external factors and control internal
    talents.

4. Providing cost effective data for decisions
    relative to controllable variables influencing
    customers and revenues.

The patterns of these decisions generally emerge as
a set of initial marketing premises, hypotheses,
assumptions, and design controls on the project that
are referred to as strategic positioning and
tactical positioning. Strategic positioning
generally relates to how the enterprise will utilize
or neutralize uncontrollable, external market
forces. Tactical positioning has to do with
implementation of the strategy through manipulation
of the controllable variables in a specific market
situation. Strategic planning might try to provide
housing for the elderly as a growing cohort in the
market pushed by circumstance to relocate, while
tactical planning might market supporting services
and lifestyle in congregate housing while avoiding
nursing care responsibilities.

5

II. MARKET RESEARCH AND MODELING MARKET BEHAVIOR

Real estate market research is ultimately behavioral research, but still a science, not an art. Other sciences have less data than real estate. Indeed, real estate and urban planning seem to be inundated with plausible data points, and the problem is to discover the pattern and the causal factors leading to the powers of forecasting. Therefore, market research is not aimless, but rather is focused on defining hypotheses, confirming assumptions, and contributing facts which in turn provide the enterprise with a strategic and tactical position in the marketplace with strong, monopolistic overtones.

A. Models of Market Behavior

To simplify the structure and analysis of behavioral research on economic matters, it is typical to provide a model of relationships that is, in essence, a hypothesis about market segmentation, motivation, and the elements that combine to create effective demand. Models for behavioral research and enterprise decision have been characterized by Dilmore as based on truth, beauty, or chance. [3]

1. Models based on truth reflect normative premises about economic motivation and simple decision criteria such as optimizing. Truth tends to make clear distinctions between market factors and merchandising tricks of promotion. Models based on truth tend to rely on proof by assertion, are deductive, and basically rely on secondary data, such as Reilly's gravitational models of retail draw.

2. Models that stem from beauty are intuitive, reflective of sensitivity of a few persons' experience, and gain credibility from elegance.

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[3] Gene Dilmore, "Technology of Information Processing and Data Basing--Implications for Real Estate Value Reporting," Proceedings of 1984 Real Estate Valuation Colloquium on a Redefinition of Real Estate Appraisal Precepts and Process, The Lincoln Institute of Land Policy, Cambridge, MA, June 1984. .

As Dilmore pointed out, $E=MC^2$ was initially based on the speed of light because the concept was elegant, and it was only years later that empirical data supported the model. Models based on beauty are not always persuasive since beauty is in the eye of the beholder or communicated by means of the aura and trustworthiness of the communicator. For example, George Writer segmented the upper end of the Denver single-family housing market as the Gucci shirts, the Pendletons and the Brooks' Brothers button-down. The Ray Ellison folks depend on Professor Lazlo and lifestyle groups.

3. Behavioral models of chance exploit the increasing credibility of statistics in scaling, forecasting, and ranking consumer preferences. Statistics can be inductive, generated from focused primary research instruments, honest in measuring the degree of fuzziness in the resolution of focus, and abused in terms of power to communicate disinformation between enterprises.

B. Six Critical Elements of a Model

Whichever model genre or format is selected, there are six elements to the model, the research, and the decision that may follow. These are recognized as:

1. The question that needs to be addressed.

2. Data availability with plausible relevance.

3. The hypothesis with which to edit, structure, and focus the data on the question at hand.

4. Skills of the analyst that can be applied with reliability and understanding of the opportunities and pitfalls.

5. The decision-makers' ability to convert the inferences of the research model to appropriate action.

6. Cost effectiveness of the modeling process relative to the economic significance and risk of loss in the action taken.

As a general observation, models concerned with external aggregate forces tend to be fragmented, deductive, and oversimplified because the complexities are so great, research budgets so small, and time in such short supply. Not to mention that the larger systems are not yet well understood. The science of meteorology has more data points than it can manage, and its models still tend to rely on assertions and logic to bridge the gaps in understanding. Nevertheless, the weather cycle is reasonably predictable and so is the demand and supply for carefully defined real estate units. Even basic models provide an adequate basis for timing picnics and office buildings, spring planting and ground breaking. Disappointment with aggregate data most often occurs because the user misfits the data to the problem and not because the basic model never anticipated some unique phenomenon.

On the other hand, with internal, controllable variables, the real estate market analyst has the means to develop inductive, statistical models with a great deal of reliability in the control of internal decisions relative to the enterprise response to external forces. An explosion of software systems simulates parking demand by hour, day, and season correlated to building tenancy. Energy consumption can be correlated to building shape, materials, and site orientation. Linear programming models optimize elevators, installations, land use mix, and all the other controllable design variables and financing options. Of course, there are significant dangers in too much precision on data-rich small problems and data-poor forecasts subject to wide ranges of variables. In some ways today's market research techniques suffer the same problems as the excitement over the Ellwood technique two decades ago, when capitalization rates could be computed to six decimal places, but only two significant numbers were in the normalized net income forecast.

Still, the scope and format of real estate market research is limited only by the inventiveness of the researcher in modeling new connections of easily available data points and then capitalizing on these market insights throughout the hierarchy of roles for market research.

8

III. THE FUNCTIONAL CONCERNS OF MARKET RESEARCH

The real estate enterprise must market concepts, credibility, and cooperation as well as product to three major sets of enterprises. In order of importance these groups are consumer enterprises, public infrastructure enterprises that provide entitlement and offsite networks of supporting services, and finally reactive enterprises supplying capital, expertise, and material. Consumer enterprises are further subdivided among those who actually rent or buy, those enterprises which coalesce temporarily to influence political decisions, and future users who must be anticipated in the flexibility of product adaptation to changing times or who will be represented by self-appointed proxies for environmental conservation.

A. Market Research Objectives

Although random interactions of these groups and the interplay of their negotiations may be of interest to the market researcher, critical questions to be answered by market research models must focus on the following basic topics which represent the building blocks of market strategy and positioning:

1. Potential market gap opportunities consistent with enterprise abilities to capture that particular segment

2. Profile of prospect psychographics

3. Proportion of population meeting prospect profile

4. Profile of competitive supply meeting prospect needs

5. Proportion of supply historically provided in each period (absorption rate)

6. Product and service standards (defining competitive standards)

7. Product and service differentiation (providing competitive edge)

8. Product and service pricing matrix

9. Potential elasticity of revenue

10. Pace and phasing of production, including economics of scale required for pricing

11. Penetration required into prospect profile group as a percentage of period supply (capture rate)

12. Profile of political power segment within entitlement process

13. Psychographics of the voting constituencies determining entitlement

14. Preconditioned mindset of the capital sources financing the real estate decision

15. Psychographics of the enterprise's personnel in terms of suitability to the task at hand

B. Other Peripheral Objectives of Research

Real estate marketing research is systematic information gathering from investigation of any factor influencing communication, persuasion, or specification of needs and dissatisfactions among the various interacting decision-makers. Wherever there is a potential protagonist/antagonist relationship, the protagonist researcher must carry out some degree of research for data that will contribute toward a reduction in resistance, avoidance of resentment, dissolution of misinformation, and motivation of constructive response. The responsibility of market research for the real estate enterprise has only recently been correctly expanded to include every aspect of anticipation and control of the behavioral interfaces which represent in total the external forces shaping the enterprise and the internal communications within the enterprise which shape its response.

C. Market Research for Public Planning

Although market research has always been identified
by consumerism, market research has also become a
major data input for planning in the public sector.
Planning, like management of a real estate
enterprise, is an effort to deal with sets of
interacting problems as a whole. The new emphasis in
planning, as Ackoff [4] has suggested, is not just
dealing holistically with a number of interacting
problems, but doing so with a perspective
orientation. Market research is now the planners'
(rather than their own) way to discover the
perspective that is appropriate, and the market
momentum which can be harnessed to advance public
plans. Planners have learned to give public segments
what they want rather than what the planners want.
Planners compete for capital by tapping demand
generated cash flows rather than pillaging tax
revenues. Thus, market research has been expanded to
serve the external forces imposing on the real
estate enterprise by researching the collective
social ethics, values, and peer group perceptions
that influence the political process of providing
entitlements by means of land use control and
capital allotments from both public funds and
regulated capital markets as a precondition of any
private real estate enterprise.

Formal and informal survey research is required of
large and small constituencies, including:

1. Contiguous property owners
2. Organized neighborhood-tenant associations
3. Constituencies sharing common interests, such as
   age, school children, religion, professions,
   etc.
4. Community power structure and media bias
5. Formal political district boards and councils
6. Public boards regulating community
   infrastructure
7. Public boards regulating financial institutions

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[4] Russell L. Ackoff, The Art of Problem-Solving, (New York:
John Wiley & Sons, 1978).

While the search for market opportunity may be in
researching the degree of effective demand for a
specific set of benefits, access to that opportunity
depends on first marketing the idea to those who
fear they may pay so that others may benefit. The
cost/benefit impact study is a whole new class of
market research for products and services with high
public profiles--such as real estate, medicine,
transportation, and energy.

IV. CLASSIFICATION OF MARKET RESEARCH FORMS

Convenient classifications for marketing research are
somewhat arbitrary categories of competitive strategy
formulation, market research, merchandising research,
political research, and promotional studies. These
categories parallel the enterprise decision process for
which the data is required:

1. Setting enterprise goals, talents, and
   opportunity search standards (competitive
   strategy studies)

2. Reviewing trends to identify suitable
   opportunity areas (market study)

3. Selecting a consumer target group within an
   opportunity area (merchandise study)

4. Formulating a technical program to capture the
   opportunity

   a. Securing entitlement in the public sector
      (political research)
   b. Defining competitive standards and
      conditions required for entry (competitive
      project analysis)
   c. Finding competitive differentials in the
      private sector (consumer research)

5. Implementing the program designed to capture the
   opportunity (promotion studies)

6. Operating the program over time to realize the
   goals of the program

12

7. Generating feedback of data with which to modify and improve implementations of numbers 1-6.

Note that marketing research in some format is involved in all seven steps except the implementation and operating phases called Property Development and Management. These phases are omitted only because the feedback process is separated from operations.

A. Market Research

Market research is defined as research of secondary data sources to define trends, patterns of geographic fragmentation, and clusters of market segmentation which scale the size of any enterprise opportunity and provide a link between site and marketplace. Shifts in the demand/supply equilibrium of space/time units will be derivative of changes in:

1. Demographic trends

2. Psycho/social value trends

3. Available investment capital allocations and interest cost trends

4. Technological trends

5. Environmental trends

6. Energy cost impact trends

7. Locational preferences

8. Income redistribution through federal fiscal budget and tax policy

Secondary data are seldom in appropriate scale for a proposed project and must therefore be disaggregated into a series of smaller subsets by a variety of devices initially generated by primary research. The circumference of a trade area, subdivision of demographic data by age, income, or marital status, or subsets of aggregate data by psychographic lifestyle preferences are all examples of refining the focus of market data to search out a specific

target subset, consistent with enterprise goals and monopolistic marketing.

B. Merchandising Research

Merchandising research is defined as primary research of specified subsets of customers and competitive supplies in order to confirm appropriate ratios for the disaggregation of aggregate data to identify location, space, and amenity needs, and to specify levels of effective demand. (According to a Chicago builder, the market for two-bedroom townhouses may be subdivided among 13 different family status groups.) The objective is always to define a subset with the highest level of interest in the subject matter to maximize survey response rate and intensity of execution of survey formats. Various devices may be used deductively to make the scope of empirical research manageable, cost effective, and directly involved with market prospects. Prospect lists may include comparable building tenant rosters, crisscross telephone directories and yellow sections, professional lists, street directories, subscription lists, license numbers, etc. Merchandising research is also concerned with an inventory of supply that is determined to be competitive and therefore defines the competitive standard of attributes taken for granted by the consumer. At the same time, empirical research of the prospects will strive to identify the competitive edge and motivational appeals to overcome inertia and to permit monopolistic pricing for a specific time, place, and group.

C. Political Research

Political research is defined as primary research of specified subsets of political decision makers and their constituents in order to anticipate and influence legislative decisions, commission rulings, and attitudes of specific political persons and blocs. Projects must be marketed to collective consumers so as to minimize the generation of political resistance to the project by inadvertently providing features or marketing themes that stimulate negative political action. The only project with building permits on the Kenai River spent its research budget on identifying the

environmental concerns and design preferences of
area residents so that the ultimate land use plan
from the outset avoided river bank development and
the other cliches of recreational land. The
attractions of the Kenai were apparent and consumers
would come under any rules and conditions imposed by
local constituents. Land use of any type is first
dependent on collective political approval, and
therefore real estate concepts must first be
marketed to those who control the political process.

D. Promotional Research

Promotional research is defined as investigation of
media channels, messages, and subliminal codes that
communicate and motivate the customer. In the case
of real estate, the product is so big that it
envelops the customer as a primary media, using
forms, colors, textures, as well as spatial layouts
to communicate sensitivity to the needs of the
prospect. While merchandising research and political
research identify the potential irritations and
misfits of prospect to existing real estate
accommodations, promotion is concerned with
communicating how the proposed real estate
enterprise combination of space, time, service, and
cosmetic attributes will reduce irritation for the
activity to be enclosed. Irritation is both
technical and perceptual and stems from the
following fundamental motivations:

1. Desire to avoid physical discomfort in
   accommodating the person to the environment.

2. Incentive to profit by reducing economic
   inefficiency in the use of people and resources
   in order to improve net spendable cash flow or
   transferable wealth.

3. Need to reduce anxiety and stress for physical
   well being.

4. Need for enhancement of status and social well
   being.

Biological evolution indicates that surviving
organisms are those which specially adapt so that
the necessities of survival are accomplished by

using less energy, incurring less stress, and enjoying more relaxation and comfort. Similarly, real estate that survives contributes to the enclosed establishment in much the same way.

Technical irritation, which has historically stimulated improved planning, is the objective of merchandising research, while perceptual dissatisfactions existing in the mind of the beholder can be diffused and exploited by means of promotional research. Better merchandising may improve the speed of elevator service in an office building, while promotional research may place mirrors at the elevator floor stop to distract those who might otherwise perceive the elevators to be slow.

E. Integration of Market Methods and Available Talents

The four convenient dichotomies of real estate market research in the previous section interact with the formation of strategic hypotheses and finally strategic programs for the real estate asset manager. Appropriate techniques, budgets, and objectives of each category of market research shift over the timeline of the real estate asset management problem. A preliminary effort to indicate the sequencing and changing content of real estate market research studies over time is provided in Exhibit 1, a matrix of development staging and research objectives. Exhibit 2 provides a matrix of research techniques now utilized in market analysis classified as models of truth, beauty, and chance. No mention is made of obsolete terminology such as highest and best use studies, feasibility analysis, or other similar nonspecific types of consulting products.

Naturally, the utilization of the more sophisticated market research techniques is somewhat cyclical as methods and formats become identified with innovators and successful real estate entrepreneurs. Entrepreneurial egos, cash budgets, and time pressures have tended to prefer research models based on truth by assertion or intuitive beauty, rather than carefully crafted statistics of behavioral research. The emergence of more elaborate techniques is highly correlated to the

16

OBJECTIVES AND SUBJECTS FOR
REAL ESTATE MARKET RESEARCH

		PREDEVELOPMENT PHASE	SUBDIVISION PHASE	PROJECT-FEASIBILITY PHASE	INITIAL PROJECT MARKETING	PROPERTY-MANAGEMENT PHASE
MARKET	OBJECTIVE	Spatial patterns and movements	Absorption rates for land	Absorption rates for space	Timing, trade area data, identification of competitive supply	Roll-over rates
		Statistical studies of economic, demographic, political, technical, and environmental trends	Rate of creation and sale and improvement of urban lands	Focus groups, rates of construction by type and class and aggregate occupancy of comparable projects	——	Monitor competitive supplies and terms
MERCHANDISE	OBJECTIVE	Influential person analysis	Capture rate for sites	Capture rate for occupants by product price and tenant profile	Trade-off analysis of features	Tenant canvass for renovations and service innovations and expansion demand
		——	Research of required amenities	Research of competitive standard and competitive edge focus groups	Feedback from model space	——
POLITICAL	OBJECTIVE	Impact analysis, regional fiscal, environmental, and transportation impacts	Land use control approval process and power structure	Building permit approval process and power structure	Monopoly of entitlements	Feedback from neighborhood and political groups
		——	——	Focus groups	Testing for political image	——
PROMOTION	OBJECTIVE	Identification of long-term visual and location perception codes	Imagery for neighborhood groups and contiguous property owners	Conversion rate of prospects	Define channels of communication and sales	Resigning of tenant lease maturities
		——	——	——	Testing of advertising effectiveness	Public relations research for building management
STRATEGIC	OBJECTIVE	Substitute forecasting skills for risk capital	Substitute pre-sales and public capital to finance public infrastructure	Position for unique project and timing to reduce capital risks	Price for elasticity matched to scale of production	Estate transfer or corporate liquidation formats
		——	——	——	To control variable costs	Next user or investor market analysis

17

EXHIBIT 1

EXHIBIT 2

GENERALIZED ALLOCATION OF
MARKET RESEARCH METHODS FOR REAL ESTATE
ASSET MANAGEMENT

	TRUTH-NORMATIVE	BEAUTY (INTUITIVE)	CHANCE-STATISTICAL
MARKET	Gravitational models Input-output Shift-share Census data and planning counts Social prototypes (hierarchy of needs)	Subjective forecasts Delphi studies	Dynamic time series model for forecasting Regression analysis Cluster analysis
MERCHANDISE	Non-systematic survey/ research Competitive property inventories Standard plan selection	Focus groups Personal interview Experience logs Marketing diaries	Factor analysis Conjoint analysis Random telephone survey AID analysis Multi-dimensional scaling
POLITICAL	Flowchart of political process	Focus groups Personal interview Expert opinion	Random telephone survey Precinct voting profiles Legislative voting records
PROMOTION	Standard advertising, channels for distri- bution, and established building forms and textures	Focus groups Architectural models, testing of visual and tactile codes	Factor analysis Conjoint analysis Random telephone survey

appearance of high rates of compound interest and
saturation of generic space markets so that profit
margins and survival depend on monopolistic market
and pricing. Low cost data processing was a timely
and coincidental aid to this shift of
entrepreneurial attitudes towards research. Real
estate needs to break the stereotype of report
titles and normative formats as well as the
presumption that appraisers do market research.
Nothing in appraisal training relates to decision
theory for enterprises in the real world or modern
methods of gathering and interpreting data to
facilitate these decisions. Real estate analysis is
no longer an exercise in modeling of real estate
futures with normative and intuitive models with a
generic format and a narrow scope of issues to be
addressed. Nor can one individual span the array of
issues within the broad sequence of asset management
steps suggested in Exhibit 1. As a result, real
estate market analysis as a cottage industry of
generalists is nearly over.

V. CONCLUSIONS

Recognition that market research for real estate
requires investigation of a broad front of behavioral
interfaces within economic, engineering, and
architectural constraints is the first step toward
recognition that real estate analysis will become a
clinical service of related specialists rather than the
province of cottage industry generalists. The shift of
investment capital by fiduciaries toward real estate
presages large increases in market research budgets for
both proposed and existing income property investment to
protect the fiduciary against the consequences of
negligence in establishing a marketing strategy for
yield and protection of capital.

Bigger fees to protect decision makers against the
consequences of bigger mistakes will attract and
generate larger firm activities in providing real estate
market analysis. For the same reason that accounting
firms are taking over appraisal firms, advertising and
public relation firms will take over real estate market
research. Political science firms and research
divisions of large advertising agencies are already
playing a role in the application of sophisticated

research techniques to large real estate project marketing problems.

Nevertheless, something is lost when those using the new techniques are not well grounded in real estate vernacular, building technique, and the theology of land planning. Therefore, a young generation of statistical analysts will join forces with normative and intuitive problem solvers to provide a clinical array of services as a coordinated team of market analysts. Within that team will be a land planner, a mechanical engineer, an architect, a financial analyst, a political liaison specialist, and one or more market researchers. This team will support the developer as employees or as a subcontracting professional firm. The subcontracting firm is socially preferred to facilitate dissemination of an understanding of the market on a cumulative basis to multiple developers. However, currently the creation of value depends primarily on market research that will provide a proprietary, competitive differential leading to a confidential, inhouse data base development. The learning curve from research and the experience curve that provides a timing edge will be key to monopolistic operations of institutionalized real estate. The result will be a greatly reduced dissemination of research methods, findings, and demonstrable successes. Almost inevitably, market research firms providing services to the general public will evolve into development firms for their own account because the value created through thorough and comprehensive research is so much greater than professional fees currently acceptable for the service.

LEASE RATE ANALYSIS

KING COUNTY INTERNATIONAL AIRPORT

for

KING COUNTY, WASHINGTON

AUGUST 1982

MUNDY, JARVIS & ASSOCIATES, INC.

ECONOMIC MARKET & VALUATION ANALYSTS

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September 21, 1982

Mr. Chris J. Loutis
Manager
King County Real Property Division
500 Fifth Avenue, Room 500-A
Seattle, WA 98104

Dear Mr. Loutis:

Transmitted with this letter is the report, "Lease Rate Analysis-King County Airport," completed for you by Mundy, Jarvis & Associates, Inc. This appraisal examined the fair market rental of two properties leased by The Boeing Company at the King County International Airport, one parcel of 249,919 square foot referred to as the Eastside Parcel, and one of 4,906,379 square foot, referred to as the Westside Parcel.

The analysis was directly supervised by Bill Mundy, Ph.D., MAI, and carried out by Judith Chaney, MBA. This project began on May 28, 1982 and was completed during August 1982. Revisions were made in conjunction with Robert Foreman, MAI, who is preparing a separate report for King County.

Our research began with an intensive analysis of the King County International Airport and the surrounding neighborhood. This included interviews with over 100 land users in the neighborhood and an extensive analysis of the demand for different types of space in the South Seattle subarea based on an economic base analysis of the Seattle consolidated area by Bill Mundy. On the basis of that research it was determined that the highest and best use of the subject property would be a mixed-use business, industrial, and distribution park including such uses as office, aircraft service and sales, warehousing, manufacturing, and a complementary line of retail establishments such as restaurants and office supplies. Lance Meuller & Associates has provided a site plan which demonstrates how the property could be developed.

On the basis of this highest and best use analysis, ten comparable sales were researched, five corresponding to the Eastside Parcel and five to the Westside Parcel. In addition, comparable leases from King County, the Port of Seattle, private parties, and the Seattle School District were examined. These data indicated a fair market rent as of July 1, 1982 of $.60 per square foot per year for the Eastside Parcel and $.38.5 for the Westside Parcel. Both these figures are inclusive of the 12.84% leasehold tax.

Mr. Chris J. Loutis
September 21, 1982
Page 2

     This appraisal is subject to the assumptions and limiting additions
included in the report. It has been a pleasure preparing this for you. If
you have any questions or further comments, please do not hesitate to contact
us.

                                   Sincerely,

                                   MUNDY, JARVIS & ASSOCIATES, INC.

                                   Bill Mundy, Ph.D., MAI
                                   President

                                   Judith Chaney, MBA
                                   Research Analyst

dc

Enclosure

Table of Contents

Table of Contents (con't)

LIST OF TABLES

LIST OF FIGURES

APPENDICES

A. Telephone Questionnaire

B. Economic Base Model

C. Comparable Sales

D. Professional Qualifications

SUMMARY OF PERTINENT INFORMATION

Purpose of the Report

The purpose of this research by Mundy, Jarvis & Associates, Inc. was to determine the fair market rental of the 5,156,298 square feet of land leased by the Boeing Company at the King County International Airport as of July 1, 1982.

Research Design

There were several distinct steps in the research process for this assignment. The first was an orientation of our staff and that of Lance Mueller & Associates to the King County International Airport (Boeing Field). The site was inspected by Bill Mundy and Judith Chaney of Mundy, Jarvis & Associates and by Lance Mueller and Robert Fadden of Lance Mueller & Associates.

The next step was an analysis of the surrounding neighborhood which examined changes in land use as well as an inventory of present uses. The neighborhood for this purpose was defined as the area south of Spokane Street, west of Interstate 5, east of West Marginal Way, and north of 118th Street South.

Presently this area is a complex and diverse transportation and industrial center serving the Seattle Consolidated Area, the Pacific Northwest Region, national and worldwide markets. Heavy manufacturing and port-related activities such as transportation, shipping and storage are found within the IH (Heavy Industrial) zone, while warehousing, distribution, and Boeing manufacturing and testing facilities dominate the IG (General Industrial) and M (Manufacturing) zones.

The examination of land use patterns was augmented by telephone interviews with 102 major businesses in the area defined above. These interviews not only confirmed the land use changes found earlier but also indicated the reasons for those changes from the land user's point of view.

The most important locational factors cited by these respondents concerned access, such as access to the freeway (17.9%), a central location (17.2%) and being close to their customers (17.2%). Another major consideration was that they were able to find a site large enough for their business in the south-end industrial area (15.7%).

Table 6 discusses the locational disadvantages to the south-end industrial area which were mentioned by our respondents. The major factor was that there was no longer enough space in the area for the firm to expand (19.6%) followed by the concern that the location was too costly, either because of high rent or high taxes (17.6%). Interestingly, there

were 134 advantages cited and only 51 disadvantages. This difference would seem to indicate that many firms are satisfied with their location in the south-end industrial area.

The final step in the analysis of these interviews was to develop a profile of businesses located in the south-end industrial area over the past 17 years. This information is shown on Table 7. When the current tenant or the previous user were classified by major SIC categories, as shown in Table 6, many categories showed little change over time either in absolute number of businesses or in relative percentages. These stable categories were agriculture, construction, and finance, insurance, and real estate (FIR).

The number of manufacturing, transportation, and wholesale businesses has increased substantially over the past 17 years from 51 to 80 firms in our sample. The relative importance of these industries, however, has actually declined as the number of other types of businesses (e.g., services) have grown even faster. This differential clearly illustrates the diversification occurring in the Duwamish Valley.

In summary, the Duwamish Valley is experiencing significant changes in land use trends. As Seattle expands south, the remaining residential areas in the Valley are disappearing along with older businesses that depended on a residential neighborhood. Heavy demand from water and rail dependent industries has swallowed up large undeveloped parcels and led to more intensive land use. The increasing number of service - oriented industries and smaller wholesale/distribution firms has created demand for mixed use industrial/business park developments.

The information about businesses which are economically viable in the area was combined with an analysis of the economy of the region to make estimates of square feet of space which will be demanded in that area through 1995 by SIC (Standard Industrial Classification) category. Demand for nonaviation uses was based on the Economic Base Model of the Seattle Consolidated Area which was developed by Mundy, Jarvis & Associates and which is updated annually. Demand for general aviation uses was developed from interviews with tenants at the King County International Airport, with Don Smith, Manager of the Airport, and with other airport managers in the Puget Sound Region.

By 1995 this includes site demand of 89,000 square feet of retail space, 116,000 square feet of office, 418,000 square feet of office/ warehouse and 307,000 feet of warehouse.

Next an analysis of the highest and best use of the property leased by Boeing was performed. The subject property consists of two irregularly shaped sites. One, on the westside of the airport is 4,906,379 square feet; the other, on the eastside, is 249,919 square feet. The difference in size and location necessitated a separate highest and best use determination for each.

It was determined that general aviation was the best use of the eastside parcel, including fixed base operators, aircraft hangers and tie downs, and other aircraft-related uses. An analysis was made of comparable leases, both aviation and nonaviation, which gave an indication of fair market rent. Little weight was given to existing aviation leases at the Airport because they have not been negotiated at fair market rent levels. The Port's leases indicate a rate of 6U¢, as do the private leases. The School District lease is not firm enought to rely on at this time. Taking all these indicators into consideration, it is our opinion the fair market rent based on comparable leases is 60¢ per square foot a year effective rate of 53¢ contract rate exclusive of the 12.48% leasehold tax.

Another approach examined sales of comparable property to determine the fair market value of the eastside property. These sales were compared to the subject on the basis of general location, access, zoning, shape, size, time of sale, level of improvements, and location in the City vs. the County.

The general location of the comparables was quite similar to the subject since all are within the Duwamish Valley industrial area. All properties have excellent road access though East Marginal Way can be congested and has restricted left hand turns. Airport Way at the airport is less congested although it is only two lanes. All properties were zoned industrial and were not adjusted on this basis.

The subject was superior to all the comparables because it has airport access. The interview data discussed earlier, however, suggested that this access is not important to nonaviation users, so it was not judged to be important in adjusting the sales data. Waterway access is critical for some manufacturing companies and unimportant to others. The comparable leases, discussed earlier, showed no significant difference in rate between the Port properties which had water access and the private properties which did not. No adjustment to the sales data, therefore, was made because of water frontage.

The subject is roughly rectangular in shape and thus is superior to Comparables 4 and 5.

Time of sale was adjusted at 5% a year based on a regression analysis of over 100 sales of property up to 10 acres in the Duwamish Valley between 1978 and 1983. All properties were similar in level of improvements.

Finally, the interview data indicated a preference for being in King County rather than Seattle because of lower taxes. Comparable 4 is similar to the subject on that basis; the other comparables are inferior.

In reconciliating the sale comparables, the most weight was given to Sales 1 and 2; Comparable 1 is the most recent and 2 the most similar in

size. The indicated price for the subject is $5.50 per square foot. This estimate is well supported by Sales 4 and 5 at $5.50 per square foot and Comparable 3 at $5.00 per square foot.

This value was then capitalized to yield another indication of fair market rent. These indicators suggest a capitalization rate of about 11% would be appropriate at the King County International Airport. Multiplying the indicated land value of $5.50 per square foot times 11% yields a rent rate of 60.0¢. The two indicators were correlated to produce an estimated fair market rent of 60¢ per square foot per year.

An analysis of the probable rate of return which would be generated by each feasible use at the airport concluded that a mixed use business/industrial park with aviation and nonaviation uses would be the highest and best use of the westside parcel. Given the size of the westside parcel, its frontage on West Marginal Way, the airport location and favorable exposure from Interstate 5, we are of the opinion this site would be a strong candidate for a mixed use business, industrial and distribution park with a complementary line of retail establishments such as restaurant(s), office supplies and furniture, and business services such as travel agents. A mixed use business park development as a highest and best use is supported by the trend of land uses found in the area and by such successful developments as Benaroya Business Park and Fischer Business Park. Lance Mueller and Associates analyzed the site to determine the feasibility of various use options and completed a site plan which illustrates how this parcel could be developed to meet existing and projected demand in the area. An exhaustive search was made for sales of large parcels of undeveloped land which were purchased for development as mixed use business/industrial parks. Many of these sales were located on the fringes of urban growth in Renton, Kent and Bellevue. In addition comparable sales near Paine Field in Snohomish County were examined.

Most weight was given to Comparables 6 (Evergreen East) and 7 (Bellevue Airfield). Land Comparable No. 6 with an indicated value of $3.50 per square foot is very similar to the subject although there is superior demand for the subject as well as a superior level of improvements. The Bellevue Airfield is a very important indication of the fact that the market is placing a higher value on industrial parks than airfields as one use replaces another. This sale supports the land use trends that were discussed earlier in the vicinity of the King County Airport. The sale by Cabot, Cabot, and Forbes to Boeing Computer Services indicates a value of $3.45 to $3.55. Taking these sales as well as the other sales into consideration, the indicated sales price for the subject is $3.50 per square foot.

This land value was capitalized at the rate of 11% on the basis discussed earlier for the eastside parcel. Capitalizing $3.50 at 11% gives a annual rent per square foot of 38.5¢, rounded to 38¢.

INTRODUCTION

Purpose of the Report

The purpose of this research by Mundy, Jarvis and Associates, Inc. was to determine the fair market rental of the 5,156,298 square feet of land leased by the Boeing Company at the King County International Airport. The legal descriptions of the subject property are retained in our files.

Research Participants

The work on this project was completed under the supervision of Bill Mundy, Ph.D., MAI. Judith Chaney, MBA, designed the research, analyzed the data, and wrote the final report. Mike Griffin was responsible for obtaining and refining the comparable lease and sales information. Jean Bosch, Director of Survey Research, supervised the interviews with 100 major land users in the vicinity of the King County Airport. The site plan for the proposed highest and best use was provided by Robert Fadden, Lance Mueller & Associates. Francie Morgan completed the other graphics.

We would also like to acknowledge the assistance of Thomas E. Coulton and Robert C. Martin of the King County Real Property Division, and of Donald Smith, Manager, King County International Airport.

This work was conducted in conjunction with an appraisal by Robert Foreman, MAI.

Research Timeframe

The project began on May 28, 1982. An interim report was submitted to King County on July 7, 1982, which contained preliminary lease and sales comparables. The analysis was refined during the month of July and the final report written during August.

Research Design

There were several distinct steps in the research process for this assignment. The first was an orientation of our staff and that of Lance Mueller & Associates to the King County International Airport (Boeing Field). The site was inspected by Bill Mundy and Judith Chaney of Mundy, Jarvis & Associates and by Lance Mueller and Robert Fadden of Lance Mueller & Associates.

The next step was an analysis of the surrounding neighborhood which examined changes in land use as well as an inventory of present uses. The neighborhood for this purpose was defined as the area south of Spokane Street, west of Interstate 5, ease of West Marginal Way, and north of 118th Street South, as shown on Figure 1.

2
Figure 1

STUDY AREA
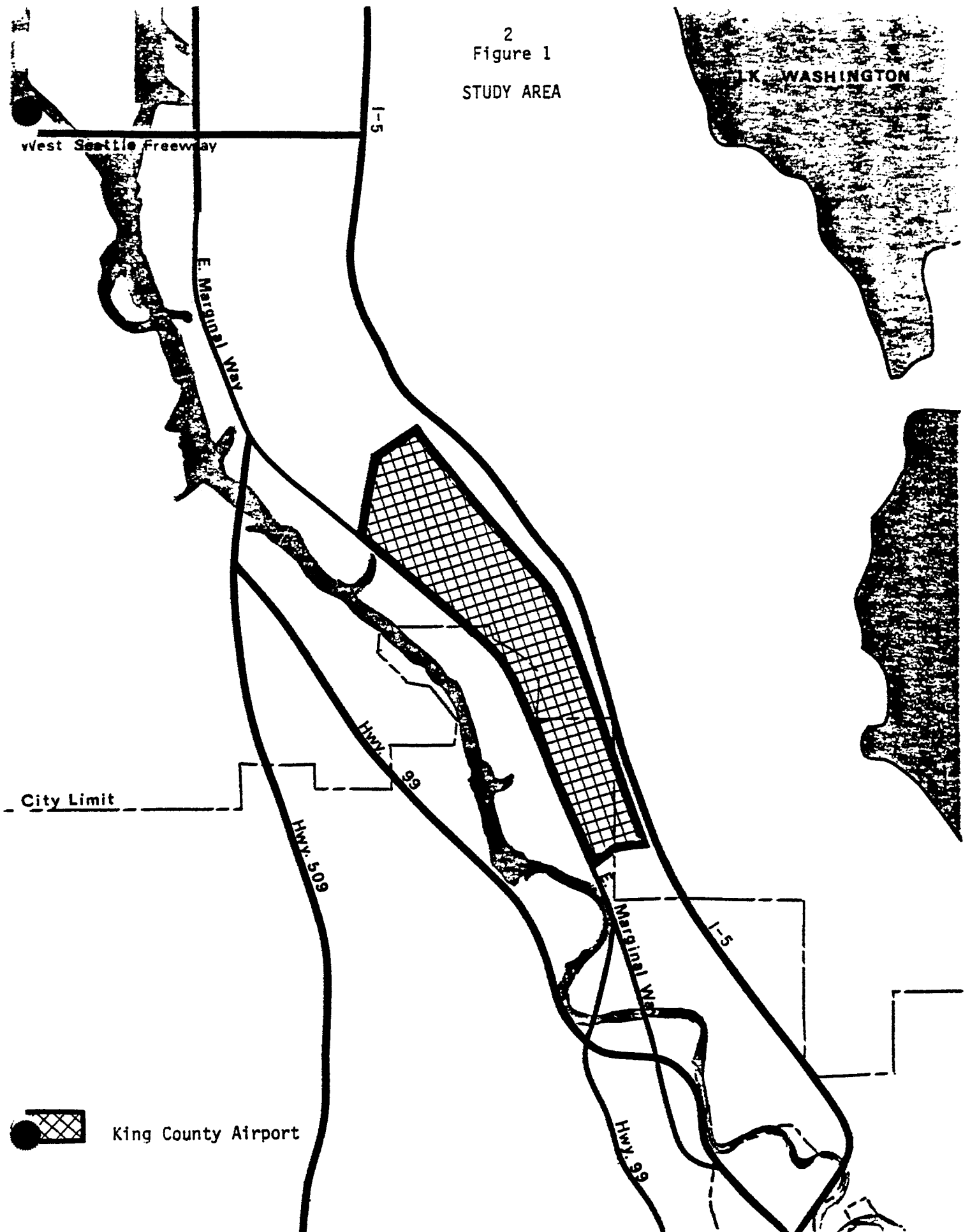
LK. WASHINGTON

West Seattle Freeway

I-5

E. Marginal Way

City Limit

Hwy. 99

Hwy. 509

Marginal Way

I-5

Hwy. 99

King County Airport

The examination of land use patterns was augmented by telephone interviews with 102 major businesses in the area defined above. These interviews not only confirmed the land use changes found earlier but also indicated the reasons for those changes from the land user's point of view.

The information about businesses which are economically viable in the area was combined with an analysis of the economy of the region to make estimates of square feet of space which will be demanded in that area through 1995 by SIC (Standard Industrial Classification) category. Demand for nonaviation uses was based on the Economic Base Model of the Seattle Consolidated Area which was developed by Mundy, Jarvis & Associates and which is updated annually. Demand for general aviation uses was developed from interviews with tenants at the King County International Airport, with Don Smith, Manager of the Airport, and with other airport managers in the Puget Sound Region.

Next an analysis of the highest and best use of the property leased by Boeing was performed. The subject property consists of two irregularly shaped sites. One, on the westside of the airport is 4,906,379 square feet; the other, on the eastside, is 249,919 square feet. The difference in size and location necessitated a separate highest and best use determination for each.

It was determined that general aviation was the best use of the eastside parcel, including fixed base operators, aircraft hangers and tie downs, and other aircraft-related uses. An analysis was made of comparable leases, both aviation and nonaviation, which gave an indication of fair market rent. Another approach examined sales of comparable property to determine the fair market value of the eastside property. This value was then capitalized to yield another indication of fair market rent. The two indicators were correlated to produce an estimated fair market rent of 60¢ per square foot per year.

An appropriate lease rate for the subject property was determined by correlating comparable rents with a fair rate of return on the value of the land.

An analysis of the probable rate of return which would be generated by each feasible use at the airport concluded that a mixed use business/-industrial park with aviation and nonaviation uses would be the highest and best use of the westside parcel. Lance Mueller and Associates analyzed the site to determine the feasibility of various use options and completed a site plan which illustrates how this parcel could be developed to meet existing and projected demand in the area. An exhaustive search was made for sales of large parcels of undeveloped land which were purchased for development as mixed use business/industrial parks. Many of these sales were located on the fringes of urban growth in Renton, Kent and Bellevue. In addition comparable sales near Paine Field in Snohomish County were examined. These indicators of value were adjusted to the subject parcel to arrive at a final estimate of land value if developed

for the highest and best use. This land value was multiplied by an appropriate rate of return to determine fair market rent of 38¢ per square foot per year.

DEFINITION OF VALUE

Market rent is "the rental income that a property would most probably command on an open market as indicated by current rentals being paid for comparable space (as of the effective date of appraisal)" (The Appraisal of Real Estate, 1978, pg. 136).

The market value of the subject property is "the highest price in terms of money that a property would bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably and assuming the price is not affected by undue stimulus" (The Appraisal of Real Estate, 1978. pg. 23).

DATE OF APPRAISAL

The date of the fair market rent estimate is July 1, 1982.

THE SUBJECT PROPERTY

Site Description

The King County International Airport is located in the Duwamish Valley in the southern industrial region of Seattle, Washington. As shown in Figure 1 the Seattle-King County boundary jags through the airport, but it is under the sole jurisdiction of King County.

There is access from Interstate 5 to the east at the north end (Michigan Street) and the south end (Boeing Access Road) as well as from East Marginal Way (Highway 181) on the west. The Duwamish Waterway parallels the west boundary at a distance of about 1/4 mile. Figure 2 is a photograph of the airport looking northwest.

There are a number of leases for land and some for land and improvements at the airport both to private companies and public agencies. The Boeing parcels dominate the land uses as shown in Figure 3.

The Boeing Company presently leases 5,156,298 s.f. at the King County International Airport under eight separate leases. The leases became effective in 1952 and 1955 and are for periods of 40, 65, and 75 years. Table 1 summarizes the existing leases and Figure 4 shows these properties.

Boeing Field
King County International Airport
Seattle, Washington

Figure 4

VIEWS OF THE SUBJECT PROPERTY
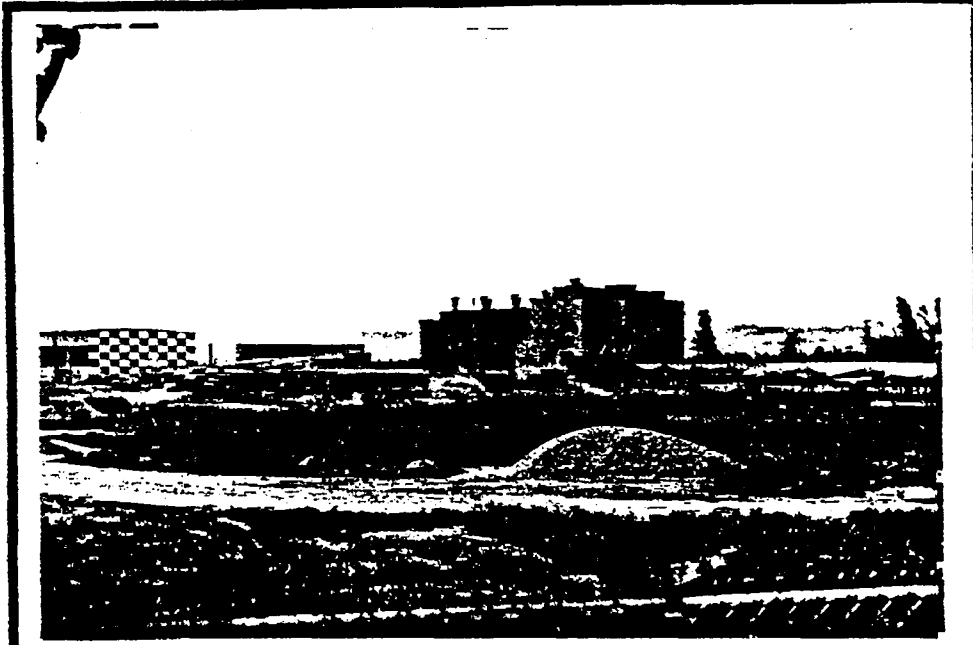
Camera facing southwest toward Westside Parcel.
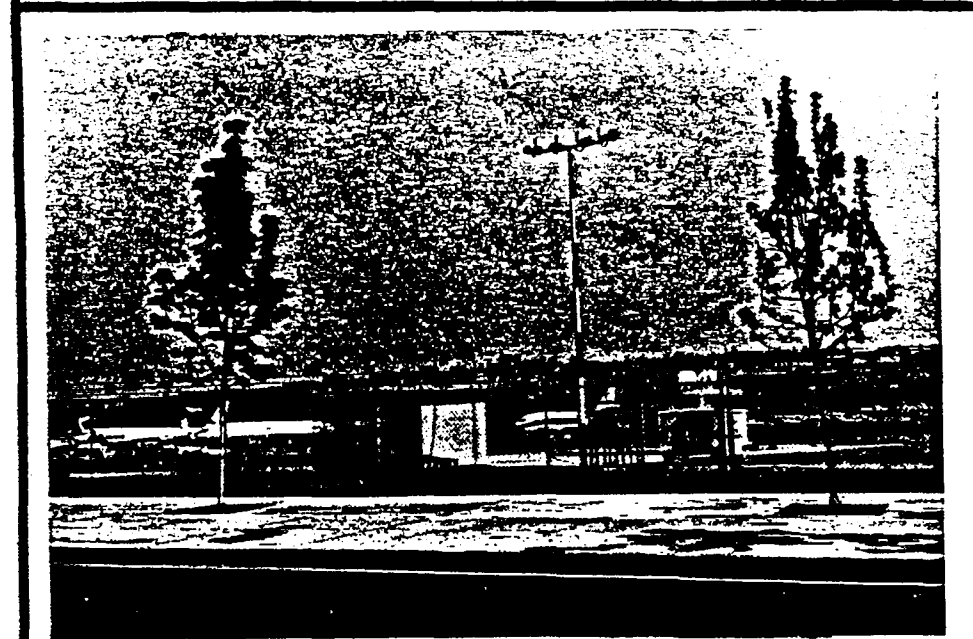
Camera facing east toward Westside Parcel.

Camera facing southwest toward the Eastside Parcel.

Camera facing northwest toward the Eastside Parcel.

Table 1
Summary of Boeing Leases

Lease Term	Eastside Area	Westside Area	Total Area	1981 Revenue
40 Years	-0-	711,082 s.f.	711,082 s.f.	$38,662.36
65 Years	-0-	190,545[1]	190,545	14,862.51
75 Years	249,919 s.f.	4,004,752	4,254,671	264,664.98
Total Area	249,919 s.f.	4,906,379	5,156,298	318,189.85

Source: King County International Airport
        Mundy, Jarvis & Associates, Inc.

[1]Plus an easement of 45,810 s.f.

The present eastside annual rental rate is 17.16¢, and the westside annual rental rate is 5.43¢. Under the lease terms Boeing is guaranteed access to and use of the runways and operational airport areas, but does not pay landing fees or fuel flowage fees. Boeing does pay for its utilities and maintains a fire fighting capability as does King County. Boeing, but not King County, may delete areas from the leases upon six months' written notice.

As Figure 3 shows, the total area leased by Boeing historically has been divided into the eastside and the westside parcels. Because of the great difference in size, location, and use, the areas were analyzed separately in this report as well.

The Eastside Parcel

This property consists of 249,919 square feet (5.74 acres) located on the west side of East Perimeter Road. It is adjacent to the southeast side of the terminal and administration offices. Direct access is from East Perimeter Road which is a two lane service road for the airport.

The property is roughly rectangular in shape, is level, and has all utilities and sewer. Zoning is General Industrial with the additional lease restriction of aviation - related uses. There is a height restriction of approximately 20 feet at the western boundary to over 60 feet at the eastern boundary.

The existing improvements are the property of the Boeing Company and did not enter into the subsequent analysis.

The Westside Parcel

The westside property is composed of the 12 parcels described below. For the purpose of this analysis, they have been considered as one piece of property because the leases are extensively cross referenced and because the property has one lessee who uses the land for a common purpose. In an economic sense, these 12 parcels are a single property.

Table 2
The Westside Parcels

Parcel	Square Feet	Acres
Parcel 2	3,824,753	87.80
Parcel 2A	89,000	2.04
Parcel 3	19,730	.45
Parcel 4	71,269	1.64
Parcel 11	190,545	4.37
Parcel 14 (Elect bldg.)	77,000	1.77
Parcel 15 (Elect bldg.)	42,222	.97
Parcel 17 (Tank Test N)	51,271	1.18
Parcel 18 (Tank Test S)	20,-539	.47
Parcel 19 (Jet Fueling)	425,375	9.77
Parcel 20 (Jet Fueling)	43,755	1.00
Sound Suppressor Site	50,920	1.17
Total Westside	4,906,199	112.63

Source: King County International Airport
Mundy, Jarvis & Associates, Inc.

As Figure 3 shows, there are two areas which break up the westside property -- the FAA control tower on the south and a narrow strip on the north. The property is generally level.

Access is via East Marginal Way on the western boundary of the property. It is zoned General Industrial with the additional lease restriction of aviation - related uses. There is a side slope height restriction beginning at the east boundary of the property which increases at a ratio of 7 to 1.

All utilities and sewers are available and the existing buildings are the property of the lessee. The parcels have been variously improved with concrete and asphalt, and some parcels are bare land.

LOCATION DATA

The Seattle Standard Consolidated Area

The King County International Airport lies within the Seattle Standard Consolidated Area (SSCA) which is composed of King, Pierce, and Snohomish Counties in Washington State. Like many other metropolitan areas, the SSCA was first settled and grew because of plentiful natural resources: farmland, timber, fish and a deep water port. Over the years, harnessing the abundent water flow has led to cheap hydroelectric power.

Recently, the natural amenities, coupled with a highly skilled workforce and the influence of the Boeing Company, have encouraged the development of local high technology companies as well as the immigration of such firms from other parts of the country. Finally, Seattle is becoming an important service and financial center for the Pacific Northwest, as well as for Alaska and the Pacific Rim Countries, further broadening the economic base of the region.

The first Boeing aircraft in 1916 heralded the beginning of a company which has become the major employer in the Consolidated Area. The number of people employed by Boeing has varied enormously dependent on military spending and the prosperity of commercial airlines. Figure 5 shows how this company has impacted employment in the Seattle metropolitan area since 1965.

Despite the current slump, the underlying base of the economy in the Consolidated Area is strong. The diversification into high technology, services, and financial firms has lessened the impact of any one employer, including the Boeing Company.

For a comprehensive discussion of the SSCA the reader is referred to Appendix B where the economic base of the metropolitan area is discussed.

The Duwamish Valley

Historical Development

The immediate neighborhood of the King County International Airport is the Duwamish Valley, as shown in Figure 6. As the map shows, this area is composed of five census tracks (93, 99, 108, 109, 112) in Seattle as well as a small portion of census tract 263 in King County.

Development of the Duwamish Valley has centered around use of the Duwamish Waterway, although the waterway has been only one of many attractive features in the valley. The tidal flats of the Duwamish Valley were first developed in the early 1900's because they offered inexpensive land close to Seattle. As Seattle expanded, the tidal flats were filled with material from excavation in Seattle.

Figure 5

EMPLOYMENT TRENDS FOR SEATTLE SMSA - 1/1966 TO 6/1982

Figure 6

Page 14

THE DUWAMISH VALLEY

ELLIOTT BAY

WEST WATERWAY

EAST WATERWAY

DUWAMISH WATERWAY

S. King St.

S. Connecticut St.

E. Marginal Way

I-5

NORTH

Lander-Holgate (Census Tract 93)

(M) MANUFACTURING

(IG) GENERAL INDUSTRIAL

(IH) HEAVY INDUSTRIAL

S.W. Genesee

North Delridge
(Census Tract 99)

Riverview
(Census Tract 108)

Georgetown (Census Tract 109)

1st Ave S.
Bridge

S. Kenyon St.

City Limits

South Park
(Census Tract 112)

S.W. Cloverdale St.

City Limits

K I N G   C O U N T Y

Head of
Navigation

Source of Map: City of Seattle

By 1931 the Duwamish River was straightened for use as a commercial waterway and Harbor Island was built at the mouth of the river. Industrial development continued south from Seattle along the waterway, and the Boeing Company moved into the area. Boeing has become the major employer in the Duwamish Industrial Valley although it has not used the Duwamish River extensively. Other companies dependent on water transportation continued to move into the valley between 1920 and 1940.

In the 1960's the development of containerized cargo shipment increased the demand for large parcels of land with waterfront access. This need was met by sites on and near Harbor Island.

Presently, the Port of Seattle is sponsoring a plan by the Corps of Engineers which would improve the Federal navigation channel in the east, west, and Duwamish Waterways to allow larger cargo vessels to use the waterway. If approved the project would be completed in 1990.

Over 97% of the land within study area shown in Figure 6 is industrially zoned. Presently this area is a complex and diverse transportation and industrial center serving the Seattle Consolidated Area, the Pacific Northwest Region, national and worldwide markets. Heavy manufacturing and port-related activities such as transportation, shipping and storage are found within the IH (Heavy Industrial) zone, while warehousing, distribution, and Boeing manufacturing and testing facilities dominate the IG (General Industrial) and M (Manufacturing) zones. Table 3 shows the distribution of these businesses by acres.

Table 3

Land Use by SIC Category
(1974 - 1976)

SIC Category	Number of Acres	Percent
Construction	49.1	1.5
Manufacturing	927.7	28.1
Transportation, Communication, Utilities	1,235.20	37.4
Wholesale Trade	301.0	9.1
Retail Trade	143.5	4.3
Finance, Insurance, Real Estate	144.1	4.4
Public Administration	234.0	7.1
Residential	57.6	1.7
Vacant Lot	178.6	5.4
Vacant Unit	31.3	.9
Total	3302.1	99.9

Source: Mundy, Jarvis & Associates, Inc.
"Industrial Area Background Report",
Vol. II, City of Seattle. Office of Policy and Evaluation,
pp. 64-75.

Note: Acreage also includes Boeing Plant No. 2, Isaacson Steel, Kenworth Trucks adjacent to King County International Airport and south of city limits.

Examination of these SIC categories shows many industries which are access - dependent. In the transportation, communication, and utilities group are maritime-released transportation industries. Manufacturing is concentrated in four major SIC groups - aircraft (Boeing), cement, glass and gypsum production. Boeing, of course, needs airport access while the other industries rely on the Duwamish Waterway for importing raw materials used in production. The steel manufacturers on Harbor Island are tied to truck and rail transport. Finally, the Port of Seattle operates a large number of container and noncontainer terminals and supporting warehouses.

South Park

The South Park/Duwamish Annexation Area is 920 acres in unincorporated King County directly adjacent to existing city limits and directly west of the King County International Airport. This area has a residential district to the west and major industries to the east including Boeing, Kenworth Truck Company, Monsanto, Jorgenson Steel and Issacson Steel. If the annexation were approved by the Seattle City Council, the King County Boundary Review Board, and the voters, zoning for the industrial area east of the Duwamish would not change, but those businesses would be subject to city taxes. Benefits provided would include city sewer, utilities, and fire protection, as well as road improvements. The major businesses in the area have started a legal battle to prevent annexation which is yet to be resolved. If the plan proceeds as described in the Final EIS (November 1981) the airport property would not be directly affected. It would, however, be the only remaining property with good access to the airport, the Duwamish, railroads and I-5, and the low tax benefits of being in unincorporated King County. Figure 7 shows this area.

Present Land Use

Current land use trends were examined by interviewing 102 major nonaviation land users in the area shown on Figure 1. These firms were selected on a stratified basis. Within one mile of the site all businesses were contacted. Between one and three miles the larger businesses were selected and beyond three miles only major land users were chosen. Of the firms contacted, approximately 95% completed the survey. The questionnaire is shown in Appendix A.

The purpose of these telephone interviews was to determine the distribution of significant businesses in the area and to assess the locational attributes of the site for their business. Finally, we attempted to determine who had occupied the site before the present user to pinpoint specific changes in land usage. The data are not directly comparable to those on Table 3; this information is the number of firms, the former is number of acres.

Table 4 shows the businesses we interviewed classified by major Standard Industrial Classification (SIC) categories. As this table shows, the majority of the businesses were wholesale dealers in durable goods, such as machinery, auto parts, furniture, and appliances. Table 4 also indicates a wide variety of firms are located in the area. Many of these such as the nursery and the businesses oriented towards residential neighborhoods, such as personal services, and retail trade are businesses that have been in their present location for 20 to 30 years. Overall, these 100 firms had been at their present locations for an average of 13.4 years, with a range between two months and 70 years.

SOUTH PARK ANNEXATION AREA

¼ mile   ½ mile   1 mile
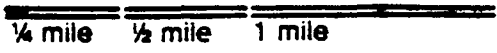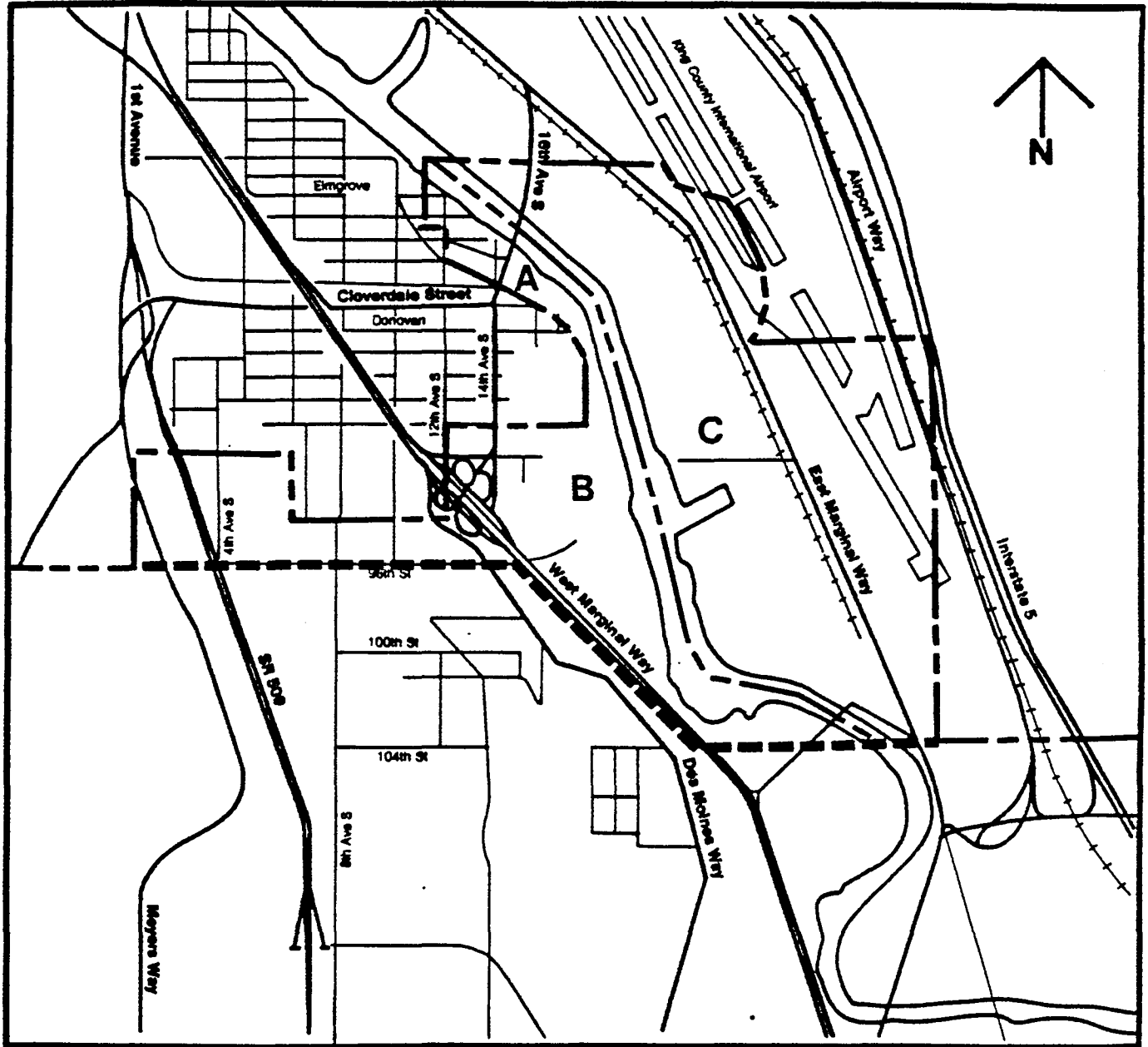
A   Residential/Commercial/Industrial Strip
B   Industrial Area (on west side of Duwamish)
C   Industrial Area (on east side of Duwamish)

— — — — Existing City Limits
▬ ▬ ▬ ▬ Proposed Annexation Boundary

Source: FEIS, November 20, 1981

The next question was whether the business had previously been located within the south-end industrial area. The respondents were fairly evenly divided on this question, with 43.8% having had their previous location outside of the south-end industrial area. The remaining businesses relocated to this area from another spot within the area (24.0%) or had originated at their present site (43.8%). This information confirms data collected by Mundy, Jarvis & Associates in previous studies which shows that business firms tend to prefer to remain within the same general area as their present location when relocation becomes necessary.

Table 4
Businesses Interviewed

SIC Category	Number of Interviews	Percent of Interviews
Agriculture, Nursery	1	1.0%
Construction	2	2.0
Manufacturing	24	23.5
Transportation	7	6.9
Wholesale Trade	49	48.0
Retail Trade	7	6.9
Finance, Insurance & Real Estate	2	2.0
Services	10	9.8
Total	102	100.1%

Note: Percents may not sum to 100% due to rounding error.

Source: Mundy, Jarvis & Associates, Inc.

The most important locational factors cited by these respondents concerned access, such as access to the freeway (17.9%), a central location (17.2%) and being close to their customers (17.2%). Another major consideration was that they were able to find a site large enough for their business in the south-end industrial area (15.7%). This information is shown on Table 5.

Table 5
Locational Advantages to the Southend Industrial Area

Advantage	Number of Responses	Percent of Responses
Freeway Access	24	17.9%
Central Location	23	17.2
Close to Customers	23	17.2
Site Large Enough	21	15.7
Railroad Access	10	7.5
Parking Available	8	6.0
Duwamish Waterway Access	7	5.2
Close to the Boeing Company	3	2.2
Close to Truck Lines	3	2.2
Close to Competitors	3	2.2
High Traffic Volume	3	2.2
All Other Responses	6	4.5
Total	134	100.0%

Source: Mundy, Jarvis & Associates, Inc.

To test directly the value of proximity to the King County International Airport, we asked the respondents to rate the importance of that proximity on the following scale: 1 = must have; 3 = neutral; 5 = major inconvenience. Overall the respondents gave access to the King County and international airport a rating of 2.9, neutral. They were also asked to rank access to the Duwamish Waterway on the same scale. The mean rating was 2.8.

These interviews specifically excluded businesses located at the King County International Airport since these firms were interviewed more intensively in personal interviews. For the 102 nonaviation respondents discussed above, the airport is not an important location factor.

Table 6 discusses the locational disadvantages to the south-end industrial area which were mentioned by our respondents. The major factor was that there was no longer enough space in the area for the firm to expand (19.6%) followed by the concern that the location was too costly, either because of high rent or high taxes (17.6%). Interestingly, there were 134 advantages cited and only 51 disadvantages. This difference would seem to indicate that many firms are satisfied with their location in the south-end industrial area. As Table 6 shows, only three firms (5.9%) indicated that they are planning a move in the near future.

Table 6
Locational Disadvantages to the Southend Industrial Area

Disadvantage	Number of Responses	Percent of Responses
Not Enough Space	10	19.6%
Too Costly (Rent/Taxes)	9	17.6
Too Noisy	7	13.7
Unpleasant Environment	4	7.8
Not Enough Parking	4	7.8
Plan to Move Soon	3	5.9
Too Far from Customers	3	5.9
All Other Responses	11	21.6
Total	51	99.9%

Note: Percent may not sum to 100% due to rounding error.

Source: Mundy, Jarvis & Associates, Inc.

The final step in the analysis of these interviews was to develop a profile of businesses located in the south-end industrial area over the past 17 years. This information is shown on Table 7. When the current tenant or the previous user were classified by major SIC categories, as shown in Table 6, many categories showed little change over time either in absolute number of businesses or in relative percentages. These stable categories were agriculture, construction, and finance, insurance, and real estate (FIR).

The number of manufacturing, transportation, and wholesale businesses has increased substantially over the past 17 years from 51 to 80 firms in our sample. The relative importance of these industries, however, has actually declined as the number of other types of businesses (e.g., services) have grown even faster. This differential clearly illustrates the diversification occurring in the Duwamish Valley.

In summary, the Duwamish Valley is experiencing significant changes in land use trends. As Seattle expands south, the remaining residential areas in the Valley are disappearing along with older businesses that depended on a residential neighborhood. Heavy demand from water and rail dependent industries has swallowed up large undeveloped parcels and led to more intensive land use. The increasing number of service - oriented industries and smaller wholesale/distribution firms has created demand for mixed used industrial/business park developments.

Industrial parks are more than a mix of industrial, warehouse, and office users. Using a master plan, the developer controls the mix of

Table 7

Business Profile Over Time

Type of Business	1982 N	%	1980 N	%	1975 N	%	1970 N	%	1965 N	%
Agriculture	1	1.0	1	1.1	1	1.3	1	1.4	1	1.5
Construction	2	2.0	2	2.2	3	3.8	2	2.8	2	3.0
Manufacturing	24	23.5	24	25.8	22	27.8	19	26.4	18	26.9
Transportation	7	6.9	7	7.5	5	6.3	4	5.6	2	3.0
Wholesale Trade	49	48.0	45	48.4	38	48.1	35	48.6	31	46.3
Retail Trade	7	6.9	6	6.5	7	8.9	8	11.1	8	11.9
FIR	2	2.0	2	2.2	1	1.3	1	1.4	1	1.5
Services	10	9.8	6	6.5	2	2.5	2	2.8	2	3.0
Government	0	0.0	0	0.0	0	0.0	0	0.0	2	3.0
Subtotal	102	100.1	93	100.2	79	100.0	72	100.1	67	100.1
Unknown	0	-	9	-	23	-	30	-	35	-
Total	102	100.1	102	100.2	102	100.0	102	100.1	102	100.1

Source: Mundy, Jarvis & Associates, Inc.

tenants and appearance of the property. Improvements include underground utilities, uniform site grading, landscaping, planned circulation patterns, sign restrictions, mandatory setbacks and controlled construction materials. This care in development leads to an industrial area which is clean and nonpolluting and which is compatible with residential neighborhoods. Rail and truck access is crucial.

While many industrial parks have been built in outlying areas (Kent, Everett, the Eastside) several innovative ventures in south Seattle have been successful. The Benaroya Business Park at 5950 6th Avenue South has 70 acres and 1.5 million square feet of developed space with railroad access. Similarly, the Fisher Industrial Center at 4th Avenue South and South Atlantic Street with 3+ acres has 80,000 square feet of space. The main deterent to similar developments in the Duwamish Valley is the lack of large tracts of properly zoned land. Assemblage is a time-consuming and costly process. Figure 8 shows the difference between the older heavy manufacturing companies and the newer office and industrial park developments in the neighborhood of the subject property. The Boeing leasehold, particularly the westside parcel, is a unique opportunity in the southend because of its large size and excellent accessibility.

Figure 8
SOUTH SEATTLE SUBAREA
LAND USE TRENDS

Older Heavy Industrial Users.
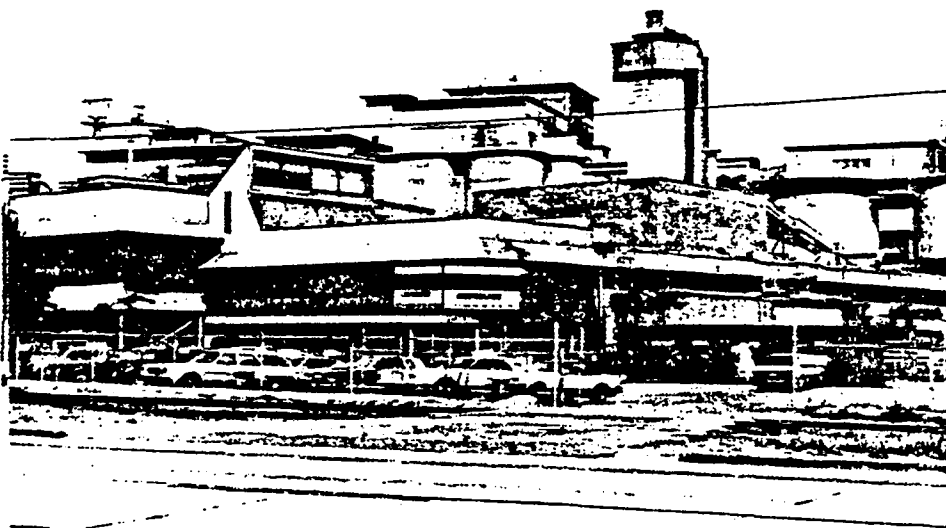
Older Heavy Industrial Users.
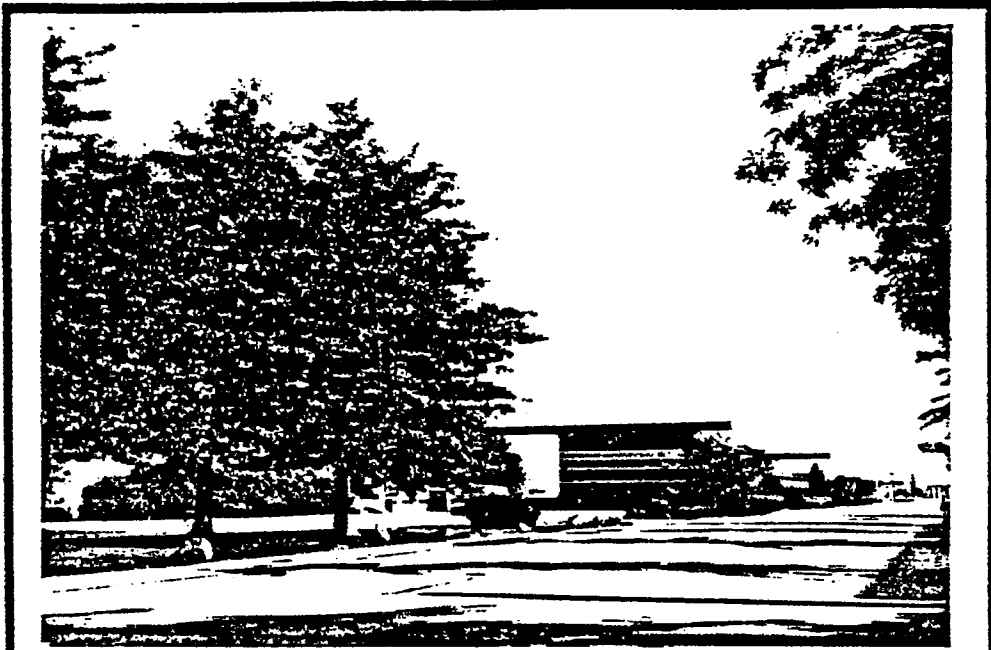
Benaroya Business Park
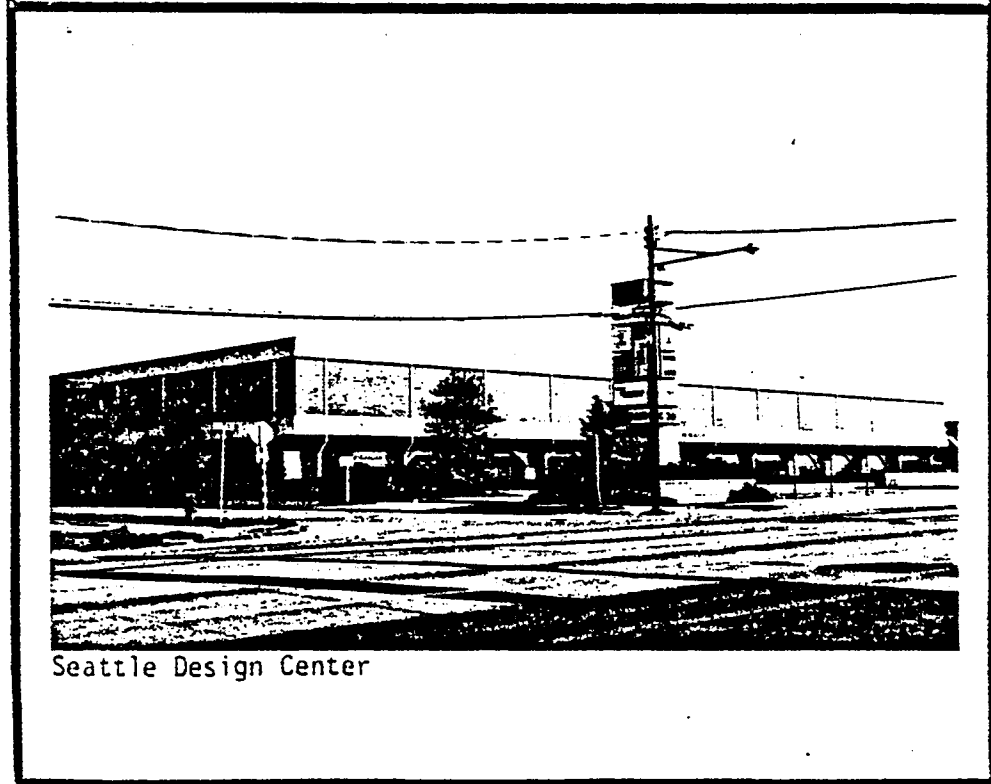
Seattle Design Center
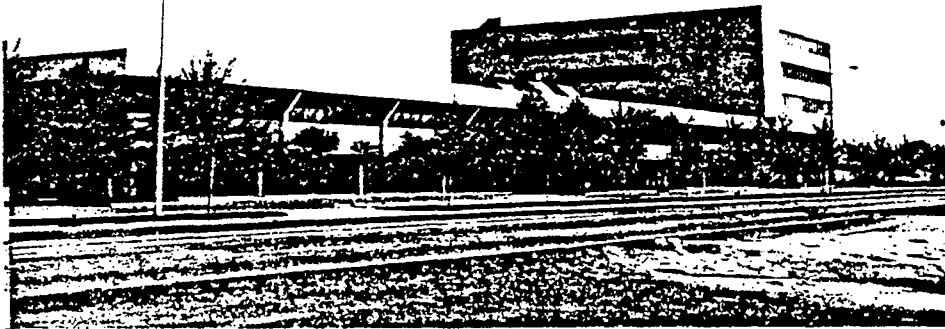
6100 Building
6100 4th Avenue South
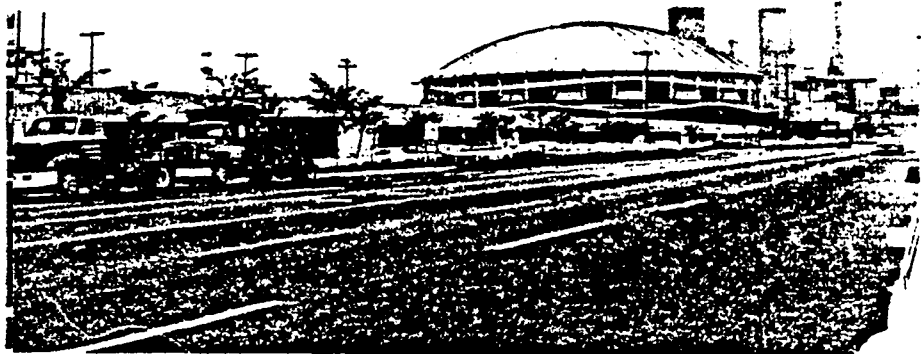
Fisher Industrial Park

HIGHEST AND BEST USE ANALYSIS

Definition of Highest and Best Use

The objective of this research was to determine the fair market rental of the property leased by the Boeing Company at the King County International Airport. The fair market rental is defined as "the rental income that a property would most probably command on the open market as indicated by current rentals being paid for comparable space as of the effective date of the appraisal" (Real Estate Appraisal Terminology, Byrl N. Boyce, Ed., 1975). The determination of what constitutes comparable properties depends on a highest and best use analysis. This analysis identified the use(s) that return the highest rental to the subject property. Comparable leases are those of properties used at this highest and best use.

Another method of determining fair market rental besides direct market comparables is to determine the fair market value of the subject property and a fair rate of return on value. This rate of return may be found by comparing the return on competing investment opportunities or by developing a capitalization rate from the marketplace. Both methods of estimating fair market rental were used in this analysis.

Land is valued as if vacant and available for its highest and best use. Highest and best use is defined as

That reasonable and probable use that will support the highest present value, as defined, as of the effective date of the appraisal.

Alternatively, that use, from among reasonably probable and legal alternative uses, found to be physically possible, appropriately supported, financially feasible, and which results in highest land value. (Real Estate Appraisal Terminology, Byrl N. Boyce, Ed., 1975.)

The subject property, both the westside and eastside parcels, is zoned IG, general industrial. King County is not planning any zoning changes at the airport; the legally allowable uses under the present zoning are industrial, heavy and light manufacturing, and retail businesses and services. The business inventory discussed earlier demonstrated that all of these uses are found in the immediate neighborhood of the subject property.

The current leases have further restrictions on permitted activities. Section 12, page 30 of the Basic Comprehensive 75-year lease and Section 7 of the 65-year lease state that

Lessee is leasing the Leased Property and is acquiring the interests, rights, and privileges granted hereunder for aircraft manufacturing or aircraft industrial purposes or for other business, manufacturing or industrial purposes or operations relating to, identified with or in some way dependent upon the use, operation or maintenance of the Airport.

The 40-year lease for the electronics building states that

The lessee is leasing the leased property primarily for the purpose of constructing thereon one or more buildings . . . to be used, among other things, for the testing, repairing, installing, maintaining, manufacturing, developing, designing and modifying of electronic equipment, apparatus, parts or devices used in or in connection with aircraft.

Furthermore,

All of the property involved in this lease is, or is to be, devoted to airport purposes, including those purposes designated in . . . (the paragraph quoted above). The installation of a building to be used for these purposes is contemplated and this lease shall be cancelled if Lessee fails to construct such building within or prior to three years from the date of this lease.

It is our opinion, based on the research performed by Robert Foreman, MAI and cited in his letter to the King County Division of Real Estate (August 5, 1982), that these restrictions in the present lease do not constitute a restriction on future uses of the property to aviation-related uses only.

Physically, the site is adequate for all permitted uses in size, access, and utilities available. The smaller eastside parcel may be inadequate for some large-scale operations, such as concrete manufacturing, but it is large enough to support smaller scale repair and manufacturing operations as well as retail and office uses. The height restrictions on this parcel, discussed earlier, do not preclude typical industrial buildings.

While the westside parcel is sufficiently large to support any permitted use, the irregular shape coupled with the nonleased strips which divide the property pose some problems. The height limitations on this parcel would permit typical industrial development with required parking located in the most restricted areas.

Once uses which are physically possible and legally permitted were identified, the next step in the highest and best use analysis was to determine which uses are economically viable through an analysis of market demand. Demand must be sufficient within a reasonable developmental timeframe to support the proposed use. Often it can be demonstrataed that a particular development will draw market support from existing competing developments which are inferior to the proposed project. In this case, however, we have taken a more conservative approach which focuses on meeting unmet demand that will be created by incremental additions to the labor force through 1995. Market demand for each use was projected using an economic base model of the King-Snohomish-Pierce Counties region which was developed by Mundy, Jarvis & Associates, Inc. and is updated annually. These regional projections were then refined to the South Seattle subarea which contains the subject property.

The Economic Base Model

An analysis of the demand for space by various types of users in South Seattle was made using the Economic Base developed by Mundy, Jarvis & Associates, Inc. This technique looks at changes in employment patterns in the Seattle consolidated area, including Everett, Seattle, and Tacoma. The overall trends are broken down to specific types of industries and specific sub-areas within the consolidated area to determine actual demand for commercial, industrial, and residential space. Appendix B is the complete regional model.

Distribution of Employment to Sub-Market Areas

Once employment projections for the consolidated area were made, they were disaggregated to sub-market areas based on their historical share of employment. Data on the share of employment for each sub-market area was obtained from the Washington State Employment Security Department, Puget Sound Council of Governments and data from a sampling of 912 business establishments located in Snohomish, King and Pierce Counties. Employment was also disaggregated by employment category, such as construction, durable manufacturing, etc. These data are shown in Table 8 (Employment Distribution, in Percent, Seattle SCA).

Based on the distribution shown in Table 8 (Employment Distribution) and the employment projections for 1982 through 1995 employment was distributed to the Seattle area. This is the shaded area shown in Figure 8. The projections assume that Seattle's proportion of employment, by each employment category, will remain constant through the 1982 through 1995 period.

Importantly, these numbers represent additions to the Seattle labor force assuming that space is provided in the Seattle area to accommodate these employment additions. If this space is not provided migration from the Seattle area will occur to other areas within the SCA. This is especially important in categories such as manufacturing, wholesale trade and certain service categories where industrial sites are required which, even today, are in extremely short supply (given requirements such as size, plottage, and access). Based on our employment projections and the distribution of employment for Seattle we can expect to see employment additions in Seattle, given the above assumptions, as shown in Table 9 (Seattle Employment Additions, 1983-1995).

South Seattle Employment Additions

From the Seattle information employment was disaggregated to South Seattle (Figure 9). The basis for this disaggregation was information on 216 firms located in South Seattle which were a portion of the 912 firms interviewed in the Seattle SCA. The South Seattle share of employment, by employment category, as well as the probable increase in South Seattle

Table 8

Employment Distribution (in %) for Seattle SCA

Category	Rural Snohomish	Everett	N. King S. Snohomish	Seattle	E. King	S.E. King	So. King	Pierce
Construction	.187	.61	.56	2.131	.592	.268	.344	.84
Durable Mfg.	.846	1.28	1.90	7.187	2.399	1.252	.602	1.57
Non-Durable Mfg.	.137	.21	.17	1.777	.573	.162	.048	.84
Transportation, Communications & Utilities	.187	.39	.31	3.832	.354	.172	.172	.67
Wholesale Trade	.759	.21	.29	3.603	.440	1.128	.201	.80
Retail Trade	.137	.09	.24	8.381	3.048	2.351	.086	2.85
Finance, Insurance, Real Estate	.05	.41	.05	5.151	.459	.038	.038	.75
Services	.548	.96	.96	10.712	1.472	.736	.554	3.10
Government	.548	1.08	1.24	5.619	1.825	1.328	.975	3.69
Total	3.40	5.24	5.73	49.02	11.16	7.43	3.02	15.11

Source: Mundy, Jarvis & Associates, Inc.

Figure 9

SOUTH SEATTLE SUBAREA

South Seattle
Subarea

▓▓▓ Seattle

Table 9

Seattle Employment Additions
1983-1995

		1982	1983	1984	1985	1990	1995
Total Employment (000)		896.0	928.6	975.7	1022.9	1115.1	1232.4
Net Employment Addition (000)			32.6	47.1	47.2	92.2	117.3
Seattle Share, by Type							
Construction	(2.13%)		690	1,000	1,010	1,960	2,500
Durable Mfg.	(7.187%)		2,340	3,390	3,390	6,630	8,430
Non-Durable Mfg.	(1.777%)		580	840	840	1,640	2,080
Transportation, Communication & Utilities	(3.832%)		1,250	1,800	1,810	3,530	4,490
Wholesale Trade	(3.603%)		1,170	1,700	1,700	3,320	4,230
Retail Trade	(8.381%)		2,730	3,950	3,960	7,730	9,830
Finance, Insurance Real Estate	(5.151%)		1,680	2,430	2,430	4,750	6,040
Services	(10.712%)		3,490	5,050	5,060	9,880	12,670
Government	(5.619%)		1,830	2,650	2,650	5,180	6,590

Source: Mundy, Jarvis & Associates

employment for the years 1983 through 1995 are shown in Table 10 (South Seattle Employment Additions, 1983-1995). Once again, it is important to remember that these employment additions are based on the assumption that facilities will be available in the South Seattle area to accommodate this net increase in employment.

Demand Analysis

Given the probable additions to the South Seattle labor force we are in a position to make estimates of probable space needs. Space estimates for the subject site are based on three important variables, which are discussed in the following paragraphs.

The first is employment additions to the area, which are taken from Table 10 (South Seattle Employment Additions).

The second variable is typical square feet per employees found for different business establishments in each of the employment categories. These square feet per employee ratios are based on more than 2,000 interviews Mundy, Jarvis & Associates, Inc. has conducted with firms in the Pacific Northwest where information has been sought on the type of business, number of employees in that establishment and the amount of area either owned or leased by that establishment. This data is from a proprietary data base of Mundy, Jarvis & Associates, Inc. which is continually updated as research studies are performed.

The third variable is the site capture ratio. This ratio is our opinion of the percentage of increased space demand that could be captured at the subject site. It takes into consideration such important market related variables as transportation systems, types of facilities to be offered at the subject site, the competitive characteristics of the marketplace including vacancy, rents, and quality of competitive space.

Space demand for South Seattle is shown in Table 11 (South Seattle Space Demand). Two different types of demand are shown. The first is incremental demand. This is demand that is created as the labor force in an area expands. The second type of demand is latent demand. Latent demand is that demand existing in the marketplace which is inadequately served for one reason or another. This might be from obsolete facilities or facilities which are demolished for one reason or another. The sum of incremental and latent demand yields total demand. The market capture ratio is then applied to total demand to yield the probable number of square feet required at the site, in net rentable square feet.

These demand figures were then disaggregated into different types of space categories including retail, office, office-warehouse, warehouse and its equivalent, light industrial. Those demand figures are shown in Table 12 (Space Demand by Type).

Table 10

South Seattle Employment Additions
1983-1995

	South Seattle Share(1)	1983	1984	1985	1990	1995
Construction	45.3%	310	450	460	890	1,130
Durable Manufacturing	41.6%	970	1,410	1,410	2,760	3,510
Non-Durable Mfg.	39.2%	230	330	330	640	820
Transportation, Communications & Utilities	18.8%	240	340	340	660	840
Wholesale Trade	46.2%	540	780	780	1,530	1,950
Retail Trade	28.7%	780	1,130	1,140	2,220	2,820
Finance, Insurance & Real Estate	2.1%	40	50	50	100	130
Service	11.2%	390	570	570	1,110	1,420
Government	10.0% (e)	180	270	270	520	660

Notes: (1) Based on employment data on 216 South Seattle firms.
(e) Mundy, Jarvis & Associates estimate. Specific data on this category not available.

Source: Mundy, Jarvis & Associates, Inc.

Table 11

South Seattle Space Demand

	SF/ Empl. (1)	Site Capture (%)	1983					1984				
			Empl. Inc.	Incre- mental	Latent (2)	Total	Site	Empl. Inc.	Incre- mental	Latent	Total	Site
Construction	200	10	310	62,000	6,200	68,200	6,820	450	90,000	9,000	99,000	9,900
Dur. Mfg.	350	2	970	339,500	33,950	373,450	7,469	1,410	493,500	49,350	542,850	10,857
Non-dur. Mfg.	350	2	230	80,500	8,050	88,550	1,771	330	115,500	1,550	127,050	2,541
TCU	220	15	240	52,800	5,280	58,080	8,712	340	74,800	7,480	82,280	12,342
Wholesale Trade	500	10	540	270,000	27,000	297,000	29,700	780	390,000	39,000	429,000	42,900
Retail Trade	500	2	780	390,000	39,000	429,000	8,580	1,130	565,000	56,500	621,500	12,430
FIR	275	20	40	11,000	1,100	12,100	2,420	50	13,750	1,375	15,125	3,025
Service	350	15	390	136,500	13,650	150,150	22,523	570	199,500	19,960	219,460	32,917
Gov't.	220	5	180	39,600	3,960	43,560	2,178	270	59,400	5,940	65,340	3,267
Total				1,381,900	138,190	1,520,090	90,173		2,001,450	200,145	2,201,595	130,180

	SF/ Empl. (1)	Site Capture (%)	1985					1990				
			Empl. Inc.	Incre- mental	Latent (2)	Total	Site	Empl. Inc.	Incre- mental	Latent	Total	Site
Construction	200	10	460	92,000	9,200	101,200	10,120	890	178,000	17,800	195,800	19,580
Dur. Mfg.	350	2	1,410	493,500	49,350	542,850	10,857	2,760	966,000	96,600	1,062,600	21,252
Non-dur. Mfg.	350	2	330	115,500	11,550	127,050	2,541	640	224,000	22,400	246,400	4,928
TCU	220	15	340	74,800	7,480	82,280	12,342	660	145,200	14,520	159,720	23,958
Wholesale Trade	500	10	780	390,000	39,000	429,000	42,900	1,530	765,000	76,500	841,500	84,150
Retail Trade	500	2	1,140	570,000	57,000	627,000	12,540	2,220	1,110,000	111,000	1,221,000	24,420
FIR	275	20	50	13,750	1,375	15,125	3,025	100	27,500	2,760	30,250	6,050
Service	350	15	570	199,500	19,950	219,450	32,917	1,110	388,500	38,850	427,350	64,102
Gov't.	220	5	270	59,400	5,940	65,340	3,267	520	114,400	11,440	125,840	6,292
Total				2,008,450	200,845	2,209,295	117,971		3,918,600	391,860	4,310,460	254,732

35

Table 11 (con't.)

	SF/ Empl. (1)	Site Capture (%)	1995 Demand in Sq. Ft.				
			Empl. Inc.	Incre- mental	Latent (2)	Total	Site
Construction	200	10	1,130	226,000	22,600	248,600	24,860
Dur. Mfg.	350	2	3,510	1,228,500	122,850	1,351,350	27,027
Non-dur. Mfg.	350	2	820	287,000	28,700	315,700	6,314
TCU	220	15	840	184,800	18,480	203,280	30,492
Wholesale Trade	500	10	1,950	975,000	97,500	1,072,500	107,250
Retail Trade	500	2	2,820	1,410,000	141,000	1,551,000	31,020
FIR	275	20	130	35,750	3,575	39,325	7,865
Service	350	15	1,420	497,000	49,700	546,700	82,005
Gov't.	220	5	660	145,200	14,520	159,720	7,986
Total				4,989,250	498,925	5,488,175	324,819

Source: Mundy, Jarvis & Associates, Inc.

36

Table 12

Space Demand by Type
(in square feet of NRA, rounded)

Year	Retail(1)	Office(2)	Office-Warehouse(3)	Warehouse(4)	Total
1983	8,580	11,420	40,480	29,700	90,180
1984	12,430	16,190	58,660	42,900	130,180
1985	12,540	16,410	58,660	42,900	130,510
1990	24,420	31,920	114,240	84,150	254,730
1995	31,020	40,710	145,840	107,250	324,820
Total	88,990	116,650	417,880	306,900	930,420

Notes: (1) Includes retail goods and services.
(2) Includes construction, finance, insurance, real estate, government.
(3) Includes durable and non-durable manufacturing, transportation, communication and utilities, and services.
(4) Includes wholesale trade.

Source: Mundy, Jarvis & Associates, Inc.

These demand projections must be considered the minimum level of demand since they are based solely on changes in the regional economy. If a parcel the size of the westside property were available, the market would be truly national in scope. Development would require the financial, planning, and marketing resources of a major development company. The finished property would be marketed to attract new businesses to the region, perhaps even national headquarters of companies with significant holdings in the Pacific Northwest. Burlington Northern's recent move to Seattle illustrates the potential demand from the corporate market.

Aviation Demand

The Economic Base Model includes demand for office, industrial and warehouse space generated by general aviation users under such SIC categories as 37-"Manufacturing, Transportation Equipment" and 45--"Transportation and Public Utilities, Transportation by Air." Demand

for parking space for aircraft, however, is a special use not covered by the model. Demand for this use was determined through interviews with airport managers and managers of businesses at the King County International Airport who lease space for private aircraft. All these sources indicated that there is a strong demand for tie-downs and hanger space. Typical rental rates are $75 per month for a tie-down of about 2,500 square feet and $550 per month for hanger space for a twin engine plane. While these rates are well below the return generated by more intensive uses, they do provide a rent on otherwise unuseable land, such as that with a low height restriction.

Interviews with present tenants at the airport indicated that there is a high demand for general aviation space of the type provided by Fixed Base Operators (FBO). For example, Seattle Flight Service now leases 243,300 square feet. They indicated they could absorb as much more space and use it for tie-down leases, parking, hangers, and servicing. Orville Tosch who has a 6,000 square foot hanger is turning away repair work because of a lack of space and of skilled employees. Federal Express indicated a need for 14,000 to 15,000 square feet in the next 3 to 5 years. The pending closure of the Bellevue Airfield will increase the pressure at the King County International Airport to handle service for the small private aircraft.

The Highest and Best Use

Given the strong demand from general aviation users and the unique location with airfield access, it was determined that general aviation was the highest and best use of the eastside parcel. This use would include offices, repair facilities, flight training schools, aircraft service and storage, and light manufacture of aircraft parts.

The economic base analysis suggests demand for numerous uses as shown in Table 12. By 1995 this includes site demand of 89,000 square feet of retail space, 116,000 square feet of office, 418,000 square feet of office/warehouse and 307,000 feet of warehouse. Given the size of the westside parcel, its frontage on West Marginal Way, the airport location and favorable exposure from Interstate 5, we are of the opinion this site would be a strong candidate for a mixed use business, industrial and distribution park with a complementary line of retail establishments such as restaurant(s), office supplies and furniture, and business services such as travel agents. A mixed use business park development as a highest and best use is supported by the trend of land uses found in the area and by such successful developments as Benaroya Business Park and Fischer Business Park.

After making our highest and best use determination, the next step was to select appropriate sale and rent comparables. The sale comparables were used to determine the land value which was then capitalized to estimate the fair market rental. The rent comparables were used for the direct market data approach to estimating fair market rent.

APPENDIX A

Telephone Questionnaire

Hello. My name is _____ and I am with Mundy, Jarvis. We are doing a survey of major land users for King County. May I ask you a few questions:

1. Name of Company_____

2. Address_____

3. Contact_____Phone #_____

4. Nature of Business_____

    _____

    _____(SIC   )

5. How long have you been in this location?_____Years

6. Was your previous location within the Southend industrial area?

    Harbor Ave to Marginal way, south to S. 118th(A. Grocer's Coop.) to I-5 on the east?
    _____this has been our only location.
    _____Yes
    _____No

7. Who was in this location before you?

    _____

    What was the nature of their business?_____

    _____

    _____

    _____

8. What are the advantages to this location for your business?

    _____

    _____

    _____

9. What are the disadvantages?

    _____

    _____

    _____

10. How important is proximity to the Duwamish Waterway to your company on a scale from 1 to 5 where,

    1 = must have
    2 = nice but not essential
    3 = indifferent
    4 = minor drawback
    5 = major inconvenience

11. On the same scale how would you rate proximity to Boeing Field?_____

Thank you.

APPENDIX B

Economic Base Model

THE SEATTLE METROPOLITAN AREA ECONOMIC BASE

The need for commercial and residential real estate is directly tied to the economic base of an area. As the area's economic base changes so do other "non-basic" or support sectors. Housing and commercial real estate services are several of the more important support sectors. Therefore, to understand the present and probable future need for real estate services it is important to understand the "workings" of the area's economic base. The Seattle area economic base is discussed in five sections which follow, beginning with a brief review of the area's resources and history. We then compare Seattle's recent growth on a national and regional basis. A shift-share analysis analyzes the components comprising the Seattle area economy and how those components have changed over time. Then, a "minimum requirements" economic base model for the economy is developed whereby employment projections are made using two different growth scenarios for the period 1982 through 2000. From the employment projections a demographic model is developed whereby population and housing projections are made.

For the purpose of this analysis, the Seattle Consolidated Area is defined by King, Snohomish and Pierce Counties. Therefore, the Seattle area economic base includes the major cities, such as Seattle, Everett, and Tacoma, minor municipalities, such as Arlington, Issaquah, and Puyallup, and the unincorporated areas of Snohomish, King, and Pierce Counties.

The three-county area was divided into eight sub-markets. These areas represent independent "micro" economics. The sub-market area boundaries are shown in Figure 1.

Area Resources and History

Like many cities in the United States, Seattle, Tacoma and Everett owe their existence to a plentiful supply of important natural resources. Even though the Puget Sound area was "discovered" by Captain George Vancouver in 1775--charting many of our present landmarks including Mt. Rainier, Mt. Hood, Admiralty Inlet and Hood Canal--it wasn't until the 1850's that the forest resources of Puget Sound were tapped. In 1870 the population of Walla Walla and Olympia still remained greater than that of Seattle. The area was dependent upon shipping and forestry until Seattle was linked by rail (the Great Northern Railroad) to Tacoma and cities to the south, which were tied to Sacramento, California. Sacramento, in turn, was linked to Omaha, Nebraska by the Central Pacific Railroad. The link to Seattle was completed in 1893.

In 1889 Washington produced four percent of the nation's lumber output. Washington remained first in lumber output until 1938, when surpassed by Oregon. Also important were pulp and plywood production.

Figure 1
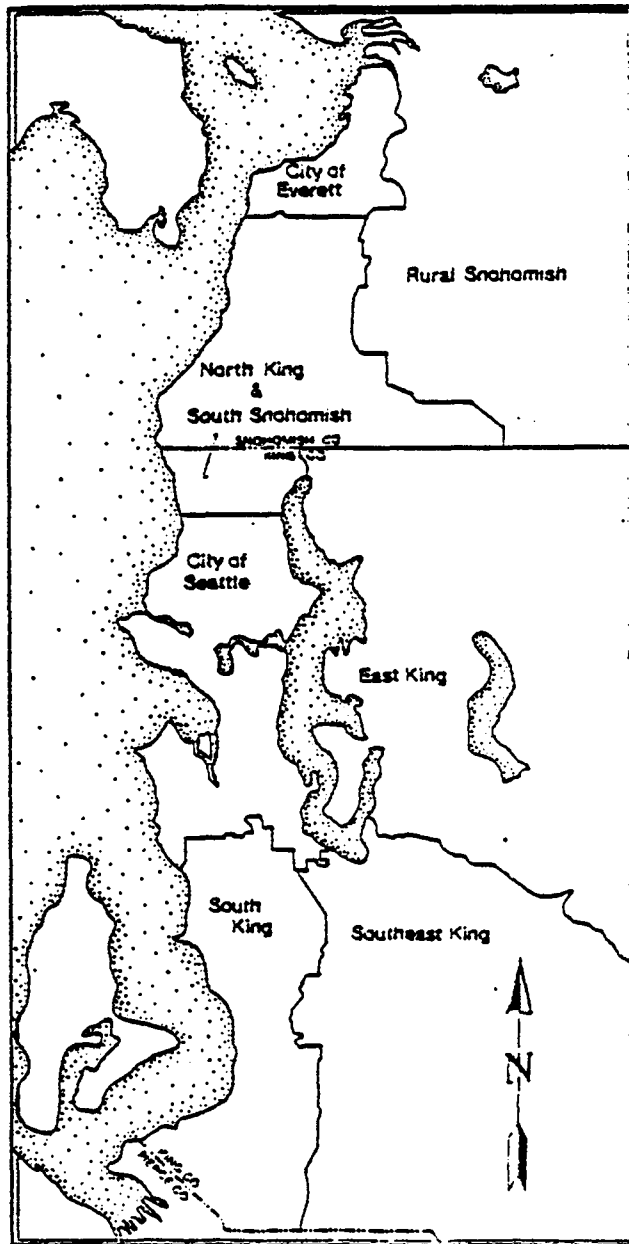
The Seattle area was pulled up by its bootstraps from a severe recession in 1897 by the Alaska gold rush, thereby establishing Seattle as a major port and outfitting point for Alaska trade, and then soon to follow, trade to the Orient. The area's deep water ports also fostered a large shipbuilding industry. In 1891 the government selected Bremerton as a site for its Naval shipyard, where warships were produced for World Wars I and II. Many ships were also produced during this same period in Seattle, where employment increased from 6,000 prior to World War II, to 140,000 in 1943.

The Seattle area has also benefitted from an impressive agricultural industry that established itself in central and eastern Washington in the early 1900's. Early-day eastern Washington wheat farming was important. Then with the completion of Grand Coulee Dam and the opening of the Columbia Basin to agriculture in 1948 the agricultural industry made another surge. Also related to the Grand Coulee development was the provision of cheap hydroelectric power which in 1941 attracted the state's first aluminum manufacturer, Alcoa.

Until recently the one major industry that was not dependent on regional natural resources was aerospace. Starting in 1916 with William Boeing's first airplane, Boeing and the aerospace industry have contributed to impressive growth and economic well-being for this area and its residents. However, it has also caused many recessions and grief. A chronology of change at Boeing and in the aerospace industry from 1916 through 1979 is depicted in Table 1.

TABLE 1
SEATTLE'S AEROSPACE INDUSTRY

Period	Employment	Event
1916-1939	0-7,000+	William Boeing's B&W Twin Float sport seaplane launched. The beginning of Pacific Aeroproducts Company.
1940	7,600	Mobilization for World War II.
1944	44,000	Production of Flying Fortress and Superfortress.
1946	10,000	Sales decrease from $600 million to $14 million in 2 years.
1947		Introduction of B-47 followed by B-52.
1960*	58,000	First commercial jet – Boeing 707.
1962	73,300	Diversification into missles and space.
1964	52,000	Retrenchment due to several major defense contract losses.
1968	104,500	Expansion due to 707/727 success; intensive airline orders.
1971	37,500	SST contract loss; softness in commercial aircraft market.
1978	58,700	Diversification, expanding commercial aircraft orders, and success in military contracts.
1979	76,800	Introduction of 757/767; Everett plant's major expansion.
1980	80,550	Workforce peaks with 299 commercial plan deliveries and 757/767 startup.
1981	79,700	Workforce decreases slightly due to softness in national economy and decreasing 727/747 orders. Commercial deliveries – 257.
3/82	74,000	Workforce declines due to falling commercial aircraft production.

*All aerospace employment.
Source: Mundy, Jarvis & Associates, Inc.

MUNDY, JARVIS & ASSOCIATES, INC.
SEATTLE • PORTLAND • ANCHORAGE

As with the development of any economy, there are certain events that are very instrumental in an area's development. A chronology of those events is shown below:

1878	Rail connection from Seattle to the Renton and Newcastle coal mines.
1883	Northern Pacific transcontinental railroad reaches Tacoma via Columbia River route.
1885	First pulp mill in Washington Territory at Camas.
1889	Statehood.
1889	Fires destroy major parts of both Seattle and Spokane.
1891	Bremerton navy yard established.
1893	Great Northern Railroad reaches terminus and Yukon begins.
1900	Northern Pacific sells 900,000 acres of timberland to Frederick Weyerhaeuser; one of several major sales of railroad land-grant properties.
1905	Washington gains first place in output of lumber.
1905	Pacific Car and Foundry established.
1909	Milwaukee Railroad completed to Seattle and Tacoma.
1909	Alaska-Yukon-Pacific Exposition, Seattle.
1914	Panama Canal opened, aiding cargo shipments to East Coast.
1916	Pacific Aero Products Company (later, the Boeing Company), founded in Seattle.
1917	Lake Washington Ship Canal opened; Fort Lewis established.
1918	World War I. Puget Sound shipyards employ 50,000.
1926	Washington State lumber production at all-time high.
1929	Great Northern Railroad completes Cascade Tunnel.
1940	State's first primary aluminum plant in operation at Vancouver, Washington.
1941	Grand Coulee Dam completed.

1943   World War II shipbuilding employs 140,000 in the state.

1947   Kaiser Aluminum takes over government-built aluminum plants at Spokane and Tacoma.

1949   Seattle-Tacoma International Airport opened.

1955   The Boeing Company enters the commercial jet transport market.

1956   Natural gas becomes available by pipelines from the Southwest and Canada.

1962   Century 21 - Seattle World's Fair.

1966   Intalco Aluminum, Bellingham, builds Washington's sixth aluminum plant.

1966   Boeing opts to build the 747 superjet.

1968   Major oil field discovered at Prudhoe Bay on Alaska's North Slope.

1978   Boeing announces the 757 and 767 commercial jets.

Figure 2 shows how employment, unemployment and aircraft employment have changed in the Seattle metropolitan area since 1965. The relationship between changes in aircraft employment and changes in Seattle's total employment and unemployment are vividly shown. As aircraft employment increased dramatically during the 1967 through 1968 period, so did the area's total employment, with a slight lag, approximating one year. Then, with Boeing's loss of the SST contract and the downturn in the airline industry and subsequent aircraft orders, aircraft employment dropped dramatically. This is directly correlated with the increase in the unemployment rate. The annual peaks and troughs are related, to a large extent, to the seasonal nature of many major industries, especially contract construction, fishing, food processing, lumber and wood products. The causes of these changes and probable future changes that will occur in employment and thereby the area's economic base are discussed in the next two sections.

Figure 2
EMPLOYMENT TRENDS FOR SEATTLE SMSA – 1/1956 TO 6/1982
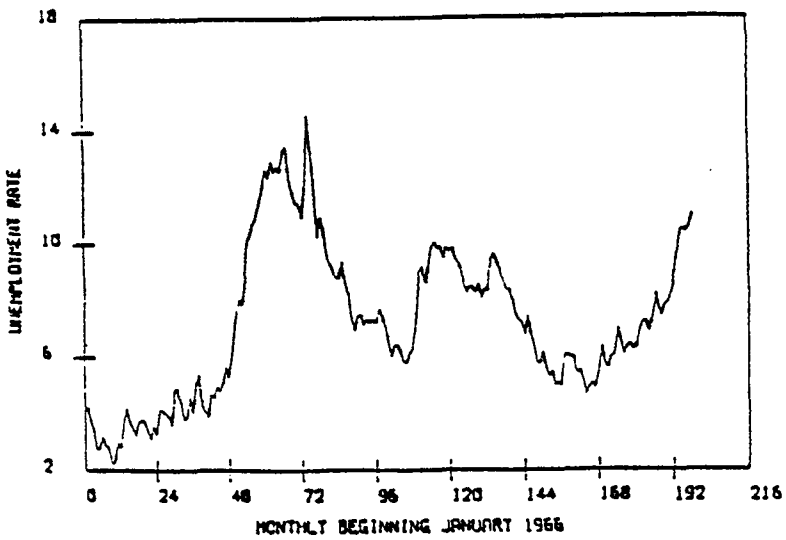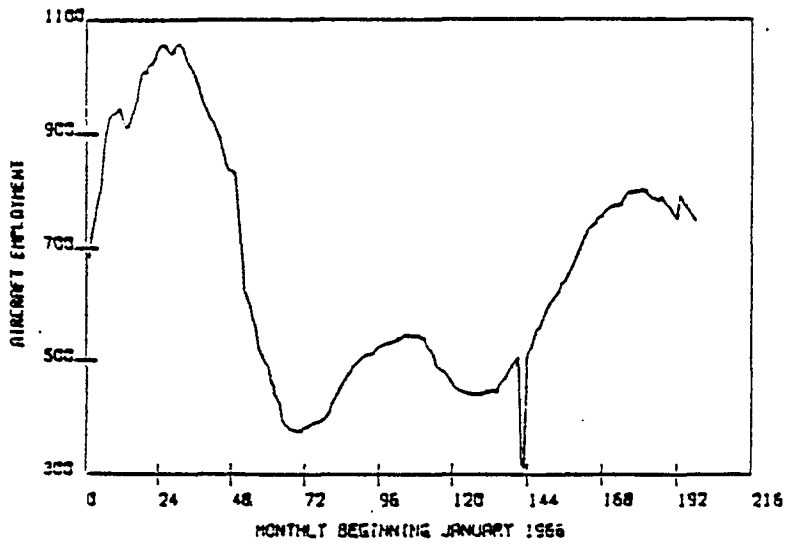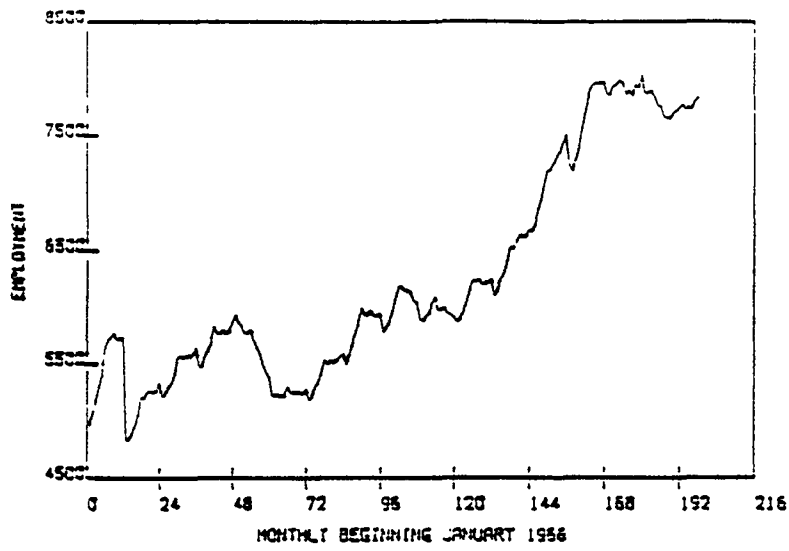
Shift-Share Analysis

A region may grow either because it has industries that are growing nationally or because it is gaining an increasing proportion of industries, regardless of whether these industries are growing or not. The shift-share analysis formalizes these two separate effects.

The share analysis addresses the first portion of the problem, the proportion of national industry totals found within each region. It provides a snapshot of a region's structure vis-a-vis the national economy. This is, however, only a static analysis.

The shift analysis studies the region's structure from a dynamic standpoint. It is concerned with regional changes in economic activity between two defined points in time and concentrates on whether the regional change is greater than or less than the national average change. The shift measures the difference between the actual regional change and the change that would have occurred had the region grown at statewide or national average rates. This is a measure of an area's industrial advantage.

Average annual employment for 1965 and 1982 (February) by industry is shown for the Seattle area, the State of Washington and the United States in Table 2 (Shift-Share Analysis). The first six columns of the Table show the 1965 and 1980 employment for Seattle, Washington State and the United States respectively. In the right hand columns the Seattle Metropolitan Area's share of Washington State employment and United States employment is shown. In the last columns the total shift statistics are shown. The implications of the statistics are discussed in the paragraphs below.

Table 2

Seattle SCA Shift-Share Analysis
(Number of Jobs in 000 except US in 000,000)

	Seattle SCA		WA. State		United States		Share for Seattle Wash.		U.S. (10⁴)		Shift for Seattle	
	1965	1982	1965	1982	1965	1982	1965	1982	1965	1982	WA	US
Construction	24.4	40.8	46.4	72.1	3.29	3.78	.53	.67	7.42	10.79	2.89	12.77
Manufacturing	136.5	185.3	227.0	289.6	18.06	19.35	.60	.64	7.66	9.68	11.16	39.06
Durable	102.6	150.7	156.0	208.4	10.41	11.51	.66	.72	9.86	13.09	13.64	37.26
Lumber & Wood	13.6	12.7	46.9	39.7	.61	.61	.29	.32	22.30	20.82	1.19	-.90
Furniture	2.1	2.0	2.8	2.7	.43	.46	.75	.74	4.88	4.35	-.02	-.25
Stone, Clay, Glass	2.7	3.0	5.4	6.7	.63	.69	.50	.53	4.29	5.08	.15	.47
Primary Metal	4.1	4.7	11.7	14.6	1.30	1.02	.35	.32	3.15	4.61	-.42	1.48
Fabricated Metal	6.2	8.5	6.9	11.6	1.27	1.49	.90	.73	4.88	5.71	-1.92	1.23
Machinery	5.1	7.6	8.6	15.1	1.74	2.44	.59	.50	2.93	3.11	-1.36	.45
Electrical	2.4	8.6	2.8	10.5	1.66	2.08	.86	.82	1.45	4.14	-.40	6.59
Transportation	66.4	91.1	68.7	97.0	1.74	1.73	.97	.94	38.16	52.66	-2.65	26.08
Aircraft	56.8	78.2	57.0	78.4	.62	NA	.99	.99	91.61	-	-	-
Ship Building	5.4	9.0	6.7	13.5	.13	NA	.81	.67	41.54	-	-	-
Other	4.2	3.5	5.0	5.1	.99	NA	.84	.69	4.24	-	-	-
Non-Durable	28.4	35.0	71.0	81.2	7.66	7.84	.40	.43	3.71	4.46	2.52	5.93
Food	12.5	12.1	26.2	27.9	1.74	1.61	.48	.43	7.10	7.52	-1.28	.67
Apparel	2.6	2.9	4.5	5.3	1.35	1.20	.58	.56	1.93	2.42	-.16	.59
Paper	6.1	4.5	19.8	16.1	.63	.67	.31	.28	9.60	6.72	-.46	-1.99
Printing	4.9	8.7	9.2	15.6	.98	1.30	.53	.56	5.00	6.69	.39	2.20
Chemicals	2.3	1.9	8.5	9.0	.91	1.09	.27	.21	2.52	1.73	-.53	-.86
Trans., Comm., Util.	36.7	59.0	61.7	85.8	4.04	6.05	.60	.69	9.08	11.68	7.96	13.12
Whlse. & Ret. Trade	112.7	223.9	198.9	369.1	12.72	20.60	.57	.61	8.86	10.87	14.76	41.38
Fin., Ins., R.E.	30.4	65.6	44.4	90.4	3.02	5.34	.68	.73	10.07	12.28	3.71	11.85
Services	68.4	185.9	123.3	309.3	9.49	18.80	.55	.60	7.52	9.89	14.32	44.43
Government	91.6	145.8	193.1	317.3	10.07	16.18	.47	.46	9.10	9.01	-4.72	-1.38
Total	503.3	889.3	896.6	1,536.7	82.14	90.26	.56	.58	6.13	9.85	26.68	336.25

Note: 1982 data for February. Columns will not total since "Other" categories have been deleted.

Seattle's Employment Share

    Seattle's employment share is compared, in the following paragraphs, with
both the State of Washington and the United States.

    Seattle-Washington State. The Seattle Consolidated Area accounted for 56%
of Washington employment in 1965. This has increased to 58% for the present
period. Considerable growth has occurred in all major employment categories
except government. Increases have been consistently in the 4% to 5% range
except transportation, communications and utilities which has increased by 9%.
The proportion of employment by category for 1965 and 1982 is shown below.

Employment Category	1965	1982
Contract Construction	53%	57%
Manufacturing	60%	64%
Transportation, Communications & Utilities	60%	69%
Wholesale & Retail Trade	57%	61%
Finance, Insurance & Real Estate	68%	73%
Service	55%	60%
Government	47%	46%
Overall Share	56%	58%

    Employment in durable manfacturing increased at a rate greater than
non-durable manufacturing, 6% versus 3%. Several areas in durable
manufacturing where Seattle's share of State Employment has eroded
significantly include fabricated metal products and machinery manu-
facturing. For non-durable categories Seattle's position has also eroded
in several major categories including food processing, apparel manu-
facturing, paper production and chemical processing.

    Seattle - United States. In 1965 Seattle's share of United States
employment was 0.613%. This has increased to 0.985% to 1982, a 61%
increase in its employment share over the last 17 years.

    Contract construction has enjoyed the greatest proportionate change
in its share, increasing by 45%. Service was second with a 32% increase.
Manufacturing, wholesale and retail trade and finance, insurance, real
estate all increased in the 20% range. The shares of employment and
proportionate increases are shown below.

Employment Category	1965	1982	% Change
Contract Construction	.742%	1.079%	45%
Manufacturing	.756%	.958%	27%
Transportation, Communications & Utilities	.908%	1.868%	29%
Wholesale & Retail Trade	.886%	1.087%	23%
Finance, Insurance & Real Estate	1.007%	1.228%	22%
Service	.752%	.989%	32%
Government	.910%	.901%	-1%
Overall Share	.613%	.985%	61%

In the manufacturing sector, durable manufacturing's share increased by 33%, due mainly to significant employment increases in the transportation sector, fueled by Boeing and its sub-contractors. The share decreased in lumber and wood products, and furniture manufacturing.

For non-durable employment growth in Seattle's share was nominal, 20%. Chemical and paper and allied products decreased, the other categories increased.

Seattle's Employment Shift

The employment shift measures the regional change in comparison to change both on a state level and United States level. This variable shows clearly which sectors are doing well in the Seattle Consolidated Area.

Over the last 17 years a significant shift has occurred in favor of Seattle and Washington State. Ranked in order of magnitude of change are the following categories.

Service

Wholesale, retail trade

Manufacturing, mainly durable manufacturing and transportation equipment

Transportation, communications and utilities

Contract construction

Finance, insurance and real estate

Government

Four basic employment categories in manufacturing, transportation and electrical equipment manufacturing have performed significantly better than the United States. Two categories have not grown as fast, lumber and wood products and furniture manufacturing. Seattle in comparison to Washington has performed "at par", losing slightly in most durable manufacturing categories and gaining in other durable manufacturing.

For non-durable manufacturing there has been a slight shift in Seattle's favor, mainly occurring in other non-durable manufacturing when comparing Seattle to Washington. The shift has been in favor of non-durable manufacturing, printing, food processing and apparel when comparing Seattle with the United States.

A table detailing the employment for Seattle, Washington State and the United States as well as Seattle's share of employment and the shift occurring in favor of Seattle was shown in Table 2 (Seattle SCA, Shift-Share Analysis).

SEATTLE'S NEIGHBORS

Over the last decade (1970 through September 1981) employment in the United States increased by 29%. In comparison, employment in the five West Coast states increased by 43.3%. On a state-by-state basis the increases have been:

California: 42.5%

Oregon: 42.4%

Idaho: 56.1%

Montana: 43.6%

Washington: 46.1%[*]

---

[*] Using Washington data from 1971 (the bottom of the Boeing "bust") indicates a 48.0% increase.

These data are also displayed in Figure 3 (Rate of Employment Growth, 1970 to September 1981) and Figure 4 (Employment Increase, 1970 to September 1981).

For the West Coast, California has captured the majority of absolute employment change, increasing by 2.9 million over the decade. This equals 75% of the West Coast employment increase. Oregon increased by 317,000 (8% of the West Coast Employment Increase) and Washington by 514,000 (13%). Importantly, 60% of Washington's employment increase occurred in the Seattle Consolidated Area (Snohomish, King and Pierce Counties).

Figure 3

RATE OF EMPLOYMENT GROWTH - 1970 TO SEPT 1981 (NON-AG)
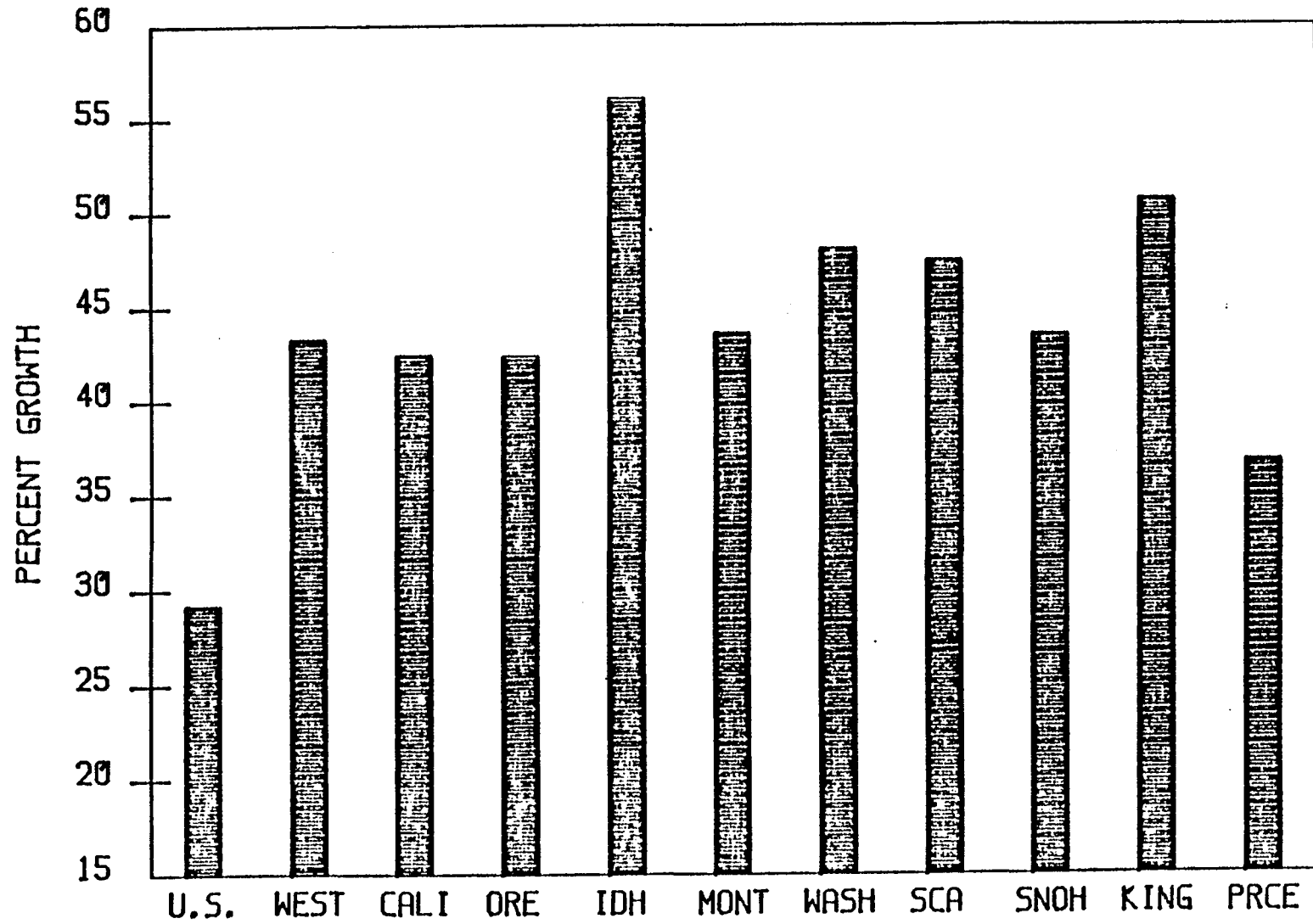
Figure 4

EMPLOYMENT INCREASE - 1970 TO SEPT 1981 (000'S)

REMAINDER/WA

SNOHOMISH CO.

KING CO.

PIERCE CO.

OREGON

IDAHO

MONTANA

CALIFORNIA
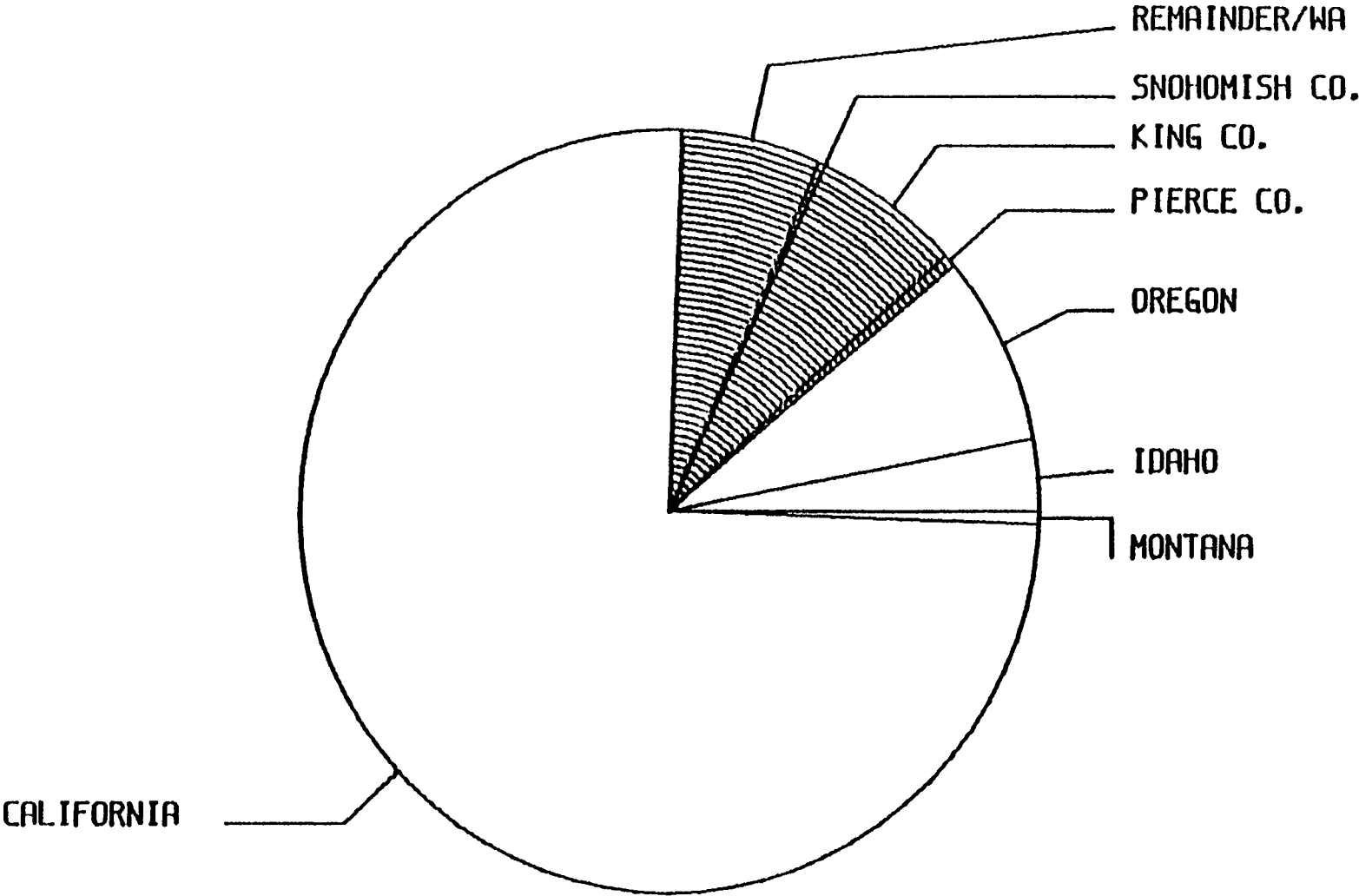
Minimum Requirements Approach

The following analysis is based on one of several economic base analysis techniques. It is a "middle-range" analysis, the minimum requirements method.*

The minimum requirements method is based on the assumption that a "minimum" number of employees in any metropolitan area are required to provide such necessary goods as groceries and services. Excesses above this minimum are employees engaged in export activities: Producing goods and services locally and selling them beyond the boundaries of the metropolitan area (aircraft for instance) are export activities that provide the growth and dynamics for an area vis-a-vis a stagnating "no-growth" economy.

The minimum requirements approach provides the analyst with insight into what makes a particular economy "tick". It is a method of assessing the extent to which an area's industries sell outside the local economy. The portion of an industry that sells within the local economy is termed service, since it is needed to serve the needs of the area's residents. Retail trade is an example of an industry with a large service component, because it sells mostly within the local economy. The portion of an industry that sells outside the local economy is termed basic or export, because it generates a net flow of income from which necessary imports are financed. Aircraft manufacturing is an example of an industry with a large basic component, because it sells mostly outside the local economy. The majority of industries fall somewhere between the extremes of retail trades and aircraft manufacturing and have both basic and service components.

As an urban area grows in size there is a tendency toward self-sufficiency. An area the size of Moses Lake, Washington (population 10,900) for example, is on the average about 68% export (basic) and 32% service, or a ratio of one export to less than one-half service employee. In comparison, a metropolitan area of approximately 300,000 inhabitants (Spokane, Washington) has a ratio of 50% export to 50% service and a city the size of Seattle (some 1.7 million), may have a ratio of 40% export to 60% service. Research shows that the export to service ratio has been slowly changing with time, moving toward an increasing proportion of service workers.

A minimum requirements analysis disaggregates a local economy into two major parts, the export or basic component and the service component. By determining the composition of each sector and how that composition changes with time, it is possible to gain valuable insight into how the local economy performs, upon which industries the economy is dependent, and how it may perform in the future. Employment in the Seattle-Everett-Tacoma area was broken down by industry and by basic and service components, and is shown in Table 3 for 1970 to 1981 and Table 4 for 1982.

---

*Ullman, Edward, Michael F. Dacey and Harold Brodsky,

The Economic Base of American Cities, The University of Washington Press, Seattle, Washington, 1969.

TABLE 3

BASIC AND SERVICE EMPLOYMENT IN
SEATTLE-EVERETT-TACOMA

1970

	% TOTAL EMPOY.	% MIN. REQ.	BASIC	% BASIC	SERVICE	% SERV.	SERVICE DEFICIT	TOTAL
Construction	4.8	3.3	9.2	30.9	20.5	69.1	0.0	29.7
Manufacturing	23.8	9.2	40.9	61.4	57.2	38.6	0.0	148.1
Durable	18.5	6.1	77.0	67.0	37.9	33.0	0.0	114.9
NonDurable	5.3	3.1	13.9	42.0	19.3	58.0	0.0	33.2
T.C.U.[1]	7.4	5.0	14.6	32.0	31.1	68.0	0.0	45.7
Trades	22.3	16.5	36.4	26.2	102.5	73.8	0.0	138.9
Wholesale	6.3	3.5	17.5	44.7	21.8	55.3	0.0	39.3
Retail	16.0	13.0	18.8	18.9	80.8	81.1	0.0	99.6
F.I.R.[2]	6.6	4.1	15.7	38.2	25.5	61.8	0.0	41.2
Services	15.9	17.7	0.0	0.0	99.1	100.0	10.9	99.1
Government	19.1	9.8	57.9	48.7	60.9	51.3	0.0	118.8
TOTAL		65.6	213.8		407.7		10.9	621.5

SOURCE: Bill Mundy & Associates, Inc.

(All employment figures in thousands.)

[1] Transportation, Communication and Utilities
[2] Finance, Insurance and Real Estate

Table 4

Basic and Service Employment in
Seattle-Everett-Tacoma
April 1982

	Employment		Min.	Basic		Service		
	Total	%	Req.(%)	No.	%	No.	%	Deficit
Construction	38.3	4.3	3.3	8.7	22.7	29.6	77.3	0
Manufacturing	186.1	20.7	9.2	103.5	' .6	82.6	44.4	0
Durable	151.2	16.8	6.1	96.4	63.8	54.8	36.2	0
Non-durable	35.0	3.9	3.1	7.2	20.5	27.8	79.5	0
T.C.U. (1)	56.5	6.3	5.0	11.6	20.6	44.9	79.4	0
Trade	216.5	24.1	16.5	68.4	31.6	148.1	68.4	0
Wholesale	64.5	7.2	3.5	33.1	51.3	31.4	48.7	0
Retail	152.0	16.9	13.0	35.3	23.2	116.7	76.8	0
FIR (2)	64.9	7.2	4.1	28.1	43.3	36.8	56.7	0
Service	182.6	20.3	17.7	23.7	13.0	158.9	87.0	0
Government	149.9	16.7	9.8	61.9	41.3	88.0	58.7	0
Total	897.7		65.6	305.9		588.9		

Source: Mundy, Jarvis & Associates, Inc., 6/1982

Notes: All employment figures in thousands
(1) Transportation, communications and utilities
(2) Finance, insurance and real estate.
Columns may not add due to rounding errors

Basic Employment

After partitioning employment into basic and service components by industry, basic employment was further analyzed to determine historical trends. Table 5 reports basic employment broken down by seven sectors in both numerical and percentage form. The following paragraphs discuss the trends evident in basic employment since 1970.

Contract Construction

Basic employment in 1970 was 9,200 and comprised 4.3% of all basic employment in the consolidated area. By 1974, basic employment had fallen to 5,400 or 2.3% of total basic employment, due to the 1971 Boeing layoffs and a recession in the housing industry. Consequently, the demand for housing grew faster than the supply. This situation helped stimulate housing construction in the late 1970's and by 1979, basic employment had grown to 24,400 or 7.9% of total basic employment. In 1980, basic employment fell to 21,300 or 6.7% of total basic employment as a result of tight money market conditions. The 1980 basic employment probably would have been lower if it were not for a surge in the construction of office space in Seattle and Bellevue. Since 1980 construction employment has continued its downward trend, now at 8,700 basic employees (38,300 total), slightly higher than the 1974 low. Major construction projects continue to provide support for this category (i.e., Bellevue offices, Seattle hotels, I-90, Bangor).

Durable Manufacturing

In 1970, durable manufacturing was the backbone of the local economy. Basic durable employment was at 77,000 or 36.0% of total basic employment. When the federal government canceled plans to build the SST in 1971, the Boeing Company was forced to reduce the size of its work force. Basic durable employment fell to 54,900 or 26.9% of total basic employment. By 1974, basic durable employment had risen to 74,800 or 32.3% of total basic employment. By 1976, however, it had fallen back to 62,800 or 25.7% of total basic employment. With the introduction of the Boeing 757 and 767 aircraft and the acquisition of government defense contracts to build cruise missiles, aircraft employment has grown substantially. Also, the development of the electronics industry has contributed to an increase in basic employment and the diversification of the local economy. Thus, by 1981 basic employment in durable manufacturing had increased to 98,500. Through April 1982 all durable manufacturing categories were showing weakness, however the weakness is especially noticeable in aircraft employment, accounting for more than 50% of the year-to-year decline.

Non-Durable Manufacturing

In 1970, basic employment in nondurable manufacturing was 13,900 or 6.5% of total basic employment. By 1975, basic durable employment had declined to 11,600 or 5.2% of total basic employment. Growth in food and kindred products, apparel, and printing and publishing helped push basic

TABLE 5

BASIC EMPLOYMENT IN CONSOLIDATED AREA
1970 - 1980

	1970 n	1970 %	1971 n	1971 %	1972 n	1972 %	1973 n	1973 %	1974 n	1974 %	1975 n	1975 %	1976 n	1976 %	1977 n	1977 %	1978 n	1978 %
Constr.	9.2	4.3	6.8	3.3	5.7	2.7	6.5	2.9	5.4	2.3	7.6	3.4	8.4	3.4	13.3	5.1	19.2	6.9
Manufac.	90.9	42.5	69.1	33.8	71.7	33.9	81.6	36.5	87.1	37.6	84.2	37.7	74.9	30.7	77.5	29.9	92.1	33.1
Durable	77.0	36.0	54.9	26.9	57.6	27.2	69.0	30.9	74.8	32.3	72.6	32.5	62.8	25.7	64.4	24.9	76.6	27.5
NonDur	13.9	6.5	14.2	6.9	13.5	6.7	12.6	5.6	12.3	5.3	11.6	5.2	12.1	5.0	13.1	5.0	15.5	5.6
T.C.U.	14.6	6.8	14.5	7.1	13.4	6.3	13.0	5.8	12.2	5.3	10.0	4.5	12.6	5.2	12.5	4.8	11.8	4.2
Trades	36.4	17.0	37.4	18.5	39.0	18.4	40.7	18.2	42.5	18.4	54.1	24.2	55.6	22.8	60.5	23.4	66.5	23.9
Whlsale	17.5	8.2	17.2	8.4	17.2	8.1	18.3	8.2	20.1	8.7	25.5	11.4	25.4	10.4	28.4	11.0	29.7	10.7
Retail	18.8	8.8	20.7	10.1	21.8	10.3	22.5	10.0	22.5	9.7	28.6	12.8	30.2	12.4	32.9	12.4	35.1	13.2
F.I.R.	15.7	7.3	16.0	7.8	16.6	7.8	16.9	7.6	17.1	7.4	17.1	7.7	17.1	7.0	19.3	7.5	22.1	7.9
Services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	.3	5.6	2.5	8.2	3.4	11.2	4.3	12.4	4.5
Govrnmt	57.9	27.1	65.3	31.9	68.3	32.3	66.4	29.7	66.4	28.7	67.5	30.2	66.8	27.4	64.7	25.0	63.0	22.7
Total Basic	213.8	100.0	204.4	100.0	211.5	100.0	223.3	100.0	231.4	100.0	233.2	100.0	243.6	100.0	258.9	100.0	278.1	100.0
Total Service	407.7		389.9		403.2		425.8		421.2		425.7		464.4		493.8		547.4	
GRAND TOTAL	621.5		594.3		614.7		649.1		672.6		648.9		708.0		752.7		834.5	

NOTE: In thousands of employees.

Source: Bill Mundy & Associates, Inc.

Table 5 (con't)

	1979		1980		1981		1982	
	n	%	n	%	n	%	n	%
	24.4	7.9	21.3	6.7	13.8	5.5	8.7	3.6
	107.5	34.8	109.9	34.5	106.6·	42.7	103.5	42.4
	92.5	30.0	97.5	30.6	98.5	39.5	96.4	39.5
	15.0	4.8	12.4	3.9	8.1	3.2	7.2	2.9
	12.3	4.0	13.6	4.3	12.2	4.9	11.6	4.8
	67.6	21.9	65.7	20.6	67.5	27.1	68.4	28.0
	32.2	10.4	32.0	10.0	33.0	13.2	33.1	13.6
	35.4	11.5	33.7	10.6	35.2	14.1	35.3	14.5
	23.5	7.6	24.0	7.5	26.6	10.7	28.1	11.5
	13.0	4.2	17.2	5.4	22.1	8.9	23.7	9.7
	60.6	19.6	66.9	21.0	61.7	24.7	61.9	25.4
	308.8	100.0	318.6	100.0	310.5	100.0	305.9	100.0
	589.0		607.7		605.9		588.9	
	897.8		926.3		916.4		897.7	

non-durable employment to 15,500 or 5.6% of total basic employment in 1978. Since 1979 there has been a steady erosion in non-manufacturing employment due mainly to decreasing employment in food and kindred products as well as printing and publishing. However, all categories have shown some weakness. Food and kindred products declines are related to closures of food processing plants in the area, printing and publishing to the general economic slow down.

Transportation, Communication and Utilities

Basic T.C.U. employment in 1970 was 14,600 or 6.5% of total basic employment. By 1975, basic T.C.U. employment declined to 10,000 or 4.5% of total basic employment. In spite of an increase in total T.C.U. employment, from 44,200 in 1975 to 59,900 in 1980, basic T.C.U. employment increased only to 13,600 and the percentage of total basic T.C.U. employment fell to 4.3%. This is because employment increases have been in the service component, rather than the basic component, to serve the needs of the expanding population. Basic employment in this sector has declined only nominally since 1980 and has exhibited substantial stability since 1976.

Wholesale Trades

In 1970, 17,500 workers or 8.2% of total basic employment were in wholesale trades. As of 1975, this figure had grown steadily to 25,500 or 11.4% of total basic employment. By 1980, basic wholesale trade employment had increased to 32,000 or 10.0% of total basic employment and by April 1982 it had increased to 33,100 employees (10.7%). This increase is evidence of the increasing importance of the Seattle SCA as a major transshipment point to regions outside the SCA.

Retail Trades

In spite of having a large service component, retail trade continues to sell to customers outside the local economy. In 1970, basic retail trade employment was at 18,800 or 8.8% of total basic employment. By 1975, basic employment had grown to 28,600 or 12.8% of total basic employment. By 1978, 35,100 or 13.2% of total basic employment was in retail trades. This figure declined to 33,700 or 10.6% of total basic employment as growth failed to keep pace with that of other sectors of the economy. The overall increase in basic retail trade employment was due to growth in restaurants and taverns. Employment in automotive dealers and service stations was also responsible for much of the growth between 1974 and 1978, but has fallen on hard times due to the current economic recession. Since 1978 basic employment has remained static. Interesting dynamics occur in this and the service category during periods of employment and economic weakness, which are discussed in the service section.

Finance, Insurance and Real Estate

The finance, insurance and real estate category accounted for 15,700 (7.3%) of basic employment. Even though the proportion of basic employees fluctuated considerably between 1970 and 1976, the number was remarkably constant. In 1977 significant changes started to occur in this category as the Seattle SCA began to take on a more regional financial services center role. Since 1976 basic employment increases in this category have been growing at a steady rate, from 17,100 individuals in 1976 (7.0% basic) to a current level of 28,100 or 9.1% of basic employment.

Services

In spite of its name, not all employment in the service category is service employment, because many of the services available in Seattle are also sold outside the local economy. Although this may foster some degree of confusion, we now have some 5.4% of total basic employment employed in services. This includes business services, such as accountants or data processing consultants, who sell their services to businesses in Spokane or Fairbanks. In 1970 we were in a position of having a service deficit. Thimeans that the Seattle area had to import services from other areas to serve the needs of the local economy, or, the needs were simply not being adequately met. In 1974, however, the Seattle area began to export services to other areas. Increases in basic service employment have continued unabatted since then. This was due primarily to increases in business services and health services. Other services such as legal, hotel and lodging, social services, educational and personal services all registered increases.

Interestingly, retail trade and services have held constant and risen (respectively) during this recent recession. An analysis performed in the Seattle economy after the 1971 local recession indicated that these two sectors show surprising stability during economic downturns, not resulting in a "negative" multiplier effect as is often popularly believed. The retail trade sector is now exhibiting this character. Basic service employment has continued to increase due, in part, to the increasing financial importance of the area and also because of the rapid employment increases in business services (i.e., advertising, consulting and management, commercial R&D), health and legal services.

Government

While the government does not normally sell its services it certainly provides them. Seattle has become a major regional government center. Basic employment in government goes to serving needs outside the local economy. For example, the Federal Regional Training Center is located in Seattle and serves the needs of Washington, Idaho, Oregon and Alaska. Consequently, government accounted for 27.1% of total basic employment in 1970. This was second only to durable manufacturing. In 1971, with the layoffs at Boeing and the sharp decline in durable manufacturing, basic

employment in government increased to 65,300 or 31.9% of total basic employment. By 1972 it had increased to 68,300 or 32.3%. Since 1972 basic government employment has been slowly decreasing. In 1980 there was an increase in both federal and state and local employment. Most recently government employment has dropped or remained constant, comparable with 1979 figures.

Employment Projections

Given the recent trends in basic employment it is possible to make assumptions about future trends and develop employment projections. The projections are based on the following assumptions: First, since more precision is possible in making short term projections than long term projections, it is assumed that the long term trends will be extensions of short term trends with a gradual decline in the growth rates. Second, the national trend of migration into the area will continue at a strong rate. Third, there is a continued trend toward more service-type employment. The final assumption concerns the effects of the current economic recession. Projection "A" assumes that the effects of the recession are currently at their peak and recovery will begin by mid-1982. It is anticipated in this projection that growth will be steady but gradual.

<u>Projection "A"</u>

Contract Construction

Basic employment in commercial and industrial contract construction will remain at present levels. This is due to the large number of commercial real estate development projects committed and underway in the SCA. We anticipate a slight moderating of interest rates during the latter one-half of 1982 and into 1983, which will encourage residential construction only slightly. For the mid and longer terms we expect contract construction to increase at a rate similar to that for the 1970-77 period.

Durable Manufacturing

Basic employment in durable manufacturing has been eratic over the last decade because of the influence of Boeing and the aircraft industry. While the aerospace industry will continue to play a major role, the local economy has become more diverse and less dependent on it. This trend is expected to continue in the future. Aerospace employment is expected to increase, but not as rapidly as employment in other high-technology industries. Electronic-related industries have a particularly bright future. Companies such as John Fluke Manufacturing, Interface Mechanisms, Criton Industries, Physio-Control and Data I/O will contribute significantly to basic employment. Also, the location of major electronics manufacturers like Hewlett-Packard, Fairchild Camara and Honeywell are expected to stimulate employment growth in the area. The lumber and wood products industry has been especially hard hit by the current recession, it is expected to make a modest recovery when housing starts pick up again nation-wide. Growth in other durable manufacturing industries such as, fabricated metals, machinery or stone, clay and glass products, are expected to lag behind that of the high-technology industries. Growth in basic employment is expected to increase at a rate typical of the past decade until 1990, then gradually slow. The type of increase will vary, favoring light industry to heavy.

Non-Durable Manufacturing

Basic non-durable employment has also been erratic over the last decade, but not as much as in durable manufacturing. Basic non-durable employment has been decreasing in the past few years because of in-migration increasing the size of the population, which in turn, generated a stronger demand for non-durable goods within the local economy. Basic non-durable employment has failed to keep pace with this growth trend. In-migration is expected to continue and basic non-durable employment is expected to increase, and even "catch up" ground lost since 1978-79. Over the long-term growth is expected to be moderate. Employment in processed foods, especially convenience foods and beverages, apparel, printing and publishing and chemicals are expected to grow most rapidly. Basic employment in paper products, however, is expected to decline.

Transportation, Communications and Utilities

Basic T.C.U. employment has declined during the 1970's. Railroad transportation is expected to show a healthy short-term growth rate as Burlington Northern relocates its headquarters here. We expect more corporate and related BN facilities to find their way to the Seattle SCA - over the next five years - than has been announced to date. The long-promised trade with China is just beginning to be realized. It won't reach a significant level in the immediate future because their import needs do not match our leading exports. However, in the long run, trade with China will help to stimulate basic employment in transportation. We expect trade with other Pacific Rim countries, especially Japan, to continue at healthy levels. Also, the development of natural resources in Alaska will help to stimulate basic employment in transportation.

Communications, such as television, radio and telephone, are also expected to contribute to growth in basic employment. Employment in utilities, including electricity, natural gas, water and sewer services is expected to be for service use only.

Wholesale and Retail Trades

The growth of basic employment in this sector over the past decade, showing only a slight moderation during the current recession. The current recession is expected to constrain growth for 1982, especially in such areas as automobiles and home furnishings. Growth in basic employment is expected to be generated in areas like food stores, general merchandise, restaurants, and so forth. After recovering from the recession growth is expected to continue at a rate equal to that of the past decade until 1990, then increase at a decreasing rate.

Finance, Insurance and Real Estate

Seattle is rapidly becoming the major financial center for the Northwest. Basic employment has grown steadily over the past decade - especially the last five years - and this trend is expected to continue. The largest banks in the state--Seattle First National, Rainier, First Interstate Bank and Peoples -- are headquartered in Seattle. These financial institutions can be expected to participate in the growth of the Pacific Northwest. With the introduction of interstate banking the largest banks in the country are expected to open or expand branches in Seattle. Many, in fact, already have including the largest; Bank of America, Chase and Citibank. Locally headquartered insurances companies such as Safeco, Pemco and Unigard are expected to contribute growth in basic employment. Other major insurance companies have regional headquarters in Seattle, including Aetna, Prudential and Equitable, to serve the needs of the Pacific Northwest. Basic employment is expected to grow much more rapidly than the average of the past decade, then taper off starting in 1990.

Services

Since 1974 the growth of basic service employment has been outstanding and the trend is expected to continue. Much of this growth will be generated by the hotel and lodging industry. The new Westin Tower, the newly remodeled Olympic Hotel and other new hotels under construction (Sheraton, the Madison) and in planning (both in Seattle and Tacoma) will help generate basic employment. Business services, such as advertising, computer and data processing services, research an development laboratiories, architectural and engineering and accounting services, and medical services will also contribute to the growth of basic service employment. Basic service employment is expected to grow at a rate similar to its 1974 to 1982 rate then taper off slightly.

Government

While government has been a major source of basic employment in the past, future growth is likely to be slow. New policies of the Reagan administration will constrain employment growth at all levels. Federal employment will decrease. State Government, even though it will have to pick up a larger burden from the federal government will decline moderately. County and local governments, who depend on C.E.T.A. funds and revenue sharing, will be hard-pressed. Growth at the county and local level - in terms of basic employment - will remain constant.

Projection "B"

Contract Construction

A severe recession and slow recovery will keep growth in basic construction employment well below the average rate of the 1970's. Tight money market conditions will keep residential construction at minimal levels through mid-1982. Growth in basic construction employment will be powered by industrial and commercial construction at this time. After 1982 pent-up housing demand and easing money market conditions will increase employment in residential construction. From that point basic employment will follow the same trend as under Projection "A".

Durable Manufacturing

Basic durable employment trends will follow those of Projection "A", except that aircraft manufacturing is assumed to hold constant at present levels. Electronics and high-technology industries are expected to provide the impetus for growth in basic employment.

Other Sectors

The remaining sectors--non-durable manufacturing, transportation, communication and utilities, wholesale and retail trades, finance, insurance and real estate, services, and government--will follow the same basic employment trends as under Projection "A", except they are slightly lower.

Figure 5 shows the employment projections for 1982 to 2000, based on the growth assumptions discussed above. These are translated into the numerical projections shown in Table 6 (Employment Projection A). In this table service employment is added based on the 1970-1980 basic: service ratio to obtain total employment. The growth trend for total employment (Projection A) is shown in Figure 5 (Employment - Projection A, 1970-2000).

Table 6

Employment Projection A
1982-2000
(000)

	1982	1983	1984	1985	1990	1995	2000
Contract Construction	8.5	10.2	14.0	16.0	10.2	15.0	17.0
Manufacturing	102.7	103.8	108.3	113.9	128.0	143.1	159.7
Durable	95.7	96.0	98.6	100.9	113.0	126.5	141.7
Non-durable	7.0	7.8	9.7	13.0	15.0	16.6	18.0
T.C.U.	11.8	12.2	13.1	14.0	15.0	15.7	16.2
Trade	69.7	73.2	76.2	79.4	88.0	94.3	101.0
Wholesale	33.7	35.5	37.0	38.4	43.0	46.3	50.0
Retail	36.0	37.7	39.2	41.0	45.0	48.0	51.0
FIR	29.2	31.2	33.1	35.2	40.2	44.3	48.0
Service	25.0	28.0	31.0	34.0	41.3	46.5	52.0
Government	61.0	60.5	59.6	59.0	60.5	64.6	66.0
Total Basic	307.9	319.1	335.3	351.5	383.2	423.5	459.9
Total Service	588.1	609.5	640.4	671.4	731.9	808.9	878.4
Total Employment	896.0	928.6	975.7	1,022.9	1,115.1	1,232.4	1,338.3

Source: Mundy, Jarvis & Associates, Inc.

Distribution of Employment to Sub-Market Areas

Once employment projections were made, they were dissagregated to sub-market areas based on their historical share of employment. Data on the share of employment for each sub-market area was obtained from the Washington State Employment Security Department, Puget Sound Council of Governments and data from a sampling of 912 business establishments located in Snohomish, King and Pierce Counties. Employment was also dissagregated by employment category, such as construction, durable manufacturing, etc. This data is shown in Table 7 (Employment Distribution, in Percent, Seattle SCA).

Based on the distribution shown in Table 7 (Employment Distribution) and the employment projections for 1982 through 1995 employment was distributed to the Seattle area. This is the shaded area shown in Figure 6. The projections assume that Seattle's proportion of employment, by each employment category, will remain constant through the 1982 through 1995 period.

Importantly, these numbers represent additions to the Seattle labor force assuming that space is provided in the Seattle area to accommodate these employment additions. If this space is not provided migration from the Seattle area will occur to other areas within the SCA. This is especially important in categories such as manufacturing, wholesale trade and certain service categories where industrial sites are required which, even today, are in extremely short supply (given size, plottage, access, etc. requirements). Based on our employment projections and the distribution of employment for Seattle we can expect to see employment additions in Seattle, given the above assumption, as is shown in Table 8 (Seattle Employment Additions, 1983-1995).

South Seattle Employment Additions

From the Seattle information employment was dissagregated to South Seattle. The basis for this dissagregation was information on 216 firms located in South Seattle which were a portion of the 912 firms interviewed in the Seattle SCA. The South Seattle share of employment, by employment category as well as the probable increase in South Seattle employment for the years 1983 through 1995 are shown in Table 9 (South Seattle Employment Additions, 1983-1995). Once again, it is important to remember that these employment additions are based on the assumption that facilities will be available in the South Seattle area to accommodate this net increase in employment.

South Seattle Space Demand

Given the probable additions to the South Seattle labor force we are in a position to make estimates of probable space needs. Space estimates

Figure 5

BASIC EMPLOYMENT — PROJECTION A

Table 7

Employment Distribution (in %) for Seattle SCA

Category	Rural Snohomish	Everett	N. King S. Snohomish	Seattle	E. King	S.E. King	So. King	Pierce
Construction	.187	.61	.56	2.131	.592	.268	.344	.84
Durable Mfg.	.846	1.28	1.90	7.187	2.399	1.252	.602	1.57
Non-Durable Mfg.	.137	.21	.17	1.777	.573	.162	.048	.84
Transportation, Communications & Utilities	.187	.39	.31	3.832	.354	.172	.172	.67
Wholesale Trade	.759	.21	.29	3.603	.440	1.128	.201	.80
Retail Trade	.137	.09	.24	8.381	3.048	2.351	.086	2.85
Finance, Insurance, Real Estate	.05	.41	.05	5.151	.459	.038	.038	.75
Services	.548	.96	.96	10.712	1.472	.736	.554	3.10
Government	.548	1.08	1.24	5.619	1.825	1.328	.975	3.69
Total	3.40	5.24	5.73	49.02	11.16	7.43	3.02	15.11

Source: Mundy, Jarvis & Associates, Inc.

Figure 6

SOUTH SEATTLE SUBAREA

South Seattle
Subarea
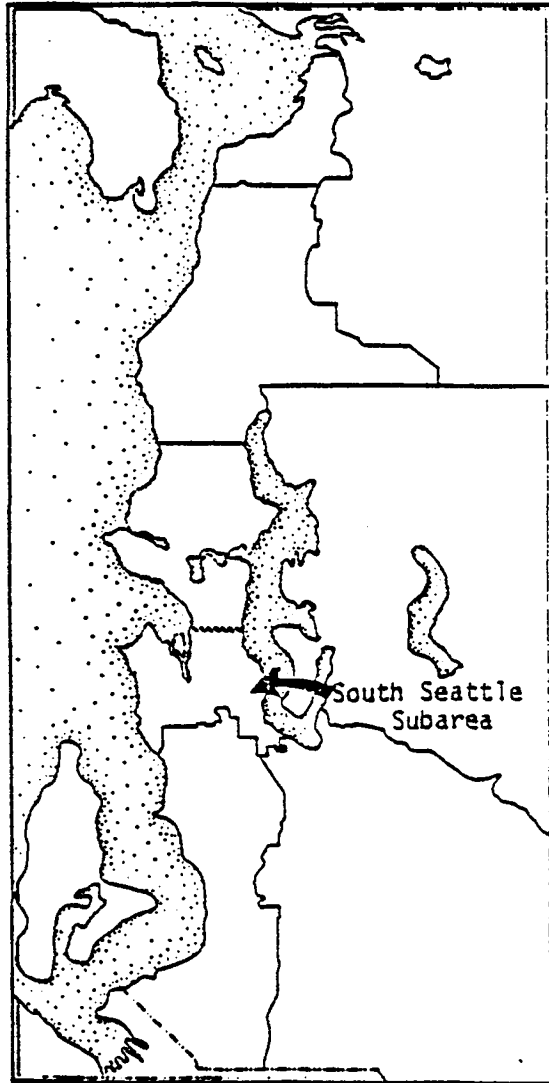
Seattle

Table 8

Seattle Employment Additions
1983-1995

		1982	1983	1984	1985	1990	1995
Total Employment (000)		896.0	928.6	975.7	1022.9	1115.1	1232.4
Net Employment Addition (000)			32.6	47.1	47.2	92.2	117.3
Seattle Share, by Type							
Construction	(2.13%)		690	1,000	1,010	1,960	2,500
Durable Mfg.	(7.187%)		2;340	3,390	3,390	6,630	8,430
Non-Durable Mfg.	(1.777%)		580	840	840	1,640	2,080
Transportation, Communication & Utilities	(3.832%)		1,250	1,800	1,810	3,530	4,490
Wholesale Trade	(3.603%)		1,170	1,700	1,700	3,320	4,230
Retail Trade	(8.381%)		2,730	3,950	3,960	7,730	9,830
Finance, Insurance Real Estate	(5.151%)		1,680	2,430	2,430	4,750	6,040
Services	(10.712%)		3,490	5,050	5,060	9,880	12,670
Government	(5.619%)		1,830	2,650	2,650	5,180	6,590

Source: Mundy, Jarvis & Associates

Table 9

South Seattle Employment Additions
1983-1995

	South Seattle Share(1)	1983	1984	1985	1990	1995
Construction	45.3%	310	450	460	890	1,130
Durable Manufacturing	41.6%	970	1,410	1,410	2,760	3,510
Non-Durable Mfg.	39.2%	230	330	330	640	820
Transportation, Communications Utilities	18.8%	240	340	340	660	840
Wholesale Trade	46.2%	540	780	780	1,530	1,950
Retail Trade	28.7%	780	1,130	1,140	2,220	2,820
Finance, Insurance & Real Estate	2.1%	40	50	50	100	130
Service	11.2%	390	570	570	1,110	1,420
Government	10.0% (e)	180	270	270	520	660

Notes: (1) Based. on employment data on 216 South Seattle firms.
(e) Mundy, Jarvis & Associates estimate. Specific data on this category not available.

Source: Mundy, Jarvis & Associates, Inc.

for the subject site are based on three important variables. They are discussed in the following paragraphs.

First, are employment additions to the area, which are taken from Table 9 (South Seattle Employment Additions).

The second variable are typical square feet per employees found for different business establishments in each of the employment categories. These square feet per employee ratios are based on more than 2,000 interviews Mundy, Jarvis & Associates, Inc. has conducted with firms in the Pacific Northwest where information has been sought on the type of business, number of employees in that establishment and the amount of area either owned or leased by that establishment. This data is from a proprietary data base of Mundy, Jarvis & Associates, Inc. which is continually being updated as various research studies are performed.

The third variable is the site capture ratio. This ratio is our opinion of the percentage of increased space demand that could be captured at the subject site. It takes into consideration such important market related variables as transportation systems, types of facilities to be offered at the subject site, the competitive characteristics of the marketplace including vacancy, rents, quality of competitive space.

Space demand for South Seattle is shown in Table 10 (South Seattle Space Demand). Two different types of demand are shown. The first is incremental demand. This is demand that is created as the labor force in an area expands. The second type of demand is latent demand. Latent demand is that demand existing in the marketplace which is inadequately served for one reason or another. This might be from obsolete facilities or facilities which are demolished for one reason or another. The sum of incremental and latent demand yields total demand. The market capture ratio is then applied to total demand to yield the probable number of square feet required at the site, in net rentable square feet.

These demand figures were then dissagregated into different types of space categories including retail, office, office-warehouse and warehouse. Those demand figures are shown in Table 11 (Space Demand, by Type).

Table 10

South Seattle Space Demand

	SF/ Empl. (1)	Site Capture (%)	1983					1984				
			Empl. Inc.	Demand in Sq. Ft.				Empl. Inc.	Demand in Sq. Ft.			
				Incre- mental	Latent (2)	Total	Site		Incre- mental	Latent	Total	Site
Construction	200	10	310	62,000	6,200	68,200	6,820	450	90,000	9,000	99,000	9,900
Dur. Mfg.	350	2	970	339,500	33,950	373,450	7,469	1,410	493,500	49,350	542,850	10,857
Non-dur. Mfg.	350	2	230	80,500	8,050	88,550	1,771	330	115,500	1,550	127,050	2,541
TCU	220	15	240	52,800	5,280	58,080	8,712	340	74,800	7,480	82,280	12,342
Wholesale Trade	500	10	540	270,000	27,000	297,000	29,700	780	390,000	39,000	429,000	42,900
Retail Trade	500	2	780	390,000	39,000	429,000	8,580	1,130	565,000	56,500	621,500	12,430
FIR	275	20	40	11,000	1,100	12,100	2,420	50	13,750	1,375	15,125	3,025
Service	350	15	390	136,500	13,650	150,150	22,523	570	199,500	19,950	219,450	32,917
Gov't.	220	5	180	39,600	3,960	43,560	2,178	270	59,400	5,940	65,340	3,267
Total				1,381,900	138,190	1,520,090	90,173		2,001,450	200,145	2,201,595	130,180

Table 10 (con't.)

	SF/ Empl. (1)	Site Capture (%)	1985					1990				
				Demand in Sq. Ft.					Demand in Sq. Ft.			
			Empl. Inc.	Incre-mental	Latent (2)	Total	Site	Empl. Inc.	Incre-mental	Latent	Total	Site
Construction	200	10	460	92,000	9,200	101,200	10,120	890	178,000	17,800	195,800	19,580
Dur. Mfg.	350	2	1,410	493,500	49,350	542,850	10,857	2,760	966,000	96,600	1,062,600	21,252
Non-dur. Mfg.	350	2	330	115,500	11,550	127,050	2,541	640	224,000	22,400	246,400	4,928
TCU	220	15	340	74,800	7,480	82,280	12,342	660	145,200	14,520	159,720	23,958
Wholesale Trade	500	10	780	390,000	39,000	429,000	42,900	1,530	765,000	76,500	841,500	84,150
Retail Trade	500	2	1,140	570,000	57,000	627,000	12,540	2,220	1,110,000	111,000	1,221,000	24,420
FIR	275	20	50	13,750	1,375	15,125	3,025	100	27,500	2,750	30,250	6,050
Service	350	15	570	199,500	19,950	219,450	32,917	1,110	388,500	38,850	427,350	64,102
Gov't.	220	5	270	59,400	5,940	65,340	3,267	520	114,400	11,440	125,840	6,292
Total				2,008,450	200,845	2,209,295	117,971		3,918,600	391,860	4,310,460	254,732

Table 10 (con't.)

	SF/ Empl. (1)	Site Capture (%)	1995 Demand in Sq. Ft.				
			Empl. Inc.	Incre-mental	Latent (2)	Total	Site
Construction	200	10	1,130	226,000	22,600	248,600	24,860
Dur. Mfg.	350	2	3,510	1,228,500	122,850	1,351,350	27,027
Non-dur. Mfg.	350	2	820	287,000	28,700	315,700	6,314
TCU	220	15	840	184,800	18,480	203,280	30,492
Wholesale Trade	500	10	1,950	975,000	97,500	1,072,500	107,250
Retail Trade	500	2	2,820	1,410,000	141,000	1,551,000	31,020
FIR	275	20	130	35,750	3,575	39,325	7,865
Service	350	15	1,420	497,000	49,700	546,700	82,005
Gov't.	220	5	660	145,200	14,520	159,720	7,986
Total				4,989,250	498,925	5,488,175	324,819

Source: Mundy, Jarvis & Associates, Inc.

Table 11

Space Demand - by Type
(in square feet of NRA, rounded)

Year	Retail(1)	Office(2)	Office-Warehouse(3)	Warehouse(4)	Total
1983	8,580	11,420	40,480	29,700	90,180
1984	12,430	16,190	58,660	42,900	130,180
1985	12,540	16,410	58,660	42,900	130,510
1990	24,420	31,920	114,240	84,150	254,730
1995	31,020	40,710	145,840	107,250	324,820

Notes: (1) Includes retail trade.
(2) Includes construction, finance, insurance, real estate, government.
(3) Includes durable and non-durable mfg., transportation, communications and utilities, and service.
(4) Includes wholesale trade.

Source: Mundy, Jarvis & Associates, Inc.

University of Florida

Real Estate Research Center

MARKET ANALYSIS STUDY

Please answer the following questions.

1) How many years have you served as a real estate consultant?

    _0_ 0-3 8.9%4-10 19.4%11-15 20.9%16-20 50.8%more than 20

2) What percent of your professional service includes conducting the following studies?

	zero %	1-24 %	25-49 %	50-74 %	75-100 %
appraisal	4.7%	13.1%	17.8%	35.6%	28.8%
feasibility	16.7%	10.4%	70.8%	.5%	1.6%
market	21.1%	63.2%	11.6%	1.6%	2.6%
highest & best use	32.5%	55.5%	8.4%	1.0%	2.6%
other (specify)	63.7%	27.4%	5.8%	1.6%	1.6%

3) Are your clients initially aware of the differences between the types of studies listed in the above question?

47.9% 0 - 24% know the difference between the study types

25.0% 25 - 49% know the difference between the study types

15.4% 50 - 74% know the difference between the study types

11.7% 75 - 100% know the difference between the study types

4) Please indicate how often clients in the following situations seek your professional service as a market analyst?

	Frequently	Sometimes	Rarely
a. Client has defined objectives and a specific project in mind (i.e. high-income apartments for a particular location).	56.3%	30.7%	13.0%
b. Client has defined objectives and a general idea of the types of real estate he wishes to invest in or develop (i.e. residential apartments).	28.0%	55.4%	16.7%
c. Client has no specific objectives and only a general desire to invest in or develop real estate.	11.3%	25.8%	62.9%

5) Which of the forecasting methods listed below do you use when conducting a market analysis? (please check all that apply)

12.8% economic base multiplier 35.1% trend analysis 32.4% personal judgment

15.7% simple or multiple linear regression 4.2% other_____

6) For those areas of the market analysis that require forecasting, do you include two or more projection figures?

18.0% always 36.5% frequently 27.5% sometimes 8.5% rarely

9.5% present only one projection figure

7) Please indicate the importance of the following factors in determining what
data to include in a market analysis:

	Very Important	Somewhat Important	Unimportant
a. project size	76.9%	20.4%	2.7%
b. project budget	53.9%	35.6%	10.4%
c. client position	36.5%	50.0%	13.5%
d. accessibility to data	63.9%	31.1%	4.9%
e. standard data for study type	47.2%	46.1%	6.7%

8) Please indicate the importance you place on the topics below as part of the
market analysis:

	Very Important	Somewhat Important	Unimportant
a. transportation linkages	63.1%	35.3%	1.6%
b. local political attitudes	49.5%	46.3%	4.2%
c. supply and demand	97.9%	2.1%	0
d. regional economic conditions	77.1%	21.9%	1.0%
e. national economic conditions	25.3%	70.4%	4.3%

9) Have you or someone working on your behalf conducted a consumer preference
survey as part of a market analysis?

46.6% yes   53.4% no

9a) If so, how often do you include this activity as part of the market analysis?
4.4% always 20.0% frequently 54.4% sometimes 21.1% rarely

10) Please indicate the degree of influence the following factors have on the
supply and demand of real estate in a market area:

	High	Medium	Low
a. financing cost	81.5%	17.5%	1.1%
b. population	52.0%	42.0%	4.2%
c. parking requirements	28.0%	58.7%	13.2%
d. absorption rate	87.7%	12.3%	0
e. employment	51.3%	45.5%	3.1%
f. environmental impact	23.8%	55.0%	21.2%
g. existing inventories	75.1%	23.8%	2.1%
h. land cost	40.0%	47.4%	12.6%
i. disposable income	50.0%	42.6%	7.4%
j. new construction	54.5%	42.2%	3.2%

11) What do you find to be the more difficult aspect(s) of conducting a market
analysis? Can you suggest ways to improve the analysis process?

ANSWER - 72.9%

NO ANSWER - 27.1%

Please answer the following questions.

1) How many years have you served as a real estate consultant?

   _0_ 0-3 _17_ 4-10 _37_ 11-15 _40_ 16-20 _97_ more than 20

2) What percent of your professional service includes conducting the following studies?

	zero %	1-24 %	25-49 %	50-74 %	75-100 %
appraisal	9	25	34	68	55
feasibility	32	136	20	1	3
market	40	120	22	3	5
highest & best use	62	106	16	2	5
other (specify)	121	52	11	3	3

3) Are your clients initially aware of the differences between the types of studies listed in the above question?

   _90_ 0 - 24% know the difference between the study types
   _47_ 25 - 49% know the difference between the study types
   _29_ 50 - 74% know the difference between the study types
   _22_ 75 - 100% know the difference between the study types

4) Please indicate how often clients in the following situations seek your professional service as a market analyst?

	Frequently	Sometimes	Rarely
a. Client has defined objectives and a specific project in mind (i.e. high-income apartments for a particular location).	108	59	25
b. Client has defined objectives and a general idea of the types of real estate he wishes to invest in or develop (i.e. residential apartments).	52	103	31
c. Client has no specific objectives and only a general desire to invest in or develop real estate.	21	48	117

5) Which of the forecasting methods listed below do you use when conducting a market analysis? (please check all that apply)

   _61_ economic base multiplier _158_ trend analysis _155_ personal judgment
   _75_ simple or multiple linear regression _20_ other_____

6) For those areas of the market analysis that require forecasting, do you include two or more projection figures?

   _34_ always _63_ frequently _52_ sometimes _16_ rarely
   _13_ present only one projection figure

7) Please indicate the importance of the following factors in determining what data to include in a market analysis:

	Very Important	Somewhat Important	Unimportant
a. project size	143	38	5
b. project budget	97	64	19
c. client position	65	89	24
d. accessibility to data	117	57	9
e. standard data for study type	84	82	12

8) Please indicate the importance you place on the topics below as part of the market analysis:

	Very Important	Somewhat Important	Unimportant
a. transportation linkages	118	66	3
b. local political attitudes	94	88	8
c. supply and demand	187	4	0
d. regional economic conditions	148	42	2
e. national economic conditions	47	131	8

9) Have you or someone working on your behalf conducted a consumer preference survey as part of a market analysis?

  88 yes   101 no

9a) If so, how often do you include this activity as part of the market analysis?

  4 always 18 frequently 49 sometimes 19 rarely

10) Please indicate the degree of influence the following factors have on the supply and demand of real estate in a market area:

	High	Medium	Low
a. financing cost	154	33	2
b. population	101	82	8
c. parking requirements	53	111	25
d. absorption rate	163	23	0
e. employment	98	87	6
f. environmental impact	45	104	40
g. existing inventories	142	43	4
h. land cost	76	90	24
i. disposable income	94	80	14
j. new construction	102	79	6

11) What do you find to be the more difficult aspect(s) of conducting a market analysis? Can you suggest ways to improve the analysis process?

  ANSWER - 140

  NO ANSWER - 52

Table 36

RESULTS OF INTERVIEWS WITH SAMPLE
OF BUSINESSES IN STUDY AREA

INDUSTRY	AREA	NUMBER OF BUSINESSES	EMPLOYMENT	NUMBER OF BUSINESSES
Construction	34,351	18	167	17
Manufacturing	665,799	78	2,398	82
T.C.U.	1,604,981	87	3,308	91
Wholesale and Retail Trades	4,338,454	457	7,560	474
F.I.R.	1,304,454	211	5,598	218
Services	3,119,598	479	10,149	514
Government	579,752	18	3,544	20
	11,647,339	1,348	32,724	1,416
No Response		96		28

Source: Bill Mundy & Associates, Inc.

Table 37

C.B.D. EMPLOYMENT PROJECTION A
BY MAJOR S.I.C. CATEGORY: 1981-2000

YEAR	CONST.	MFG.	T.C.U.	TRADES	F.I.R.	SERV.	GOVT.	TOTAL
1981	835	11,990	16,540	58,116	37,990	50,745	26,088	.162,344
1982	886	12,434	17,151	29,306	29,083	53,095	26,827	168,810
1983	962	12,924	17,867	30,695	30,352	55,900	27,694	176,542
1984	1,037	13,397	18,584	32,083	31,620	58,651	28,546	184,157
1985	1,114	13,870	19.275	33,447	32,888	61,401	29,397	191,789
1986	1,187	14,325	20,044	34,835	34,157	64,126	30,233	199,354
1987	1,262	14,792	20,814	36,211	35,425	66,877	31,100	206,986
1988	1,338	15,247	21,558	37,562	36,649	69,627	31,935	214,517
1989	1,402	15,691	22,301	38,914	37,918	72,245	32,755	221,796
1990	1,457	16,123	22,991	40,203	39,099	74,809	33,526	228,688
1991	1,501	16,321	23,630	41,404	40,188	77,192	34,240	235,437
1992	1,541	16,831	24,187	42,445	41,106	79,222	34,834	240,366
1993	1,576	17,129	24,718	43,437	41,981	81,198	35,412	245,493
1994	1,608	17,409	25,196	44,355	42,480	82,988	35,910	250,082
1995	1,639	17,660	25,647	45,210	43,511	84,724	36,408	254,537
1996	1,665	17,894	26,046	45,979	44,211	86,273	36,842	258,487
1997	1,691	18,122	26,417	46,693	44,911	87,796	37,275	262,303
1998	1,714	18,332	26,789	47,331	45,523	89,211	37,677	265,817
1999	1,733	18,536	27,108	47,914	46,179	90,600	38,062	269,145
2000	1,752	18,729	27,400	48,422	46,741	91,909	38,416	272,171

Table 39

SQUARE FOOTAGE PER EMPLOYEE RATIOS
FOR SEVEN MAJOR INDUSTRIES

INDUSTRY	AREA (SQ. FT.)	EMPLOYMENT	SQ. FT./EMP.	NUMBER OF BUSINESSES
Construction	33,343	167	200	17
Manufacturing	663,899	2,039	326	75
T.C.U.	1,280,468	5,606	228	81
Wholesale and Retail Trades	4,301,103	7,250	593	414
F.I.R.	1,300,663	4,707	276	205
Services	3,098,366	9,048	342	438
Government	579,642	2,543	228	17
	11,257,484	31,360	359	1,252

Source: Bill Mundy & Associates, Inc.

Table 40

SPACE DEMAND GENERATED BY
C.B.D. EMPLOYMENT:
PROJECTION A

YEAR	CONSTR.	MFG.	T.C.U.	TRADES	F.I.R.	SERV.	GOVT.	TOTAL	OFFICE SPACE OCCUPIED
1981	166,716	3,903,944	3,777,901	16,377,570	7,734,477	17,377,118	5,946,499	55,284,225	12,415,148
1982	176,514	4,050,204	3,917,528	17,075,172	8,035,801	18,183,386	6,113,396	57,552,001	12,913,431
1983	196,962	4,323,598	4,191,458	18,367,020	8,612,662	19,660,658	6,481,474	61,833,832	13,869,598
1984	218,063	4,602,786	4,477,324	19,716,180	9,214,817	21,185,153	6,861,110	66,275,433	14,858,490
1985	240,256	4,889,134	4,764,359	21,088,603	9,833,624	22,755,459	7,249,456	70,820,891	15,876,591
1986	262,522	5,175,877	5,078,538	22,513,139	10,468,167	24,359,179	7,641,838	75,499,260	16,915,374
1987	286,098	5,478,225	5,405,448	23,987,509	11,128,292	26,039,263	8,057,632	80,382,467	18,002,021
1988	310,386	5,782,376	5,732,864	25,479,810	11,789,285	27,761,015	8,472,633	85,328,369	19,104,781
1989	332,801	6,087,487	6,066,951	27,003,527	12,477,805	29,467,088	8,889,859	90,325,518	20,207,355
1990	353,850	6,398,941	6,398,597	28,539,855	13,162,314	31,214,666	9,308,415	95,376,638	21,314,505
1991	372,678	6,691,803	6,714,019	30,001,777	13,814,525	32,882,828	9,708,815	99,186,445	22,366,790
1992	389,824	6,946,697	7,003,016	31,340,913	14,398,674	34,388,771	10,064,977	104,532,872	23,308,494
1993	405,506	7,189,810	7,278,425	32,618,639	14,955,014	35,845,946	10,405,975	108,699,315	24,210,364
1994	419,980	7,417,086	7,530,433	33,807,315	15,432,328	37,185,511	10,710,556	112,503,209	25,032,885
1995	433,964	7,629,413	7,772,645	34,941,887	15,953,011	38,494,939	11,011,074	116,236,933	25,835,492
1996	446,142	7,823,095	7,988,059	35,962,505	16,404,057	39,669,204	11,275,923	119,568,985	26,551,290
1997	457,644	8,001,898	8,183,078	36,890,275	16,830,303	40,772,942	11,522,725	122,658,865	27,212,681
1998	468,032	8,167,586	8,372,901	37,726,360	17,213,270	41,803,243	11,751,660	125,503,052	27,825,362
1999	476,778	8,316,465	8,531,787	38,458,234	17,583,529	42,751,250	11,954,985	128,073,028	28,370,989
2000	484,719	8,453,349	8,675,448	39,099,503	17,923,544	43,629,038	12,138,355	130,403,956	28,862,083

Bill Mundy & Associates, Inc.

Table 42

OFFICE SPACE DEMAND BASED ON
PROJECTION A EMPLOYMENT FOR C.B.D.
STUDY AREA: 1981 - 2000

YEAR	OCCUPIED OFFICE SPACE	VACANT OFFICE SPACE	TOTAL OFFICE SPACE DEMAND		PROBABLE SUPPLY	EXCESS SUPPLY
			CUMULATIVE	ANNUAL		
1981	12,415,148	653,429	13,068,577		13,105,658	37,081
1982	12,913,431	679,654	13,593,085	524,508	15,438,135	1,845,050
1983	13,869,598	729,979	14,599,577	1,006,492	15,438,135	838,558
1984	14,858,490	782,026	15,640,516	1,040,939	15,640,516	0
1985	15,876,591	835,610	16,712,201	1,071,685	16,712,201	0
1986	16,915,374	890,283	17,805,657	1,093,456	17,805,657	0
1987	18,002,021	947,475	18,949,496	1,143,839	18,949,496	0
1988	19,104,781	1,005,515	20,110,296	1,160,800	20,110,296	0
1989	20,207,355	1,063,545	21,270,900	1,160,604	21,270,900	0
1990	21,314,505	1,121,816	22,436,321	1,165,421	22,436,321	0
1991	22,366,790	1,177,199	23,543,989	1,107,668	23,543,989	0
1992	23,308,494	1,226,763	24,535,257	491,267	24,535,257	0
1993	24,210,364	1,274,230	25,484,594	949,337	25,484,594	0
1994	25,032,885	1,317,520	26,350,405	865,812	26,350,405	0
1995	25,835,492	1,359,763	27,195,255	844,849	27,195,255	0
1996	26,551,290	1,397,436	27,948,726	753,472	27,948,726	0
1997	27,212,681	1,432,246	28,644,927	696,201	28,644,927	0
1998	27,825,362	1,464,493	29,289,855	644,927	29,289,855	0
1999	28,370,989	1,493,210	29,864,199	574,344	29,864,199	0
2000	28,862,083	1,519,057	30,381,140	516,941	30,381,140	0

Source: Bill Mundy & Associates, Inc.

Table 45

RELATIONSHIP BETWEEN EMPLOYMENT
IN THE CONSOLIDATED AREA AND SQUARE FEET
OF OFFICE SPACE IN THE C.B.D.

YEAR	OFFICE SPACE SUPPLY	VACANCY RATE	OCCUPIED OFFICE SPACE	EMPLOYMENT (SCA)	SQ. FT./EMP. RATIO
1970	6,314,500			621,500	
1971	6,599,200	9.41%	5,978,215	594,300	10.06
1972	6,865,500	10.55%	6,141,190	614,700	9.99
1973	7,645,800	10.68%	6,829,229	649,100	10.52
1974	8,467,500	10.65%	7,565,711	672,600	11.25
1975	8,587,500	8.45%	7,861,856	648,900	12.12
1976	9,114,500	8.22%	8,365,288	708,100	11.82
1977	9,615,600	6.90%	8,952,124	752,700	11.89
1978	9,820,600	2.80%	9,545,623	834,500	11.44
1979	10,341,100	.05%	10,335,929	897,800	11.51
1980	11,980,626	6.06%	11,254,600	926,300	12.15
1981	13,105,658	9.47%	12,415,148	965,500	12.86

Source: Bill Mundy & Associates, Inc.

Table 46

OFFICE SPACE DEMAND BASED ON
PROJECTION A EMPLOYMENT FOR
CONSOLIDATED AREA: 1981 - 2000

YEAR	EMPLOYMENT IN CONSOLIDATED AREA	SQ. FT./EMP. RATIO	OCCUPIED OFFICE SPACE	VACANT OFFICE SPACE	TOTAL OFFICE SPACE DEMAND CUMULATIVE	TOTAL OFFICE SPACE DEMAND ANNUAL	PROBABLE SUPPLY	EXCESS SUPPLY
1981	965,500	12.86	12,415,148	653,429	13,068,577		13,105,658	37,081
1982	1,004,200	12.86	12,903,970	679,156	13,583,126	514,549	15,438,135	1,855,009
1983	1,050,200	13.20	13,862,640	729,613	14,592,253	1,009,126	15,438,135	845,882
1984	1,095,500	13.55	14,844,025	781,264	15,625,289	1,033,036	15,625,289	0
1985	1,140,900	13.90	15,858,510	834,658	16,693,168	1,067,879	16,693,168	0
1986	1,185,900	14.25	16,899,075	889,425	17,788,500	1,095,332	17,788,500	0
1987	1,231,300	14.60	17,976,980	946,157	18,923,137	1,134,637	18,923,137	0
1988	1,276,100	14.95	19,032,845	1,001,729	20,034,574	1,111,437	20,034,574	0
1989	1,319,400	15.30	20,186,820	1,062,464	21,249,284	1,214,711	21,249,284	0
1990	1,360,400	15.65	21,290,260	1,120,540	22,410,800	1,161,516	22,410,800	0
1991	1,398,200	15.98	22,343,236	1,175,960 .	23,519,196	1,108,396	23,509,196	0
1992	1,429,900	16.28	23,278,772	1,225,199	24,503,971	984,775	24,503,971	0
1993	1,460,400	16.55	24,169,620	1,272,085	25,441,705	937,735	25,441,705	0
1994	1,487,700	16.80	24,993,360	1,315,440	26,308,800	867,095	26,308,800	0
1995	1,514,200	17.03	25,786,826	1,357,201	27,144,027	835,227	27,144,027	0
1996	1,537,700	17.23	26,494,571	1,394,451	27,889,022	744,995	27,889,022	0
1997	1,560,400	17.40	27,150,960	1,428,998	28,579,958	690,936	28,579,958	0
1998	1,581,300	17.55	27,751,815	1,460,622	29,212,437	632,479	29,212,437	0
1999	1,601,100	17.68	28,307,448	1,489,866	29,797,314	584,877	29,797,314	0
2000	1,619,100	17.78	28,787,598	1,515,137	30,302,735	505,421	30,302,735	0

Source: Bill Mundy & Associates, Inc.

Table 48

HISTORICAL ABSORPTION OF OFFICE SPACE

YEAR	OCCUPIED SQ. FT. ADDED	OCCUPIED CUMULATIVE SQ. FT.	TOTAL SQ. FT. ADDED	TOTAL CUMULATIVE SQ. FT.
1971		5,978,215		6,599,200
1972	162,975	6,141,190	266,300	6,865,500
1973	688,039	6,829,229	780,300	7,645,800
1974	736,482	7,565,711	821,700	8,467,500
1975	296,145	7,861,856	120,000	8,587,500
1976	503,432	8,365,288	527,000	9,114,500
1977	586,836	8,952,124	501,100	9,615,600
1978	593,499	9,545,623	205,000	9,820,600
1979	790,306	10,335,929	520,500	10,341,100
1980	918,671	11,254,600	1,639,526	11,980,626
1981	1,160,548	12,415,148	1,125,032	13,105,658
	6,436,933		6,506,458	
	$\bar{X} = 643,693$		$\bar{X} = 650,646$	

Figure 3

OFFICE SPACE ABSORBED AND CONSTRUCTED
1972-1981
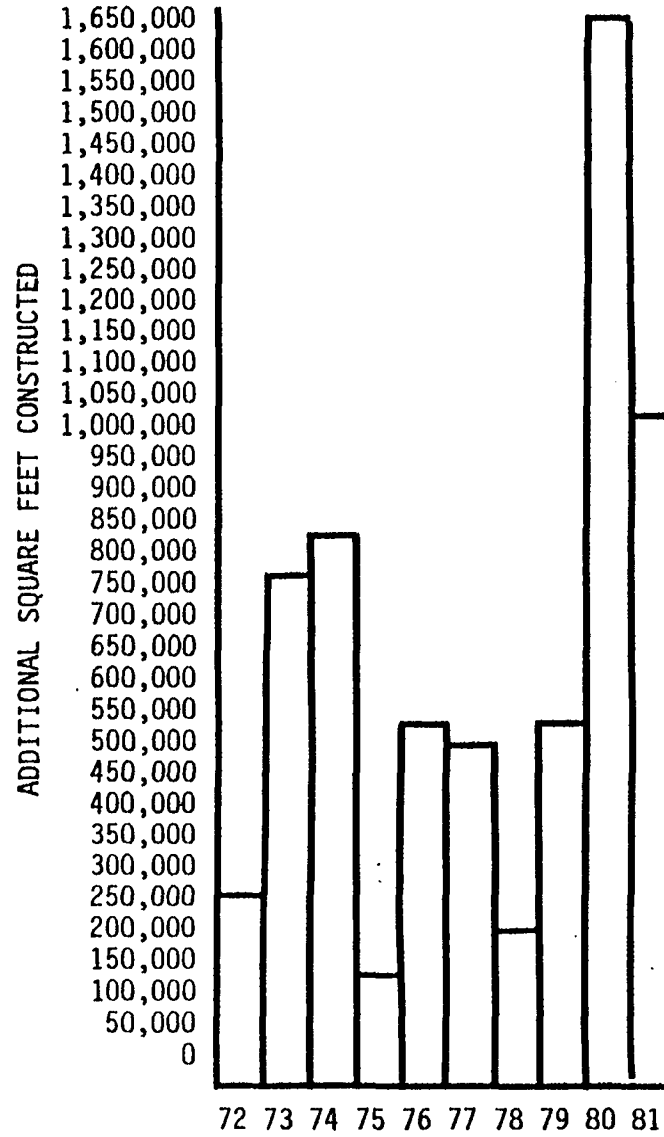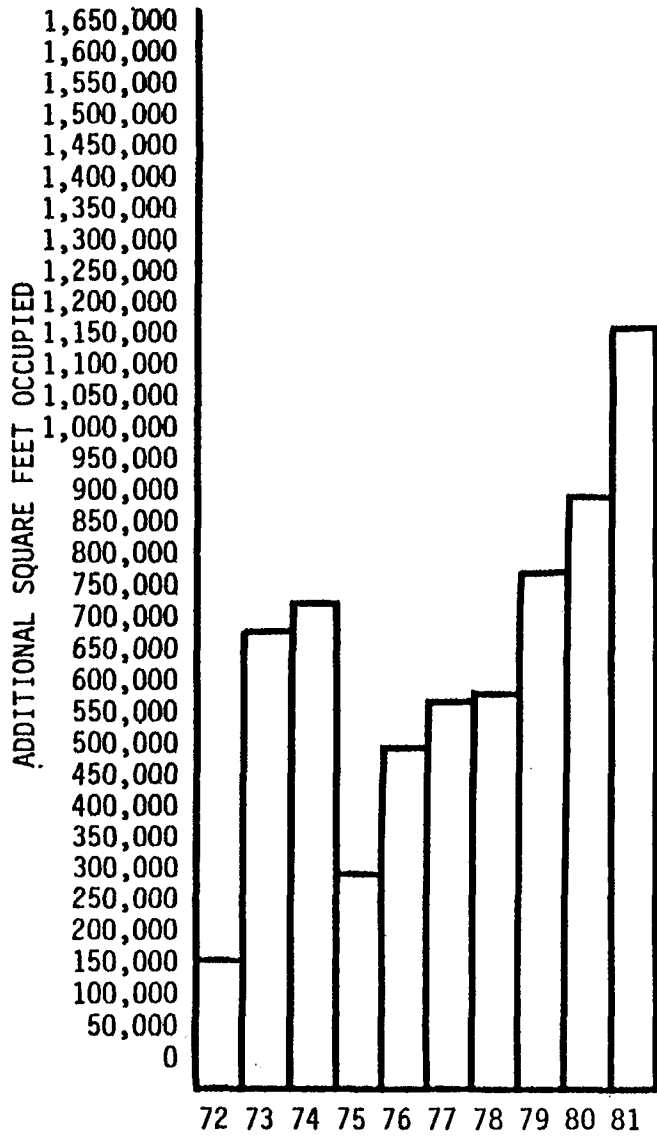
Table 49

PROJECTED OFFICE SPACE DEMAND
BASED ON HISTORICAL ABSORPTION

YEAR	CUMULATIVE OCCUPIED SPACE	CUMULATIVE VACANT SPACE (5%)	CUMULATIVE TOTAL SPACE DEMAND	TOTAL SPACE SUPPLIED	EXCESS SPACE
1981	12,415,158	653,429	13,068,577	13,105,658	37,081
1982	13,278,650	698,876	13,977,526	15,438,135	1,460,609
1983	14,142,153	744,324	14,886,477	15,438,135	551,658
1984	15,005,655	789,771	15,795,426	15,795,426	0
1985	15,869,158	835,219	16,704,377	16,704,377	0
1986	16,732,660	880,666	17,613,326	17,613,326	0
1987	17,596,163	926,114	18,522,277	18,522,277	0
1988	18,459,665	971,561	19,431,226	19,431,226	0
1989	19,323,168	1,017,009	20,340,177	20,340,177	0
1990	20,186,670	1,062,456	21,249,126	21,249,126	0
1991	21,050,173	1,107,904	22,158,077	22,158,077	0
1992	21,913,675	1,153,351	23,067,026	23,067,026	0
1993	22,777,178	1,198,799	23,975,977	23,975,977	0
1994	23,640,680	1,244,246	24,884,426	24,884,926	0
1995	24,504,183	1,289,694	25,793,877	25,793,887	0
1996	25,367,685	1,335,141	26,702,826	26,702,826	0
1997	26,231,188	1,380,589	27,611,777	27,611,777	0
1998	27,094,690	1,426,036	28,520,726	28,520,726	0
1999	27,958,193	1,471,484	29,429,677	29,429,677	0
2000	28,821,695	1,516,931	30,338,626	30,338,626	0

Table 50

COMPARISON OF ALTERNATIVE METHODS
FOR ESTIMATING OFFICE SPACE
DEMAND

	CUMULATIVE OFFICE SPACE DEMAND				
	PROJECTION A			PROJECTION B	
YEAR	C.B.D. EMP. METHOD	AREA EMP. METHOD	HISTORICAL ABSORPTION	C.B.D. EMP. METHOD	CONSOLIDATED AREA EMP. METHOD
1985	16,712,201	16,693,168	16,704,377	15,929,778	15,816,737
1990	22,436,321	22,410,800	21,249,126	21,215,421	21,064,900
1995	27,195,255	27,144,027	25,793,877	25,734,121	25,532,452
2000	30,381,140	30,302,753	30,338,626	28,813,547	28,567,781

Source: Bill Mundy & Associates, Inc.

EXECUTIVE RESEARCH SYMPOSIUM
April 23, 1974
WISCONSIN CENTER

Real Estate Research: Theoretical and Applied

Associate Professor James A. Graaskamp

I. Research areas of Current Concern in the Department of Real Estate and
Urban Land Economics

   A. Re-casting of basic urban land economic theory and structure

   B. Development of operating techniques for application of contemporary
       appraisal theory advocated by Richard U. Ratcliff

   C. Selection of applied research problems to provide field experience for
       graduate students of Real Estate Valuation and Investment Analysis

II. Restatement of Urban Land Economic Theory

   A. Shift from classical deductive economics of value allocation to inductive
       micro-economics of a single real estate enterprise in a non-price
       system.

   B. Real estate is defined as artificially delineated space over time to
       contain an activity - a space-time product
       1. Real estate process involves three major elements, land as a public
           resource, cultural need and preference for space, and money capital
           for all forms of improvement.
       2. Cultural need and preference is expressed through government
           regulation and private market transactions.
       3. Government regulation determines land use suitability and tempo of
           development.
       4. The Real Estate business is concerned with the conversion of space-
           time products to money over time. It interfaces people and the
           land.
       5. The Real Estate business is the producer, the occupant is the user,
           and regulation represents the collective public interest in land
           resource utilization and reduction of ecological losses.
       6. Space consumer, space producers, and government are all cash cycle
           enterprises. Therefore the real estate process is at equilibrium
           when all three enterprises are solvent as a result of any given
           project decision. Real Estate investment is therefore not made on
           the basis of optimizing value to the investor but on the basis of
           a satisficing distribution of cash surpluses among each of the

vested interests.

D. These premises of Real Estate seriously undermine the assumptions of appraisal fair market value and therefore the premises of traditional real estate tax assessment.
    1. The cubage concept for prorating tax revenue requirements to land consistent with planning determination of use suitabilities.
    2. Evaluation of improvements on cost to acquire for the user or percentage of cash income from tenants.

III. Professor Richard U. Ratcliff postulated that the function of the appraiser was to predict a value under conditions of uncertainty, to assist in decisions about Real Estate.

    A. Purpose of appraisal defines value. Majority of appraisals involve forecasting probable sales price.

    B. He suggested only two theoretical approaches to estimating probable sales price.
        1. Inference about future sale prices from past sales behavior of comparable buyers in the market place is preferred.
        2. In the absence of market evidence, the simulation of buyer decision criteria by modeling their decision process.

    C. The Real Estate Department has been one of the leaders in developing applications of techniques in other fields to implementation of Ratcliff's theories to Real Estate.
        1. Consumer and investor marketing research.
        2. Data processing techniques for inference and simulation.
        3. The development of EDUCARE, a non-profit foundation funded by the professional appraisal societies to instruct on campus the use of the computer terminal in small appraisal office operations.

IV. Applied Real Estate Research for Wisconsin Industry

    A. Our M.S. degree program and our Ph.D. program presently have over 60 graduate students per year on full time program who are all required to take on actual real estate problems in the field.

    B. Some of the projects handled this year have included:
        1. Definition of consumer profile and unit mix of a planned unit development in Waukesha for a Milwaukee architectural firm.
        2. Appraisal of radio station complex for tax assessment review.
        3. Identification of business investment opportunities in Mineral Point, Wisconsin.
        4. Development of economic cash flow models to negotiate land development proposals with a municipality.
        5. Development of an automatic market comparison valuation system for tax assessment purposes.
        6. Actual development proposal for the 600 block of University Avenue.
        7. Analysis of turnover periods for different single family residential types to improve marketing of single family homes and explore alternative methods for charging brokerage commission.

For further information, call Professor Graaskamp at 608-262-6378.

JAG/slw

Seminar - BUYING INVESTMENT PROPERTY
Sponsored By
University of Wisconsin Extension-Green Bay
Thursday, January 28 & Friday, January 30, 1981.
Holiday Acres Resort, Rhinelander

Instructors:

Prof. James Graaskamp   Mr. Julius Dinger
School of Business   Julius Dinger Real Estate
UW-Madison   P.O. Box 1127
1155 Observatory Drive   Eau Claire, WI   54701
Madison, WI   53706

Session #1: Thursday Morning (Graaskamp)

9:00-9:50   A. An Investment Check List For the 1980's

10:00-10:50 B. Nature and Segmentation of Northern Wisconsin Recreational Market

               1. Recreational home
               2. Recreational development
               3. Restaurants and commercial property
               4. Motels and resorts
               5. Marinas

11:00-11:50 C. Regional Problems of Northern Wisconsin

               1. Access systems
               2. Energy impacts
               3. Competitive alternatives
               4. Education/recreation

LUNCH

Session #2: Thursday Afternoon (Dinger)

1:00-1:50   A. Recreational Land Selection

2:00-2:50   B. Second Homes and Seasonal Cottages

3:00-3:50   C. Land Use Regulations and the Seasonal Home

             (All sessions feature question and answer formats for at least
             25% of the time allotted)

Session #3: Friday Morning (Graaskamp)

9:00-9:50   A. The Restaurant Formula - (A financial feat to provide a taste
                 treat for palates trained to like bland)

10:00-10:50 B. Setting up a Pro Forma on a Small Motel

11:00-11:50 C. Some Case Examples in Northern Wisconsin (Dinger)

LUNCH

Session #4:   Friday Afternoon (Dinger & Graaskamp)

1:00-1:50   A.   A Pro Forma of Land Cost and Carry Projections (Some good and bad examples)

2:00-2:50   B.   Marinas and Water Sports

3:00-3:50   C.   Investment Syndication and Joint Ventures in Wisconsin in the 80's - Think Small (Graaskamp)

BUYING INVESTMENT PROPERTY IN NORTHERN WISCONSIN:
A STRATEGY FOR THE 1980'S

A Seminar Sponsored by

University of Wisconsin Extension-Green Bay
Thursday, January 29 & Friday, January 30, 1981
Holiday Acres Resort, Rhinelander

SESSION NO. 1

INVESTMENT GUIDELINES AND ENVIRONMENT

I. An investment program should begin with "Know Thyself" - specifically,
    attitudes about the future, a profile of constraints in the search
    for opportunities, and then some decision rules for ranking choices.

    A. There are many long-term trends and future possibilities about
        which we can do very little as investors
        1. Systematic versus specific risks in the stock market - the
            beta factor - random selection for diversity
        2. Location, money market, and marketing risks in real estate
        3. Given personal or instinctive judgments we position ourselves
            for future change
    B. Long-term factors for which we should have controlling attitudes
        1. Capital shy economy in which all major problems require capital
            intensive solutions
            a. Short fall in savings
            b. Selective credit assignments
            c. Continued high interests
        2. Inflation since government investment may be a faster response,
            (deficit budgets), import-export deficit, deliberate tax on
            savers to transfer wealth to doers, necessity of funding
            pension and income stabilization
        3. Deflation of consumer discretionary income through forced
            saving, higher food and shelter prices, and transition to
            energy efficient systems
        4. Energy problems during transition to alternative
        5. Shifting demographics to younger families and retirement
            families
        6. Shifting tax laws

II. Any investor or investment board must define certain limits which
    profile the nature of an investment opportunity

    A. Degree of exposure to political risk
        1. Level #1 - All manner of land use control law
        2. Level #2 - Vulnerability to political control of effective
            demand (tax deductions for second homes, alteration of public
            transportation subsidies, etc.)
        3. Level #3 - Political subsidy of competitive supply

B. Degree of "channelled demand"
    1. Identity of interest between user and investor
    2. Reciprocity
    3. Tie-in contracts
    4. Careful research of market segmentation
C. Degree of management intensiveness
    1. Dependency on a unique personality or talent
    2. Dependency on high technology levels and skills
    3. Short-term, high turnover tenancy tied to service rather than location
    4. Lack of product differentiation requires constant development of advertising differentiation
D. Financial parameters
    1. Maximum cash for down payments
    2. Maximum cash for holding power
    3. Minimum time horizon for cash income
    4. Need for diversification
    5. Tolerance for risk
E. Sequence of decision points
    1. Cost of aborting before closing
    2. Minimum cost escape route
    3. Liquidity through sale
F. Income tax parameters and objectives
    1. Acquisition factors
    2. Operations
    3. Disposition
    4. Special benefits
G. Estate planning considerations
    1. Accumulation
    2. Distribution and allocation
    3. Liquidity for estate taxes
    4. Structuring for administrative efficiency and safety

III. In the real estate industry attitudes which are shared and profiles which are sketched by conventional wisdom soon lead to a rationale for investment which may or may not be well thought out

A. The rationale for apartment investment is based on inflation
    1. Rising rents increase slower than inflation rate but only 50% of expenses are rising, debt service is fixed
    2. Rising construction costs, land costs, and interest costs mean a housing shortage or higher rents
    3. Tax favoritism to current income, opportunity for wealth transfer, and tax deferral
    4. Higher selling price due to higher rents, higher gross rent multipliers, and lower investor income expectations in anticipation of capital gains
    5. Opportunity to sell wholesale as an investment property or retail as a condominium

B. Dangers to implicit assumptions of apartment rationale

    1. Rent increases will be unacceptable so income in value won't rise. Suitability for condominium conversion provides an escape

2. Inflation has wiped out or reduced real income of the average
    American family. Only the whitecollar self-employed and major
    union in large industries have been able to protect themselves
    and therefore, you need to avoid building with blue-collar and
    elderly tenancies.

3. Since many consumer items are competing with rent paying ability
    such as food, auto expense and medical expense, it is important
    to position the investment where shelter is in short supply
    and a high priority consumption item. Population growth
    areas in the South and West may meet these requirements where
    you have an immigration of white-collar younger groups.

4. Long-term inflation causes rising interest rates, rising
    constants and therefore, lower prices and more equity. Lender
    must turn to variable rate mortgages, balloon payments, short-
    terms. Try to buy apartments with assumable mortgages, wrap-
    arounds, or pay slightly higher rates for fixed dollar mortgages.

5. Run away inflation from loss of political will leads to short
    paybacks, exculpitory clauses and aggressive upgrading of
    rents for old and new tenants. The operating expense pass
    through provision has already appeared.

A CONTEMPORARY APPROACH TO A REAL ESTATE APPRAISAL REPORT

Continuing Education Institute
March 9-10, 1979
Marriott Hotel, Milwaukee
Presented by
Prof. James A. Graaskamp, CRE, SREA
School of Business, University of Wisconsin

I. A fundamental premise of real estate appraisal is the concept of highest
and best use, a premise that views land as a commodity and potential uses
for highest profit not necessarily the socially desirable uses.

A. The term highest and best use presumes the individual appraiser knows
better than society what is best by implication although in fact it
boils down to what is the most profitable use which is legal, in demand
and within the suitability option of the physical site.

B. However, appraisal literature is showing considerable call for redefin-
ition of highest and best use concepts. Consider such key items as:

1. "Highest and Best Use," William Crouch, The Appraisal Journal, April
1966, pp. 166-176. (Appraiser must prove effective demand and
reasonable probability of political permission to use the site.)
2. "Highest and Best Use - Fact or Fancy," Paul Wendt, The Appraisal
Journal, April 1972, pp. 165-174. (Wendt makes the case very well
that the opinion of highest and best use must consider so many cash
flow variables on an after tax basis that the conclusions must vary
with investor type just as judgments and analytical skill must vary
by appraiser.)
3. "The Importance of the Highest & Best Use Analysis," Paul Tischler,
The Real Estate Appraiser, May-June 1972. (Tischler argues that
proposed use must not only consider highest income to owner but also
external costs and economic costs and impact.)

C. On a little broader base, the Rockefeller Land Use Commission noted a
growing public consensus that land use was central to both environmental
balance and social equity and therefore subject to public control first
and private development second.

D. The definition of fair market value assumes that the buyer is knowledgeable
as to all the uses to which it may be put and yet today we are in transition
from viewing land as a commodity to land as a public resource.

1. But the law has always defined private options to use and benefit as
those rights which are not preempted by the public since the
constitution reserves:
a. First claim on productivity - the real estate tax
b. First prerogative on use decisions - the police power
c. Compensation in cash only for entrenched private rights -
eminent domain
2. Court cases in Wisconsin have held that the land owner does not have
inherent right to develop marsh land to the damage of the general
public by upsetting the natural environment...

... nothing this court has said or held in prior cases indicates that destroying the natural character of a swamp or a wetland so as to make that location available for human habitation is a reasonable us of that land when the new use, although of a more economical value to the owner, causes a harm to the general public. ... While loss of value is to be considered in determining whether a restriction is a constructive taking, value based upon changing character of the land at the expense of harm to public rights is not an essential factor or controlling. The Land belongs to the people... a little of it to those dead... some to those living... but most of it belongs to those yet to be born..." Just vs. Marinette, 56 Wis 2d 7.

3. Wisconsin courts have held that the owner and the appraiser have constructive notice of soils and suitability for septic tank since the Soil Conservation Service is available in the courthouse, same as the Register of Deeds.

E. Recognition of the fact that profit maximization must be limited by concerns for physical environment and community priorities for land use has resulted in redefinition of the most basic concept in appraisal; i.e. highest and best use, in the authorized terminology handbook sponsored by the American Institute of Real Estate Appraisers and the Society of Real Estate Appraisers. Compare the 1971 definition with that for 1975:

> Highest and best use concept -
> "A valuation concept that can be applied to either the land or imrpovements. It normally is used to mean that use of a parcel of land (without regard to any improvements upon it) that will maximize the owner's wealth by being the most profitable use of the land. The concept of highest and best use can also be applied to a property which has some improvements upon it that have a remaining economic life. In this context, highest and best use can refer to that use of the existing improvements which is most profitable to the owner. It is possible to have two different highest and best uses for the same property: one for the land ignoring the improvements; and another that recognizes the presence of the improvements."
> P. 57, Real Estate Appraisal Principles and Terminology, Second Edition, Society of Real Estate Appriasers 1971.

> "Highest and Best Use: That reasonable and probable use that will support the highest present value, as defined, as of the effective date of the appraisal. Alternatively, that use, from among reasonably probable and legal alternative uses, found to be physically possible, appropriately supported, financially feasible, and which results in highest land value. The definition immediately above applies specifically to the highest and best use of land. It is to be recognized that in cases where a site has existing improvements on it, the highest and best use may very well be determined to

be different from the existing use. The existing use will continue, however, unless and until land value in its highest and best use exceeds the total value of the property in its existing use. Implied within these definitions is recognition of the contribution of that specific use to community environment or to community development goals in addition to wealth maximization of individual property owners. Also implied is that the determination of highest and best use results from the appraisers judgment and analytical skill, i.e., that the determined from analysis represents an opinion, not a fact to be found. In appraisal practice, the concept of highest and best use represents the premise upon which value is based. In the context of most probable selling price (market value) another appropriate term to reflect highest and best use would be most probable use. In the context of investment value an alternative term would be most profitable use."
Real Estate Appraisal Terminology, Edited by Byrl N. Boyce, Ph.D. SRPA, Ballinger Publishing Co., Cambridge, Mass. 1975

F. The purchase of a piece of real estate today involves the acceptance of a great many assumptions about the future. Those who take care to validate these assumptions in a period of transition as to public land use control tend to have the most successful investment.

1. Business decisions today make explicit recognition of their assumptions and the need to act under conditions of uncertainty.
2. Business risk is the difference between assumptions about the future and realizations, the proforma budget and the end of the year income statement.
3. Risk management is the control of variance between key assumptions and realizations.
4. An appraisal is a set of assumptions about the future productivity of a property under conditions of uncertainty.

G. The concept of highest and best use of land was a commodity concept which did not consider externalities adequately. It is being replaced by concepts of most fitting use and the concept of most probable use.

1. The most fitting use is that use which is the optimal reconciliation of effective consumer demand, the cost of production, and the fiscal and environmental impact on third parties.
2. Reconciliation involves financial impact analysis on "who pays" and "who benefits" - thus the rash of debate on how to do impact studies.
3. The most probable use will be something less than the most fitting use depending on topical constraints imposed by current political factors, the state of real estate technology, and short term solvency pressures on consumer, producer, or public agency.
4. Most probable use means that an appraisal is first a feasibility study of alternative uses for a site in search of a user, an investor, and in need of public consent.

H. No matter what the field, a decision model must be considered in light of how it fits the following constraints:

1. The question to be answered	4. Credibility with the decision maker
2. The facts available	5. Facility of the analyst
3. The theory	6. Cost benefit ratio of method

II. Uncertainty, fixed point values, and central tendency.

A. Definition of Market Value: "The highest price estimated in terms of money which a property will bring if exposed for sale in the open market, allowing a reasonable time to find a purchaser who buys with knowledge of all the uses to which it is adapted and for which it is capable of being used." The Appraisal of Real Estate, Sixth Edition, American Institute of Real Estate Appraisers, 155 E. Superior Street, Chicago, Illinois 60611, page 25.

1. Competitive market conditions
2. An informed buyer and seller
3. No undue pressure on either party
4. "Rational" or prudent economic behavior by both buyer and seller
5. A reasonable turnover period
6. Payment consistent with the standards of behavior of the market
7. Market Value looks at the transaction from the point of view of the buyer

B. It should be noted that there is an equal balance between the uses to which it may be put and the viewpoint of the buyer. The element of uncertainty is carefully hedged by a statement of limiting conditions:

1. To hedge the appraisal conclusion with a variety of limiting conditions at a time when the variables for consideration are increasing, is to produce a value conclusion that is almost fictitious.
2. Since the concept of limiting conditions must be used sparingly lest the appraiser support consistency rather than accuracy, better methods must be found to introduce some tolerance for the conditions of uncertainty which surround the appraisal estimate.
3. Given all the variables, a more logical appraisal format is required, at the very least.

C. There may be many questions a client wishes answered, decisions which are the purpose of the appraisal. The appraiser always avoids his clients problem by stating "the purpose of this appraisal is to determine fair market value," thereby redefining the clients problem to the one question the appraiser is prepared to answer.

1. Given all the different applications of an appraisal and the need to broaden the market for appraisal services a more flexible appraisal format is required.
2. Given all the assumptions under conditions of uncertainty, there is great need to dimension the appraisal answer with the range of alternative transaction prices which might occur.

D. Purpose is a critical issue - when appraising for the seller isn't it your function to predict the most probable sales price even if the market depends on dummies and doctors? On the other hand the mortgage lender may be more concerned with income value in. terms of cash available to pay off the loan once the dummies have been burned and foreclosed.

E. As a basic premise for reorganization, it can be assumed that the function of the appraisal report is to reflect the clients purposes for which he needs an appraisal:

1. For the mortgage lender, the issue is the liquidating value or probability of future cash returns being adequate to repay the loan, interest, and cost and the distribution of profit centers over time

to maintain repayment incentive to the borrower.

2. For the courts eminent domain or assessment appeal, the statement of function leads to the definition of value as the juridictional market value.

3. A report for a would-be buyer or seller might lead to the definition ·of value as investment market value.

4. For most cases the appraiser would seek to determine the most probable selling price.

F. Investment market value is a term coined by Mack Hodges for the present value of future income receipts, considering a specific set of assumptions about the after tax cash flow of property and requires some general description of the investment standards and tax status of buyers interested in a specific type of property, specifically income-investment property.

G. Investment value, which requires some detail about motivations of a probable or specific buyer, is a special case of the broader concept of "most probable sales price" (Vp). This approach makes the point conclusion explicitly a statement of the central tendency (mode, mean, or median) around which a transaction price is likely to fall. Thus it generally supplies a valuation as a range of prices within which a transaction would most likely occur, similar to but not necessarily a concept of statistical standard error.

H. Most probable selling price is derivative of the theoretical work of Prof. Richard U. Ratcliff.

1. The quotable definition: "The most probable price is that selling price which is most likely to emerge from a transaction involving the subject property if it were to be exposed for sale in the current market for a reasonable time at terms of sale which are currently predominant for properties of the subject type."

2. See his article "Is There a 'New School' of Appraisal Thought?", The Appraisal Journal, October 1975.

3. For the full theory: Valuation for Real Estate Decisions, R. U. Ratcliff, available from Democrat Press, P.O. Box 984, Santa Cruz, California 95060.

III. The logic of the approach not only makes economic sense but leads to a superior outline for writing and reading an appraisal report. It gives the appraiser more freedom to use whichever technique seem appropriate but deny the appraiser the escape of convenient limiting assumptions and of the perfect market-prudent investor fictions of classic appraisal.

A. The purpose of the appraisal (assessment, mortgage loan, insurance, etc.) leads to a selection of a value definition.

B. Detailed analysis of the property lead to a statement about most probable productive use.

C. Most probable use leads to inference about the most probably buyer-type, his motivation, and economic logic.

D. Comparability becomes a matter of analyzing a buyer-type rather than only a physical piece of nearby real estate. Buyer-type leads to a choice of valuation for appraisal method. In Ratcliff the basic approaches are:

1. Preferred method is to infer buyer behavior from actual market transactions.
2. In the absence of adequate market data, the method requires simulation of probably buyer investment analysis or enterprise budgeting.
3. Note that one or more of the three approaches may be used or some other technique may be utilized. For the next two days we are going to be looking at ways of analyzing productivity, or simulating investment productivity of agricultural property.
4. Buyer type may be a class of buyers, the property owner next door, or a particular investor with a strong preference for property attributes identified. Past market actions can provide evidence that buyers are not fully informed and that prices are being set by ignorance but it is still probable price.

E. The relationship of the report format to the choice of methods can be better understood by moving through a report outline provided in Exhibit 1.

1. It is useful to note that this general appraisal report form is very similar to that of a feasibility analysis of a specific site. An appraisal is a special case of the feasibility problem of a site in search of a use which has a market and a customer.
2. The report provides equal balance between the physical attributes of the site and the investment assumptions of typical buyers.
3. It forces the appraiser to be explicit about what he means in terms of property management, farm management, tree management, recreational property management or whatever. It requires the appraiser to have some professional ability to identify a program for utilization of the land.

Concept of Most Probable Buyer Type/Most Probable Price

I. Ratcliff Theory would place as much emphasis on behavior of prospective buyers or investors as on the operating behavior and characteristics of a property. Appraisal is trying to predict how people, buyer and seller, will behave in the future, converting a decision to a mutually acceptable price.

A. Each party is operating under certain assumptions and constraints:

1. Buyers assume they will have to pay no less than some specific price, that others are bidding for the property, that they cannot afford to pay more than a certain amount of income for shelter or business location, or that a desired use requires a specific set of attributes.

2. Sellers assume buyers see the property in the same way they do, that the property has some inherent value and utility, and that its just a matter of time before some fish can be found to pay the asking price.

B. The definition of value selected by the appraiser also assumes certain motivations for buyer and seller which typically are a matter of convenience for the appraiser but often a significant source of error in the prediction of price. While the wording on fair market value differs slightly, the following conditions are always assumed to prevail:

1. Competitive market conditions.
2. An informed buyer and seller.
3. No undue pressure on either party.
4. "Rational" or prudent economic behavior by both buyer and seller.
5. A reasonable turnover period.
6. Payment consistent with the standards of behavior of the market.
7. Market Value looks at the transaction from the point of view of the buyer.

C. However, a buyer is integrating and comparing a property more to a personal set of needs than to a property alternative which is only roughly similar to another in function and potential.

1. For example, a commercial office building developer seeks a site with a minimum number of construction problems, an optimum shape, and maximum rental value. On the other hand, the committee buying a home office site for an insurance company or bank will emphasize visibility and location at the expense of almost any development cost and despite any reduction in rental value for re-use.

2. A young couple may buy an old house because it is run down and in need of renovation in order that the initial cost is low and the opportunity for creating equity is greatest, while the seller is selling because of irritation with the fit of the structure to his lifestyle or because he has reached the end of his lifecycle in that location.

3. One man's floor is another man's ceiling.
4. Therefore, the eventual sales price at which two parties will agree is arranged within a zone of expectations and requirements reflecting the assumptions of each party. Indeed some transactions are designed so that the final price is determined later based on whose assumptions prove to be more correct in a speculative situation.

D. Both buyer and seller enter negotiations with a subjective value expectation (Vs) which is a constraint in bargaining for the property.

   1. "The actual selling price will usually represent a compromise between what the buyer would have paid if necessary and what the seller would have taken as a last resort." p. 13, Ratcliff.
   2. Therefore, the appraisal must take more than just the buyer viewpoint of the transaction or the appraisal will not be of a value that reaches the minimum the seller can or would accept.

E. This leads then to the concept of a transaction zone around a point which is the central tendency of bargaining, a point we call most probable price. Notice the assumptions of most probable price may be somewhat more acceptable in terms of pragmatic realism than those of fair market value.

   1. Subjective value (Vs) is a figure with which buyers and sellers enter the market as a constraint in the bargaining. The actual selling price will represent a compromise between what the buyer would have paid if necessary and what the seller would have taken as a last resort.
   2. In residential work, where there are many sales, the transaction zone may be defined statistically as the standard deviation of the estimate.
   3. The possible variance or error in the estimate of probable sales price may be intuitive by the appraiser.
   4. The zone may be defined by the logic of bargaining positions. The seller wants to cover his debt and broker fees; the buyer assumes a certain value in a new use less remodeling costs, less a cushion for unexpected costs and profit.
   5. In the cast of investment properties, sensitivity analysis may define the range of alternative outcomes.
   6. There may be certain conditions which cannot be known by the appraiser but which would change his estimate as to what the buyer or seller would accept; the appraiser may define the transaction zone as the range between optimistic and pessimistic impacts of external events.

F. The important function of the transaction zone is to alert the reader of the report:

   1. To the fact that an appraisal value is not a certainty but a prediction of a future hypothetical business event.
   2. Present value is the purchase of a set of assumptions about the future and therefore value depends on which set of assumptions the buyer and seller "buy."
   3. The reliability of a prediction is important in using probable price as a benchmark for a decision; reliability is less important in assessment than in investment, conservatism more important. in lending than in equity investment, etc.

II. The Two Basic Methods of Appraisal

As you know, Ratcliff concludes that most appraisals are concerned with prediction of a future event, a transaction price. Since an appraisal method is a forecasting tool, forecasting is best done with some past experience. Failing that, the best method is simulation of the real estate market process.

A. Given reliable information on past market behavior, the preferred method of appraisal is to process the data, statistically if possible, to derive a prediction of future price behavior under given conditions and with means for estimating the reliability of the prediction.

  1. Statistical prediction if possible.
  2. Statistical rules for definition of a data set at the least.

B. Should market data be unavailable or inconclusive, the appraiser is forced to resort to the second method of appraisal, namely the construction of a real estate market model of factors which reflect his understanding of how buyers and sellers might behave.

  1. The income approach and the cost approach are submodels of how an investor is supposed to behave.
  2. After tax investment models are another submodel of market behavior, but while these may measure demand from the buyer's viewpoint, it may not measure the minimum price expected by the seller who also has a tax model to consider. In using the second approach, the appraiser must be very careful to indicate price on the supply side representing minimum expectations (Vs) of the seller.

CONTEMPORARY REAL ESTATE FINANCIAL ANALYSIS
Presented by
Continuing Education Institute

Instructor: Professor James A. Graaskamp, CRE, SREA
University of Wisconsin, School of Business

I. Basic Concepts and Definitions

A. Real estate is a tangible product - defined as artificially
delineated space with a fourth dimension of time referenced to a
fixed point on the face of the earth.

1. Real estate is a space-time unit, room per night, apartment per
month, square foot per year, tennis court hours, or a condominium
for two weeks in January at a ski slope.
2. To the space-time abstraction can be added special attributes
to house some form of activity.
3. Improvements from survey market to city layouts to structures
define space.
4. Legal contracts and precedents define time.
5. Rights of use are defined by public values, court opinions.
6. Private rights to use are those which remain after the public
has exercised its rights to control, to tax, or to condemn.

B. A real estate project is cash cycle business enterprise which combines
a space-time product with certain types of management services to
meet the needs of a specific user. It is the process of converting
space-time needs to money-time dimensions in a cash economy.

1. A real estate business is any business which provides expertise
necessary to relate space-time need to money-time requirements
and includes architects, brokers, city planners, mortgage bankers,
and all other special skills.
2. The true profit centers in real estate are in the delivery of
services and cash capital. Money is an energy transfer system.
3. Equity ownership is the degree to which one enterprise controls
or diverts cash from another real estate enterprise.
4. Public has direct ownership to the degree real estate taxes
take a percentage of tenant income in excess of service cost.
5. Consumer must view space as a total consumption system involving
direct cost, surface cost, transportation cost and negative in-
come of risk.
6. The best real estate project is the one which has the lowest net
present value of cost as the sum of cost to the consumer prod-
uction sector and public sector.

7.330 A motel for transients, for resorts, or for terminal traffic uses all of its facilities and location to sell a "room-night" of occupancy because that is an 80% gross margin. Anything done after that is justified by its constribution to "room-night" sales or its reduction of average cost to capture a customer per "room-night."

7.340 The revenue unit may be related to the method of measuring profit of the project in question such as per acre, per camper pad, per event, per front foot of shoreline, per stool or table, etc., not to mention sq. ft., per frame at a bowling alley or per tennis court hour, or per hour of ice time.

7.350 Sometimes the prospect is identified by who really signs the check for a particular type of real estate.

    7.351 The salesman or the management paying his travel costs
    7.352 The doctor or the clinic
    7.353 The district manager or the corporate real estate manager
    7.354 The ticket buyer or the promoter
    7.355 The bowling league, team business manager, travel agency tour guide

7.360 The market segment may be defined initially by the source for a prospective user list - people who share a common address, hobby, professional specialty or some other identifier.

    7.361 A reverse directory or criss-cross telephone book
    7.362 Building directories of comparables
    7.363 Mailing lists of specialty publications
    7.364 License number spotting
    7.365 Guest registers
    7.366 Charge account mailing addresses

7.400 The objective of these approaches, revenue unit, the decision maker, the prospect list source, is to segment the user market to a specific and relatively small group of potential customers who can be surveyed to generate original and relevant information about their space needs and motivations.

    7.410 Unlike most consumer markets, the number of prospects is always low; think small!

        7.411 Real estate is a series of micro-markets. A 24-unit building with one, two, three bedroom units has at least three sub-markets.

        7.412 A 24-unit building is a $500,000 enterprise with a $75,000 gross sales potential from only 24 customers!

7.420   A survey of existing properties and alternatives
available to a selected market segment defines only
the <u>competitive standard</u> - namely the minimum product
and price necessary to be in the market.

   7.421   Comparison shopping further identifies where
there may be gaps in the supply of alternatives,
a market opportunity gap, or where the oversupply
is so significant as to portend the last competitive
alternative before bankrupcy - namely price
cutting.

   7.422   Comparison shopping should not only identify the
physical characteristics of the product and price
but the nature of the promotion effort as well.

   7.423   Promotion comparison should consider pedestrian
and vehicle approaches, model location, furnishings,
and sales people.

   7.424   Review of the promotion campaign should reveal
whom the competitors believe to be their prospect.

7.430   A survey of users, is designed to reveal or to identify
the <u>competitive differential</u> attributes which would
provide that monopoly element required of every
successful project.

   7.431   A second product of consumer survey is the ability
to develop locally relevant ratios which permit
disaggregation of market data into market segments
and the conversion of potential numbers of people
into potential dollar sales over time.

   7.432   Survey questions to create ratios require previous
construction of a market model hypothesis.

7.500   Introduction to Prospect Survey

While a survey analysis appears to be a group of questions, in
fact the real product is a table of data unavailable from any
other source. The analyst should begin with a written
mock-up of the final report logic and the specific tables which
lead to a conclusion.

7.510   With a preliminary hypothesis as to the prospect, survey
questions may be intended to provide:

   7.511   Key ratios necessary for segmentation of market
data already broken down by trade area, demographics,
employment, etc.

   7.512   Key indicators of anxieties or preferences or
tradeoffs of the prospect.

7.513   Key indicators of the anxieties or preferences of non-prospects who feel a vested interest in the impact or have a significant part in the purchase process. (For example - the members of the Public Housing Authority have a different set of needs than the ultimate user, but the product is "bought" by the Board).

7.520   Consider the elderly housing market chart in <u>Exhibit 11</u>. Notice that the ratios required for market segmentation follow a logical reduction pattern. The analyst has made several working assumptions - namely that his market is over 65 and overwhelmingly from Dane County because these assumptions are both reasonable and conform to break-out points in the raw data.

7.530   The ratio sought by the survey follow a precise reduction pattern:

    7.531   How many will consider moving?

    7.532   Of those, how many would consider staying in town?

    7.533   Of those, how many would consider an apartment?

    7.534   Of those remaining who would consider an apartment in town, how many would consider a specific location?

    7.535   Notice the reduction process defines a subset of the elderly market - a micro-market.

7.540   Each of these ratios suggests a specific calculation or perhaps a short table of statistics. The specific title on the table of data and its sub-columns should be written before the questions are drafted and the collection of data begun. Notice the research begins with careful definition of the questions to be answered. All answers become relevant and all unnecessary questions are avoided. These types of questions depend on knowing the precise character of secondary data available to which the ratios must be applied in the systematic model devised for the problem.

    7.541   Confine vocabulary to basic 1000 words; avoid lingo.

    7.542   Structure questions to permit check-off, or branching to set up subsets. (See <u>Exhibit 16</u>)

    7.543   Always test the questionnaire on half a dozen prospects or friends to reveal misunderstandings before using on the market.

    7.544   Questions may take different formats. (See Exhibit #14)

7.550 The second type of question is generally attempting to measure either anxieties or preferences. Both are dangerous survey areas for amateurs as well as professionals and it is often cheaper to subcontract these particular functions to consumer research specialists. Nevertheless, a little common sense can generate considerable useful information on the competitive edge.

7.551 Probe for dissatisfaction with existing space or life style.

7.552 Probe for anxieties about uncontrollable trends and events.

7.553 Probe for desired social structure ties, real or imagined.

7.560 The real estate analyst can choose between systematic telephone interviews, direct mail questionnaires, and personal interviews in depth.

7.561 The telephone interview may be less expensive per question and fastest but is limited in the type and amount of questions which can be asked. Rifled to a project known to the analyst, it tells much about the user profile for a good comparable without having to ask about the product which the analyst can inspect for himself. (See Exhibit 15)

7.562 A telephone survey is also useful to disaggregate census data or to estimate market penetration of a competitor (such as a retail store) into an area.

7.563 Direct mail questionnaires may cost from 5¢ to $3 or more for each successful question; they take at least a week to prepare and test and perhaps three weeks before cutoff of additional responses. The type of question is broader and can be graphic such as alternative site maps and simple floor plans; response depends on careful construction of the mailing list, a very time consuming process. Consider the following types of questions:

7.564 The double barreled question occurs when two or more questions are combined in one so that the answer is always ambiguous as to the significance of each item but often occurs in the effort to shorten an interview or a question.

. Would you be at all uneasy if people of a different religion or race were to move in next to your home?

. As you see it, what are some of the good points and the bad points of the present Governor of this state?

PROJECT MASS/SCALE MISC.

THE FOLLOWING QUESTIONS WILL PROVIDE US WITH INFORMATION AS TO
WHAT YOU FEEL IS ESSENTIAL IN A HIGH RISE BUILDING FOR THE ELDERLY.
WHILE WE REALIZE THAT SOME PEOPLE DO NOT LIKE HIGH RISE STRUCTURES
IT IS ESSENTIAL THAT WE FIND OUT HOW WE CAN BEST DESIGN SUCH A
BUILDING TO MINIMIZE THE IRRITATIONS AND MAXIMIZE THE BENEFITS
TO THE RESIDENTS.

If you <u>had</u> to live in a high rise building:

24. Would you prefer:

☑ A six story building with 16 apartments and neighbors
on each floor or/
◯ A ten story building with 10 apartments and neighbors
on each floor

25. Would you prefer:

☑ A six story building with less open space outside or/
◯ A ten story building with more open space outdoors

26. Would you prefer:

☑ a large laundry room with adjacent bathrooms on one
floor or/
◯ smaller laundry facilities (one washer and dryer) on
each floor

27. Would you prefer:

◯ small lounges on each floor or/
☑ a larger main lounge

28. Would you prefer:

◯ An enclosed roof top sun deck or/
☑ a larger patio area outdoors

ADDITIONAL COMMENTS

ARE THERE ANY ADDITIONAL SUGGESTIONS YOU WOULD LIKE TO MAKE ?

more exits in case of fire

THANK YOU FOR YOUR HELP.   GOODBYE.

7.565 Sensitive questions on family income should be asked at the end of the interview while the opening questions should be of more general interest. When a question about income is asked the response should permit some degree of obliqueness by the respondent.

- The respondent can select a range of income or perhaps enter the answer with a letter A, B, etc. in place of a dollar amount.

- If socio-economic questions are generally short and direct, they are a welcome contrast to the time consuming and thought provoking questions which preceded them.

7.566 Contingency questions are those which are asked or skipped depending on the respondent's answer to a preceding question. The survey should be as simple to follow as a well designed road map for an interviewer or a respondent. For example:

EXHIBIT #16

(112) Generally speaking, in politics do you usually think of yourself as a Republican, a Democrat, an Independent, or what?

/Republican/ /Democrat/   /Independent/ /Other/ /No pref./

(112a) Would you say that you are a strong or not so strong (Republican; Democrat)?

(112c) In general, do you consider yourself closer to the Republican or to the Democratic party?

/Strong/ /Not so strong/   /Rep./ /Dem./ /Neither/ /No pref/

(112b) Was there ever a time when you thought of yourself as closer to to the other party?

(112d) Was there ever a time when you thought of yourself as a Republican or Democrat?

/yes/ /No/   /Yes/ /No/

7.568 Personal interviews in depth permit questions using photographs with colors and styles. Expensive and time consuming, it assumes precious qualification of the interviewee as a typical prospect.

7.570 Processing of surveys can involve simple tallies or counts, simple subdividing of responses into subcategories, or preferably organization of the questionnaire to permit key punching or cross tabbing or statistical analysis by computer processing. The problem of identification requires:

7.571 Coding by colored paper, colored return envelope, stamp on self-addressed stamped envelope to reflect geographic area, building address, type of respondent, original mailing list source, etc. Careful organization before mailing solves most processing problems.

7.572 Beware of code numbers if you promised anonymity; give them the option of identifying the respondent, etc.

7.573 Always identify yourself as an analyst (but not the project or the client), providing a phone number or an address where the interviewee can find you. It will generate both presale prospect lists and some primary unexpected political participation by others.

7.600 Telephone Survey to Improve Bidding Position on Turn-Key Elderly Housing Project

As a simple illustration of the relationship of consumer need to pre-architectural programs, consider the survey approach for a turnkey, 160-unit elderly housing project, solicited by the City of Madison Housing and Redevelopment Autnority for a specific urban renewal site. Developers were to compete on both cost and sensitivity of design with an oral presentation to the Board in addition to submission of bid materials.

7.610 The packet of bid instructions included:

7.611 Identification of the 116,549 sq. ft. site (with views of lake, park, and hospital)

7.612 Restriction of access to one side of site, and inclusion of 53 parking stalls, and a drive through portachere.

7.613   A statement that the proposed structure be in harmony with existing buildings.

7.614   Limit of 160 units in three distinct structures inter-connected by an enclosed weatherized corridor system for elderly housing.

7.615   Specification of three structures consist of a one-story building housing 10-15% of total units; a three-story with 25-35% of total units; and a high rise with the remaining 60-70% of the total units.

7.616   Provision of extensive community, recreation, management and maintenance spaces with explicit instructions as to the location and relationship of the latter two space groups.

7.617   Design in accord with HUD Minimum Property Standards.

7.618   Time between solicitation and presentation was four weeks.

7.620   Joint venture proposal was to include experienced design/construction firm from out-of-town, the local broker/developer for financing and community relations, and a team of two graduate students in real estate. After organization of their joint venture three and one half weeks remained; designer required two weeks to prepare materials; estimator two days, etc. and specification and development of a pre-architectural program had to be completed in eight days.

7.621   Four days allocated to data collection and survey design; four days allocated to analysis and development of design program.

7.622   Market researchers read relevant secondary literature (such as Housing the Elderly, Central Mortgage and Housing Corporation of Canada, Second Edition, July 1972, Printed in Canada; or Design of Housing for the Elderly: A checklist, by Marie C. McGuire, NAHRO 1972; items found in The Built Environment For the Elderly and the Handicapped, a bibliography, U. D. Department of Housing & Urban Development, Library and Information Division, June 1971).

7.623   Researchers visited several Madison projects, obtained floor plans, and visited with managers to make a subjective analysis of the relative success or misfit design elements in existing housing.

7.630   During same two day period architect/engineers reviewed information packet and site constraints; then met with market researchers to generate the following basic research questions.

7.631 What are the physical limitations of the prospective residents requiring special features?

7.632 What is the prior living experience of the resident, to minimize disruption of life style through design sensitivity?

7.633 What unit mix would be appropriate?

7.634 How is unit mix allocated between three required structures?

7.635 What should be basic unit size?

7.636 How should space within each unit be allocated?

7.637 What functions and design features should be included in community spaces?

7.638 Are there other wants, needs and anxieties of users unmet by existing Madison elderly housing projects?

7.640 To answer these questions the survey design required specification of survey measurement devices and identification of a respondent group.

7.641 Given the experience of the researchers, their preliminary research to brief themselves, and a two-day time limit, they chose to do a non-probability judgment sample.

7.642 Time schedule required a telephone survey technique with a random sample of residents in elderly housing units in Madison.

7.650 Sampling criteria required:

7.651 Sample be representative of the population of interest

7.652 Persons selected must be able to respond with relevance and validity to the survey

7.653 Population from which sample would be drawn had to be experienced in type of unit to be researched

7.660 In response to these criteria:

7.661 It was reasoned that most likely there would be homogeneity of demand characteristics between present occupants of public elderly housing in Madison and prospective occupants on Housing Authority waiting lists.

7.662 Literature search indicated that continuity theory (habit, pattern, life style) control elderly so that occupant of present comparable units would best be able to relate to design questions and project their future needs and desires relative to their own units and experience.

7.663 A need survey could have been made of Housing Authority management, building managers, or HUD underwriters but developer felt that the best responding group would be the elderly themselves.

7.670 The interview sampling plan consisted of:

7.671 Identification of Madison public housing units for the elderly by street address

7.672 Identification of present occupants by name in existing units from current reverse telephone directory.

7.673 Random sample of residents named and available by phone (potential bias)

7.680 Survey results were to be keypunched and analyzed on a cross tabulation program at the UW School of Business Computer Center to reveal how different persons in different types of units might have differed in their responses.

7.681 For speed, keypunching was to be done directly from completed questionnaire form

7.682 Usable forms were required to have answers to all relevant questions

7.683 Ultimately there were 99 usable responses from a total population of 268 apartment units in the Madison elderly housing program.

7.684 Two persons completed these responses in two twelve hour working days; computer analysis took one day.

7.690 Sample questionnaire provided in Exhibit 15

7.691 Telephone survey very poor technique for measuring attitudes of elderly

7.692 More valid than group meetings conducted by Housing Authority where residents are intimidated by landlord, size of group, or dominant extroverts

7.693 Personal interview more time consuming and more valuable

7.694 Interviews should be conducted in respondent own unit to position questions against current experience and to permit demonstration with more ease than verbal articulation.

7.695 Exhibit 15 should be viewed as demonstrating how standardization is imposed on telephone survey techniques

7.696 Interviewers were women

7.700 The questionnaire was intended to generate a brief consumer profile, identify possible significant and subtle dissatis- factions with unit design, and permit some open-end questions to explore areas not anticipated by researchers.

7.710 The consumer profile of the typical occupant:

7.711 Was female (83%)

7.712 Had previously rented a housing unit (82%) with 91% having paid less than $175 per month and 60% had paid less than $100, indicating most found the public housing unit better in quality and lower in price ($50-$60 per month)

7.713 Long waiting periods before admittance to public housing generally made them most grateful and non-critical.

7.714 Almost all had known low density low rise residential environments over their lifetimes.

7.720 For space allocation and features the survey revealed:

7.721 Satisfaction of present site with living room larger than bedroom, etc.

7.722 99% preferred bathroom to open into bedroom

7.723 Open-end question revealed majority wanted outside window from kitchen

7.724 Desire for indoor walking-exercise area without steps

7.725 Desire for lounges tied to indoor passages and with views of action centers

7.726 Desire for outside space defended from intrusion by strangers, kids, etc.

7.727 Desire for community craft and recreation facilities which were not isolated by stairs, windowless walls, or outside walkways (as was the case in Madison projects).

7.728 Anxiety about high rise among many due to fire hazard dependence on elevators or life- time unfamiliarity with high rises.

7.729 Preferred more units per floor in low rise to exclusiveness of high rise floor but would take anything they could get.

7.730 The theory on aging elderly behavior patterns also contributed to design constraints, for example, the disengagement theory indicates the elderly gradually lose the energy to maintain a great variety of social contacts, etc., a tendency which leads to isolation and increased depression due to lonliness.

7.731 Physical design must provide a variety of choices as to their withdrawal from the street, the total project, a small group of neighbors, or their own room.

7.732 At the same time heterogeneity of unit mix
avoids clustering all handicapped, all married,
etc. in one particular zone to give everyone
a variety of social contacts.

7.733 Circulation patterns can be designed to
encourage random meetings without forcing
social involvement.

7.734 Visual elements which are depressants such
as views of cemeteries, hospitals, nursing
homes, etc. should be avoided.

7.740 With the initial design constraint inputs, the
designers worked up a tentative plan which proved
to exceed the desired cost estimate at which point
estimators, market analysts, and designers met in
an all-day session to hammer out final trade-offs.
A 165-unit project was the result as described in
Exhibits 17, 18, 19 and 20.

7.741 Project had second lowest total cost ($3,397,380
or $26,000 per unit) of the ten proposals
submitted.

7.742 Project was turned down by renewal board
because they did not like contractors reputation
for economy and thought the exterior was less
attractive than conventional tower.

7.743 Experience is typical of real estate that
is designed to please the investor rather
than the ultimate user, particularly when
the investor has not properly defined the
context in sufficient detail to judge the
fit of any proposal submitted.

1. Moreover, he may be using the consultant to double check another source of information and therefore expects a consultant to begin from scratch as a way of confirming the original source.

2. Nevertheless, the feasibility analyst must eventually extract from the client, preferably in writing, an agreement as to what the stated objectives of the study are and the input which will be provided by others than the analyst.

3. This step will probably only be accomplished after the consultant has come to a better understanding of the real problems faced by the client.

V. <u>What is the Problem as Understood by the Consultant?</u>

The problem as perceived by the client almost always must be converted into a sequence of problems as understood by the consultant. The perceived question of "How much should I pay for the land," may come to be understood as "Why do I need to invest in land"?

A. The feasibility analyst should be the devil's disciple for in order to define what needs doing, he must first discover what has been done, what assumptions have been made, and whether those who made the assumptions knew what they were doing.

1. A useful technique is to reverse the question or the alternative in order to have better perspective on the assumed area of solution. If asked to organize a non-profit partnership to create a counseling facility, approach the problem as how to dissolve a partnership of non-profit contributors. If asked the feasibility of restaurant expansion, investigate the possibility of reducing the size of the kitchen instead.

2. To gain perspective, one creative think system (Synectics) recommends conversion of the familiar to the strange and the strange to the familiar by analogy. Thus any multi-user real estate becomes analagous to a retailing model while any single user real estate decision becomes an industrial location model.

3. Statement of the problem as a "compressed conflict" by describing it in two words which appear to be mutually exclusive or contradictory may be useful in understanding a problem. For example, customer control as "channeled freedom" or land use control has "fixed state of flux" can then lead to discovery of more remote analogies. Analogies serve as reiliminary models suggesting opportunity areas for a solution.

B. In search of the real problem as opposed to the initial problem perceived by the client, the analyst should retreat to some basic classification and task identification checklists. First there are only three alternative feasibility situations:

1. A site or a project owned by a specific client in search of a market.
2. An identified market segment or use in search of the site and project to be provided by a specific client.
3. A specific client desiring to search for an opportunity in real estate enterprise.

C. Next the analyst must know the viewpoint of the audience for his report, written or oral, because the elements considered important by a mortgage lender may be significantly different than those of a general partner or those of a limited partner or those of a large tenant.

D. Since there are so many facets to the context of a real estate project and measurement of its success, not to mention the assumptions on which the determination of feasibility depends, it is important to have the client agree on what elements of feasibility are to be provided by which expert or analyst.

1. Analyst should be an expert on experts
2. It is useful to include a standard checklist of components with a letter or proposal as that checklist later becomes the really significant portion of the statement of limiting conditions (hold harmless agreements) which are part of the final report. A sample of one such checklist is provided in Exhibit 2.

E. With a review of which elements are to be provided by which experts it then becomes possible to assist the client in choosing which report title or titles are properly the responsbility of the real estate analyst. (See 1.360)

F. With definition of the report expected and the information to be provided by others, the analyst can prepare a budget and a schedule for staging the report so that he and the client can begin to establish priorities both in time and money available for research to define the feasibility assignment on which the analyst is to proceed.

G. Despite the necessity of defining the assignment in light of the clients problem, it is necessary for the analyst to recall that he is to remain an independent analyst an advocate of his own opinion:

1. There is a difference between a justified feasibility opinion about the total project and the more limited feasibility of justifying a mortgage loan from a credit source not generally known for its analytical ability.

EXHIBIT 2   Feasibility Assignment and Accountability Worksheet
XYZ Appraisal Company
xxx Street   Anywhere U.S.A.

Name of Client _____   Date _____

Assignment Description _____

Feasibility Input	Provided by	Approved by	Sequence and date available
1. Definition of questions and strategic objectives			
2. Definition of success criterion			
3. Ranking of criteria by priority			
4. Definition of specific site			
5. Definition of market opportunity			
6. Space user profile			
7. Space consumer preference survey			
8. Space product definition			
9. Aggregate and market forecast and absorption rate			
10. Merchandising capture rate by product mix			
11. Legal and political constraints assumed for user and investor			
12. Site constraints and site development plan			
13. Architectural constraints and plans			
14. Environmental impact assumptions			
15. School district impact assumption			
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17. Aesthetic and social impact			
18. Land cost assumptions			
19. Improvement cost assumptions			
20. Indirect cost assumptions			
21. Operational cash-flow budget assumptions			
22. Income tax liability assumptions			
23. Financing and refinancing assumption			
24. Other			

Accepted by Client _____
(Date)

Worksheet suggested in part by John Rasmussen, Feasibility Research Group,
210 Michigan Theater Building, Ann Arbor, Michigan 48108.

2. The analyst must be careful not to be a subcontractor to an architect, engineer, or other service organization where he cannot make his own report directly to the client, critical of his professional associates as it may be. It is recommended that the feasibility analyst as a generalist have a primary contract with his client.

H. Correctly defining the context in all its basic dimensions requires a generalist; an appraiser is a generalist. A feasibility study produces a set of parameters, a set of predesigned or preoperational specifications within which a program proposal should work. The analyst and his client should always remember that the second stage of the feasibility study will be confirmation of the feasibility assumptions and parameters by technical analysis and planning by the specialists.

I. An appraisal is a forecast of productivity of a property relative to the needs of a certain buyer group and a prediction of the price at which it would sell to the most probable buyer.

1. Anticipation of an economic behavior by the buyer leads to the highest price he would be willing to pay.

2. Anticipation of the behavior of the seller leads to an estimate of the least he would be willing to accept.

3. Analysis of the influence of outside factors affecting price supply and demand leads to an estimate central tendency between buyer and seller maximum.

4. The upper and lower ranges specify a transaction zone within which a most probable price will occur. The most probable sales price does not need to be at the center of the zone nor do the alternatives need to follow a normal distribution curve. The zone and the distribution most typically are statements of verbal probability.

J. An appraisal is therefore a feasibility study of alternative courses of action and these alternatives are matched to the most probable user/investment group to be seeking such a property opportunity at that time.

The appraisal process as a feasibility study lends itself to the following logical process;

1. What is the problem for which the appraisal is to serve as a benchmark?

2. Which definition of value would best serve the decision process?

3. What does an inventory of site attributes reveal as to the positive and negative contributions of the site to alternative uses?

4. What does an inventory of improvement attributes existing on the site reveal as to the positive and negative contributions of the improvements to alternative uses?

SEMINAR

REAL ESTATE FEASIBILITY

ANALYSIS

SEMINAR OBJECTIVE

Real estate appraisers and mortgage lenders require a basic understanding of the
relationship among appraisal reports, feasibility reports, and real estate
counseling. The appraiser can find many opportunities to expand his services
and justify more adequate professional fees if he can distinguish between assign-
ments which require standard appraisal and those which require custom research
and focus. There is often a wide gap between the probable price at which a
property will sell and the price which a specific user should pay or the type of
property a specific user should consider. This seminar will distinguish among
the various functions and customer relationships which give rise to feasibility
work and a systematic approach to inquiry on a feasibility type of assignment.
It will also teach the mortgage lender, developer, or investor how to best contract
for analytical real estate services.

COURSE SCHEDULE

First Day

Time	
8:00-9:00	Registration
9:00-10:15	Basic Concepts and Definitions -Concepts of the Real Estate Process -Concepts of Risk Management -Concepts of Feasibility Analysis
10:15-10:30	Coffee Break
10:30-12:00	Relationship With the Client -Defining the Problem to be Studied -Assigning Responsibility for Various Facts and Assumptions -Focusing the Report Product
12:00-1:00	Lunch
1:00-2:30	Site in Search of a Use -Systematic Site Analysis -Preliminary Definition of Market Alternatives
2:30-2:45	Coke Break
2:45-4:45	Preliminary Financial Analysis -Capital Budget Justified by Rent -Rents Required by Capital Budget -Financial Planning Around Cash Breakeven Point -Sensitivity Analysis

Second Day

Time	
9:00-10:30	Market and Merchandising Analysis -Definitions -Description of Alternative Methods Of Market Analysis -Limitations of Market Analysis
10:30-10:45	Coffee Break
10:45-12:00	Merchandising Research -Concepts -Basic Applications -Pitfalls
12:00-1:00	Lunch
1:00-3:00	Case Study Examples -Apartment House and Single Family Area -Mini Warehouse -Elderly Housing
3:00-3:15	Coke Break
3:15-4:00	Preparation of the Feasibility Report -Definition of the Feasibility Parameters -Limitations on Use, Etc. -Liability of the Appraiser -Responsibility for the Client
4:00-5:00	Question and Answer Session

LECTURER

JAMES A. GRAASKAMP is Professor of Real Estate, University of Wisconsin School
of Business, and Chairman of the Department of Real Estate and Urban Land Economics.
He received his Ph.D. in Urban Land Economics and Risk Management from the
University of Wisconsin in 1964. He specializes in Undergraduate and Graduate
Appraisal Theory and method courses, Real Estate Investment and Finance, Real
Estate Marketing Research, Residential and Commercial Property Development and
Principles of Risk Management. He holds professional designations of Senior
Real Estate Analyst - SREA; American Society of Real Estate Counselors - CRE;
and College of Property Underwriters - CPCU.

Presented by Professor James A. Graaskamp, SREA, CRE
University of Wisconsin School of Business

I. Basic Concepts and Definitions

A. Real estate is a tangible product - defined as artificially
    delineated space with a fourth dimension of time referenced to a
    fixed point on the face of the earth.

    1. Real estate is a space-time unit, room per night, apartment per
        month, square foot per year, tennis court hours, or a condominium
        for two weeks in January at a ski slope.
    2. To the space-time abstraction can be added special attributes
        to house some form of activity.
    3. Improvements from survey market to city layouts to structures
        define space.
    4. Legal contracts and precedents define time.
    5. Rights of use are defined by public values, court opinions.
    6. Private rights to use are those which remain after the public
        has exercised its rights to control, to tax, or to condemn.

B. A real estate project is cash cycle business enterprise which combines
    a space-time product with certain types of management services to
    meet the needs of a specific user. It is the process of converting
    space-time needs to money-time dimensions in a cash economy.

    1. A real estate business is any business which provides expertise
        necessary to relate space-time need to money-time requirements
        and inclues architects, brokers, city planners, mortgage bankers,
        and all other special skills.
    2. The true profit centers in real estate are in the delivery of
        services and cash capital. Money is an energy transfer system.
    3. Equity ownership is the degree to which one enterprise controls
        or diverts cash from another real estate enterprise.
    4. Public has direct ownership to the degree real estate taxes
        take a percentage of tenant income in excess of service cost.
    5. Consumer must view space as a total consumption system involving
        direct cost, surface cost, transportation cost and negative
        income of risk.
    6. The best real estate project is the one which has the lowest net
        present value of cost as the sum of cost to the consumer prod-
        uction sector and public sector.

C. The real estate process is the dynamic interaction of three groups, space users (consumers), space producers, and the various public agencies (infrastructures) which provide services and capital to support the consumer needs. (See Exhibit 1)

1. Each of these three decision groups represent an enterprise, an organized undertaking. All are cash cycle enterprises constrained by a need for cash solvency, both short and long term.
2. A desirable real estate solution occurs when the process permits maximum satisfaction to the consumer at a price that he can afford within the environmental limits of land while permitting the consumer, producer, and the government cash cycle to achieve solvency - cash break even at a minimum, after full payment for services rendered.
3. Solvency of the total process, not value, is the critical issue.
4. Land is an environmental constraint and not a profit center.
5. Land provides access to a real estate business opportunity and is not the opportunity itself. Real estate business wants to control land to create a captive market for services.

D. Land is the point where demand and supply forces find cash solvency. Location is a manufactured attribute. Site attributes are exploited to reduce outlays and to increase receipts and include:

1. Physical attributes
2. Legal-political attributes
3. Linkage attributes
4. Dynamic attributes
5. Environmental attributes

E. Recognition of the fact that profit maximization must be limited by concerns for physical environment and community priorities for land use has resulted in redefinition of the most basic concept in appraisal; i.e. highest and best use, in the authorized terminology handbook sponsored by the American Institute of Real Estate Appraisers and the Society of Real Estate Appraisers. Compare the 1971 definition with that for 1975:

> Highest and best use concept-
> "A valuation concept that can be applied to either the land or improvements. It normally is used to mean that use of a parcel of land (without regard to any improvements upon it) that will maximize the owner's wealth by being the most profitable use of the land. The concept of highest and best use can also be applied to a property which has some improvements upon it that have a remaining economic life. In this context, highest and best use can refer to that use of the existing improvements which is most profitable to the owner. It is possible to have two different highest and best uses for the same property: one for the land ignoring the improvements; and another that recognizes the presence of the improvements.:
> p. 57, Real Estate Appraisal Principles and Terminology, Second Edition, Society of Real Estate Appraisers 1971.

Exhibit 1

THE REAL ESTATE PROCESS

"Highest and Best Use: That reasonable and probable use that will support the highest present value, as defined, as of the effective date of the appraisal. Alternatively, that use, from among reasonably probable and legal alternative uses, found to be physically possible, appropriately supported, financially feasible, and which results in highest land value. The definition immediately above applies specifically to the highest and best use of land. It is to be recognized that in cases where a site has existing improvements on it, the highest and best use may very well be determined to be different from the existing use. The existing use will continue, however, unless and until land value in its highest and best use exceeds the total value of the property in its existing use. Implied within these definitions is recognition of the contribution of that specific use to community environment or to community development goals in addition to wealth maximization of individual property owners. Also implied is that the determination of highest and best use results from the appraisers judgement and analytical skill, i.e., that the determined from analysis represents an opinion, not a fact to be found. In appraisal practice, the concept of highest and best use represents the premise upon which value is based. In the context of most probable selling price (market value) another appropriate term to reflect highest and best use would be most probable use. In the context of investment value an alternative term would be most profitable use."
Real Estate Appraisal Terminology, Edited by Byrl II. Boyce, Ph.D. SRPA, Ballinger Publishing Co., Cambridge, Mass. 1975

F. The purchase of a piece of real estate today involves the acceptance of a great many assumptions about the future. Those who take care to validate these assumptions in a period of transition as to public land use control tend to have the most successful investment.

  1. Business decisions today make explicit recognition of their assumptions and the need to act under conditions of uncertainty.
  2. Business risk is the difference between assumptions about the future and realizations, the proforma budget and the end of the year income statement.
  3. Risk management is the control of variance between key assumptions and realizations.
  4. An appraisal is a set of assumptions about the future productivity of a property under conditions of uncertainty.

G. The concept of highest and best use of land was a commodity concept which did not consider externalities adequately. It is being replaced be concepts of most fitting use and the concept of most probable use.

  1. The most fitting use is that use which is the optimal reconciliation of effective consumer demand, the cost of production, and the fiscal and environmental impact on third parties.
  2. Reconciliation involves financial impact analysis on "who pays" and "who benefits" - thus the rash of debate on how to do impact studies.

3. The most probable use will be something less than the most fitting use depending on topical constraints imposed by current political factors, the state of real estate technology, and short term solvency pressures on consumer, producer, or public agency.

4. Most probable use means that an appraisal is first a feasibility study of alternative uses for a site in search of a user, an investor, and in need of public consent.

H. In seeking the most fitting and most probable use, the inner city planner and private property appraiser must interact to determine how community objectives and consumer - production sector solvency can be achieved simultaneously.

1. A real estate decision has only two basic forms. Either a site is in search of a use and consumer with the ability to pay, or a consumer, need or use with a defined ability to pay is seeking some combination of space-time attributes he can afford.

2. The individual consumer with needs and a budget is the drive wheel.

3. The public sector represents the community owned consumer service delivery system, seeking to minimize marginal cost to the consumer and average cost to the community at large.

4. The production sector responds to a derivative demand for engineering and management expertise.

I. Critiquing the form and adequacy of a real estate solution is analogous to the artistic concept of judging the success of an art object by relating form of the solution to the context to which it was created.

1. Context includes those elements which are fixed, given, or objectives and to which any solution must adapt.

2. Form giving elements are those variables within the artists control, i.e. options or alternatives at a particular time.

3. A solution is judged for its correctness or success in terms of the degree of fit of the form proposed to the context.

4. Feasibility analysis is concerned with the degree of fit or the extent of misfit between a proposed course of action and the context within which it must operate or fit.

5. Success therefore depends on how appropriately the problem is defined; testing feasibility depends primarily upon accurate and comprehensive definition of the context.

J. An enterprise is any organized undertaking, and a real estate problem or project always begins from the viewpoint of some enterprise relative to its environment.

1. The systems engineer sees the eventual form of an enterprise, in terms of both its configuration and behavior, as representing a negotiated consensus between two general sources of power--the power of the environment to dictate form and behavior of the organization on one hand and the power of the organization to decide for itself what its characteristics and behavior will be on the other.

2. The system engineer uses "power of the environment" as a dynamic alternative to the static implications of context and adds dynamic element of behavior to the elective responses of the form giver.

II. Financial Management and Risk Management

Investment is a real estate enterprise as mortgage lender or equity investor is simply buying a set of financial assumptions about the interaction of the project to its context, of the firm to its environment. Real estate analysis is to control the variance between expectations and realizations, between proforma prospects and historical balance sheets and profit and loss statements.

A. Analysis is risk management, control of variance.
B. There are essentially two types of risk exposures:

   1. Static risks (uncontrollable, or external events) are those which can only cause a loss due to surprise upset of a plan.

   2. Dynamic risks (partially controllable internal events) can produce profit or loss and are best controlled by the finesse of management execution of a plan.

C. Risk evaluation or comparison grows out of the function of risk management for an enterprise.

   1. Risk management has two objectives:

      a. First priority - conservation of existing enterprise assets despite surprise events.
      b. Second priority - realization of budgeted expectations despite surprise events.

   2. The process of risk management involves systematic and continuous:

      a. Identification of significant exposures to loss
      b. Estimation of potential loss frequency and severity
      c. Identification of alternative methods to avoid loss
      d. Selection of a risk management method
      e. Monitoring execution of risk management plan

   3. The risk management process is both a philosophy of inquiry or analysis and a checklist of management concern, which is attempting to answer systematically "WHAT IF...?" questions, to antici- pate surprise and to provide for a response or adjustment in advance of the contingency.

D. Identification of significant exposures to loss can begin by using standard business documents as reminders, such as:

   1. Review of balance sheet accounts
   2. Review of profit and loss statement accounts
   3. Review of business organization or function chart
   4. Review of elements of financial feasibility analysis

E. Significant has to do with potential loss frequency, loss severity, and degree of uncertainty.

   1. Very frequent and minor become expense accounts
   2. Less frequent but predicatable and major become reserves or budget allowances.

3. Infrequent, uncertain but very severe become issues of risk management.
4. A 50/50 probability is the most uncertain outcome.

F. The alternative methods of avoiding loss which everyone sub-consciously uses include:

1. Eliminate risk exposure
2. Reduce frequency or severity of loss (diversification or mortgage loan closing process)
3. Combine risks to increase predictability (reserves for expense)
4. Shift risk by contract (subcontracts or escalator clauses)
5. Shift risk by combination (diversification) by contract (insurance)
6. Limit maximum loss (corporate shell or limited partnership)
7. Hedging (sale and leaseback, options, contingent sales)

G. Risk management concepts leads to understanding of the true essence of a mortgage contract and an equity commitment

1. A mortgage is a classic straddle in two markets for the borrower; it is a call on a space-time commodity in a rising market and a put to the lender in a falling market. It is also a straddle in the money market. The mortgage contract is a risk management agreement to provide coverage of static risks and an imperfect straddle on the dynamic risks. Protection for the lender is revenue to the borrower, negative incentives, and salvage.

2. Equity ownership is the degree to which you can divert cash flow and maintain control within an acceptable level of risk avoidance.

III. Feasibility Analysis

A. The concept of feasibility is elusive and much abused. Combining the systems concept of enterprise under conditions of uncertainty and the physical design concept of fit leads to the following definition:

"A real estate project is 'feasible' when the real estate analyst determines that there is a reasonable likelihood of satisfying explicit objectives when a selected course of action is tested for fit to a context of specific constraints and limited resources.

B. The problem of defining objectives and measuring success depends almost entirely on correctly defining the problem and values of the client.

The majority of enterprises are not solely interested in rate of return on investment or lowest cost.

Most decisions must fit a combination of success "measures" with each decision maker weighting the overall importance of each item differently. Examples of such measures would be:

1. A check list of physical attributes
2. A check list of critical linkage attributes
3. A check list of dynamic behavioral attributes

4. A check list of attributes or services (given weighted point scores)
5. Financial ratios measuring risk, such as cash break-even, rate of capital recapture, loan ratios or sensitivity to specified contingencies
6. Probability distributions of alternative outcomes and standard error of the estimate
7. Pshychological gratifications
8. Specified legal attributes
9. Measures of impact on environment

C. The definition also implies uncertainty - a reasonable likelihood of succeeding. That statement is deliberately short of a statistical probability statement. However, analystical judgments can produce some verbal probability statements (that horse is a nag while the black stallion is an odds on favorite) so that the measures of success should lend themselves to explicit recognition of the degree of uncertainty with which success might be achieved.

D. The general theory of the management process for any enterprise can be converted to real estate semantics for feasibility:

Values, objectives, policy	Strategic format
Search for opportunity alternatives	Market trend analysis
Selection of an opportunity	Merchandising target with monopoly character
Program to capture opportunity	Legal-political constraints
	Ethical-aesthetic constraints
	Physical-technical constraints
	Financial constraints
Construction of program	Project development
Operation of program	Property management
Monitoring and feedback	Real estate research

E. The analyst must also identify and measure or define the limited resources of the client in terms of personnel, expertise, available cash resources, and the time line of expectations and commitment since time available to achieve the solution is often a critical resource and constraint relative to alternative choices.

F. These basic elements and definitions then lead to a correct title for the report required. Most feasibility reports go wrong on the title page because the analyst did not clearly understand to which elements of context and form his report was to be addressed. Seldom does the analyst do a complete feasibility study as a single report on his own. Components may be provided by others and the sequence of sets may differ in each case depending on how the consultant understands the client. Therefore, a report should be entitled as one of the following:

1. Strategy study: selection of objectives, tactics, and decision criteria.
2. Market analysis: economic base studies or other related aggregate data review.
3. Merchandising studies: consumer surveys, competitive property analysis, marketability evaluation, etc.
4. Legal studies: opinion on potential legal constraints, model contracts or forms of organization, and political briefs.

5. Compatability studies of project to community planning, conservation standards, or other public policies.
6. Engineering, land planning, and architectural studies.
7. Financial studies: economic modeling, capital budgets, present value and discounted cash flow forecasts, rate of return analysis, financial packages.

G. Correctly defining the context in all its basic dimensions requires a generalist; an appraiser is a generalist. A feasibility study produces a set of paramters, a set of predesigned or preoperational specifications within which a program proposal should work. The analyst and his client should always remember that the second stage of the feasibility study will be confirmation of the feasibility assumptions and parameters by technical analysis and planning by the specialists.

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2. Which definition of value would best serve the decision process?

3. What does an inventory of site attributes reveal as to the positive and negative contributions of the site to alternative uses?

4. What does an inventory of improvement attributes existing on the site reveal as to the positive and negative contributions of the improvements to alternative uses?

5. What basic alternative use programs or scenarios may be considered as plausible alternatives motivating buyers as of the date of the appraisal?

6. Which alternative use appears to be the most probable use when screened by external factors including effective market demand, political controls, forecasting risk, and potential profitability as perceived by investor/buyers.

7. What is the profile of the most probable buyer/investor for the most probable use to the degree that the profile can define the search for comparable transactions?

8. Could the appraiser simulate the purchase guidelines of a most probable buyer group if there were no sales which were thought to be comparable and appropriate to the subject situation?

9. What is the value to be justified by the appraiser using normative, traditional measures of what a buyer should do, such as the cost approach or conventional income approach?

IV. **What is the Problem as Perceived by the Client?**

The original problem as perceived by the client is seldom the real issue of feasibility analysis that will need to be examined by the analyst.

A. The appraiser is conditioned to having the client specify the function of the appraisal, such as for fire insurance or eminent domain and then having the client's attorney or the court jurisdiction define the definition of fair market value, the question which the appraiser then begins to answer.

B. However, the client may ask for an appraisal when he needs a feasibility study. He may ask what he should pay for a piece of property before he has determined that his strategic needs are best met by purchase rather than by leasing by avoiding ownership of additional space altogether (by sub-contracting certain functions of others by the way in which he purchases services and supplies).

   1. Since everyone is an expert on real estate the client will probably presume that a certain procedure will be followed.
   2. The architect will presume that the real estate expert will show the financial implications of a final design, when in fact the real estate expert should first assist in the pre architectural program of design objectives.
   3. Almost every client will overlook some of the basic issues because of the natural bias of his position.
   4. The consultant must begin by attempting to discover what is taken for granted and that search will continue to condition his relationship ith his client.

C. When the client first contacts the consultant the question provided by the client will conceal some implicit client preferences and assumptions. The consultant will need to interview his client by asking him explicitly about:

   1. His concept as to the "essence" of his business
   2. His preferred method of meeting entrepreneurial risk
   3. His preferred method of personnel compensation
   4. His style of value decision trade-offs between qualitative and quantitative issues.
   5. His perception of his risk position and his risk utility "curve."
   6. His personal non-business objective.
   7. His reasons for being involved with real estate (a simple question revealing in most cases tremendous naivete and lack of indepth preparation by the client).

D. The client is often skeptical of the ability of the consultant to contribute anything new since he may regard the consultant as one "who tells him the time by reading the client's own watch."

1. Moreover, he may be using the consultant to double check another source of information and therefore expects a consultant to begin from scratch as a way of confirming the original source.
2. Nevertheless, the feasibility analyst must eventually extract from the client, preferably in writing, an agreement as to what the stated objectives of the study are and the input which will be provided by others than the analyst.
3. This step will probably only be accomplished after the consultant has come to a better understanding of the real problems faced by the client.

V. What is the Problem as Understood by the Consultant?

The problem as perceived by the client almost always must be converted into a sequence of problems as understood by the consultant. The perceived question of "How much should I pay for the land," may come to be understood as "Why do I need to invest in land"?

A. The feasibility analyst should be the devil's disciple for in order to define what needs doing, he must first discover what has been done, what assumptions have been made, and whether those who made the assumptions knew what they were doing.

1. A useful technique is to reverse the question or the alternative in order to have better perspective on the assumed area of solution. If asked to organize a non-profit partnership to create a counseling facility, approach the problem as how to dissolve a partnership of non-profit contributors. If asked the feasibility of restaurant expansion, investigate the possibility of reducing the size of the kitchen instead.

2. To gain perspective, one creative think system (Synectics) recommends conversion of the familiar to the strange and the strange to the familiar by analogy. Thus any multi-user real estate becomes analagous to a retailing model while any single user real estate decision becomes an industrial location model.

3. Statement of the problem as a "compressed conflict" by describing it in two words which appear to be mutually exclusive or contradictory may be useful in understanding a problem. For example, customer control as "channeled freedom" or land use control has "fixed state of flux" can then lead to discovery of more remote analogies. Analogies serve as reiliminary models suggesting opportunity areas for a solution.

B. In search of the real problem as opposed to the initial
problem perceived by the client, the analyst should retreat
to some basic classification and task identification check-
lists. First there are only three alternative feasibility
situations:

    1. A site or a project owned by a specific client in
       search of a market.
    2. An identified market segment or use in search of
       the site and project to be provided by a specific
       client.
    3. A specific client desiring to search for an opportunity
       in real estate enterprise.

C. Next the analyst must know the viewpoint of the audience
for his report, written or oral, because the elements
considered important by a mortgage lender may be significantly
different than those of a general partner or those of a
limited partner or those of a large tenant.

D. Since there are so many facets to the context of a real
estate project and measurement of its success, not to mention
the assumptions on which the determination of feasibility
depends, it is important to have the client agree on what
elements of feasibility are to be provided by which expert
or analyst.

    1. Analyst should be an expert on experts
    2. It is useful to include a standard checklist of
       components with a letter or proposal as that checklist
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22. Income tax liability assumptions			
23. Financing and refinancing assumption			
24. Other			

Accepted by Client _____
                              (Date)

Worksheet suggested in part by John Rasmussen, Feasibility Research Group,
210 Michigan Theater Building, Ann Arbor, Michigan 48108.

VI. Property analysis to determine alternative uses

    A. Elements of analysis are approached as an inductive research problem moving progressively from on-site facts to external conditions. The appraiser needs to examine the following elements in sequence: (See Exhibit 3)

        1. Physical attributes of site and improvement.

        2. Legal-political constraints on alternative uses.

        3. Basic financial parameters of alternative uses.

        4. Existence of effective market demand for remaining alternatives.

        5. Comparative risk and return evaluation of alternatives for which there may be demand.

    B. A physical analysis of inventory of site and improvement attributes should include the five following subsets:

        1. Physical attributes (static) include site dimensions, soils, geology, topography, site improvements and capacity, and on-site flora and fauna.

        2. Legal-political attributes include not only zoning and sub-dividing codes at the local level but also relevent federal, state, or private controls which might direct or restrict site use. As appropriate, the appraiser should note administrative patterns relevant to application of law to use of subject site.

3. Linkage attributes identify relationships of site to networks, populations or activities centers that might generate potential demand for the subject property.

4. Dynamic attributes are those attributes which exist in the mind of others in terms of status, anxiety, beauty, imagery, sentimentality or other perceptions which attach to the subject property to the degree that these are economically significant.

5. Environmental attributes of the site concern with off-site natural systems of which the subject property may be a part such as riparian rights, pollution down wind, storm water runoff, etc. Even the shadow cast by the structure off-site may become significant in the era of solar energy. Impacts on others may be perceptual (i.e. dynamic) or fiscal (legal-political) as well.

C. Static site attributes which begin to narrow the potential market to alternative uses should include both the facts and their implications for productive use in such topic areas as:

1. Size, shape, and lot area

2. Topography, soils, geology, slope stability, bearing capacity, septic suitability, potential for subsidance, etc.

3. Water table, wells, streams, ponds, storm water swales, shoreland edges, and bulkhead lines, flood plain designations, etc.

4. Flora and fauna which enhance marketability or which might cause environmental impact litigation

5. Concealed utility easements, old foundations, etc.

6. Existing on-site utility services and capacity

7. Access points to public thoroughfares or private right-of-ways

8. Site improvements such as paving, retaining walls, pedestrian paths, culverts, etc.

9. Landmark attributes or historical site features

D. An inventory of legal attributes should move from specific site controls imposed by local zoning ordinances to state and federal regulations as well as private controls which may intervene. The appraiser has an obligation to report foreseeable attitues or future legislation which will affect administration of these ordinances relative to future uses of the site.

1. All alternative setback lines and building envelope interpretations relative to site

2. Legal uses under applicable zoning and critical limitations of each relative to FAR, bulk, parking requirements, DU count, etc.

3. Special zoning options which may be available at owners option such as rezoning, downzoning, PUD zoning, etc.

4. Special controls imposed by extra-territorial zoning, tax conservancy commitments, subdivision process, urban renewal districts, tax increment districts, etc.

5. Special state or federal constraints under airport approach zone districts, harbor commissions, coastal zones, Office of Environmental Protection Agency, etc.

6. Public attitudes of public commissions for sewer, water, highway, planning, or building administration

7. Public and planning premises of community master plans relative to sprawl, restoration, redevelopment, and other land use priorities as these attitudes will affect administraion of the law

8. Existing or impending legislation relative to such matters as:

   a. Septic tank installation
   b. Water quality for ground water, water recharge areas, storm water runoff, salt water encroachment, etc.
   c. Air quality standards relative to use, HVAC performance, micro-climate interference, etc.
   d. Conservation of envrionmental edges, prime agricultural land, wet lands

9. Define physical system sub-systems

   a. Foundation system
   b. Structural system
   c. Floor system
   d. Ceiling system
   e. Roof system
   f. Exterior wall system
   g. Interior wall system
   h. Horizontal circulation sytsem (provacy, interaction, congestion, confusion)
   i. Vertical circulation system (handicapped code, cost, economy of scale and height)

10. Delineation of functional systems

    a. Bay spaces
    b. Module unit
    c. Ceiling heights
    d. Visual codes - such as mass, entrance, claustrophobic signals

11. Public controls on possible alternative special uses such as restaurants, places of public assembly, schools, etc.

EXHIBIT 3

Static Attributes

Physical

Legal

Linkage

Environmental

Building Envelope
& Orientation of
Technical Alternatives

Market Attributes

General Market
Patterns

Micro Markets

Neighborhood
Expectations

Future Markets

Possible Alternative
Use Scenarios

*Consumer profiles, price range, and product description

*Alternative revenue justified capital budgets and source and application financing structure

Solvency Tests

Justified Private Capital
- Required Capital
  Investment
+ Public Capital Subsidy
= Net Private Capital
  Exposure

Acceptable Alternative Uses

*Preliminary environmental, political, and fiscal constraints

Infrastructure Tests.

Environmental Tolerance

Public Service Capacity

Fiscal Impact

Public Priorities and
Subsidy

Financially Solvent
Most Fitting Use

*After-tax cash flows, financial ratios, and qualitative screens

Investment Tests

Investor Limitations
& Objectives

Acceptable Risk Sensitivity
Parameters

Most Probable Use of Site
In Search of Use

12/1/78

F. Analysis of the static and legal/political attributes of site and structure should be summarized in terms of competitive advantages and disadvantages of plausible alternative uses for costs, pricing, marketing, and political administration of compatibility.

1. Some static attributes may help identify most probable user types (Ex. special display window sizes may be suitable for antique or art display) while attributes will make certain uses unlikely (Ex. floor load limitations of fire proofing weights required of places of public assembly).

2. Some static or legal attributes can provide monopoly advantages because suitability is unique relative to lands all around it, because of exemption from certain regulations, or existing approvals of development plans, including licenses for dredging, building code variances, etc.

3. Some attributes lead to higher cost which the front door approach may reveal as leading to excessive rents or prices.

G. Linkage attributes relate to subject property to both networks of supporting infra-structure which contributes toward effective demand for the property as economic space time or the supply and demand impact of related activity centers which may interact with the subject property.

1. Analysis moves best from the borders of the subject property outward to expanding zones of potential demand or competitive supply.

2. Utility services are network linkages in terms of:

    a. Limitations on sewage processing, storm water retention or runoff constraints
    b. Community energy supplies, priorities, and capacity
    c. Water processing and chemistry as applicable
    d. Possible dependency on resources such as wild game and fish, underutilized labor pools, fire department coverage zones, etc.

3. Street, sidewalk, rail, and public transit systems including access points, traffic department controls, etc.

4. Relationship of subject site to contiguous properties, balance of city block, and neighborhood layout pattern.

5. Relationship of subject site to generators of potential needs and uses for the subject site, such as:

    a. Employment centers
    b. School system alternatives
    c. Retail services
    d. Complimentary existing nearby uses
    e. Recreational services
    f. Health care systems
    g. Security systems
    h. Waste disposal services

6. Neighborhood demographics (population, age, employment, income, etc.)

7. Relationship to competitive alternative and estimate of supply of available space, competitive ranking, and exposure of subject site to competitive interception of potential demand.

H. Dynamic attributes are those characteristics which exist in the minds of the beholder, which are mental or emotional responses which a site or project stimulates and which affect decision making behavior.

1. Image conditioning of the approach zone

2. Visual factors in terms of prominence of the site, views from the site, potential for controlled sight lines, etc.

3. Prestige and status

4. Anxiety factors of access and security

5. Noise as a function of traffic count (FHA noise pollution manual)

6. Prevailing air currents and airborne pollution (phosphate plants or sulphite paper mills, for example).

7. Political images established for a site by the public positions of local politicians or vested interest groups.

8. Historical community reputation and values attached to the project site and structures.

I. Environmental attributes of the site recognize that the real estate product today must respond not only to the needs of the individual consumer in the marketplace but to the collective community of consumers represented by the community political administrators. Land use must be sold to both "markets." If the proposal won't sell at City Hall, there will be little opportunity to market the product individually. Pre-architectural programs must not only consider physical factors of environmental impact off-site, but in addition:

1. Silhouette of social impact in terms of public perceptions of:

    a. Displacement of existing residents and neighborhood units
    b. Contribution to social integration or mobility barriers
    c. Contribution to land use heterogeneity
    d. Contribution to regional and community master plans

2. Fiscal impact on the community where appropriate:

    a. Direct impact on real estate tax revenues
    b. Direct impact on other governmental revenue
    c. Direct impact on incremental government
    d. Secondary contributions to local government revenues
    e. Secondary cost burdens created for local communities

3. Social factors in the ethical environment:

    a.   Impact on supply/demand equilibrium

    b.   Stamina of project sponsor in the face of public pressure

    c.   Vulnerability of potential project buyers to secondary political pressures and counter attack

    d.   Potential uses requiring unique political resources or private/public consortiums

J.   For the experienced real estate analyst systamatic narrowing of alternative uses from study of the attributes leads to a limited series of alternatives which can then be given a final screening in terms of preliminary financial analysis and effective demand. The analyst may review these attributes to identify alternative uses by emphasizing one or more of the following angles of inquiry.

    1.   Does any site of site attributes suggest a special space/time - to money/time configuration? For example, a high floor area ratio but little parking may suggest a building with a low person occupancy, such as a switchboard building or luxury apartment with minimum number of dwelling units.

    2.   What attributes of the subject site provide monopoly characteristics or are inferior to alternative sites?

    3.   What patterns in adjacent or competitive structure represent a trend to which the subject property should adapt?

    4.   What patterns of use is revealed by transactions in similar properties on nearby locations?

K.   A program of use or reuse can be called a scenario and may be suggested by physical characteristics of the property, contiguous property trends and conditions, or known supply shortages with which the appraiser is familiar.

L.   Ranking of these scenarios for economic power is accomplished by means of the Back Door approach, i.e., the revenue justified investment for the property, as is alternative whrksheets for this approach using the default point and the debt cover ratio as the critical conversion of income to capital are provided in Exhibits 4-10.

M.   Economic power has to be qualified in terms of marketing risks and capital budgeting risks of each of the alternative uses before alternative uses can be ranked in summary fashion as in Exhibit 6.

    1.   Note that Exhibit 6 integrates the basic elements of preliminary feasibility analysis.

    2.   Remaining disucssion will emphasize market risk which is the primary cause of misleading appraisal conclusions

Exhibit 4

REVENUE REQUIRED BY CAPITAL BUDGET
LOAN TO COST RATIO APPROACH

SITE ACQUISTION COST

+

CONSTRUCTION BUDGET

+

INDIRECT COST AND
DEVELOPMENT FEES

=

TOTAL CAPITAL BUDGET

x   x

1- LOAN TO COST RATIO   LOAN TO COST RATIO

=   =

CASH EQUITY REQUIRED   MORTGAGE LOAN

x   x

REQUIRED PRE-TAX CASH
DISTRIBUTION RATE   DEBT SERVICE
                                                                                CONSTANT

=   =

CASH THROW OFF
REQUIRED FOR EQUITY   CASH REQUIRED FOR
                                                                                MORTGAGE LENDER

+

NET OPERATING INCOME

+

OPERATING EXPENSES

+

REAL ESTATE TAXES

+

CASH REPLACEMENTS

=

EFFECTIVE GROSS REVENUE
REQUIRED

+

VACANCY LOSS

=

GROSS POTENTIAL REVENUE

÷

NET LEASABLE UNITS

=

RENT REQUIRED PER UNIT

Exhibit 5

REVENUE JUSTIFIED CAPITAL BUDGET
DEFAULT RATIO APPROACH

GROSS RENT POTENTIAL

x

x

1- DEFAULT RATIO	DEFAULT RATIO
=	=
RISK VARIABLES AND EQUITY CASH	CASH BUDGET OUTLAYS
-	-
VACANCY LOSS	OPERATING EXPENSES
-	-
RISK RESERVE	REAL ESTATE TAXES
=	-
CASH AVAILABLE FOR INVESTORS	CASH REPLACEMENTS
÷	=
REQUIRED PRE-TAX CASH DISTRIBUTION RATE	CASH AVAILABLE FOR DEBT SERVICE
=	÷
JUSTIFIED CASH EQUITY INVESTMENTS	DEBT SERVICE CONSTANT
	=
	JUSTIFIED MORTGAGE LOAN

+

TOTAL JUSTIFIED INVESTMENT

-

EXISTING CLAIMS OR PLANNED IMPROVEMENT BUDGET

=

PROCEEDS AVAILABLE FOR PROPERTY PURCHASE "AS IS"

Exhibit 6

REVENUE JUSTIFIED CAPITAL BUDGET
DEBT COVER RATIO APPROACH

GROSS RENT POTENTIAL

−

VACANCY LOSS

=

EFFECTIVE GROSS REVENUE

−

OPERATING EXPENSES

−

REAL ESTATE TAXES

−

CASH REPLACEMENTS

=

NET OPERATING INCOME AVAILABLE

FOR DEBT PAYMENT, INCOME TAX, CASH DIVIDENDS

−

÷

DEBT SERVICE CASH

DEBT COVER RATIO

REQUIRED BY LENDERS

=

=

CASH AVAILABLE FOR

INCOME TAX AND INVESTORS

CASH AVAILABLE FOR

DEBT SERVICE

÷

÷

REQUIRED PRE-TAX CASH

DISTRIBUTION RATE

DEBT SERVICE CONSTANT

=

=

JUSTIFIED CASH

EQUITY INVESTMENT

JUSTIFIED MORTGAGE

LOAN

+

TOTAL JUSTIFIED INVESTMENT

−

EXISTING CLAIMS OR PLANNED

IMPROVEMENT BUDGET

=

PROCEEDS AVAILABLE FOR

PROPERTY PURCHASE AS IS

CAPITAL BUDGET

Exhibit 7

FRONT DOOR APPROACH

ARCHITECTURAL PROGRAM

CONSTRUCTION COST PER SQ. FT. ← BUILDING COMPLEXITY AND QUALITY

✱

GROSS BUILDING AREA ← BUILDING DESIGN AND EFFICIENCY

=

BUILDING BUDGET

＋

LAND VALUE, SITE WORK, FEES, CARRYING CHARGE, BUILDERS PROFIT

=

PROJECT BUDGET ✱ MORTGAGE LOAN / COST

MORTGAGE LOAN ✱ MORTGAGE CONSTANT = ANNUAL DEBT SERVICE

=

EQUITY ✱ CASH ON CASH RATE = CASH THROW-OFF

MARKET CHECK

PROJECT VALUE

÷

NET INCOME MULTIPLIER

=

=

NET OPERATING INCOME

＋

RESERVES

＋

REAL ESTATE TAXES AND OPERATING EXP.

＋

VACANCY & BAD DEBT

=

POTENTIAL GROSS INC.

÷

NET LEASEABLE AREA

=

RENT PER SQ. FT.

TAX SUBSIDY

DEPRECIATION ─ MORTGAGE INTEREST

=

TAXABLE INCOME

✱

TAX RATE

=

− TAX LIABILITY OR + TAX CREDIT

＋

CASH THROW-OFF

=

SPENDABLE CASH AFTER TAXES

MARKET ✱ TARGET

OPERATING BUDGET

Exhibit 8
FRONT DOOR - MINIMUM RENT REQUIRED

$20/sq. ft.

X

20,000 sq. ft.

=

$400,000

÷

$200,000

=

$600,000

-

(80% LTV)

| $480,000 | X | (.1025 constant) | = | $49,200 |

+

| $120,000 | X | .07 | = | $8,400 |

=

$57,600

+

$2,400

+

$50,000

+

$6,000

=

$116,000   90% NLA

÷

$18,000

=

$6.44-6.50/sq.ft.

Default ratio:

$$\frac{\text{Debt service + expenses}}{\text{Gross rent}}$$

$$\frac{\$49,200 + 50,000}{\$116,000} = 86\%$$

Payback before taxes:

$$\frac{\text{Equity cash investment}}{\text{Equity dividend}}$$

$$\frac{120,000}{8,400} = 14+ \text{ yrs.}$$

Debt cover ratio:

$$\frac{\text{Net operating income*}}{\text{Debt service}}$$

$$\frac{60,000}{49,200} = 1.22$$

* NOI = gross rent - vacancy - expenses

OPERATING BUDGET

Exhibit 9

BACK DOOR
APPROACH

MARKET SURVEY

RENT / SQUARE FT.	←	MARKET RENT/SPACE UNIT

✱ **✱**

NET LEASEABLE AREA	=	TARGET CAPTURE RATE

	RENTAL MARKET TOTAL SPACE UNIT DEMAND

=

MARKET CHECK

POTENTIAL GROSS INCOME	✱	DEFAULT POINT	POTENTIAL GROSS INCOME

= −

TOTAL CASH OUTLAYS	−	OPERATING EXPENSES	VACANCY, R.E.TAXES & OPERATING EXPENSES

= =

CASH MARGIN	REAL ESTATE TAXES	NET OPERATING INCOME

− ✱

VACANCY		NET INCOME MULTIPLIER

RESERVES	CASH AVAILABLE FOR DEBT SERVICE

= =

MORTGAGE CONSTANT	=	MORTGAGE LOAN

+

CASH THROW-OFF	=	CASH ON CASH RATE	=	EQUITY

+

PRINCIPAL REPAYMENT	TOTAL PROJECT VALUE

−

DEPRECIATION	LAND VALUE, SITE WORK, FEES, CARRYING CHARGES BUILDERS PROFIT

=

TAXABLE INCOME	BUILDING BUDGET

✱

TAX RATE	GROSS BUILDING AREA

= =

−TAX LIABILITY, OR + TAX CREDIT	CONSTR. COST / SQ.

+

CASH THROW-OFF	ARCHT. PROGR.

=

SPENDABLE CASH AFTER TAXES	TAX SUBSIDY

CAPITAL BUDGET

$6.75/sq. ft.

$18,000

=

$121,500		.80

-

$97,200		$26,000

= -

$24,300		$24,000

- =

$6,000		$47,200

- ÷

$2,400		.1025	=	$460,500

= +

$15,900	÷	.12	=	$132,500

=

$592,500

-

$200,000

=

$392,500

÷

$20,000

=

$19.625 or 19.5/sq.ft.

Default ratio =

$$\frac{47,200 + 50,000}{121,500} = .80$$

Payback ratio:

$$\frac{132,500}{15,900} = 8.33 \text{ yrs.}$$

Debt cover ratio:

$$\frac{65,500}{47,200} = 1.39$$

X. Introduction to Financial Analysis

Review of property attributes and identification of alternative uses
which have potential for effective demand typically narrows the alternative
for further consideration to those where potential revenue can support
reasonable capital budget parameters. Initial financial analysis
does not involve present value theory but rather progressive refinement
of ratios and risk characterisitcs for consumers, producers, and the
public infrastructure. Analysis which follows is concerned with
only the private production and finance side of the equation.

A. There are two points of departure for analysis:

1. Given the capital budget, it is necessary to convert to the
   required rents necessary to support the project and cash return
   objectives. Specified budgets converted to required rents
   is often called the front door approach.
2. Given market rent per unit, it is necessary to establish
   themaximum justified capital budget. Targeted market rents
   converted to justified investment can be allocated to various
   development budgets and is called the back door approach.

B. Refer to the front door approach exhibit and example, oversimplified
for purposes of illustration.

C. Refer to the back door approach exhibit and example

1. The back door approach is the preferred response to the market
   although lenders typically enter the scene after the capital
   budget is set.
2. Note that the back door approach can be driven by a default
   ratio or a debt cover ratio which are dynamic risk concepts
   rather than loan to value ratio which is a static regulatory
   concept.

C. The back door approach is the essence of the FHA 2013 form, state
housing finance approach to projects where revenue is defined by
the FMR rules, or even purchase of an existing property subject to
long term rents, renovation, etc.

1. It is possible to detail the back door approach for any type
   of project by simply setting up tabs in a flow chart fashion
   as suggested by the example for a 236 project.
2. Another way to view the flow charts is in the nature of two
   basic programmable formulas:

$$\text{Gross rent} = \frac{TRC * LTV * MC + (1 - LTV * CC)}{1 - (ER + RET + VR + RR)}$$

$$\text{Justified project budget} = \frac{GR}{\frac{LTV * MC + (1 - LTV * CC)}{1 - (ER + RET + VR + RR)}}$$

Where:
TRC = Total replacement cost; LTV = loan to value ratio
MC = mortgage constant; CC = Cash on cash for equity cash
ER = expense ratio; RET = real estate tax ratio
VR = Vacancy ratio; RR = reserve ratio

C. Preliminary financial analysis begins with a variety of ratios which are intended to reveal the tolerance of the project for variance in key assumptions, the ability absorb surprise, as well as dynamic risk. These ratios become the objective of further refinement through sensitivity analysis. Among the important ratios we have used so far are:

1. Absorption rate:

$$\frac{\text{Units sold or leased per period}}{\text{Total supply of units available for sale or lease}} = \text{Absorption rate}$$

2. Capture rate:

$$\frac{\text{Units in specific project sold or leased per period}}{\text{Total competitive units sold or leased per period}} = \text{Capture rate}$$

3. Vacancy ratio:

$$\frac{\text{Space unit x \# of units x rental payment periods per year x turnover rate x rental payments lost x rent}}{\text{\# of units x \# of payments x rent per period}} = \text{(gross rent)}$$

1-bedroom apartments x 20 x 50% turnover x 1 month lost 1 $200/mo.

$$\frac{20 \times 50\% \times 1 \times 200}{20 \times 12 \times 200}$$

$$\frac{2000}{48000} = \frac{1}{24} = 4.2\%$$

4. Expense ratio:

$$\frac{\text{Expenses}}{\text{Gross rent}}$$

5. Net income ratio:

$$\frac{\text{Net income}}{\text{Purchase price + additional costs}} = \text{Overall rate or cap rate}$$ (should be = to debt service constant or higher)

6. Debt cover ratio:

$$\frac{\text{Net operating income}}{\text{Debt service}}$$

7. Default ratio:

$$\frac{\text{Operating expenses + real estate taxes + short term debt + interest + principal payments}}{\text{Gross rent}}$$

Exhibit 11
CASH FLOW PRO FORMA USING PARAMETER NORMS

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

```
DATE:    2/14/1977
BLDG:       1
RUN :       1
```

```
GROSS SQUARE FEET IN BUILDING:        700.
BUILDING EFFICIENCY        :          85.0 PCT
NET LEASEABLE SQUARE FOOTAGE :        595.

LAND AND CONSTRUCTION COST : $     19500.
LOAN TO COST RATIO         :          75.0 PCT
ORIGINAL LOAN AMOUNT       : $     14625.

EQUITY REQUIREMENT         : $      4875.

PERMANENT INTEREST RATE    :          9.000 PCT
TERM OF LOAN                       30. YEARS

ANNUAL DEBT SERVICE        : $      1412.
```

		ANNUAL DOLLARS
GROSS INCOME : 595. SQ FT AT $ 6.00		3570.
LESS: VACANCY OF 5.00 PCT		179.

GROSS ADJUSTED INCOME		3392.
PLUS: PARKING INCOME		150.
PLUS: OTHER INCOME		24.
GROSS EFFECTIVE INCOME		3566.
LAND LEASE EXPENSE		100.
OPERATING EXPENSES: 595. SQ FT AT $ 2.76		1642.

NET OPERATING INCOME		1823.
DEBT SERVICE (9.66 PCT CONSTANT)		1412.

PRO FORMA CASH FLOW		411.

```
RETURN ON EQUITY        8.43 PERCENT

DEBT SERVICE COVERAGE:      1.291

DEFAULT RATIO :      83.48 PERCENT
```

BACKDOOR APPROACH FORMAT
FOR RANKING MOST PROBABLE USE

$$\left\{ \boxed{RIU} \times \boxed{nLU} \right\} + \left\{ \boxed{RIU} \times \boxed{nLU} \right\} + \left\{ \boxed{RIU} \times \boxed{nLU} \right\}$$

$$=$$

$$\boxed{GI} \times \boxed{OP} = \boxed{Cash}$$

$$\times \qquad\qquad -$$

$$\boxed{I-OP} \qquad\qquad \boxed{OE}$$

$$= \qquad\qquad -$$

$$\boxed{ECm} \qquad\qquad \boxed{CE}$$

$$- \qquad\qquad -$$

$$\boxed{VAC} \qquad\qquad \boxed{RTE}$$

$$- \qquad\qquad =$$

$$\boxed{RES} \qquad\qquad \boxed{COS}$$

$$= \qquad\qquad \div$$

$$\boxed{CT} \qquad\qquad \boxed{mC}$$

$$\div \qquad\qquad =$$

$$\boxed{EC} \qquad\qquad \boxed{JmC}$$

$$=$$

$$\boxed{JEI}$$

$$+$$
$$=$$

$$\boxed{JPB}$$

$$-$$

$$\boxed{RB}$$

$$=$$

$$\boxed{PB}$$
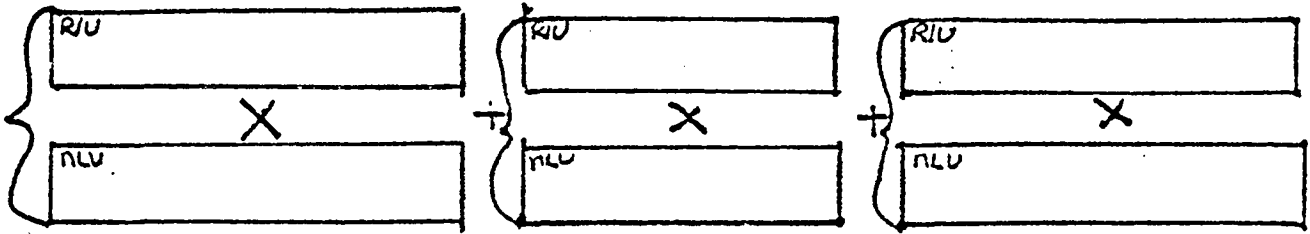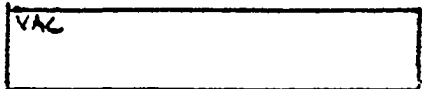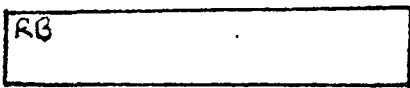
LOAN DATA FOR EACH SET OF FINANCIAL CONDITIONS

AMOUNT FINANCED $ 14625.   EQUITY $ 4875.

LOAN RATIO 75.00 PCT

INTEREST	TERM	CONSTANT	DEBT SERVICE		
			ANNUAL	PER SQ FT	PER UNIT
9.000	30.0	9.6555	1412.	2.3733	
9.250	30.0	9.8721	1444.	2.4265	
9.500	30.0	10.0903	1476.	2.4802	
8.500	30.0	9.2270	1349.	2.2680	
8.000	30.0	8.8052	1288.	2.1643	

AMOUNT FINANCED $ 15600.   EQUITY $ 3900.

LOAN RATIO 80.00 PCT

INTEREST	TERM	CONSTANT	DEBT SERVICE		
			ANNUAL	PER SQ FT	PER UNIT
9.000	30.0	9.6555	1506.	2.5315	
9.250	30.0	9.8721	1540.	2.5883	
9.500	30.0	10.0903	1574.	2.6455	
8.500	30.0	9.2270	1439.	2.4192	
8.000	30.0	8.8052	1374.	2.3086	

AMOUNT FINANCED $ 16575.   EQUITY $ 2925.

LOAN RATIO 85.00 PCT

INTEREST	TERM	CONSTANT	DEBT SERVICE		
			ANNUAL	PER SQ FT	PER UNIT
9.000	30.0	9.6555	1600.	2.6897	
9.250	30.0	9.8721	1636.	2.7501	
9.500	30.0	10.0903	1672.	2.8109	
8.500	30.0	9.2270	1529.	2.5704	
8.000	30.0	8.8052	1459.	2.4529	

AMOUNT FINANCED $ 17550.   EQUITY $ 1950.

LOAN RATIO 90.00 PCT

INTEREST	TERM	CONSTANT	DEBT SERVICE		
			ANNUAL	PER SQ FT	PER UNIT
9.000	30.0	9.6555	1695.	2.8480	
9.250	30.0	9.8721	1733.	2.9119	
9.500	30.0	10.0903	1771.	2.9762	
8.500	30.0	9.2270	1619.	2.7216	
8.000	30.0	8.8052	1545.	2.5972	

AMOUNT FINANCED $ 18525.   EQUITY $ 975.

LOAN RATIO 95.00 PCT

INTEREST	TERM	CONSTANT	DEBT SERVICE		
			ANNUAL	PER SQ FT	PER UNIT
9.000	30.0	9.6555	1789.	3.0062	
9.250	30.0	9.8721	1829.	3.0736	
9.500	30.0	10.0903	1869.	3.1415	
8.500	30.0	9.2270	1709.	2.8728	
8.000	30.0	8.8052	1631.	2.7414	

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

SITE :	2000. SQUARE FEET	DATE 2-14-1977
BUILDING :	700. SQUARE FEET	BLDG 1
EFFICIENCY:	85.00 PCT(595. SQ FT)	
LOAN RATIO:	75.00 PCT OF $ 19500.	
LOAN :	$ 14625.	
EQUITY :	$ 4875.	
FINANCING :	30. YEARS 9.000 PCT	
OTR INCOME:	$ 174. ANNUALLY	RUN 1
EXPENSES :	$ 2.76 PER SQ FT	
LAND LEASE:	$ 100.	

ANNUAL CASH FLOWS

VACANCY ALLOWANCE

	3.00 PCT	4.00 PCT	5.00 PCT	7.00 PCT	10.00 PCT

RENTAL RATES
ANNUAL $/SQ FT

	3.00 PCT	4.00 PCT	5.00 PCT	7.00 PCT	10.00 PCT
$ 4.80	-210.	-239.	-267.	-324.	-410.
$ 5.40	136.	104.	72.	8.	-89.
$ 6.00	483.	447.	411.	340.	233.
$ 6.60	829.	790.	750.	672.	554.
$ 7.20	1175.	1132.	1089.	1004.	875.

BREAKEVEN RENTAL RATES

VACANCY ALLOWANCE

	3.00 PCT	4.00 PCT	5.00 PCT	7.00 PCT	10.00 PCT

RENTAL RATES
ANNUAL $/SQ FT

	3.00 PCT	4.00 PCT	5.00 PCT	7.00 PCT	10.00 PCT
	5.16	5.22	5.27	5.39	5.57

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS   PAGE   2 OF 12

SITE :	2000. SQUARE FEET
BUILDING :	700. SQUARE FEET
EFFICIENCY:	85.00 PCT(595. SQ FT)
LOAN RATIO:	75.00 PCT OF $ 19500.
LOAN :	$ 14625.
EQUITY :	$ 4875.
FINANCING :	30. YEARS 9.000 PCT
VACANCY :	5.00 PCT OF LEASEABLE
OTR INCOME:	$ 174. ANNUALLY
LAND LEASE:	$ 100.

DATE   2-14-1977
BLDG   1

RUN   1

ANNUAL CASH FLOWS

ANNUAL EXPENSE RATES PER SQ FT

RENTAL RATES ANNUAL $/SQ FT	$ 2.40	$ 2.64	$ 2.76	$ 3.00	$ 3.36
$ 4.80	-53.	-196.	-267.	-410.	-624.
$ 5.40	286.	143.	72.	-71.	-285.
$ 6.00	625.	483.	411.	268.	54.
$ 6.60	965.	822.	750.	608.	393.
$ 7.20	1304.	1161.	1089.	947.	732.

BREAKEVEN RENTAL RATES

ANNUAL EXPENSE RATES PER SQ FT

	$ 2.40	$ 2.64	$ 2.76	$ 3.00	$ 3.36
RENTAL RATES ANNUAL $/SQ FT	4.89	5.15	5.27	5.53	5.90

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS   PAGE   3 OF 12

SITE   :   2000. SQUARE FEET   DATE   2-14-1977
BUILDING   :   700. SQUARE FEET   BLDG   1
EFFICIENCY: 85.00 PCT(595. SQ FT)
LOAN RATIO: 75.00 PCT OF $ 19500.
LOAN   : $ 14625.
EQUITY   : $ 4875.
VACANCY   :   5.00 PCT OF LEASEABLE
OTR INCOME: $ 174. ANNUALLY   RUN   1
EXPENSES   : $ 2.76 PER SQ FT
LAND LEASE: $ 100.

ANNUAL CASH FLOWS

FINANCING PARAMETERS

| | 30. YEARS | 30. YEARS R | 30. YEARS | 30. YEARS | 30. YEA |
| | 9.00 PCT | 9.25 PCT C | 9.50 PCT | 8.50 PCT | 8.00 P |

S
T

RENTAL RATES ANNUAL $/SQ FT					
$ 4.80	-267.	-299.	-331.	-204.	-143.
$ 5.40	72.	40.	8.	135.	196.
$ 6.00	411.	380.	348.	474.	536.
$ 6.60	750.	719.	687.	813.	875.
$ 7.20	1089.	1058.	1026.	1152.	1214.

BREAKEVEN RENTAL RATES

FINANCING PARAMETERS

| | 30. YEARS | 30. YEARS R | 30. YEARS | 30. YEARS | 30. YEA |
| | 9.00 PCT | 9.25 PCT C | 9.50 PCT | 8.50 PCT | 8.00 P |

S
T

RENTAL RATES
ANNUAL $/SQ FT

| | 5.27 | 5.33 | 5.39 | 5.16 | 5.05 |

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS

SITE :	2000. SQUARE FEET	DATE 2-14-1977
BUILDING :	700. SQUARE FEET	BLDG 1
LOAN RATIO:	75.00 PCT OF S 19500.	
LOAN :	S 14625.	
EQUITY :	S 4875.	
FINANCING :	30. YEARS 9.000 PCT	
VACANCY :	5.00 PCT OF LEASEABLE	
OTR INCOME:	S 174. ANNUALLY	RUN 1
EXPENSES :	S 2.76 PER SQ FT	
LAND LEASE:	S 100.	

ANNUAL CASH FLOWS

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LOAN TO COST RATIO

RENTAL RATES ANNUAL $/SQ FT	75.00 PCT	80.00 PCT	85.00 PCT	90.00 PCT	95.00 PCT
S 4.80	-393.	-355.	-330.	-305.	-267.
S 5.40	-94.	-44.	-11.	22.	72.
S 6.00	205.	267.	308.	349.	411.
S 6.60	505.	578.	627.	677.	750.
S 7.20	804.	890.	947.	1004.	1089.

BREAKEVEN RENTAL RATES

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LOAN TO COST RATIO

RENTAL RATES ANNUAL $/SQ FT	75.00 PCT	80.00 PCT	85.00 PCT	90.00 PCT	95.00 PCT
	5.59	5.49	5.42	5.36	5.27

PRØ FØRMA CASH FLØW TABLE

SENSITIVITY APT. DEMØ

U. W. REAL ESTATE DEPT.

SITE :	2000. SQUARE FEET	DATE 2-14-1977
BUILDING :	700. SQUARE FEET	BLDG 1
EFFICIENCY:	85.00 PCT(595. SQ FT)	
FINANCING :	30. YEARS 9.000 PCT	
VACANCY :	5.00 PCT ØF LEASEABLE	
ØTR INCØME:	S 174. ANNUALLY	RUN 1
EXPENSES :	S 2.76 PER SQ FT	
LAND LEASE:	S 100.	

ANNUAL CASH FLØWS

LØAN TØ CØST RATIØ

RENTAL RATES ANNUAL S/SQ FT	75.00 PCT	80.00 PCT	85.00 PCT	90.00 PCT	95.00 PCT
S 4.80	-267.	-361.	-455.	-550.	-644.
S 5.40	72.	-22.	-116.	-210.	-305.
S 6.00	411.	317.	223.	129ʳ	35.
S 6.60	750.	656.	562.	468.	374.
S 7.20	1089.	995.	901.	807.	713.

BREAKEVEN RENTAL RATES

LØAN TØ CØST RATIØ

RENTAL RATES ANNUAL S/SQ FT	75.00 PCT	80.00 PCT	85.00 PCT	90.00 PCT	95.00 PCT
	5.27	5.44	5.61	5.77	5.9△

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS

SITE   :   2000. SQUARE FEET   DATE   2-14-1977
BUILDING   :   700. SQUARE FEET   BLDG   1
EFFICIENCY: 85.00 PCT(595. SQ FT)
LOAN RATIO: 75.00 PCT OF S   19500.
LOAN   :   S   14625.
EQUITY   :   S   4875.
FINANCING :   30. YEARS 9.000 PCT
REVENUE   :   S   6.00 PER SQ FT
OTR INCOME: S   174. ANNUALLY   RUN   1
LAND LEASE: S   100.

ANNUAL CASH FLOWS

ANNUAL EXPENSE RATES PER SQ FT

VACANCY RATES	S 2.40	S 2.64	S 2.76	S 3.00	S 3.36
3.00 PCT	697.	554.	483.	340.	126.
4.00 PCT	661.	518.	447.	304.	90.
5.00 PCT	625.	483.	411.	268.	54.
7.00 PCT	554.	411.	340.	197.	-17.
10.00 PCT	447.	304.	233.	90.	-124.

BREAKEVEN RENTAL RATES

ANNUAL EXPENSE RATES PER SQ FT

VACANCY RATES	S 2.40	S 2.64	S 2.76	S 3.00	S 3.36
3.00 PCT	4.79	5.04	5.16	5.41	5.73
4.00 PCT	4.84	5.09	5.22	5.47	5.84
5.00 PCT	4.89	5.15	5.27	5.53	5.90
7.00 PCT	5.00	5.26	5.39	5.64	6.03
10.00 PCT	5.17	5.43	5.57	5.83	6.23

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS

SITE :	2000. SQUARE FEET	DATE 2-14-1977
BUILDING :	700. SQUARE FEET	BLDG 1
EFFICIENCY:	85.00 PCT(595. SQ FT)	
LOAN RATIO:	75.00 PCT OF S 19500.	
LOAN :	S 14625.	
EQUITY :	S 4875.	
REVENUE :	S 6.00 PER SQ FT	
OTR INCOME:	S 174. ANNUALLY	RUN 1
EXPENSES :	S 2.76 PER SQ FT	
LAND LEASE:	S 100.	

ANNUAL CASH FLOWS

FINANCING PARAMETERS

S T	30. YEARS 9.00 PCT	30. YEARS R 9.25 PCT C	30. YEARS 9.50 PCT	30. YEARS 8.50 PCT	30. YEA 8.00 P
VACANCY RATES					
3.00 PCT	483.	451.	419.	545.	607.
4.00 PCT	447.	415.	383.	510.	571.
5.00 PCT	411.	380.	348.	474.	536.
7.00 PCT	340.	308.	276.	402.	464.
10.00 PCT	233.	201.	169.	295.	357.

BREAKEVEN RENTAL RATES

FINANCING PARAMETERS

S T	30. YEARS 9.00 PCT	30. YEARS R 9.25 PCT C	30. YEARS 9.50 PCT	30. YEARS 8.50 PCT	30. YEA 8.00 P
VACANCY RATES					
3.00 PCT	5.16	5.22	5.27	5.06	4.95
4.00 PCT	5.22	5.27	5.33	5.11	5.00
5.00 PCT	5.27	5.33	5.39	5.16	5.05
7.00 PCT	5.39	5.44	5.50	5.27	5.16
10.00 PCT	5.57	5.62	5.68	5.45	5.33

SENSITIVITY APT. DEMØ

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS   PAGE   8 OF 12

SITE   :   2000. SQUARE FEET   DATE   2-14-1977
BUILDING   :   700. SQUARE FEET   BLDG   1
LØAN RATIØ: 75.00 PCT ØF S   19500.
LØAN   :   S   14625.
EQUITY   :   S   4875.
FINANCING   :   30. YEARS 9.000 PCT
REVENUE   :   S 6.00 PER SQ FT
VACANCY   :   5.00 PCT ØF LEASEABLE
ØTR INCØME: S   174. ANNUALLY   RUN   1
LAND LEASE: S   100.

ANNUAL CASH FLØWS

BUILDING EFFICIENCY (PCT ØF GRØSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LØAN TØ CØST RATIØ

75.00 PCT 80.00 PCT 85.00 PCT 90.00 PCT 95.00 PCT
--------- --------- --------- --------- ---------

EXPENSE RATES
ANNUAL S/SQ FT

	75.00	80.00	85.00	90.00	95.00
S 2.40	394.	464.	510.	556.	625.
S 2.64	268.	333.	375.	418.	483.
S 2.76	205.	267.	308.	349.	411.
S 3.00	79.	136.	174.	212.	268.
S 3.36	-110.	-60.	-28.	5.	54.

BREAKEVEN RENTAL RATES

BUILDING EFFICIENCY (PCT ØF GRØSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LØAN TØ CØST RATIO

75.00 PCT 80.00 PCT 85.00 PCT 90.00 PCT 95.00 PCT
--------- --------- --------- --------- ---------

EXPENSE RATES
ANNUAL S/SQ FT

	75.00	80.00	85.00	90.00	95.00
S 2.40	5.21	5.11	5.04	4.98	4.89
S 2.64	5.46	5.36	5.29	5.23	5.15
S 2.76	5.59	5.49	5.42	5.36	5.27
S 3.00	5.84	5.74	5.67	5.61	5.53
S 3.36	6.22	6.12	6.05	5.99	5.90

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS

SITE	:	2000. SQUARE FEET	DATE 2-14-1977
BUILDING	:	700. SQUARE FEET	BLDG 1
LOAN RATIO:		75.00 PCT OF $ 19500.	
LOAN	:	$ 14625.	
EQUITY	:	$ 4875.	
REVENUE	:	$ 6.00 PER SQ FT	
VACANCY	:	5.00 PCT OF LEASEABLE	
OTR INCOME:		$ 174. ANNUALLY	RUN 1
EXPENSES	:	$ 2.76 PER SQ FT	
LAND LEASE:		$ 100.	

ANNUAL CASH FLOWS

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LOAN TO COST RATIO

	75.00 PCT	80.00 PCT	85.00 PCT	90.00 PCT	95.00 PCT
FINANCING					
30.YR 9.00PCT	205.	267.	305.	349.	411.
30.YR 9.25PCT	174.	235.	277.	318.	380.
30.YR 9.50PCT	142.	204.	245.	286.	348.
30.YR 8.50PCT	268.	330.	371.	412.	474.
30.YR 8.00PCT	330.	391.	433.	474.	536.

BREAKEVEN RENTAL RATES

BUILDING EFFICIENCY (PCT OF GROSS)

75.00 PCT 78.00 PCT 80.00 PCT 82.00 PCT 85.00 PCT
LOAN TO COST RATIO

	75.00 PCT	80.00 PCT	85.00 PCT	90.00 PCT	95.00 PCT
FINANCING					
30.YR 9.00 PCT	5.59	5.49	5.42	5.36	5.27
30.YR 9.25 PCT	5.65	5.55	5.48	5.42	5.33
30.YR 9.50 PCT	5.72	5.61	5.54	5.48	5.39
30.YR 8.50 PCT	5.46	5.36	5.30	5.24	5.16
30.YR 8.00 PCT	5.34	5.25	5.19	5.13	5.05

PRØ FØRMA CASH FLØW TABLE

SENSITIVITY APT. DEMØ

U. W. REAL ESTATE DEPT.

SITE :	2000. SQUARE FEET	DATE 2-14-1977
BUILDING :	700. SQUARE FEET	BLDG 1
EFFICIENCY:	85.00 PCT(595. SQ FT)	
LØAN RATIØ:	75.00 PCT ØF $ 19500.	
LØAN :	$ 14625.	
EQUITY :	$ 4875.	
FINANCING :	30. YEARS 9.000 PCT	
VACANCY :	5.00 PCT ØF LEASEABLE	
ØTR INCØME:	$ 174. ANNUALLY	RUN 1
EXPENSES :	$ 2.76 PER SQ FT	

ANNUAL CASH FLØWS

LAND LEASE CØST

RENTAL RATES ANNUAL $/SQ FT	$ 100.	$ 150.	$ 200.	$ 250.	$ 300.
$ 4.80	-267.	-317.	-367.	-417.	-467.
$ 5.40	72.	22.	-28.	-78.	-128.
$ 6.00	411.	361.	311.	261.	211.
$ 6.60	750.	700.	650.	600.	550.
$ 7.20	1089.	1039.	989.	939.	889.

BREAKEVEN RENTAL RATES

LAND LEASE CØST

RENTAL RATES ANNUAL $/SQ FT	$ 100.	$ 150.	$ 200.	$ 250.	$ 300.
	5.27	5.36	5.45	5.54	5.63

PRO FORMA CASH FLOW TABLE

SENSITIVITY APT. DEMO

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS

SITE	:	2000. SQUARE FEET	DATE 2-14-1977
BUILDING	:	700. SQUARE FEET	BLDG 1
EFFICIENCY:		85.00 PCT(595. SQ FT)	
LOAN RATIO:		75.00 PCT OF S 19500.	
LOAN	:	S 14625.	
EQUITY	:	S 4875.	
FINANCING	:	30. YEARS 9.000 PCT	
REVENUE	:	S 6.00 PER SQ FT	
VACANCY	:	5.00 PCT OF LEASEABLE	
OTR INCOME:		S 174. ANNUALLY	RUN 1

ANNUAL CASH FLOWS

LAND LEASE COST

EXPENSE RATES ANNUAL S/SQ FT	S 100.	S 150.	S 200.	S 250.	S 300.
S 2.40	625.	575.	525.	475.	425.
S 2.64	483.	433.	383.	333.	283.
S 2.76	411.	361.	311.	261.	211.
S 3.00	268.	218.	168.	118.	68.
S 3.36	54.	4.	-46.	-96.	-146.

BREAKEVEN RENTAL RATES

LAND LEASE COST

EXPENSE RATES ANNUAL S/SQ FT	S 100.	S 150.	S 200.	S 250.	S 300.
S 2.40	4.89	4.98	5.07	5.16	5.25
S 2.64	5.15	5.23	5.32	5.41	5.50
S 2.76	5.27	5.36	5.45	5.54	5.63
S 3.00	5.53	5.61	5.70	5.79	5.88
S 3.36	5.90	5.99	6.08	6.17	6.26

SENSITIVITY TABLE

SENSITIVITY APT. DEMØ

U. W. REAL ESTATE DEPT.

FIXED PARAMETERS   PAGE   12 OF 12

SITE :	2000. SQUARE FEET	DATE 2-14-1977
BUILDING :	700. SQUARE FEET	BLDG 1
EFFICIENCY:	85.00 PCT ØF GRØSS	
LØAN RATIØ:	75.00 PCT ØF S 19500.	
EQUITY :	S 4875.	
FINANCING :	30. YEARS 9.000 PCT	
REVENUE :	S 6.00 PER SQ FT	
VACANCY :	5.00 PCT ØF LEASEABLE	
PARK/ØTHER:	S 174. ANNUALLY	RUN 1
EXPENSES :	S 2.76 PER SQ FT	
LAND LEASE:	S 100. ANNUALLY	
CØNSTRUCTIØN AND LAND CØST 19500.		

EFFECT ØF SELECTED CHANGES IN PARAMETERS

PARAMETER CHANGE	INCREASE IN CASH FLØW
INCREASE BUILDING EFFICIENCY 1 PCT	21.
INCREASE RENTAL RATE S .10 PER SQ FT	57.
DECREASE VACANCY RATE 1PCT	36.
DECREASE ØPERATING RATE S .10 PER SQ FT	60.
DECREASE PERMANENT RATE .25PCT	31.
DECREASE PERMANENT LØAN TERM BY 1 YEAR	-10.
DECREASE PERMANENT LØAN TERM BY 5 YEARS	-61.
DECREASE THE LØAN RATIØ BY 5 PERCENT	94.
DECREASE LAND LEASE BY 10% 100.	

EQUIVALENT EFFECT TØ YIELD
A S 100. INCREASE IN ANNUAL CASH FLØW

INCREASE BUILDING EFFICIENCY BY	4.86 PCT
INCREASE RENT RATE BY	S 0.18 PER SQ FT
DECREASE VACANCY BY	2.80 PCT
DECREASE EXPENSE RATE BY	S 0.17 PER SQ FT
DECREASE PERMANENT RATE BY	0.79 PCT
INCREASE PERMANENT LØAN TERM BY	8.2 YEARS
DECREASE LØAN RATIØ BY	5.3 PERCENT
DECREASE LAND LEASE BY S	100.

8. Loan to value ratio:

$$\frac{\text{Mortgage loan balance}}{\text{Purchase price}}$$

9. Cash on cash:

$$\frac{\text{Net income - debt service - reserves + refinancing surplus}}{\text{Total capital budget - original mortgage balance}}$$

D. Understanding the basic ratios leads to manual or data processing of sensitivity ratios; it is important to remember that projecting specific returns is not a forecast for the future; it is intended to be a basis for measuring the tolerance of the financial parameters for variance from the initial assumptions and identifying the thresholds of insolvency or incompatibility with competitive markets. Refer to John Nabors model in Exhibit   .

E. If project makes sense before tax, then it is useful to refine analysis for projections over time on an after tax basis.

1. Accounting tabs for after tax income (See Exhibit   )
2. Accounting tabs for after tax sale proceeds (See Exhibit   )
3. Basic pattern of after tax financial analysis requires a pattern of assumptions (See Exhibit   )

F. After tax spendable cash ratios include:

1. Distributable cash from operations:

Cash throwoff
- income taxes
Cash from operations
- reserves
- repayment of working capital loans
= Distributable cash

2. Spendable cash attributable to real estate:

Distributable cash
+ tax savings to other income
+ surplus from refinancing
= Spendable cash

3. After tax sale proceeds:

+ return of working capital
+ liquidation of sinking funds
= cash reversion

4. Return on net worth B/4 tax:

$$\frac{\text{Cash throwoff + change in net worth}}{\text{Net worth at end of previous period}}$$

5. Return on net worth after tax:

$$\frac{\text{Spendable cash} + (\text{change in net worth} - \text{change in taxes on sale})}{\text{Net worth at end of previous period} - \text{taxes on sale}}$$

6. Payback ratio:

$$\frac{\text{Cumulative spendable cash}}{\text{Original budget} - \text{original debt} + \text{amount of personal guarantees}}$$

G. Precise definition of cash returns is critical in the negotiation of participating loans and partnerships

1. Defining effective gross, net income or cash throwoff with a participation loan

2. Defining base number in which general partner will share

Presented by Professor James A. Graaskamp, SREA, CRE
University of Wisconsin School of Business

I. Consumers - The Drive Wheel of the Urban   Development Process

A. The real estate process described yesterday morning is driven by
discretionary consumer expenditures for real estate and services
but that consumer is not an aggregate group; rather it is a very
large number of very small segments in a price system designed to
give the consumer democratic choice.

1. Jaquelin Robertson, former director of master planning for the
City of New York under Lindsay and now a private planner with
Llewelyn-Davies International states that one must build to
the strength to the system, and not its weaknesses. "What carries
a system forward - build around that."

2. Viable redevelopment is carried forward when its product is what
certain consumer groups want and are willing to pay for and
that is different from what planners want and think people should
pay for it.

3. Redevelopment begins with hard headed micro-market consumer research
in order to profile what motivates the consumer, what turns him
off, and what he can afford to pay.

a. With a revenue forecast, it is possible to back down on what
the private sector can invest.
b. The amount of the investment converts to real estate tax
income which can be backed down to public investment at
local level.
c. Balance of cost must be subsidized by grants or shifted
to secondary beneficiaries.

4. Redevelopment designer must begin with a merchandising strategy
designed to secure a competitive market position for the project
proposal and then approach physical design with a pre-architectural
program defined by consumer research and not be the conceits of
the planning school. Where that is done the project succeeds
because the cash flows are there and the financial structure
has been driven by parameters controlled by rent rather than
cost, i.e., the back door approach.

B. The objective   today   will be to define the general structuring
and surveys of consumer research and in the process to provide three
examples.

C. Free enterprise is the art of creating ones own monopoly, if only
for a moment, in the mind of the buyer. Monopoly characteristics
depend on careful market setmentation and catering to the segment.

1. Site and building characteristics of an existing building already provide a product profile which suggests the market segments.

2. Preferably careful identification of the prospect will permit development of a customer profile who will be the source of a product profile that would provide the most satisfaction.

D. As a result of merchandising research the analyst should be able to construct a hypothetical marketing program which defines:

1. The most probable user groups, their total number, and their effective demand constraints.

2. The timing of their effective demand in the market.

3. The competitive standard product minimum.

4. The competitive product edge necessary for monopoly advantage

5. Basic elements of a required promotion program

II. The first step is to reduce aggregate data about user groups which is plausible but overly general information to a scale which will focus on a sub-segment with a proper rationale or hierarchy. To do that requires an analytical model and in most cases, each situation requires the analyst to create his own model with which to structure the data available and to discover the missing links in the logic diagram which must be researched.

A. Models organize the anlyst, the report, and the client

1. Models explain what you are going to do.

2. Models make relationships and key assumptions explicit.

3. Models permit clients to understand logic of conclusion and to test his own set of assumptions.

B. A market research model should be careful to recognize?

1. What are the questions

2. What data is available which is relevant?

3. What theory is available to focus data on the questions?

4. How will the results be communicated?

5. What are the abilities of the analyst?

6. What is the cost benefit ratio between the model method and the question?

C. Market data refers to aggregate data, secondary information, the easy to acquire data from census tracts, traffic counts, building permits, and so on. It is useful to scale the size of the market potential, of the opportunity area but by itself aggregate market data is relatively unimportant to the success of most projects.

EXHIBIT I

SEGMENTATION LOGIC TREE

D. Merchandising data is generally primary information generated by the analyst about specific competitive projects and specific user groups which will permit an estimate of what percentage of the opportunity group can be captured for a specific project.

    1. Absorption rates apply to aggregate market data to determine the total size or amount of market activity in terms of how many lots were sold, how many apartments in a rental range were newly rented, or how many square feet of leased office space were occupied.

    2. Capture rates are the product of merchandise research and are the ratio of the total opportunity potential which might be secured for a project or must be secured to achieve financial goals. The capture rate will reflect a careful judgment of product mix, amenities, pricing, and timing.

E. A flow chart of the market research process is provided in Exhibit 1.

F. Most multi-tenant or multi-user land uses are susceptible to a retail trade area model. A retail model is a device analogous to establishing a retail trade area perimeter for a super market to segregate households which have a reasonable probability of using the outlet from those who don't because of convenience, distance, age, or income. Thus the analyst should establish a preliminary hypothesis for:

    1. Primary market area to be served.

    2. Secondary market area to be served.

    3. Principal competitors.

G. Consider Exhibit 2 as a simple market model to define the size of an opportunity area in a selected county for elderly persons requiring residential care units.

    1. For lines with asterisks the key ratios for reduction were derived from a survey of the elderly generating primary data for this county.

    2. For example, while 37% of the elderly were financially qualified, only about 60% of those were interested in considering a residential, minimal care facility or 22% of those in the convential housing market - hence the reduction from 19,700 to only 4,200. This chart should have showed the ratios from the survey.

    3. Failure to convert serious interest into action was a round number based on experience of those which had marketed similar developments in the past, as was an allowance for potential customers coming from outside the county to be closer to relatives, etc.

III. Market data provides a measure of potential scale of a market opportunity; the most important aspect of market analysis is forecasting the degree of market penetration or capture rate of remedial development.

A. To reduce aggregate market data to a merchandising hypothesis, the first.clue to segmentation may be found in correctly understanding the essence of buyer motivation or of the activity to be housed.

EXHIBIT 2a

RETIREMENT CENTER MARKET SITUATION ANALYSIS

TOTAL POPULATION
WITHIN MARKET AREA

TOTAL NUMBER OF
INDIVIDUALS FITTING
PROFILE OF TYPICAL
BUYER

THOSE INDIVID-
UALS INTERESTED
IN RETIREMENT
FACILITY

. WHAT ARE THEIR NEEDS?
. WHEN DO THEY WISH TO MOVE?
. WHAT ARE THEY WILLING & ABLE TO PAY?
. HOW MANY ARE THERE?

Persons in County age 65 and over in 1970		21,914
Adjustment 1970-1974 to reflect the number of persons moving into the 65+ bracket and the application of mortality rates by age and sex		245
Estimated persons in County age 65 and over in 1974		22,159
Less persons 65+ presently in nursing and residential care facilities in County	1,792	
Less persons 65+ presently in government subsidized housing for the elderly	638	
		2,430
Persons age 65+ in the conventional housing market in County in 1974		19,729
Survey percentage of persons financially qualified for $350 a month + $5,000 entry deposit (34%)		6,707
Survey percentage of these qualified who are seriously interested in proposed independent elderly unit (63.6%)		4,270
Household equivalent (÷ 1.519 persons per household)		2,811
Less estimated number who will not convert serious interest into any form of action (50%)		1,406
Less the percentage who, while seriously interested, said (before they heard the hypothesis) that their next home would probably be outside County (13.3%) from survey questionnaire)	187	
Less those disqualified because their current health status necessitates care beyond the scope of services to be provided in the residential care units (5.4%) (from survey)	76	
		263
Elderly households in County qualified for and seriously interested in moving into the proposed development		1,142
Plus an allowance for those elderly households coming from outside County to enter the proposed development (10%)		127
Elderly households qualified for and seriously interested in moving into the proposed development		1,269
Share of market opportunity area who state in survey that for their next dwelling unit their first preference would be an apartment, in a highrise, midrise, or garden building: Highrise or midrise 28.0% Garden 49.1 77.1%		978
Less estimated numbers of households who might move into competitive developments available supply of units		270
Households that can be considered candidates for the proposed development		780

1. Retailing is a break point for goods (a warehouse grocery), or a service industry, or a theater using lighting, staging, and mood to reinforce a role played by the buyer.

2. A restaurant may be to provide a quick food break (high turnover, pedestrian flow, conditioned ordering), or to provide recreational entertainment and consumption of an evening, or to provide a staging for business, social, or publicity roles.

3. A motel for transients, for resorts, or for terminal traffic uses all of its facilities and location to sell a "room-night" of occupancy because that is an 80% gross margin. Anything done after that is justified by its contribution to "room-night" sales or its reduction of average cost to capture a customer per "room-night."

4. The revenue unit may be related to the method of measuring profit of the project in question such as per acre, per camper pad, per event, per front foot of shoreline, per stool or table, etc., not to mention sq. ft., per frame at a bowling alley or per tennis court hours, or per hour of ice time.

5. Sometimes the prospect is identified by who really signs the check for a particular type of real estate.

    a. The salesman or the management paying his travel costs
    b. The doctor or the clinic
    c. The district manager or the corporate real estate manager
    d. The ticket buyer or the promoter
    e. The bowling league, team business manager, travel agency tour guide

6. The market segment may be defined initially by the source for a prospective user list - people who share a common address, hobby, professional specialty or some other identifier.

    a. A reverse directory or criss-cross telephone book
    b. Building directories of comparables
    c. Mailing lists of specialty publications
    d. License number spotting
    e. Guest registers
    f. Charge account mailing addresses

B. The objective of these approaches, revenue unit, the decision maker, the prospect list source, is to segment the user market to a specific and relatively small group of potential customers who can be surveyed to generate original and relevant information about their space needs and motivations. Unlike most consumer markets, the number of prospects is always low; think small!

1. Real estate is a series of micro-markets. A 24-unit building with one, two, three bedroom units has at least three sub-markets.

2. A 24-unit building is a $500,000 enterprise with a $75,000 gross sales potential from only 24 customers!

Exhibit 3

```
┌─────────────────────────────┐
│    Population Forecast       │
│    (Nine Trade Areas)        │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│   Converted to Households    │
└─────────────────────────────┘
              │
┌─────────────────────────────┐
│   Converted to Disposable    │
│  Income for Retail Purchases │
│         & Services           │
└─────────────────────────────┘
              │
              ↓
      Potential for Region
```

A

Clothing	Home Furnishing	Durables	Food & Entertainment	Services	Other Retail

B

Actual CBD Cothing	Actual CBD Home Furnishing	Actual CBD Durables	Actual CBD Food & Entertainment	Actual CBD Services	Actual CBD Other Retail

```
┌─────────────────────────┐
│   B/A = Capture Rate     │
└─────────────────────────┘
              │
┌─────────────────────────┐
│  What can be done to     │
│  improve capture rate?   │
└─────────────────────────┘
              │
```

Survey for household opinion
1. Current irritation with downtown
2. Current preferences for transportation
3. Current shopping patterns and alternatives to CBD
4. Design preferences
5. Shopping mix preferences

```
┌─────────────────────────────┐
│ Remedial development impact on│
│        capture rate          │
└─────────────────────────────┘

              X

┌─────────────────────────────┐
│ Forecasted disposable income │
│        by trade area         │
└─────────────────────────────┘

              =

┌─────────────────────────────┐
│ CBD sales in selected future │
│      years by category       │
└─────────────────────────────┘

              ÷

┌─────────────────────────────┐
│ Sales per sq. ft. per category│
└─────────────────────────────┘

              =

┌─────────────────────────────┐
│ Supply of retail and service space│
│         by category          │
└─────────────────────────────┘

              −

┌─────────────────────────────┐
│ Existing supply which is servicable│
└─────────────────────────────┘

              =

┌─────────────────────────────┐
│ Sq. footage and type of new space required│
└─────────────────────────────┘
```

C. A survey of existing properties and alternatives available to a selected market segment defines only the <u>competitive standard</u> - namely the minimum product and price necessary to be in the market.

    1. Comparison shopping further identifies where there may be gaps in the supply of alternatives, a market opportunity gap, or where the oversupply is so significant as to portend the last competitive alternative before bankrupcy - namely price cutting.

    2. Comparison shopping should not only identify the physical characteristics of the product and price but the nature of the promotion effort as well.

    3. Promotion comparison should consider pedestrian and vehicle approaches, model location, furnishings, and sales people.

    4. Review of the promotion campaign should reveal whom the competitors believe to be their prospect.

D. A survey of users, is designed to reveal or to identify the <u>competitive differential</u> attributes which would provide that monopoly element required of every successful project.

    1. A second product of consumer survey is the ability to develop locally relevant ratios which permit disaggregation of market data into market segments and the conversion of potential numbers of people into potential dollar sales over time.

    2. Survey questions to create ratios require previous construction of a market model hypothesis.

    3. Survey questions can discover latent political issues or provide a calm base for citizen input from those who rightfully dislike public hearings.

    4. Survey questions and execution should not be done by planners or appraisers.

IV. A good example of modeling market data through segmentation and survey for renovation in a small community is a project by Gruen Gruen + Associates for Santa Maria, California. The study was begun in 1972. Project is operating as the Santa Maria Town Center with retail sales ahead of forecasts.

A. The Gruen's were able to convince the redevelopment agency to avoid any physical planning until a detailed analysis of the demand for alternative services that could attract people back to the downtown area was done. This EMAS study (economic market analysis study) outline is in Exhibit 3 had the following outputs:

    1. First, a full analysis of economic data and retail data was utilized to generate information about the type of tenancies that could realistically be expected to penetrate downtown markets. (Table of Contents Exhibit 4)

Exhibit 4

ECONOMIC AND MARKET ANALYSIS STUDY
FOR DOWNTOWN SANTA MARIA

Prepared for: The City of Santa Maria
Redevelopment Agency

George S. Hobbs, Jr., Chairman
Elwin E. Mussell, Vice Chairman
Dan A. Firth
C. Clayton Kyle
Ed J. Zuchelli
Thomas P. Weldon, Jr., Executive Director

Prepared by:

GRUEN GRUEN + ASSOCIATES
Economic and Sociological Consultants

February, 1972

TABLE OF CONTENTS

2. With a lead on tenancies, the Gruen's worked with an architect to provide sketches of alternative architectural styles and concepts to show residence in survey to see what type of treatments might strike the most positive response. (See Exhibit 5)

3. The EMAS should then be able to indicate the kind of tenancies that could survive downtown, suggest their dollar sales potential, and indicate at a preliminary level a design scheme. (See Exhibit 6)

4. At the same time, back door financial studies are done from rents from capital budgets to discover what would be feasible for the private developer and what components may need to be subsidized by the public.

5. Appraisers use the EMAS and suggested tenant mix as the basis for their value estimate in the after condition.

6. Final stage was to write up a series of specifications or profiles on tenants, product design and components, and a cash flow analysis of the entire project from the viewpoint of the developer so he could see how much money there was to make tnd he would know that the city knew the financial aspects of the project. Developers were then asked to bid.

B. In the case of Santa Maria, three developers bid and the city picked Ernest Hahn to build the project. There was no demolition or site acquisition before the start of the EMAS. The entire project was done within a four year period. For the first six months of complete operation, June 1976 through December 1976, sales were approximately 15.6 million and is 70% leased. The Mall did 4.9 million, Sears - 6.9 million, and a local department store - 3.7 million.

C. Before looking at report organization and product, it is useful to observe:

1. Planners are poor market economists and merchandising survey analysts. Use specialist at the start.

2. Most appraisers are equally bad, but are reluctant to use team approach or to accept EMAS by somebody else as a legitimate set of assumptions for appraisal. Moreover, appraisal financial analysis must be on after tax cash flow in the redevelopment game, or he will miss the market completely. The financial analysis must contain extensive sensitivity analysis so that changing times due to a slow pace of such projects does not invalidate a point conclusion.

3. The leader of the team should be oriented to empirical observation, be he planner, lawyer or architect, rather than dedicated to purist appraisal or planning dogma and esthetics. The numbers crunch or nothing will be built that should have been built.

Exhibit 5

Excerpt With Permission From
Economic & Market Analysis Study for Downtown Santa Maria

Prepared for City of Santa Maria Redevelopment Agency
by Gruen Gruen + Associates

Thus, the relationship between survey derived indications of satisfaction
and current expenditure patterns were sufficiently significant to warrant
the use of survey responses to suggest the change in relative preferences
that would be caused by an appropriately developed new shopping agglomeration
in downtown Santa Maria. However, the rapid deterioration of this relation-
ship with distance suggested that it be used very cautiously in Trade Areas 5
through 9. Therefore, in addition to considering the percentage of respondents
who made no complaints, we also analyzed into the following three categories
all the comments that were made in response to the interview question concerning
the reasons for not shopping in downtown Santa Maria:

1. Complaints about physical deficiencies of the existing downtown
    that we have assumed the redevelopment will alleviate. (Remediable
    complaints)

2. Complaints concerning limited selection such as requests for a
    department store or more stores. (Remediable complaints)

3. Complaints about prices, the lack of a supermarket or other contemporary
    situations that we do not think the redevelopment programs will
    alter. (Irremediable complaints)

Table 10 presents the percentage of respondents making remediable complaints.
These complaints were used in conjunction with the information about the
relationship between the indications of satisfaction discussed above to adjust
the present indicators of the proportion of expenditures on various items
in downtown Santa Maria (the S variables originally presented in Table 4)
to reflect the increase in consumer preferences for downtown Santa Maria
that would result from the completion of a sales optimizing redevelopment
program. We did not think the evidence warranted using these percentages
of remediable complaints (%RC) directly by adding them to the previously
revealed preference percentages (S1970) to get a new percentage (S1975,
1980, 1985). Instead, we adopted the following rules to get the new
estimates of this preference variable:

	Trade Areas 1 through 4	Trade Areas 5 through 9
For Clothing	$\% RC \times .964 + S_{1970}$	Use $\% RC$ instead of S_{1970}
For Home Furnishings	$\% RC \times .361 + S_{1970}$	Use $\% RC$ instead of S_{1970}
For Other Retail	$\% RC \times .017 + S_{1970}$	$1\% + S_{1970}$

Exhibit 5

Table 10

Percentage of Respondents Making Complaints
About Remediable Features of the Present Downtown
(Complaints About Physical Problems
or Inadequate Selection of Stores and Goods)

Trade Area	% Remediable Complaints
1	62.7
2	53.8
3	65.8
4	53.3
5	19.3
6	22.2
7	14.3
8	20.0
9	10.2

Source: Gruen Gruen + Associates telephone survey

Computations following these rules permitted us to develop the estimates
of maximum percentage effective preference or penetration presented below
in Table 11. The insertion of these percentages in the sales estimate
generating equations we have been using throughout permits us to make the
forecasts of potential sales summarized in Table 12. The forecast sales
potential of almost $42 million in 1975 would have downtown Santa Maria
capturing 26.4% of the region's sales. By 1985 potential sales climb to
almost $58 million in spite of the fact that our model has downtown
Santa Maria's share of the region's sales dropping slightly to 25.4%.

Table 11

Estimated Maximum Effective Preference (S)
or Percentage Penetration Possible
After Appropriate Redevelopment

Trade Area	Clothing	Home Furnishings	Other Retail
1	76.2	74.5	19.9
2	74.3	69.1	10.4
3	76.3	72.2	12.9
4	56.9	53.0	8.6
5	19.3	19.3	2.1
6	22.2	22.2	1.5
7	14.3	14.3	1.6
8	20.0	20.0	2.8
9	10.2	10.2	1.5

Source: Gruen Gruen + Associates

Table 12

Estimated Downtown Santa Maria Future Sales Potential
(In Thousands of Dollars)

Trade Area	$ Available In Region 1975	Potential $ Sales in NDP 1975	$ Available In Region 1980	Potential $ Sales in NDP 1980	$ Available In Region 1985	Potential $ Sales in NDP 1985	% of Regional Sales to NDP
1	21,347	12,520	23,950	14,047	26,764	15,693	58.6
2	9,159	4,940	10,665	5,753	12,369	6,673	53.9
3	15,852	8,916	18,705	10,521	22,956	12,912	56.2
4	6,759	2,806	7,949	3,300	9,473	3,933	41.5
5	19,676	2,756	22,963	3,217	26,613	3,728	14.0
6	18,030	2,854	20,878	3,305	24,042	3,806	15.8
7	9,065	942	10,920	1,135	13,106	1,362	10.4
8.	25,355	3,729	31,043	4,566	38,198	5,618	14.7
9	33,589	2,527	42,857	3,224	53,925	4,057	7.5
Total	158,831	41,990	189,931	49,068	227,447	57,782	

Source: Gruen Gruen + Associates

Exhibit 5

Table 30

Proportion of Expenditures in Downtown

Trade Area	% Clothing	% Home Furnishings	% Other Retail	% Service
1	15.9	20.5	18.8	33.3
2	22.6	22.8	9.5	35.9
3	13.1	15.5	11.8	28.0
4	5.7	7.0	7.7	5.3
5	5.4	4.5	1.1	4.0
6	2.9	0.9	0.5	1.8
7	2.5	1.5	0.6	0.6
8	6.5	5.0	1.3	3.5
9	2.0	0.6	0.5	0.6

<u>Source:</u> Gruen Gruen + Associates telephone survey

Table 31

Banking, Repair, Beauty Parlor/Barber Shop
and Similar Services Obtained Downtown
By Consumers of Differing Incomes

Household Income	% Generally	% Occasionally	% Seldom
Under $7,000	43.7	22.9	16.0
$7,000-10,000	43.3	20.0	36.7
$10,000-15,000	60.7	12.5	26.8
Over $15,000	61.5	21.2	17.3

<u>Source:</u> Gruen Gruen + Associates downtown survey

Figure 2
Exhibit 6
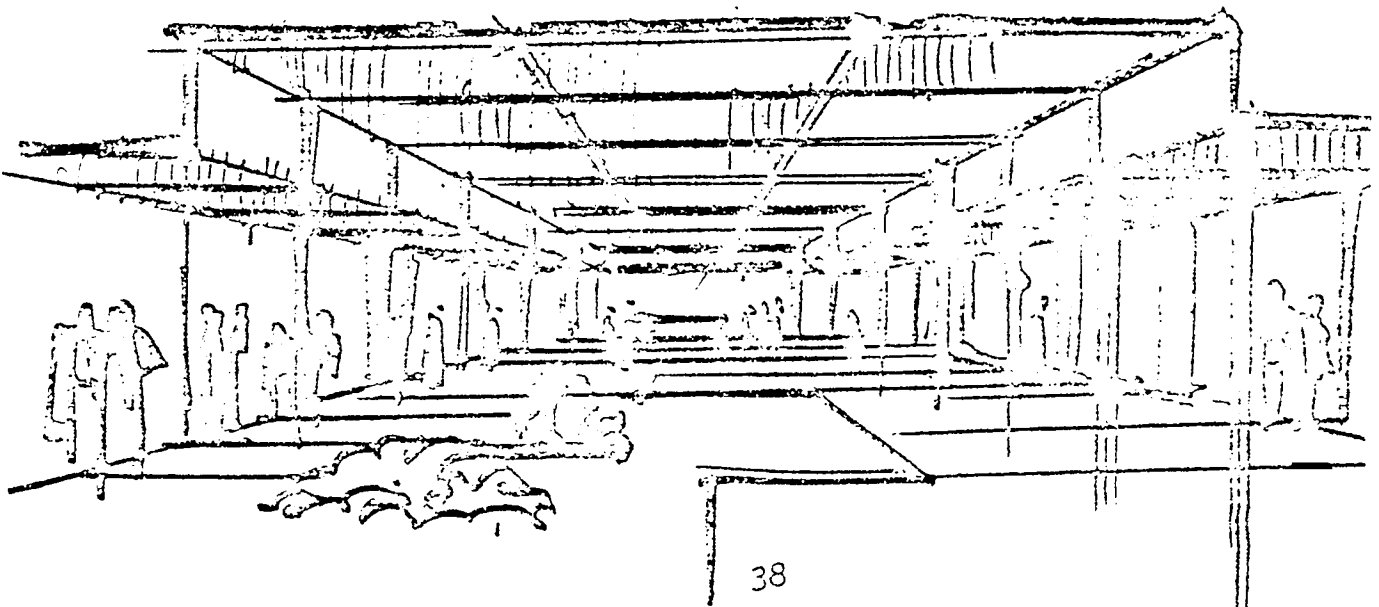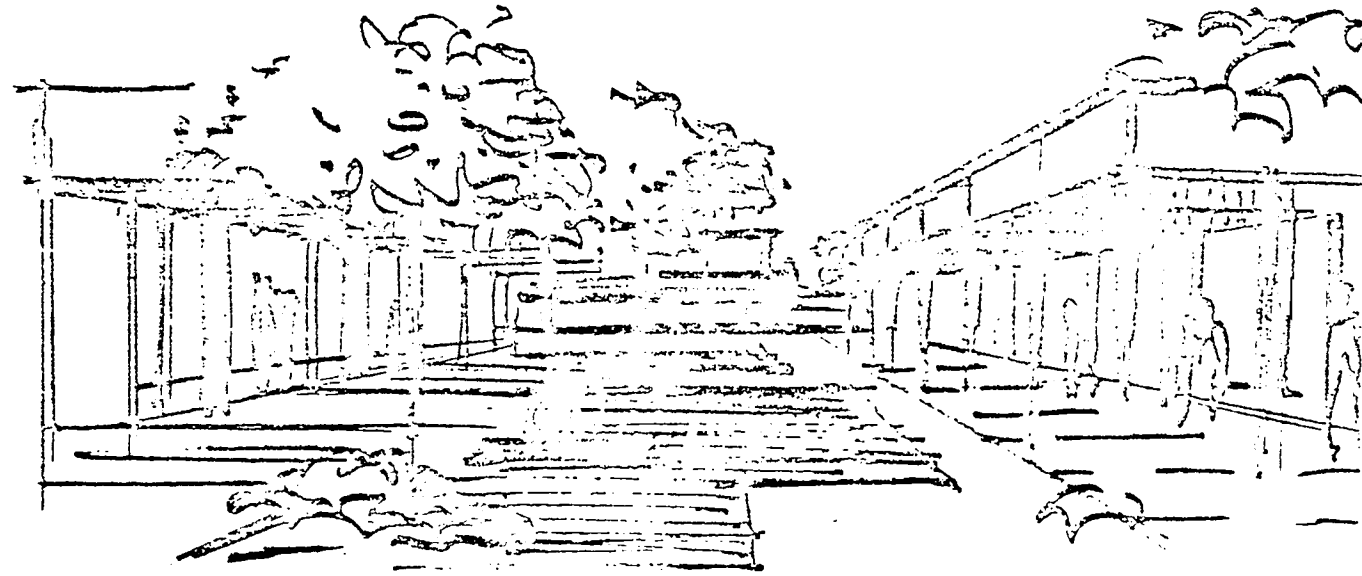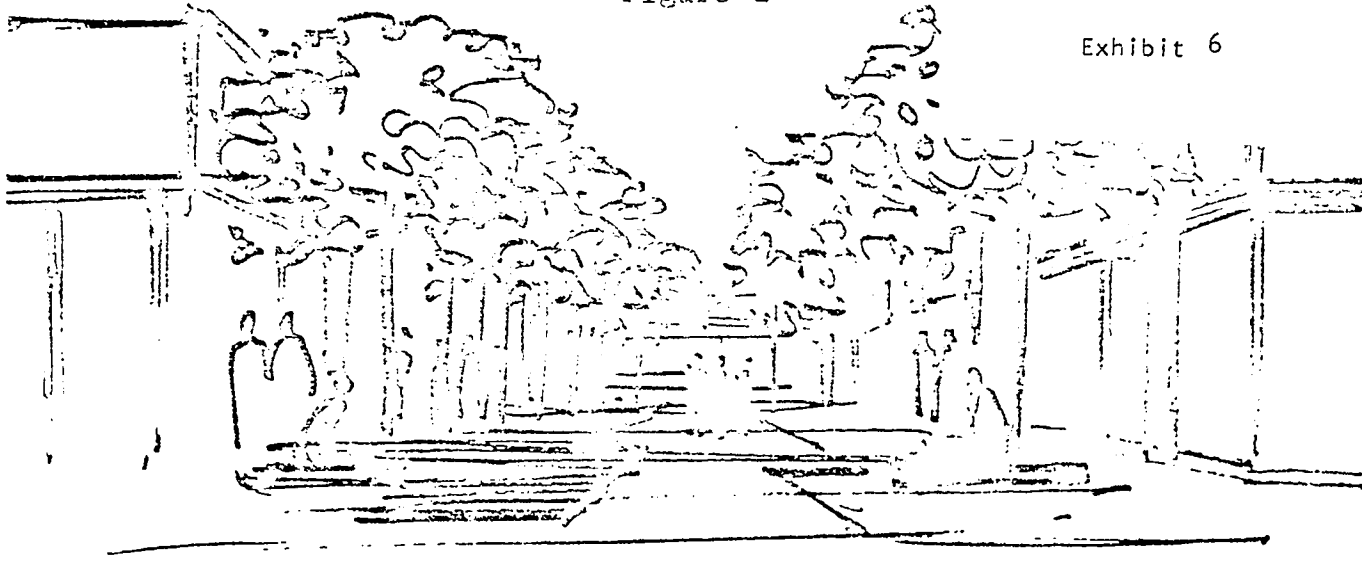
Figure 3

Figure 4

Figure 5

43
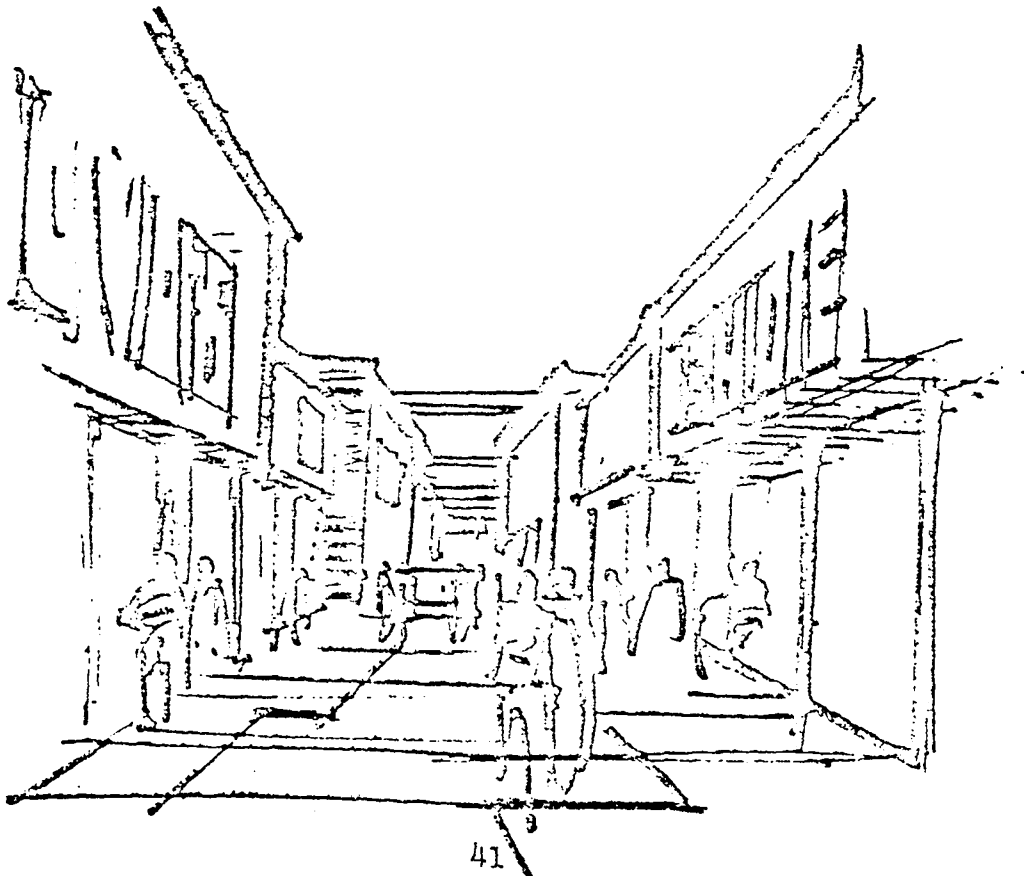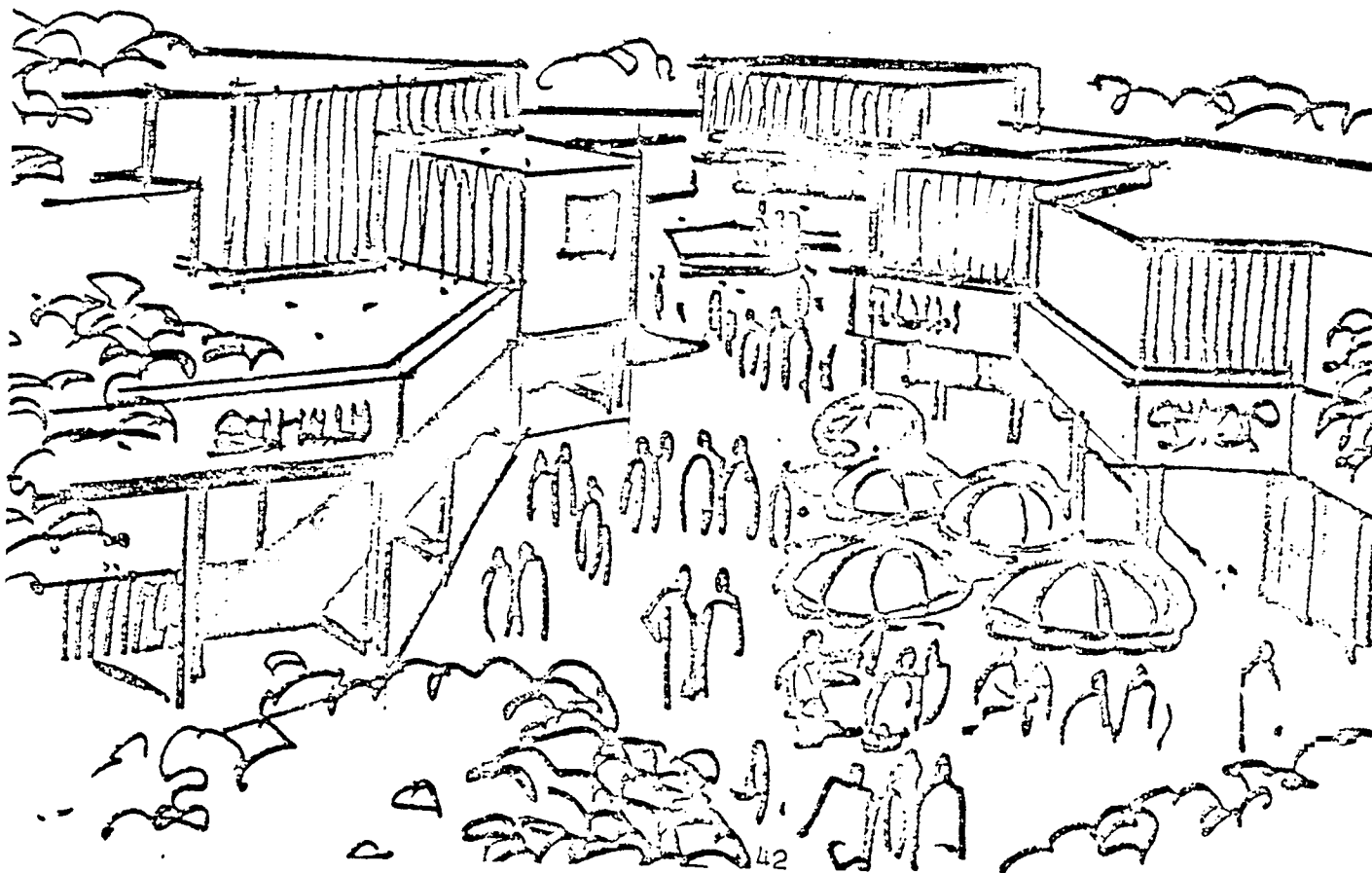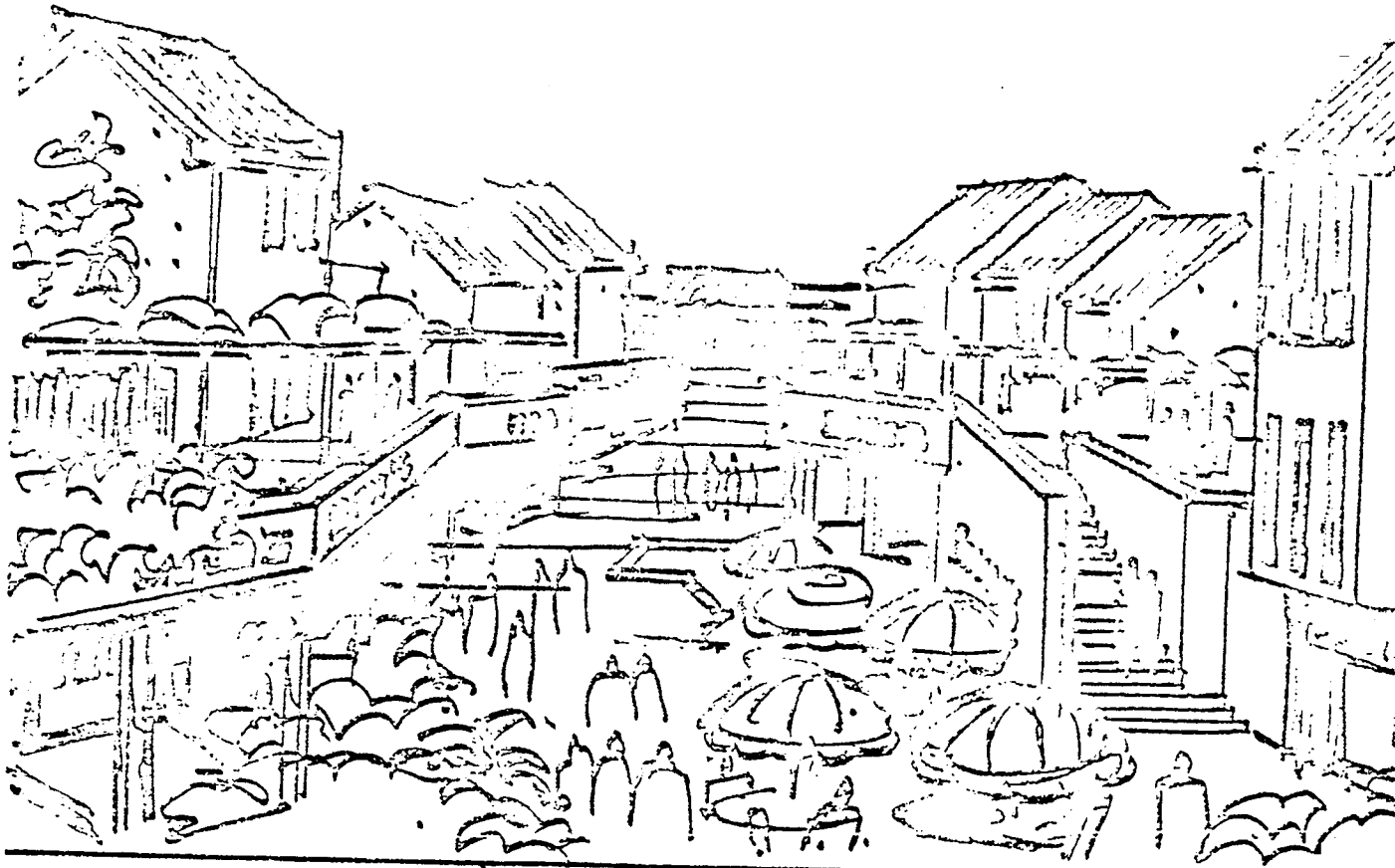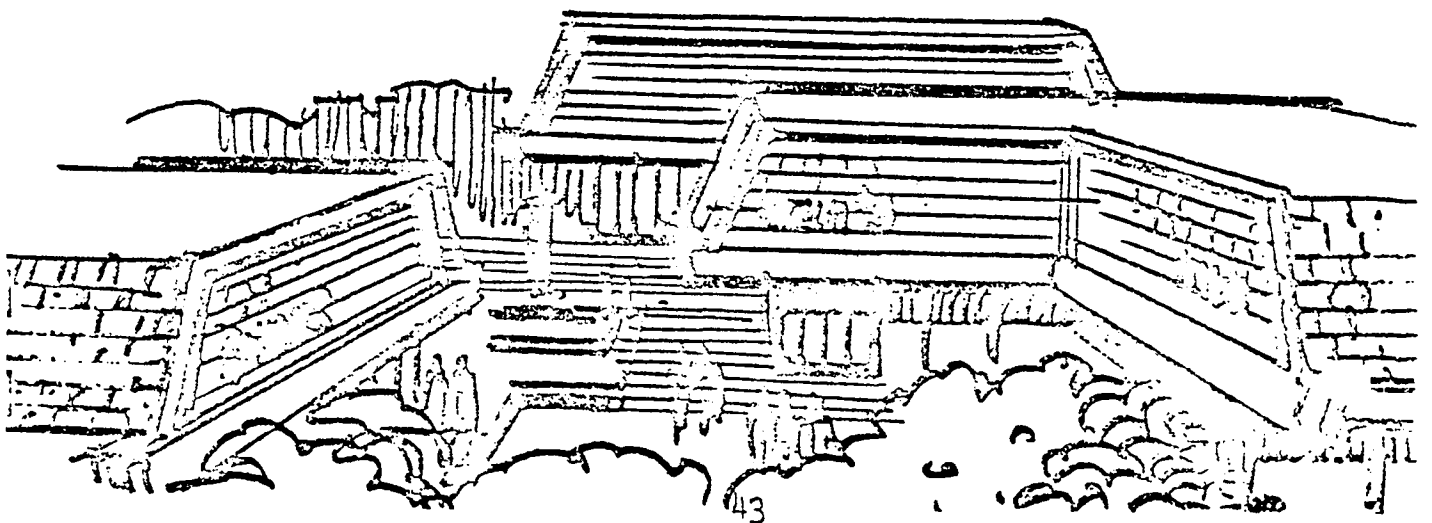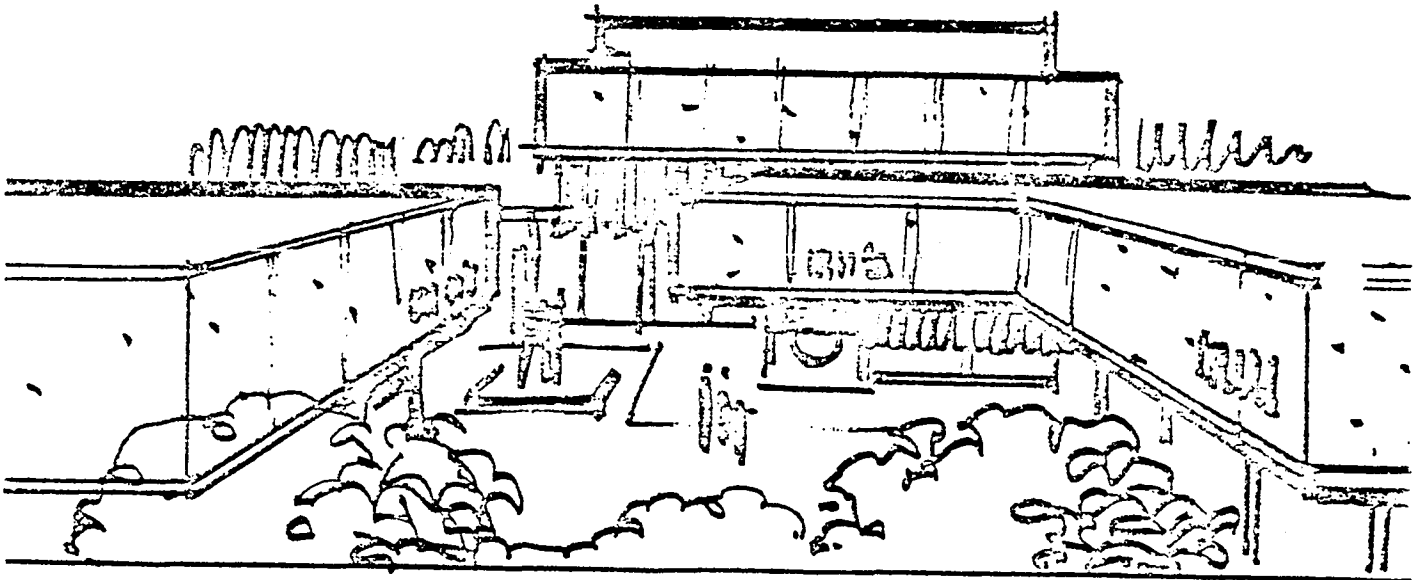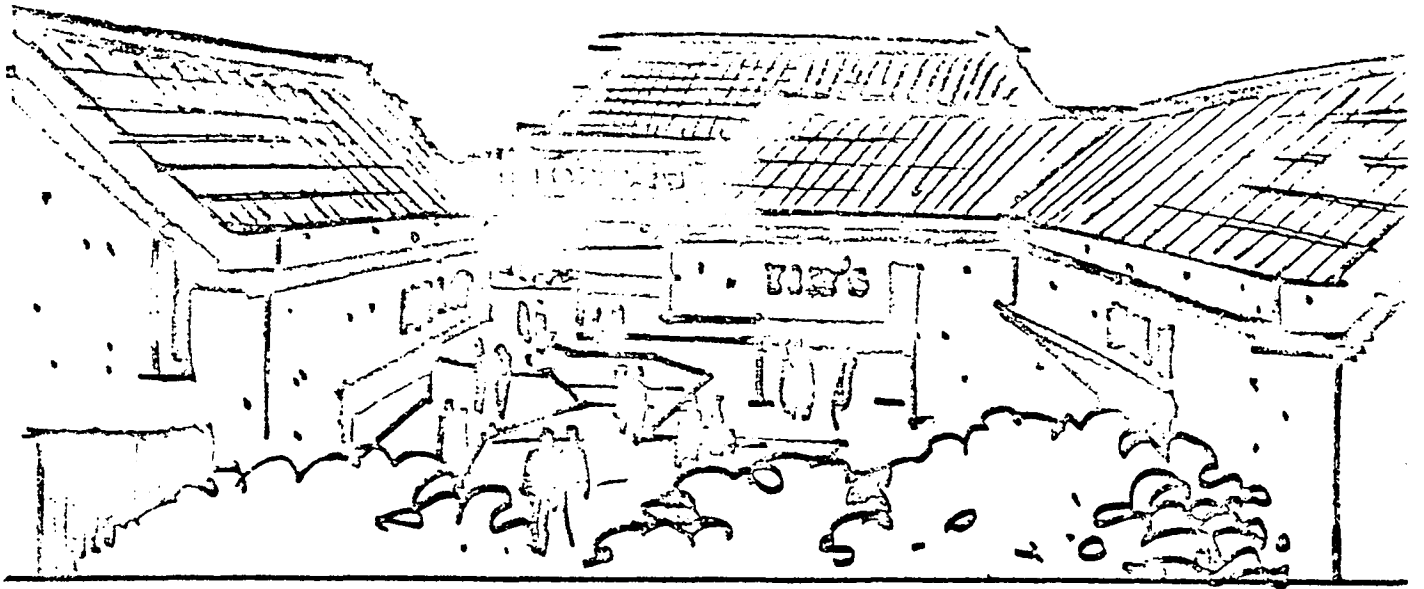
37. If a new and attractive apartment complex were to be built in Downtown Santa Maria, would you be very likely___1, likely___2, or unlikely___3 to consider this location?

38. If a one-bedroom unit were priced from $150-175 and a two bedroom unit from $175-250, would you be very likely___1, likely___2, or unlikely___3 to consider this location?

39. If a new residential hotel were to be built in Downtown Santa Maria, would you be very likely___1, likely___2, or unlikely___3 to consider this location?

We are going to show you four sets of pictures of differing of shopping centers. We would like to get your opinion of e

Picture No. 1

40. Which of the two pictures do you like the best?
   A___1   B___2

   a. Why?

   INTERVIEWER: If respondent has not mentioned the width of the walkway ask:

41. Did the different widths of the walkway affect your choice in any way? Yes___1   No___2

   a. If yes, how?

Picture No. 2

42. Which of the three pictures do you like the best?
   A___1   B___2   C___3

   a. Why?

43. Which of the three pictures do you like the least?
   A___1   B___2   C___3

   a. Why?

INTERVIEWER: If respondent has not mentioned the openness or closeness of the shopping center ask:

44. Picture A presents an open mall center, B a partly enclosed center and Picture C a completely closed mall. Did this factor influence your choice in any way? Yes___1 No___2

    a. How?

Picture No. 3

45. Which of the two pictures do you like the best?
    A___1 B___2

    a. Why?

46. If Picture A were to contain both apartments and stores while Picture B were to contain only stores, which would you prefer? A___1 B___2

    a. Why?

Picture No. 4

47. Which of the three pictures do you like the best?
    A___1 B___2 C___3

    a. Why?

48. Which of the three pictures do you like the least?
    A___1 B___2 C___3

    a. Why?

To assist us in better planning for all residents, we would appreciate your answering a few biographical questions.

INTERVIEWER: Fill in sex and race

49. Sex: Male___1   Female___2

50. Race/Ethnic: White___1, Black___2, Spanish Surname___3, Other___4

79

D. Consider the elderly housing market chart in <u>Exhibit 2a,b.</u> Notice that the ratios required for market segmentation follow a logical reduction pattern. The analyst has made several working assumptions - namely that his market is over 65 and overwhelmingly from Dane County because these assumptions are both reasonable and conform to break-out points in the raw data.

E. The ratio sought by the survey follow a precise reduction pattern:

    1. How many will consider moving?
    2. Of those, how many would consider staying in town?
    3. Of those, how many would consider an apartment?
    4. Of those remaining who would consider an apartment in town, how many would consider a specific location?
    5. Notice the reduction process defines a subset of the elderly market - a micro-market.

F. Each of these ratios suggests a specific calculation or perhaps a short table of statistics. The specific title on the table of data and its sub-columns should be written before the questions are drafted and the collection of data begun. Notice the research begins with careful definition of the questions to be answered. All answers become relevant and all unnecessary questions are avoided. These types of questions depend on knowing the precise character of secondary data available to which the ratios must be applied in the systematic model devised for the problem.

    1. Confine vocabulary to basic 1000 words; avoid lingo.

    2. Structure questions to permit check-off, or branching to set up subsets. (See <u>Exhibit 6)</u>

    3. Always test the quesionnaire on half a dozen prospects or friends to reveal misunderstandings before using on the market.

    4. Questions may take different formats. (See <u>Exhibit 6)</u>

G. The second type of question is generally attempting to measure either anxieties or preferences. Both are dangerous survey areas for amateurs as well as professionals and it is often cheaper to subcontract these particular functions to consumer research specialists. Nevertheless, a little common sense can generate considerable useful information on the competitive edge.

    1. Probe for dissatisfaction with existing space or life style.
    2. Probe for anxieties about uncontrollable trends and events.
    3. Probe for desired social structure ties, real or imagined.

H. The real estate analyst can choose between systematic telephone interviews, direct mail questionnaires, and personal interviews in depth.

    1. The telephone interview may be less expensive per question and fastest but is limited in the type and amount of questions which can be asked. Rifled to a project known to the analyst,

EXHIBIT 6   79

Simple Survey Formats
for Classification of Subsets & Measurement of Preference

I'd like to ask you a few questions about the place you lived just before you moved into this apartment.

5. About how many years did you live in your former home?

___ less than 1 year
___ 1 year - L.T. 2 years
___ 2 to L.T. 5 years
___ 5 to L.T. 10 years
___ 10 to 15 years
___ more than 15 years, _____

6. Did you live in a house or in an apartment building just before your move here?

___ house   ___ apartment   ___ other, _____

About how many apartments, including yours were there in the building?

___ L.T. 4   ___ 17 to 24
___ 4 to 8   ___ 24 to 32
___ 9 to 16   ___ more than 32

About how much rent did you pay per month, including utilities but not telephone? $ _____

___ L.T. $50   ___ $100 to L.T. $125
___ $50 to L.T. $75   ___ $125 to $150
___ $75 to L.T. $100   ___ more than $150

Did you own. or rent the house?

___ own   ___ rent

Did you rent a room, a flat or floor, or entire house?

___ room   ___ flat/floor   ___ entire

About how much rent did you pay per month, including utilities but not telephone? $ _____

___ L.T. $50   ___ $100 to L.T. $125
___ $50 to L.T. $75   ___ $125 to $150
___ $75 to L.T. $100   ___ more than $150

Now I'd like to ask you some general questions about your decision to move to this apartment.

7. How did you first find out about them?

___ family   ___ newspaper
___ friends   ___ radio
___ church   ___ television
___ Housing Authority   ___ other, _____

26. How important are the following items to you?

	Very Important	Somewhat Important	Indifferent	Somewhat Unimportant	Not Important
Private Balconies or patios	( )	( )	( )	( )	( )
Laundry facilities in each building	( )	( )	( )	( )	( )
Washer/dryer connection in your apartment	( )	( )	( )	( )	( )
Extra storage space	( )	( )	( )	( )	( )
More than 1 bath	( )	( )	(.)	( )	( )
Carpeted stairways & hallways in common areas of apt. bldg. (Areas shared by all residents)	( )	( )	( )	( )	( )
Master T.V. Antenna System	( )	( )	( )	( )	( )
Children's day care center and/or nursery school nearby	( )	( )	( )	( )	( )

EXHIBIT 6 cont'd.   30

14. What type of building features would you prefer in the layout of the condominium, unit? (choose only one of each of the following sets of alternatives)

( ) Two bedrooms with larger living area or/
( ) Three bedrooms

( ) Three bedrooms, or/
( ) Four bedrooms, or/
( ) Large master bedroom and two 4-bed bunk rooms

( ) Two-story living room with inside balcony, or/
( ) Living room with beamed cathedral ceiling

( ) Full dining room, or
( ) Dining "L" plus family-sized kitchen

( ) Sundeck balcony for living room or/
( ) Outdoor patio at ground level

( ) Walk-in closets in each room or/
( ) Large work room plus laundry room in each unit & standard closets

( ) One car garage attached to unit or/
( ) Two car garage in group parking complex, or/
( ) Carport and lower price

( ) Central air conditioning or/
( ) Woodburning masonry fireplace or/
( ) Gas-log fireplace and window air conditioning unit

( ) Contemporary natural decor with wood and rock materials, or/
( ) Maintenance-free modern masonry and aluminum exteriors, or/
( ) Well styled colonial detailing

( ) Extensive outside landscaping, or/
( ) More floor space in each room

it tells much about the user profile for a good comparable without having to ask about the product which the analyst can inspect for himself. (See Exhibit 7)

2. A telephone survey is also useful to disaggregate census data or to estimate market penetration of a competitor (such as a retail store) into an area.

3. Direct mail questionnaires may cost from 5¢ to $3 or more for each successful question; they take at least a week to prepare and test and perhaps three weeks before cutoff of additional responses. The type of question is broader and can be graphic such as alternative site maps and simple floor plans; response depends on careful construction of the mailing list, a very time consuming process. Consider the following types of questions:

4. The double barreled question occurs when two or more questions are combined in one so that the answer is always ambiguous as to the significance of each item but often occurs in the effort to shorten an interview or a question.

   . Would you be at all uneasy if people of a different religion or race were to move in next to your home?

   . As you see it, what are some of the good points and the bad points of the present Governor of this state?

5. Sensitive questions on family income should be asked at the end of the interview while the opening questions should be of more general interest. When a question about income is asked, the response should permit some degree of obliqueness by the respondent.

   . The respondent can select a range of income or perhaps enter the answer with a letter A, B, etc. in place of a dollar amount.

   . If socio-economic questions are generally short and direct, they are a welcome contrast to the time consuming and thought provoking questions which preceded them.

6. Contingency questions are those which are asked or skipped depending on the respondent's answer to a preceding question. The survey should be as simple to follow as a well designed road map for an interviewer or a respondent. For example:

WE WOULD APPRECIATE <u>YOUR</u> COMMENTS ABOUT APARTMENT LIVING <u>OR</u> ABOUT THIS SURVEY.

YOUR COMMENTS:

I have considered ^(buying) a house so that I could have my own washer and dryer. I really dislike running down to the basement to do my laundry and sometimes finding the washer & dryer being used. Also I dislike having to put coins in the machines. I understand that in South Bend, Indiana, apartments have their own washers and dryers in each unit. I realize that moving to a house would bring maintenance & lawn care and snow removal concerns which I do not want. So, I'm still living in an apartment. I would move in an instant if an apartment complex would provide me with a washer & dryer.

THANK YOU FOR YOUR HELP!

Please return the survey in the postage-paid envelope as soon as possible.

FEASIBILITY RESEARCH GROUP
210 Michigan Theater Building
Ann Arbor, Michigan 48108

EXHIBIT 7

*F*EASIBILITY *R*ESEARCH *G*ROUP

Specialists in Consumer Market Research for Decision Makers

JOHN A. RASMUSSEN
Research Coordinator

OCTOBER, 1976

SUBJECT: LANSING APARTMENT RESIDENT SURVEY

DEAR APARTMENT RESIDENT:

YOU CAN HELP PLAN NEW APARTMENTS. YOUR OPINIONS ABOUT YOUR OWN APARTMENT AS WELL AS OTHER APARTMENTS YOU MAY HAVE LOOKED AT OR LIVED IN, CAN HELP DECISION-MAKERS IDENTIFY WHAT APARTMENT RESIDENTS PREFER. THIS WILL HELP THEM IN PLANNING FUTURE APARTMENTS ACCORDING TO THE RESIDENTS' NEEDS AND PREFERENCES.

BY FILLING OUT THE ENCLOSED QUESTIONNAIRE AND RETURNING IT IN THE POSTAGE PAID ENVELOPE PROVIDED, YOU CAN HELP IN MAKING THESE DECISIONS. THIS SURVEY IS BEING CONDUCTED BY FEASIBILITY RESEARCH GROUP, AN INDEPENDENT RESEARCH FIRM.

YOUR REPLY TO THE SURVEY IS CONFIDENTIAL. THE CODE NUMBER IS USED ONLY TO HELP US REMIND PEOPLE WHO MAY BE SLOW TO RESPOND. PLEASE RETURN YOUR SURVEY IN THE POSTAGE PAID RETURN ENVELOPE AS SOON AS POSSIBLE.

VERY TRULY YOURS,

JOHN A. RASMUSSEN
RESEARCH COORDINATOR

YOUR OPINION COUNTS

210 MICHIGAN THEATER BUILDING • ANN ARBOR, MICHIGAN 48108 • 313/994-4454

LANSING AREA APARTMENT RESIDENTS

WHETHER YOU ARE

* VERY SATISFIED
* NEUTRAL   OR
* VERY DISSATISFIED

WITH YOUR APARTMENT,

HERE IS YOUR CHANCE TO BE HEARD!

NOTE: TO BE COUNTED, YOUR SURVEY MUST BE RECIEVED
BEFORE THE TABULATION DATE,

WHO RECEIVES A SURVEY?

* SURVEY SAMPLES ARE SELECTED BY A SCIENTIFIC
RANDOM NUMBER PROCESS. NOT EVERY HOUSEHOLD
WILL BE SURVEYED, THEREFORE, IT IS IMPORTANT
THAT SELECTED HOUSEHOLDS DO RESPOND,

IF I DON'T REPLY, WILL YOU SURVEY SOMEONE ELSE?

* NO, ONCE YOUR HOUSEHOLD IS SELECTED FOR THE
SAMPLE, WE CANNOT SUBSTITUTE ANOTHER APARTMENT,

WHAT IF I DON'T WANT TO ANSWER SOME OF THE QUESTIONS?

* IF YOU COME TO ANY QUESTIONS YOU DO NOT WISH
TO ANSWER, JUST SKIP THAT QUESTION AND GO ON
TO THE NEXT ONE,

WILL MY APARTMENT MANAGER SEE MY SURVEY?

* NO, THIS IS AN INDEPENDENT SURVEY OF MANY
APARTMENT COMMUNITIES. ONLY THE COMBINED
RESPONSES OF ALL APARTMENT RESIDENTS WILL BE
TABULATED,

16A. WHO LIVES WITH YOU IN YOUR PRESENT APARTMENT? (Check one)

(1) _____ My spouse

(2) _____ My spouse and children

(3) _X_ I do not share my apartment with anyone.

(4) _____ I share my apartment with roommates

_____ Other (Please explain _____)

16B. IF YOU SHARE YOUR APARTMENT WITH ROOMMATES, HOW MANY SHARE YOUR APARTMENT?
(INCLUDING YOURSELF)

(1) _____ Two   N/A

(2) _____ Three

(3) _____ Four

16C. IF YOU HAVE CHILDREN, PLEASE INDICATE HOW MANY LIVE IN YOUR HOUSEHOLD AND
HOW OLD THEY ARE.
How many children? ___ N/A ___ Their ages? _____

17. WHICH OF THE FOLLOWING AGE GROUPS DO YOU AND YOUR SPOUSE OR ROOMMATE(S) FALL INTO?

(1) _____ 18 - 24   (3) _____ 35 - 44   (5) _____ 55 - 64

(2) _X_ 25 - 34   (4) _____ 45 - 54   (6) _____ 65 or over

18. ARE YOU: (1) _____ Male   (2) _X_ Female

IN ORDER TO ASSIST FUTURE DEVELOPERS TO MEET THE NEEDS OF INDIVIDUALS LIKE YOU,
IT IS IMPORTANT TO UNDERSTAND WHICH EMPLOYERS IN THE AREA ARE ATTRACTING NEW
EMPLOYEES. WITH THIS INFORMATION, FUTURE HOUSING NEEDS CAN BE ANTICIPATED AND MET.

19A. HOW MANY INDIVIDUALS IN YOUR HOUSEHOLD ARE NOW EMPLOYED?   1

19B. WHERE DO PERSONS IN YOUR HOUSEHOLD WORK?

Name of Company	Location (City, Street)	Year Employment Began
(Law Firm)	Lansing, MI 48933	1966

20. WHICH OF THE FOLLOWING CORRESPONDS WITH YOUR TOTAL HOUSEHOLD INCOME? (IF YOU
SHARE WITH ROOMMATES, DO NOT INCLUDE THEIR INCOME.) [Check one]

(1) _____ Under $6,000 per year   (4) _X_ $12,000 to $14,999 per year

(2) _____ $6,000 to $8,999 per year   (5) _____ $15,000 to $19,999 per year

(3) _____ $9,000 to $11,999 per year   (6) _____ $20,000 or more per year

THANK YOU FOR YOUR HELP!

PLEASE RETURN YOUR SURVEY RIGHT AWAY IN THE POSTAGE PAID ENVELOPE.

1. WHICH OF THE FOLLOWING BEST DESCRIBES YOUR PREVIOUS RESIDENCE? (Check one)

(1) _X_ Apartment   0157

(2) _____ Single family house which I/we rented

(3) _____ Single family house which I/we owned

(4) _____ Lived with parents

_____ Other (Please explain _____)

2A. WHERE WAS YOUR PREVIOUS RESIDENCE LOCATED? (Check one)

(1) _____ Lansing

(2) _X_ East Lansing

(3) _____ Grand Ledge

(4) _____ DeWitt

(5) _____ Outside the state of Michigan

_____ Other (Where? _____)

2B. WHAT WAS THE NAME OF THE STREET WHERE YOUR PREVIOUS RESIDENCE WAS LOCATED?
(IF YOUR PREVIOUS RESIDENCE WAS LOCATED IN AN APARTMENT DEVELOPMENT, WHAT
IS THE NAME OF THE DEVELOPMENT?)

Street Name _West Saginaw_   Apartment Development Name _Horizon House_

3. FOR HOW MANY YEARS DID YOU LIVE AT YOUR PREVIOUS RESIDENCE?   4   Years

4. WHAT WERE YOUR MAJOR REASONS FOR DECIDING TO MOVE FROM YOUR PREVIOUS RESIDENCE?
From one-bedroom to two-bedroom
From no dishwasher to a dishwasher
For a change after 4 years

5. BEFORE YOU DECIDED TO MOVE TO THE APARTMENT DEVELOPMENT IN WHICH YOU NOW LIVE,
WHICH OTHER DEVELOPMENTS DID YOU CONSIDER? WHAT WERE THEIR NAMES?
Names of Other Apartment Developments Considered
Others considered from outside appearance
and reputation only — also location — did
not seriously look at any other

6. WHY DID YOU DECIDE TO LIVE HERE RATHER THAN IN ONE OF THE OTHER DEVELOPMENTS
YOU CONSIDERED? (Looked at complex 3 times before decided to move)
Decided to live here because knew
owners; liked apartment; and ready
for a change — especially to a 2-bedroom

7A. IF THERE HAD BEEN NO VACANCY AT THE APARTMENT DEVELOPMENT IN WHICH YOU NOW LIVE,
WHICH OF THE OTHERS WOULD YOU HAVE SELECTED AS YOUR SECOND CHOICE?
N/A

7B. WHY WOULD YOU HAVE CONSIDERED THIS AS YOUR SECOND CHOICE OVER THE OTHERS?
N/A

8. WHAT MONTH AND YEAR DID YOU MOVE INTO THE APARTMENT DEVELOPMENT IN WHICH YOU NOW LIVE? _Apr._ Month _75_ Year

9. WHY DID YOU SELECT THE PARTICULAR APARTMENT UNIT YOU LIVE IN?
   2-bedroom unit
   Close to community building.
   Gold carpeting and gold appliances

10. HOW MANY BEDROOMS DO YOU HAVE IN YOUR PRESENT APARTMENT? _2_

11. HOW MANY BATHROOMS DO YOU HAVE IN YOUR PRESENT APARTMENT? _1_

12A. HOW MUCH DO YOU PAY MONTHLY FOR RENT FOR YOUR APARTMENT? $ _225_

12B. PLEASE CHECK THOSE UTILITIES THAT ARE INCLUDED IN YOUR MONTHLY RENTAL PAYMENT.
   (1) _X_ Water
   (2) _X_ Heat
   (3) ____ Electricity

12C. PLEASE CHECK THOSE ITEMS FOR WHICH YOU PAY EXTRA IN YOUR MONTHLY RENT?

ITEM	HOW MUCH EXTRA PER MONTH?
(1) ____ Carport	$ _N/A (no carports)_
(2) ____ Pet	$ _N/A (no pets allowed)_
_X_ Other (What? _top floor_)	$ ____ Unsure

13. PLEASE RATE YOUR PRESENT RESIDENCE IN THE FOLLOWING AREAS BY PLACING A CHECK (✓) IN THE SPACE BELOW THE PHRASE THAT BEST DESCRIBES YOUR FEELINGS ABOUT YOUR RESIDENCE.

	(1) VERY SATISFIED	(2) SOMEWHAT SATISFIED	(3) NEUTRAL	(4) SOMEWHAT DISSATISFIED	(5) VERY DISSATISFIED
A. RENTAL MANAGEMENT SERVICE	(✓)	( )	( )	( )	( )

COMMENTS ____

B. MAINTENANCE SERVICE	(✓)	( )	( )	( )	( )

COMMENTS _Not 100% pleased at all times but cannot say only somewhat satisfied._

C. GENERAL ATTITUDE OF MANAGEMENT	(✓)	( )	( )	( )	( )

COMMENTS ____

D. RENT LEVEL	(✓)	( )	( )	( )	( )

COMMENTS _Naturally I would be more satisfied if it were lower)_

13. CONTINUED   PLEASE RATE YOUR PRESENT RESIDENCE IN THE FOLLOWING AREAS BY PLACING A CHECK (✓) IN THE SPACE BELOW THE PHRASE THAT BEST DESCRIBES YOUR FEELINGS ABOUT YOUR RESIDENCE.

	(1) VERY SATISFIED	(2) SOMEWHAT SATISFIED	(3) NEUTRAL	(4) SOMEWHAT DISSATISFIED	(5) VERY DISSATISFIED
E. GENERAL APPEARANCE OF DEVELOPMENT	(✓)	( )	( )	( )	( )

COMMENTS _Good landscaping and good general upkeep_

F. SOUNDPROOFING BETWEEN UNITS	( )	(✓)	( )	( )	( )

Soundproofing could be improved upon. (muted)

COMMENTS _I would only be satisfied when I could not hear voices & garbage disposal & showers running, etc._

G. APPLIANCES AND FIXTURES	( )	(✓)	( )	( )	( )

Strong desire →

COMMENTS _I would like an apt. size washer & dryer in the unit & would be willing to pay extra for the convenience)._

H. ADEQUACY OF RECREATIONAL FACILITIES	(✓)	( )	( )	( )	( )

COMMENTS ____
____

ABOUT YOUR HOUSEHOLD

14. HOW MANY PASSENGER VEHICLES (CARS, TRUCKS, VANS, ETC.) ARE OWNED BY MEMBERS OF YOUR HOUSEHOLD? (Check one)
   (1) ____ None
   (2) _X_ One
   (3) ____ Two
   (4) ____ Three

15. WHAT IS YOUR MARITAL STATUS? (Check one)
   (1) _X_ Single
   (2) ____ Married
   (3) ____ Widowed
   (4) ____ Divorced or separated
   ____ Other

V.   Introduction to Prospect Survey

While a survey analysis appears to be a group of questions, in fact
the real product is a table of data unavailable from any other source.
The analyst should begin with a written mock-up of the final report
logic and the specific tables which lead to a conclusion.

A.   A survey of existing properties and alternatives available to a
     selected market segment defines only the competitive standard -
     namely the minimum product and price necessary to be in the mar-
     ket.

     1.   Comparison shopping further identifies where there may be
          gaps in the supply of alternatives, a market opportunity gap,
          or where the oversupply is so significant as to portend the
          last competitive alternative before bankruptcy - namely price
          cutting.

     2.   Comparison shopping should not only identify the physical
          characteristics of the product and price but the nature of
          the promotion effort as well.

     3.   Promotion comparison should consider pedestrian and vehicle
          approaches, model location, furnishings, and sales people.

     4.   Review of the promotion campaign should reveal whom the
          competitors believe to be their prospect.

B.   A survey of users, is designed to reveal or to identify the
     competitive differential attributes which whould provide that
     monopoly element required of every successful project.

     1.   A second product of consumer survey is the ability to develop
          locally relevant ratios which permit disaggregation of market
          data into market segments and the conversion of potential
          numbers of people into potential dollar sales over time.

     2.   Survey questions to create ratios require previous construc-
          tion of a market model hypothesis.

C.   With a preliminary hypothesis as to the prospect, survey questions
     may be inteded to provide:

     1.   Key ratios necessary for segmentation of market data already
          broken down by trade area, demographics, employment, etc.

     2.   Key indicators of anxieties or preferences or tradeoffs of
          the prospect.

     3.   Key indicators of the anxieties or preferences of non-pros-
          pects who feel a vested interest in the impact or have a
          significant part in the purchase process. (For example -
          the members of the Public Housing Authority have a different
          set of needs than the ultimate user, but the product is "bought"
          by the Board).

Exhibit 8

SURVEY RESEARCH PROCESS--MAIL SURVEY

```
            ┌─────────────────────┐
            │    MAIL CARD TO      │
            │  NOTIFY RESPONDENT   │
            └─────────────────────┘
                      │
                      ▼
              ┌──────────────┐        ┌──────────────────┐
              │              │──────▶ │   COVER PAGE      │
              │    MAIL      │──────▶ │   MOTIVATOR       │
              │   SURVEY     │──────▶ │   SURVEY          │
              │              │──────▶ │   EXPLANATION     │
              └──────────────┘──────▶ │  RETURN ENVELOPE  │
               │          │           └──────────────────┘
               ▼          ▼
      ┌─────────────┐  ┌──────────┐
      │ NO RESPONSE │  │ RESPONSE │      25-35%
      └─────────────┘  └──────────┘
            │
            ▼
      ┌─────────────┐
      │ FOLLOW-UP   │                   + 5
      │  CARD #1    │
      └─────────────┘
            │
            ▼
      ┌─────────────┐
      │ FOLLOW-UP   │                   + 5
      │  CARD #2    │
      └─────────────┘
            │
            ▼
      ┌─────────────┐
      │ TELEPHONE   │                 (OPTIONAL)
      │ FOLLOW-UP   │
      └─────────────┘
            │
            ▼
      ┌─────────────┐
      │   REMAIL    │                 +10-15%
      │   SURVEY    │                 ─────────
      └─────────────┘                 45-60%
                                      TOTAL
                                     RESPONSE
```

Exhibit 9

*F*EASIBILITY *R*ESEARCH *G*ROUP
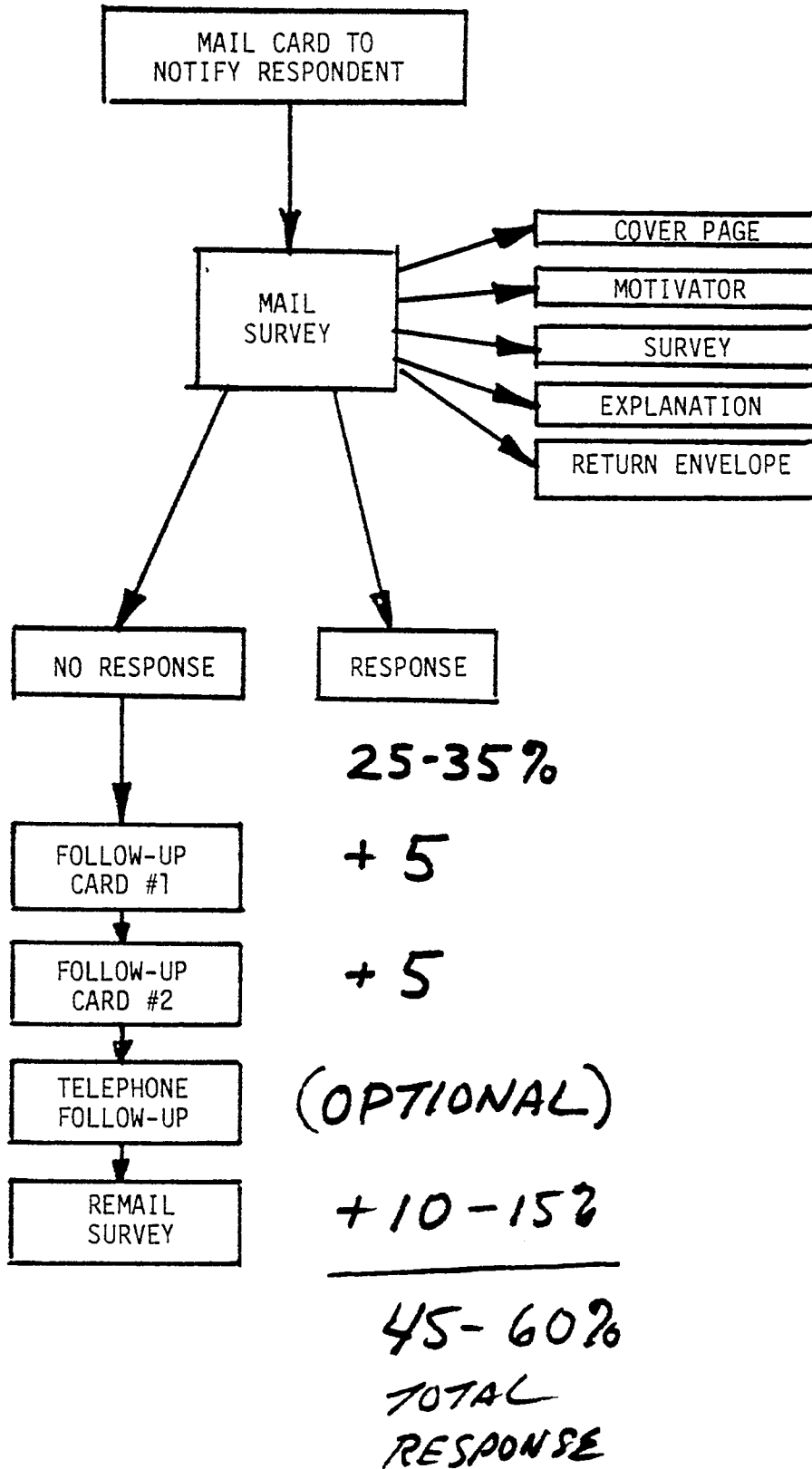
SAMPLE QUALITY CONTROL

SAMPLING ERROR

DEFINITION: Sampling error occurs when sample data is not representative of the total population of households from which the sample is drawn.

HOW
CONTROLLED: FRG's sample of the population reflects updated 1977 household data. Using our source of Washtenaw County Household addresses, which is updated for new apartments and homes built in 1977 and applying a computer-generated random sample, we can hold sample error to a minimum.

SAMPLE BIAS

DEFINITION: Sample bias occurs when respondents drawn in the sample refuse to be interviewed for the survey or do not reply to certain questions in the survey.

HOW
CONTROLLED: At FRG the following steps are taken to reduce possible sample bias:

(1) Pretesting of the survey questions and survey format to:
   (a) enable the respondent to understand the question
   (b) reduce respondent fatigue by creating a natural flow in the question sequence

(2) Monitoring interviewer performance by Head Interviewer to:
   (a) review completed surveys for completion and editing
   (b) review respondent's perception of interviewer through calling of 5% of respondents to learn consumers' opinion of interviewer

MAIL SURVEY RESPONSE RATES

	DATE	DAILY RESPONSE	TOTAL RESPONSE	POSTAGE DUE	UNDE-LIVERED	POSTAGE DUE FRG
SURVEY MAILED →	7/7/75					
	7/10/75	1	1	$0.22	1	$.10
	7/11/75	7	8	$0.84		
1st FOLLOW-UP MAILED →	7/12/75					
	7/12/75	11	19	$0.82		
	7/14/75	1+41+30	91	$8.62	(1 FRG stamp used)	
	7/15/75	63	154	$7.76	1	$.10
	7/16/75	1+2, 1+90	247	$10.90	1(3 FRG stamps)	
	7/17/75	1+115	363	$11.60	1 (1 FRG stamp)	
2nd FOLLOW-UP MAILED →	7/18/75					
	7/18/75	247	610	$34.14	5	
	7/21/75	165	775	$21.10	3	
	7/22/75	233	1,008	$28.36	4	
				(+$.20 remail)		
	7/23/75	1+2, 138	1,149	$15.66	2	
				(+$.20 remail)		
	7/24/75	153	1,302	$14.02 (+$.20 remail)		
	7/25/75	114	1,416	$13.68	1	
	7/28/75	49	1,465	$ 5.88		
	7/29/75	143	1,608	$17.16 (+$.40 remail)		
	7/30/75	53	1,661	$ 6.56	2	
	7/31/75	37	1,698	$ 4.54	1	
				(+$.40 for 2-1st class)		
MAILED FOLLOW-UP →	8/1/75					
(52.7%) response rate to date	8/1/75	11	1,709	$ 1.52	2	
	8/4/75	48	1,757	$ 5.86	1(25)	
	8/5/75	31	1,788	$ 3.72 (+$.40 postage)		
	8/6/75	1+22	1,811	$ 2.64 (+$.40 postage)		
	8/7/75	25	1,836	$ 3.00?		
	8/8/75	34	1,870	$ 4.20	1	

DATE	DAILY RESPONSE	TOTAL RESPONSE	POSTAGE DUE	UNDE-LIVERED	POSTAGE DUE FRG
8/11/75	33+6	1,906	$ 3.96		
8/12/75	3+1	1,910	$ .36 (+$1.20 remail postage)		
8/13/75	18	1,928	$ 2.16		
8/14/75	10	1,938	$ 1.20	1(27)	
8/15/75	5	1,943	$ .60		
8/18/75	10	1,953	$ 1.20		
8/19/75	4	1,957	$ .40		
8/20/75	2	1,959	$ .34	1	
8/21/75	1	1,960	$ .12		
8/22/75	1	1,961	$ .12 (+1 mailed to MEHA = 1,962)		
8/25/75	1	1,963	$ .12 (+$.40 remail)		
8/26/75	3	1,966	$ .36		
8/27/75	2	1,968	$ .24		
8/28/75	3	1,971	$ .36		
8/29/75	1	1,972	$ .12		
9/2/75	2	1,974	$ .24 (+1 mailed to MEHA = 1,975)		
9/8/75	2	1,977	$ .24		
9/9/75	1	1,978	$ .12		
9/18/75	4	1,982	$ .55	(28)	
(3,331-28 = 1,982/3,303 = 60% response rate to date)					
9/22/75	1	1,983	$ .15		
9/30/75	1	1,984	$ .15		
10/6/75	1	1,985	$ .15		
10/22/75	1	1,986	$ .15		
11/12/75	1	1,987	$ .15		
11/24/75	1	1,988	$ .15		

7. Personal interviews in depth permit questions using photo-
    graphs with colors and styles. Expensive and time consuming,
    it assumes precious qualification of the interviewee as a
    typical prospect.

I. Processing of surveys can involve simple tallies or counts,
    simple subdividing of responses into subcategories, or prefer-
    ably organization of the questionnaire to permit key punching or
    cross tabbing or statistical analysis by computer processing.
    The problem of identification requires:

    1. Coding by colored paper, colored return envelope, stamp on
        self-addressed stamped envelope to reflect geographic area,
        building address, type of respondent, original mailing list
        solves most processing problems.

    2. Beware of code numbers if you promised anonymity; give them
        the option of identifying the respondent, etc.

    3. Always identify yourself as an analyst (but not the project
        or the client), providing a phone number or an address where
        the interviewee can find you. It will generate both presale
        prospect lists and some primary unexpected political parti-
        cipation by others.

J. Comparative cost and comparative merits and disadvantages of alter-
    native survey research methods for appraisers is suggested in
    EXHIBIT 11.

    1. These were prepared in 1978 by John Rasmussen for a conference
        at the University of Wisconsin.

    2. Many appraisers worry about the size of the sample and degree
        of reliability of the results. In many cases, market segment-
        ation and correct identification of the customer group will
        alllow survey of virtually the entire universe of 20-40 users.

    3. A sample is used to infer facts about a larger universe.
        EXHIBIT 12 provides an indication of sample size and range of
        error. Note that if you are going to subdivide responses
        between homeowners and renters, for example, it is important
        to have the desired sample size in the subcategory. Hence,
        it is important to refine your list of names as sharply as
        possible.

VI. Telephone Survey to Improve Bidding Position on Turn-key Elderly
    Housing Project (Exhibits 13&14)

    As a simple illustration of the relationship of consumer need to
    pre-architectural programs, consider the survey approach for a
    turnkey, 160-unit elderly housing project, solicited by the City

SURVEY RESEARCH FOR APPRAISERS

Survey Format	Advantages	Disadvantages	Response Rates	Typcial Cost Per Response	Typical Time
Personal Interviews	1. Permits longer surveys 2. Opportunity to probe 3. Can use flash cards, floor plans, etc.	1. Higher cost than phone phone or mail survey 2. More time required than telephone 3. Training and field supervision required	60 - 75% Call Backs-3	$3 to $6 per response	30 - 60 days
Telephone Survey	1. Faster than personal interviews or mail surveys 2. Opportunity to probe 3. Less pretesting required	1. Shorter questionnaire required 2. High turnover results in lower completion rate 3. Unlisted and disconnected phones may bias sample	30 - 50% Call Backs-3	$2 to $2.50	15 - 30 days
Mail Questionnaires	1. Lowest cost 2. Larger survey sample	1. Longest time for turn around 2. Questions as well as layout require design	40 -60 % Follow ups 3 or 4	$.55 to $1.00	60 - 90 days

FEASIBILITY RESEARCH GROUP LTD.

Exhibit 11

THE RELATIONSHIP OF SAMPLE SIZE TO SURVEY ACCURACY

Sample or subsample size	With this size sample, we are $X\%$ certain the obtained percentage is within $Y\%$ of the true percentage[1].		
	95% certain	90% certain	50% certain
50	± 13.8%[2]	± 11.6%	± 4.8%
100	9.8	8.2	3.4
150	8.0	6.7	2.8
200	6.9	5.8	2.4
250	6.2	5.2	2.1
300	5.7	4.7	1.9
350	5.2	4.4	1.8
400	4.9	4.1	1.7
450	4.6	3.9	1.6
500	4.4	3.7	1.5
600	4.0	3.4	1.4
700	3.7	3.1	1.3
800	3.5	2.9	1.2
900	3.3	2.7	1.1
1000	± 3.1%	± 2.6%	± 1.1%

[1] The percentage that would be obtained if everyone in the sampling list had been sent a survey. The figures given are accurate if the true percentage is from 30% to 70%. The obtained percentage and true percentage are likely to be closer if the true percentage is less than 30% or greater than 70%.

[2] For example, if the obtained percentage is 50 the true percentage will be between 36.2% and 63.8% (±13.8%), nineteen times out of twenty (95% certain).

Exhibit 12

CHECKLIST FOR INTERVIEWERS

Exhibit 13

1. BE NEUTRAL -- DON'T ATTEMPT TO INFLUENCE RESPONDENT IN ANY WAY.

   BE INFORMAL.

   BE COURTEOUS.

   BE CONSCIENTIOUS.

2. FIRST ANSWERS ARE USUALLY THE MOST MEANINGFUL. DO NOT CHANGE ANY ANSWERS TO A PAST QUESTION.

3. DO NOT RECORD A "DON'T KNOW" ANSWER TOO QUICKLY -- GIVE RESPONDENT TIME TO THINK.

4. RECORD ANSWERS JUST AS THEY ARE GIVEN. IF LENGTHY, TRY TO SUMMARIZE IN RESPONDENT'S OWN WORDS, NOT YOURS.

5. TRY TO OBTAIN AS SPECIFIC INFORMATION AS POSSIBLE. IF RESPONDENT ANSWERS, "IT'S O.K., ASK WHY. IF NECESSARY, DO A LITTLE PROBING.

6. KEEP TALKING AS YOU WRITE. ASK NEXT QUESTION WHILE WRITING FIRST ANSWER. DON'T LET RESPONDENT GET DISTRACTED OR BORED.

7. STICK TO THE SUBJECT. DON'T LET YOURSELF OR THE RESPONDENT DIGRESS.

8. BE SURE YOU'VE ASKED EVERY QUESTION AS IT IS WRITTEN IN THE ORDER THEY APPEAR ON THE QUESTIONNAIRE FORM.

9. CHECK OVER QUESTIONNAIRE BEFORE TERMINATING THE INTERVIEW TO MAKE SURE IT IS COMPLETE.

10. THANK RESPONDENT FOR PARTICIPATING!

PROJECT NO: _____

PROJECT NAME: _____

Exhibit 14

INTERVIEW VALIDATION

CONTRACTOR NAME: _____

INTERVIEWER NO: _____

	INTERVIEWER TO FILL IN (1) ADDRESS AND PHONE NUMBER OR (2) NAME AND ADDRESS (IF NO PHONE OR REFUSAL)									FIELD SUPERVISOR TO COMPLETE. (VALIDATE WITHIN 2-7 DAYS.)				
	ADDRESS	ZIP	NAME	MR, MRS, MS, MISS	PHONE #	INTERVIEW DATE	START TIME	FINISH TIME	TOTAL TIME	VALIDATED BY	PHONE OR IN PERSON	QUESTIONS VALIDATED	COMMENTS	
1														1
2														2
3														3
4														4
5														5
6														6
7														7
8														8
9														9
10														10
11														11
12														12
13														13
14														14
15														15
16														16
17														17
18														18
19														19
20														20

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ANN ARBOR, MICHIGAN 48104

Pink - INTERVIEWER'S COPY
Yellow - FIELD SUPERVISOR
White - ____ICE

KEY: YES = X
      NO = —
      DK = DON'T KNOW
      NA = NOT APPROPRIATE
      REF = REFUSED

I CERTIFY THE ABOVE LISTED ITEMS ARE TRUE AND CORRECT.

CONTRACTOR SIGNATURE   DATE | FIELD SUPERVISOR SIGNATURE DATE

_____   _____ | _____

COMMENTS: _____

of Madison Housing and Redevelopment Authority for a specific urban renewal site. Developers were to compete on both cost and sensitivity of design with an oral presentation to the Board in addition to submission of bid materials.

A. The packet of bid instructions included:

1. Identification of the 116,549 sq. ft. site (wtih views of lake, park, and hospital)

2. Restriction of access to one side of site, and inclusion of 53 parking stalls, and a drive through portachere.

3. A statement that the proposed structure be in harmony with existing buildings.

4. Limit of 160 units in three distinct structures interconnected by an enclosed weatherized corridor system for elderly housing.

5. Specification of three structures consist of a one-story building housing 10-15% of total units; a trhee-story with 25-35% of total units; and a high rise with the remaining 60-70% of the total units.

6. Provision of extensive community, recreation, management and maintenance spaces with explicit instructions as to the location and relationship of the latter two space groups.

7. Design in accord with HUD Minimum Property Standards.

8. Time between solicitation and presentation was four weeks.

B. Joint venture proposal was to include experience design/construction firm from out-of-town, the local broker/developer for financing and community relations, and a team of two graduate students in real estate. After organization of their joint venture three and one half weeks remained; designer required two weeks to prepare materials; estimator two days, etc. and specification and development of a pre-architectural program had to be completed in eight days.

1. Four days allocated to data collection and survey design; four days allocated to analysis and development of design program.

2. Market researches read relevant secondary literature (such as Housing the Elderly, Central Mortgage and Housing Corporation of Canada, Second Edition, July 1972, Printed in Canada; or Design of Housing for the Elderly: A checklist, by Marie C. McGuire, NAHRO 1972; items found in The Built Environment For the Elderly and the Handicapped, a bibliography, U. D. Department of Housing & Urban Development, Library and Information Division, June 1971).

3. Researchers visited several Madison projects, obtained floor plans, and visited with managers to make a subjective analysis of the relative success or misfit design elements in existing housing.

C. During same two day period architect/engineers reviewed information packet and site constraints; then met with market researchers to generate the following basic research questions.

   1. What are the physical limitations of the prospective residents requiring special features?

   2. What is the prior living experience of the resident, to minimize disruption of life style through design sensitivity?

   3. What unit mix would be appropriate?

   4. How is unit mix allocated between three required structures?

   5. What should be basic unit size?

   6. How should space within each unit be allocated?

   7. What functions and design feautures should be included in community spaces?

   8. Are there other wants, needs and anxieties of users unmet by existing Madison elderly housing projects?

D. To answer these questions the survey design required specification of survey measurement devices and identification of a respondent group.

   1. Given the experience of the researchers, their preliminary research to brief themselves, and a two-day time limit, they chose to do a non-probability judgment sample.

   2. Time schedule required a telephone survey technique with a random sample of residents in elderly housing units in Madison.

E. Sampling criteria required:

   1. Sample be representative of the population of interest

   2. Persons selected must be able to respond with relevance and validity to the survey

   3. Population from which sample would be drawn had to be experienced in type of unit to be researched

F. In response to these criteria:

   1. It was reasoned that most likely there would be homogeneity of demand characteristics between present occupants of public elderly housing in Madison and prospective occupants on Housing Authority waiting lists.

2. Literature search indicated that continuity theory (habit, pattern, life style) control elderly so that occupant of present comparable units would best be able to relate to design questions and project their future needs and desires relative to their own units and experience.

3. A need survey could have been made of Housing Authority management, building managers, or HUD underwriters but developer felt that the best responding group would be the elderly themselves.

G. The interview sampling plan consisted of:

1. Identification of Madison public housing units for the elderly by street address
2. Identification of present occupants by name in existing units from current reverse telephone directory.
3. Random sample of residents named and available by phone (potential bias)

H. Survey results were to be keypunched and analyzed on a cross tabulation program at the UW School of Business Computer Center to reveal how different persons in different types of units might have differed in their responses.

1. For speed, keypunching was to be done directly from completed questionnaire form
2. Usable forms were required to have answers to all relevant questions
3. Ultimately there were 99 usable responses from a total population of 268 apartment units in the Madison elderly housing program.
4. Two persons complete these responses in two twelve hour working days; computer analysis took one day.

I. Sample questionnaire provided in Exhibit 15

1. Telephone survey very poor technique for measuring attitudes of elderly
2. More valid than group meetings conducted by Housing Authority where residents are intimidated by landlord, size of group, or dominant extroverts
3. Personal interview more time consuming and more valuable
4. Interviews should be conducted in respondent own unit to position questions against current experience and to permit demonstration with more ease than verbal articulation.
5. Exhibit 15 should be viewed as demonstrating how standardization is imposed on telephone survey techniques
6. Interviewers were women

VII. The questionnaire was intended to generate a brief consumer profile, identify possible significan and subtle dissatisfactions with unit design, and permit some open-end questions to explore areas not anticipated by researchers.

A. The consumer profile of the typical occupant:

1. Was female (83%)
2. Had previously rented a housing unit (82%) with 91% having
   paid less than $175 per month and 60% had paid less than $100,
   indicating most found the public housing unit better in qual-
   ity and lower in price ($50-$60 per month)
3. Long waiting periods before admittance to public housing
   generally made them most grateful and non-critical
4. Almost all had known low density low rise residential environ-
   ments over their lifetimes.

B. For space allocation and features the survey revealed:

1. Satisfaction of present site with living room larger than
   bedroom, etc.
2. 99% preferred bathroom to open into bedroom
3. Open-end question revealed majority wanted outside window
   from kitchen
4. Desire for indoor walking-exercise area without steps
5. Desire for lounges tied to indoor passages and with views of
   action centers
6. Desire for community craft and recreation facitilites which
   were not isolated by stairs, windowless walls, or outside
   walkways (as was the case in Madison projects).
7. Anxiety about high rise among many due to fire hazard depend-
   ence on elevators or lifetime unfamiliarity with high rises.
8. Preferred more units per floor in low rise to exclusiveness
   of high rise floor but would take anything they could get.

C. The theory on aging elderly behavior patterns also contributed to
design constraints, for example, the disengagement theory indicates
the elderly gradually lose the energy to maintain a great variety
of social contacts, etc., a tendency which leads to isolation and
increased depression due to loneliness.

1. Physical design must provide a variety of choices as to their
   withdrawal from the street, the total project, a small group
   of neighbors, or their own room.
2. At the same time, heterogeneity of unity mix avoids clustering
   all handicapped, all married, etc. in one particular zone to
   give everyone a variety of social contacts.
3. Circulation patterns can be designed to encourage random
   meetings without forcing social involvement.
4. Visual elements which are depressants such as views of ceme-
   teries, hospitals, nursing homes, etc. should be avoided.

D. With the initial design constraint inputs, the designers worked up
a tentative plan which proved to exceed the desired cost estimate
at which point estimators, market analysts, and designers met in
an all-day session to hammer out final trade-offs. A 165-unit
project was the result as described in Exhibits 17, 18, 19 and 20.

1. Project had second lowest total cost ($3,397,380 or $26,000 per
   unit) of the ten proposals submitted.
2. Project was turned down by renewal board because they did not
   like contractors reputation for economy and thought the exter-
   ior was less attractive than conventional tower.

3. Experience is typical of real estate that is designed to please the investor rather than the ultimate user, particularly when the investor has not properly defined the context in sufficient detail to judge the fit of any proposal submitted.

83

EXHIBIT #15

<u>Telephone Survey Script - Elderly Housing</u>

Prepared and executed by
James R. DeLisle, June, 197-

PRE-SURVEY INFO.

Survey
Turnkey Elderly Housing
Triangle Project
Madison, Wis.

Code of Interviewer   ☐ 1   __ 2   __ 3   __ 4   __ 5

PROJECT CODE Code of Project   ☒ Braxton
     __ Romnes
     __ Tenney Park

Sex of Respondent   __ Male   ☒ Female

****

INTRO.

Hello, my name is _____ . We are conducting
a survey of residents of elderly housing apartments so that
we may identify those features of apartment design and planning
that are satisfying to residents, as well as those that are
irritations.

The purpose of seeking your responses to these questions is
to provide a base of information from you --the real experts
on housing for the elderly-- upon which we can make specific
recommendations to developers of the proposed elderly housing
project on the Triangle Urban Renewal Area, here in Madison.
This information will result in an improved living environ-
ment in the proposed housing project. Your responses are
confidential and you will not be identified as an individual.

Would you mind answering a few questions ?   Thank you

****

PRIOR LIVING EXPERIENCE

Note:
Read options
only when arrow
is shown as in
question # 2)

1. When did you move into your present home ?

   ☐ 1960 to 1965   ☐ 1971 to 1972
   ☐ 1966 to 1968   ☐ 1973 to 1974
   ☒ 1969 to 1970

2. What type of home did you live in before moving to your present
home ?

   ↓ ☒ one family house   ↓ ☐ 1 to 4 unit apartment bldg.
     ☐ two family house   ☐ 5 or more unit apt. bldg.
     ☐ other_____   ☐ other_____

3. How long did you live in your former home ?

   ☐ less than 6 month   ☒ 2 - 5 years
   ☐ 6 mo. to 1 year   ☐ 5 - 10 years
   ☐ 1 - 2 years   ☐ Over 10 years

4. Was your previous home:

⬭ owned by you (or you and your spouse)
⬭ owned by your family (or your spouses' family)
⬭ occupied without cash rent
⬭ rented by you (or you and your spouse)

└ ─ ─ ➤ How much was your rent each month ?

⬭ less than $50   ⬭ $100 to 125
⬭ $50 to 75   ⬭ $125 to 175
⬭ $75 to 100   ⬭ $175 or more

Did your rent include:

Electricity ⬭ yes   ⬭ no
Heat
Water
Gas   ⬭ DNA

Present Living Experience | YOUR RESPONSES TO THE FOLLOWING QUESTIONS WILL TELL US WHAT YOU FEEL IS IMPORTANT IN AN APARTMENT SPECIFICALLY DESIGNED FOR THE ELDERLY

5. Which of the rooms in the apartment should be the largest, second largest, and third largest ?

	Largest	Second Largest	Third Largest
Kitchen-Dining area	⬭	⬭	⬭
Living Room			
Bedroom		⬭	

6. Is your present home:

⬭ too large for your needs
⬭ too small for your needs
⬭ just right for your needs

7. How many people live with you in your apartment ?

⬭ none   ⬭ three
⬭ one   ⬭ four
⬭ two   ⬭ five or more

If you could change your present apartment by making one room larger and one room smaller;

8. Would you make your:

↓ LR larger; BR smaller or/
BR larger; LR smaller or/
leave them like they are

9. Would you make your:

↓ LR larger; K-D area smaller or/
K-D area larger; LR smaller or/
leave them like they are

OPTIONAL UNIT FEATURES

If you had to select one of the following:

10. Would you prefer:

↓ A dining area _in_ the kitchen or/
A dining area next to the kitchen

11. Would you prefer:

↓ A bathroom door opening to bedroom only or/
A bathroom door opening to living room area only

12. Would you prefer:

↓ A large closet area in the bedroom or/
A large closet area in the living-dining-kitchen area

13. Would you prefer:

↓ A balcony or
Slightly larger apartment size

14. Would you prefer:

↓ Larger closet space or
More open space in your apartment

OPTIONAL PROJECT FEATURES

15. If you had the choice, would you want:

⬭ A larger apartment and less community space or/
⬭ A smaller apartment and more community space or/
⬛ make no change

If you had to select one of the following:

16. Would you prefer:

⬛ One large room with a music area, T.V. area, conversation area, and a small library or/
⬭ Several smaller separate rooms for each of these activities, in addition to a central lounge

17. Would you prefer:

⬭ A special lounge area for children of guests or/
⬛ A larger main lounge

---

18. Should there be a separate lounge for women only (yes ⬛) and a separate lounge for men only (yes ⬛)
   No   No

19. Is there a craft or hobby room in the building you live in now ?

⬛ yes
⬭ no

20. Would you like (do you like) a crafts room ?

⬭ no
⬛ yes

21. For what crafts would you (do you) use the craft room ?

⬭ Pottery   ⬭ woodworking
⬭ knitting and crocheting ⬭ sewing
⬭ painting   ⬭ copper enamiling
⬛ weaving   ⬭ other _____
⬭ photography   ⬭ other _____

22. How many times a week would you (do you) use the room ?

⬭ less than once a week   ⬭ More than 3 times
⬭ once   ⬭ Never
⬭ twice
⬛ three

23. Should the crafts room be:

⬛ one large room for all crafts or/

EXHIBIT 18

UNIT CHARACTERISTICS AND DISTRIBUTION

BUILDING	UNIT TYPE	DESCRIPTION	NUMBER	FLOOR	NET SQUARE FOOTAGE	TYPICAL VIEW
One-Story	A	Handicapped 1 Bed	8	1	505	(4) Courtyard (4) Brittingham Park
	B	Handicapped 2 Beds	8	1	524	(2) Courtyard (2) Neighborhood Terrace (4) Brittingham Park
Mid-Rise	C	Handicapped 1 Bed	12	1	504	(7) Brittingham Park West (5) Courtyard
	C	1 Bed	18	2,3	504	(6) Brittingham Park West (12) Brittingham Park East
	D	2 Beds	8	2,3	536	(8) Brittingham Park West
	E	1 Bed	2	2,3	504	(2) Brittingham Park East
High Rise	C	1 Bed	84	2-8	504	(42) Capitol (42) Lake Monona
	D	2 Beds	24	9,10	536	(12) Capitol (12) Lake Monona
Manager's Apartment	F	2 Bed	1	1	665	Courtyard

EXHIBIT 17

35

EXHIBIT 18
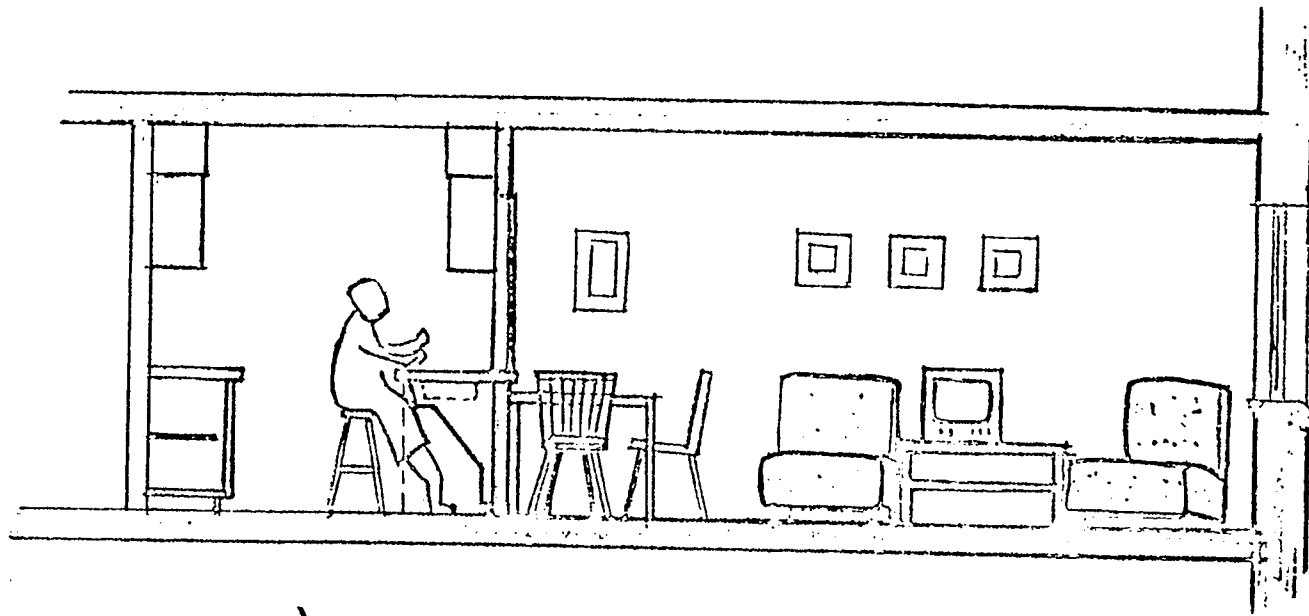
ELEVATION — KITCHEN & LIVING ROOM   TYPES C & D

SCALE   ¼" = 1'-0"

TOTAL 146 UNITS
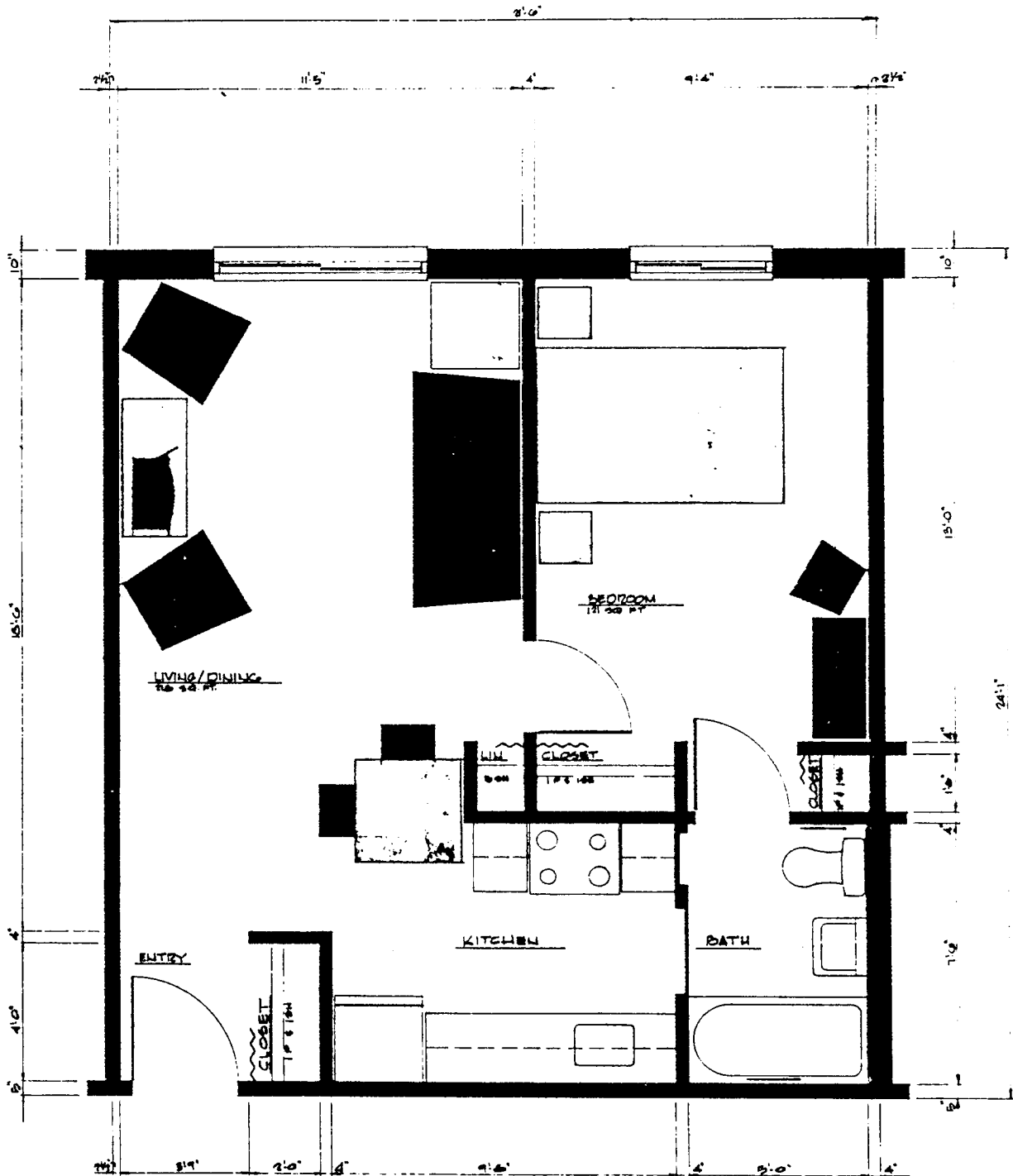
622 sq ft. GROSS - 505 sq ft. NET

ONE STORY BLDG - ONE BEDROOM APT TYPE "A" - 8 UNITS

SCALE 1/2" = 1'-0"

KITCHEN SHELF AREA 53 SQ FT.
KITCHEN DRAWERS 8 SQ FT.
GENERAL STORAGE 179 CU. FT.

E. <u>Generalized Format of Merchandising Report Summary</u>

Cash flows ultimately depend on sales or rental revenues and further refinements of the frontdoor-backdoor approaches depend on establishing an explicit set of assumptions about the geographical market area, the user segment within that market area, and so on. All you buy in a real estate investment is a set of assumptions about the market. Therefore, the analyst should provide and identify a marketing assumption checklist for the reader:

1. Definition of geographic and demographic market.

    a. Primary trade area to be served

    b. Profile of prospects by current location, statue, income, etc. in primary carefully segmented area.

    c. Secondary trade area to be served

    d. Profile of prospects by current location, status, income, etc. in secondary carefully segmented area.

2. Definition of principal competitors

    a. Existing supply

    b. Prospective supply with timeline advantage.

    c. Competitive standard package of project features.

    d. Unique features of successful competitors.

    e. Probable cause of unsuccessful competitors.

    f. Merchandising appeals of competitors.

    g. Definition of market penetration and competitive gap.

3. Establishment of merchandising strategy logic

    a. Competition
        .   Standard product
        .   Price and quality
        .   Competitive edge opportunity

    b. Positioning strategy
        .   Sales themes
        .   Name and byline
        .   Site and unit features
        .   Strong sales points

    c. Construction and architecture
        .   Sales area
        .   Models
        .   Entrance and signs

- Project amenities
- Roads and paving
- Site plan
- Construction schedule

4. Definition of prospect target for subject property

    a. Recommendations on site location

    b. Recommendations on site linkages and dynamics

    c. Recommendations on building types and numbers

    d. Recommendations on basic unit features

    e. Recommendations on basic unit options

    f. Recommendations on level of quality

    g. Recommendations on basic price targets

F. Structuring the Feasibility Report

Ultimately the budget established for analysis and the need to communicate the findings represent a severe constraint on the feasibility process. Priorities and critical assumptions necessary to achieve the desired outcome must be separated from the great mass of detail and presented tersely.

1. Format of the report should rely on three elements:

    a. An executive summary which tersely identifies alternative courses of action and recommendations as to how client can make the choice.

    b. A basic reference document which includes all the detail analysis.

    c. A collection of reports by contributing professionals incorporated by reference.

2. To be terse the executive summary should depend on:

    a. Simple charts of choices of alternative outcomes (See Exhibit 21).

    b. Simple flow charts (Such as Exhibits 3,7,13,22).

    c. Specific criteria used to measure "liklihood of success"

3. Statement of limiting conditions should first begin with a definition of the word "feasible" (as per Institute of Appraisal Terminology Handbook), and then state that it was the purpose of the study to define the context of the situation and the parameters within which a solution might be

found to fit the major constraints with a reasonable likli-
hood of success. It should carefully point out that the
generalist has made a series of explicit assumptions which
may, nevertheless, need confirmation by more detailed study
best done by specialists. The statement of limiting condi-
tions should further emphasize the constraints and objectives
placed on the study by identifying who:

a. Defined the constraints

b. Defined success

c. Provided the data and assumptions

d. Permitted key assumptions to remain untested for
economy or speed

e. Accepted assumptions of conditions of uncertainty

f. Assembled proforma financial statements and projections

g. Executed feasibility confirmation of key assumptions
with aid of specialists.

h. Placed limitations on use and confidentiality.

FEASIBILITY RESEARCH GROUP

MINI-STORAGE MARKET FEASIBILITY ANALYSIS

A MARKET ANALYSIS GUIDE FOR REAL ESTATE APPRAISERS,

MORTGAGE LENDERS, DEVELOPERS AND INVESTORS.

PREPARED BY:

JOHN A. RASMUSSEN

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PREFACE

The following illustrations of market feasibility analysis represent an introduction to market analysis. This effort should not be considered as a complete "how to do it" guide but rather as a framework for stimulating the discovery and reasoning processes of the reader i.e. not "What is the answer?" but "What questions should be asked?"

Market analysis requires original research. To assist the reader in visualizing a market opportunity analysis examples are included, both of secondary analysis (e.g. census data) and primary analysis (e.g. survey research).

An introduction to market analysis would not be complete if it did not include a basic outline or framework of the market analysis process. The real estate market analysis process used here considers real estate developments as a consumer market product. Real estate appraisers, architects and financial analysts hopefully will find that this introductory guide places market analysis in perspective.

The specific applications used to illustrate market analysis and market strategy should not be considered as models to be accepted and used in other situations. The very essence of market analysis is relating total potential demand to a specific site. Analysis of individual sites and competition in individual markets should be considered in each instance.

John A. Rasmussen
Research Coordinator
Feasibility Research Group, Ltd.
Ann Arbor, Michigan

THE CONCEPT

IS THE SELF-SERVE STORAGE CONCEPT A "FAD" OR AN ESTABLISHED MARKET TREND?

Prior to the introduction of self-serve storage facilities consumers rented storage space for storage of household furniture at MOVING AND STORAGE company warehouses.

Moving and storage company facilities are still available today from Mayflower, North American Van Lines and other companies with local household storage warehouses.

DISADVANTAGES OF MOVING COMPANY	VS.	ADVANTAGES OF SELF-SERVICE STORAGE
--In-and-out labor charges	vs.	--No labor charge for self-serve
--High minimum rents of $30+	vs.	--$9 to $18 minimums for self-serve
--Container storage boxes stacked three tiers high by hydraulic forklift	vs.	--Walk-in quick access without waiting for forklift and operator
--Access limited to 8-5pm business hours	vs.	--Easy access in evenings and weekend hours
--High ceiling heights make boat, R.V. and sporting vehicle equipment storage expensive and impractical	vs.	--Drive-in size units with 10', 15', 20', 25' and 30' depths allow renting as much or as little space as needed. Eight to ten foot heights.

The above disadvantages of moving company storage facilities are very easily overcome by the self-serve mini-storage concept for household storage needs.

The likelihood of apartment dwellers or homeowners switching back from self-serve to moving company storage facilities appears highly unlikely. A fad would tend to show a spurt in consumer demand and then decline , but mini-storage demand in both southwestern and northwestern states has indicated increasing demand for mini-storage units in mature markets.

THE USER PROFILE

There are several methods of developing user profiles.

(1) Trade Association or other published profile data

(2) Review application forms where available

(3) Survey <u>existing</u> users of mini-warehouses

(4) Survey <u>potential</u> users of mini-warehouses

WHO IS THE PRIME USER?

By identifying the profile of the user we find that the prime user is the apartment resident. Survey by Feasibility Research Group of 299 households in a random sample survey in Washtenaw County, Michigan in 1976 revealed that 28% of the apartment residents and 16% of single-family residents said that, yes, they were interested in the concept of mini-warehouse service. An additional 32% of the apartment residents and 21% of the single-family residents indicated they possibly would be interested in mini-warehouse service.

Combining the responses of those who said yes and those who said possibly interested we found that <u>60% of the apartment residents</u> and <u>37% of the single-family residents</u> represent the potential market for mini-warehouse facilities. (Note: These percentages may or may not apply in other communities.) The actual percentages are not critical, but the total support for the concept from the apartment residents vs. the single-family residents is important.

HOW LONG DOES THE PRIME USER NEED STORAGE SPACE?

After identifying the prime user of the mini-warehouse, the apartment resident followed by the single-family resident, we can further profile the market of residential users into those people who use the mini-warehouse on an annual basis and those people who use it on a seasonal or short-term use. Based upon our sample survey of 299 households the indicated demand for seasonal storage is as follows:

	APARTMENT RESIDENT'S DEMAND	SINGLE-FAMILY DEMAND
SEASONAL STORAGE:	83%	17%
ANNUAL STORAGE:	67%	33%

The apartment residents are the largest segment of the user profile as they account for the highest percentage of both the seasonal and annual storage needs.

SHORT-TERM DEMAND GENERATED BY HOUSING MOVES

A significant segment of market demand for mini-storage use comes from households who move and those households which move frequently. As might be expected, apartment residents are more mobile. Apartment residents are also more likely to move themselves, using either U-Haul truck, Avis or National, or whatever company provides the truck rental service in the market area.

To estimate the size of this potential mover, do-it-yourself market, again we go to our survey of 299 households.

QUESTION #10A: WHEN YOU MOVED TO YOUR PRESENT HOME, HOW DID YOU MOVE ALL THE THINGS YOU BROUGHT WITH YOU? (DOUBLE COUNTING*)

RESPONSE	APARTMENT	SINGLE-FAMILY HOUSING
1. HIRED A MOVING AND STORAGE COMPANY	12.0%	30.2%
2. RENTED A U-HAUL TRUCK OR TRAILER AND MOVED IT MYSELF	46.2%	31.0%
3. USED MY OWN CAR OR TRUCK TO MOVE	18.3%	21.4%
4. BORROWED A VEHICLE FROM FRIEND OR RELATIVE	17.9%	10.3%
5. EMPLOYER HIRED A MOVING AND STORAGE COMPANY TO MOVE MY THINGS	1.2%	11.9%
TOTAL	100.0%	100.0%

*A household may have employed two or more methods in moving.

We can see from the survey results that only 12% of the apartment residents hired a moving and storage company, as opposed to 30% of the single-family households. Even including the households where the employer pays for moving and storage the total moving and storage company market segment accounts for only 13.2% to approximately 42.1% of the moving market. The do-it-yourself mover thus accounts for approximately 83% of all apartment movers in the market area survey.

To identify how to reach the potential user profile, the apartment residents who move and move frequently, we can also turn to the survey. Survey data indicated that the Yellow Pages was the largest one single source of information regarding moving companies and U-Haul rental locations. Later on, in evaluating the promotion plan for mini-warehouses, it is important to recognize the Yellow Pages ad as one major part of the mini-warehouse promotion.

WHAT KINDS OF ITEMS ARE STORED IN MINI-WAREHOUSES?

There are three ways of finding out what is stored in mini-warehouses.

(1) Ask existing managers and inspect existing mini-warehouses.
(2) Trade association data.
(3) Survey people in a market area and find out what they have to store.

FRG used all of the above sources including a survey of prospective users.

Household furniture is the largest single category of items typically stored in mini-storage facilities. Our survey indicated that between 40-47% of the demand was for storage of household furniture. When you add household appliances this increases from about 48-62% of the demand.

7-12% of the indicated demand is for boats and trailers.
4-6% of the indicated demand is for sporting goods and recreational equipment.

I would like to add that most of this is for dead storage space, not where the space is used for work on a hobby or repair service or daily use, but strictly for dead storage use.

WHAT ARE THE GREATEST CONCERNS OF MINI-STORAGE WAREHOUSE USERS?

Survey responses reveal overwhelmingly that 60% of the potential users are concerned about security from theft. Safety from water damage is important to about 5-12% of the respondents. Single-family households are concerned about fire damage to a much lesser extent than security from theft. Temperature, humidity and dampness are concerns, but again much less than security from theft.

WHAT IS THE IMPORTANCE OF A STEEL STORAGE BUILDING VS. A MASONRY MINI-WAREHOUSE BUILDING?

This is perhaps one of the most interesting areas of the survey in respect to the perceived safety and security of a storage facility. We asked the question: "Which do you feel would be a safer place to store your property, a steel building or a concrete building?"

Mini-warehouses are built of steel skin over a wood frame, basically a pole barn for those of you who are familiar with pole barns, or they can be built with a steel frame, such as a Butler steel building with a steel skin and steel roof. They can also be built with poured concrete footings, 42" in Michigan, with either concrete block or tilt-up poured concrete walls with precast concrete roof structures or wood roof structures. The interior partitions can be of galvanized corrugated steel or wood frame partitions with drywall, wood frame partitions with galvanized steel or with partitions with particle board. I have seen combinations of both wood building with wood interior partitions, steel buildings with wood interior partitions, masonry buildings with wood interior partitions or masonry buildings with steel interior partitions. Which is best is best answered by the consumer.

WHAT DO CONSUMERS SAY?

TABLE R

QUESTION #25:   WHICH DO YOU FEEL WOULD BE A SAFER PLACE TO STORE YOUR PROPERTY?

RESPONSE	APARTMENT	SINGLE-FAMILY
1. A STEEL BUILDING	8.3%	11.3%
2. A CONCRETE BUILDING	29.8%	30.9%
3. MAKES NO DIFFERENCE	62.0%	57.7%
TOTAL	100.0%	100.0%

About 8% preferred the steel building as a safer place to store their property. A concrete building was favored by about 30% of the apartment residents; however, 62% of the apartment residents say it doesn't make any difference whether it's built of steel or concrete.

The importance of this survey finding is that you can build a lower cost facility and still provide safe storage space.

HOW CAN THE SECURITY BE PROVIDED?

The security which the users of mini-warehouses expect and require can be provided in several ways:

(1) A completely fenced facility,

(2) Well lighted facility,

(3) An onsite manager, manager's office and onsite manager's apartment for 24-hour security of the premises.

In several instances, in facilities with which we are familiar, two onsite manager's apartments had been offered.

HOW CAN THE INDIVIDUAL UNIT MIX BE MEASURED AGAINST THE MARKET DEMAND?

(1) Review Existing Experience

The successful developers of existing mini-warehouses who have monitored rent-up in several locations have been able to identify the best unit mix. After basing initial mix upon judgment and previous experience the monthly rent-up is monitored for each size of unit. Learn how rapidly the 5'x5' units fill compared with the 10'x10' units compared with the 10'x15' units. When all of the 5'x5' units are filled the demand would shift to filling in the next largest size unit. This would indicate a shortage of the 5'x5' units.

(2) Survey Potential Demand

If there are no mini-warehouses in the market area or perhaps only one or two smaller local facilities which can't be used as a guide to set a competitive standard, it is possible to estimate the demand for mini-warehouse unit mix using survey research.

In FRG's resident survey in Washtenaw County, Michigan we used the question: "HOW MUCH STORAGE SPACE WOULD YOU NEED TO STORE THE ITEMS YOU WISH TO STORE?" We then listed the various unit sizes. This was in a market where many people were not aware of mini-warehouses but had some idea of what amount of space they might need for the items they now needed to store.

MINI-WAREHOUSE LOCATION CRITERIA

1. TOTAL POPULATION IN URBANIZED AREA

    --Total demand may range from 1 to 1.5 feet of space per person in total
    urban population. (An urban area of 100,000 would indicate a total de-
    mand of 100,000 to 150,000 square feet of mini-storage space.)

2. TOTAL POPULATION WITHIN PRIMARY TRADE AREA

    --Total demand based upon population within trade area of 3 to 5 miles.
    Census tract maps and census tract data provide
    (A 3-mile trade area population of 30,000 would indicate a potential
    demand of 30,000 to 45,000 square feet of space.)
    (A 5-mile trade area population of 90,000 would indicate a potential
    demand of 90,000 to 135,000 square feet of space.)

3. HIGH CONCENTRATION OF RENTAL HOUSEHOLDS

    --User profile consists of rental households.
    (Census data used for trade area also provides information on renter or
    owner occupancy.)

4. TURNOVER RATE OF 20% OR MORE (IF DATA AVAILABLE)

    --Housing moves generate mini-storage demand.
    (Telephone or other utility connections indicate total annual turnover.)

5. HIGHLY VISIBLE SELF-ADVERTISING SITE

    --Visibility appears more important than accessibility.
    (Interstate highway and bypass exposure is helpful, but not essential.)

6. RELATIVELY HIGH TRAFFIC COUNT

    --Local traffic counts in front of and adjacent to site may be more impor-
    tant than interstate highway traffic counts.

7. RESIDENTIAL, COMMERCIAL OR LIGHT INDUSTRIAL AREA

    --A neighborhood attractive to residential users rather than a heavy
    industrial area.

MINI-WAREHOUSE SITE CRITERIA

1. ### SITE SIZE

    Range 2-6 acres. Typical site is 2½-3½ acres.

2. ### MAXIMUM SITE COVERAGE

    Maximum site coverage approximately 40% of gross site (depends upon zoning).

    e.g. A 2-acre site would allow approximately a 35,000 square foot maximum size facility.

    $$43,560 \times 2 \text{ acres} = 87,120 \text{ square feet}$$
    $$87,120 \times 40\% = 34,848 \text{ square feet}$$

3. ### ZONING

    Light industrial or commercial zonings is typical. Heavily industrial districts are generally undesirable for residential storage use as apartment owners and homeowners do not like to go into industrial neighborhoods, particularly at night.

    One community has allowed residential storage only to be located in a multiple-family zoning area.

4. ### SEWER AND WATER REQUIREMENTS

    Mini-warehouses have been built with well and septic systems as well as public utilities. Many developers consider the public water essential for fire protection to help reduce insurance rates.

    Storm drainage is perhaps one of the major problem areas for mini-warehouses. With the lot site covered with asphalt and roof area there is a considerable amount of water runoff. Retention ponds onsite or public storm sewer drainage are usually necessary.

5. ### ECONOMIC CONSIDERATIONS

MIMIMUM FACILITY SIZE   In order to support a first-class mini-warehouse facility an onsite manager's office and apartment is a requirement. In order to maintain the operating expense ration with a manager's salary and apartment it is necessary to have a large enough facility to support the onsite manager. Based upon typical costs of construction and the operating expenses the minimum size for economic facility may be as low as 35,000 square feet in some locations but could be higher in other urban communities which have higher land costs, higher storm sewer costs, higher building costs and higher wage costs for managers.

MAXIMUM FACILITY IZE   What is the maximum size operation for an economic mini-warehouse? While I understand there are some mini-warehouses over 100,000 square feet, most of the mini-warehouses are in the 40-60,000 square feet range with the typical being approximately 50,000 square feet.

TABLE OF CONTENTS

CERTIFICATION

EXPERIENCE AND QUALIFICATIONS

SUBJECT LOCATION AND TRAFFIC MAP

FEASIBILITY RESEARCH GROUP LTD.

SITE PLAN
_____

SO MINI STORAGE

I-94

BUSINESS LOOP
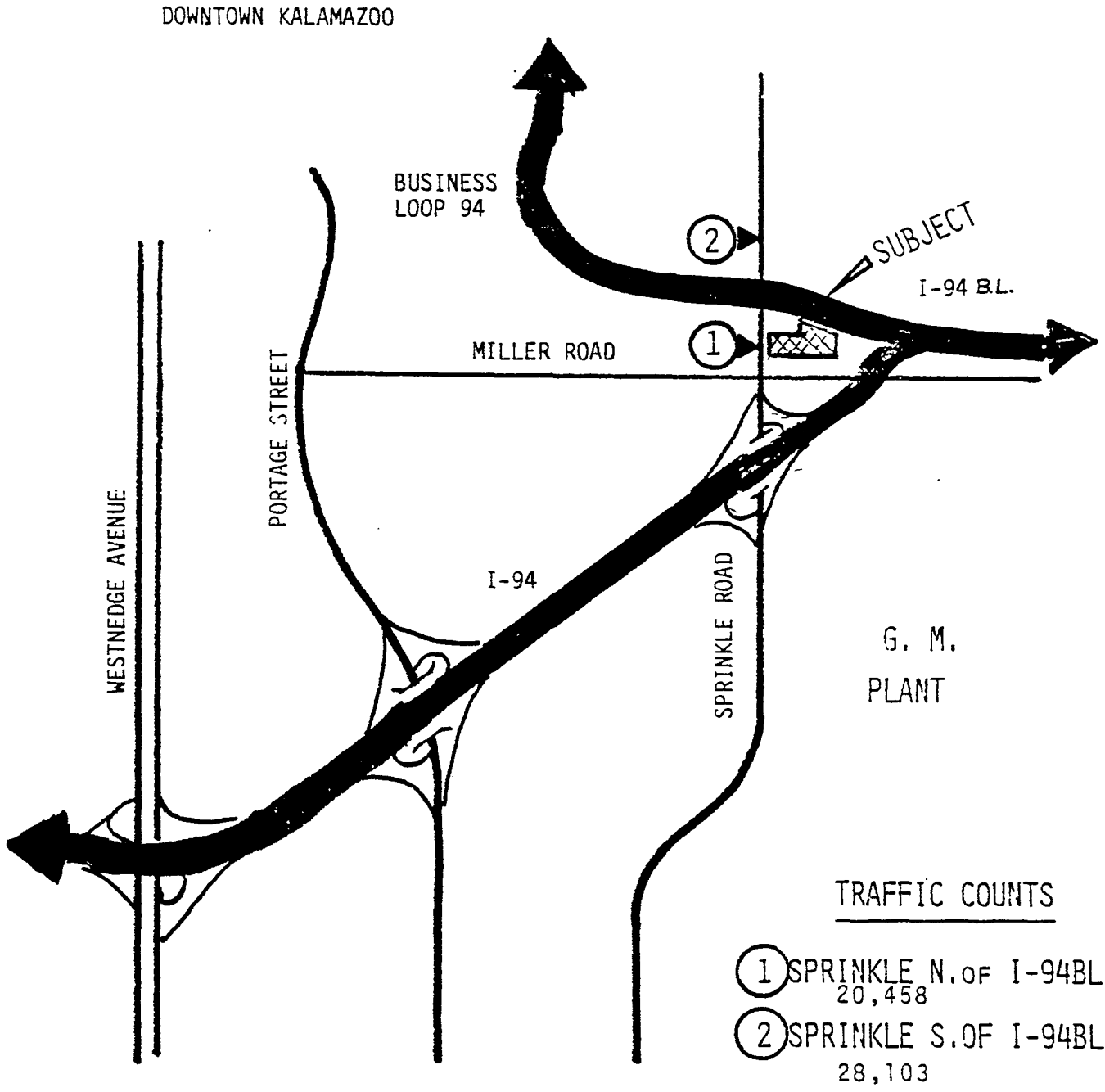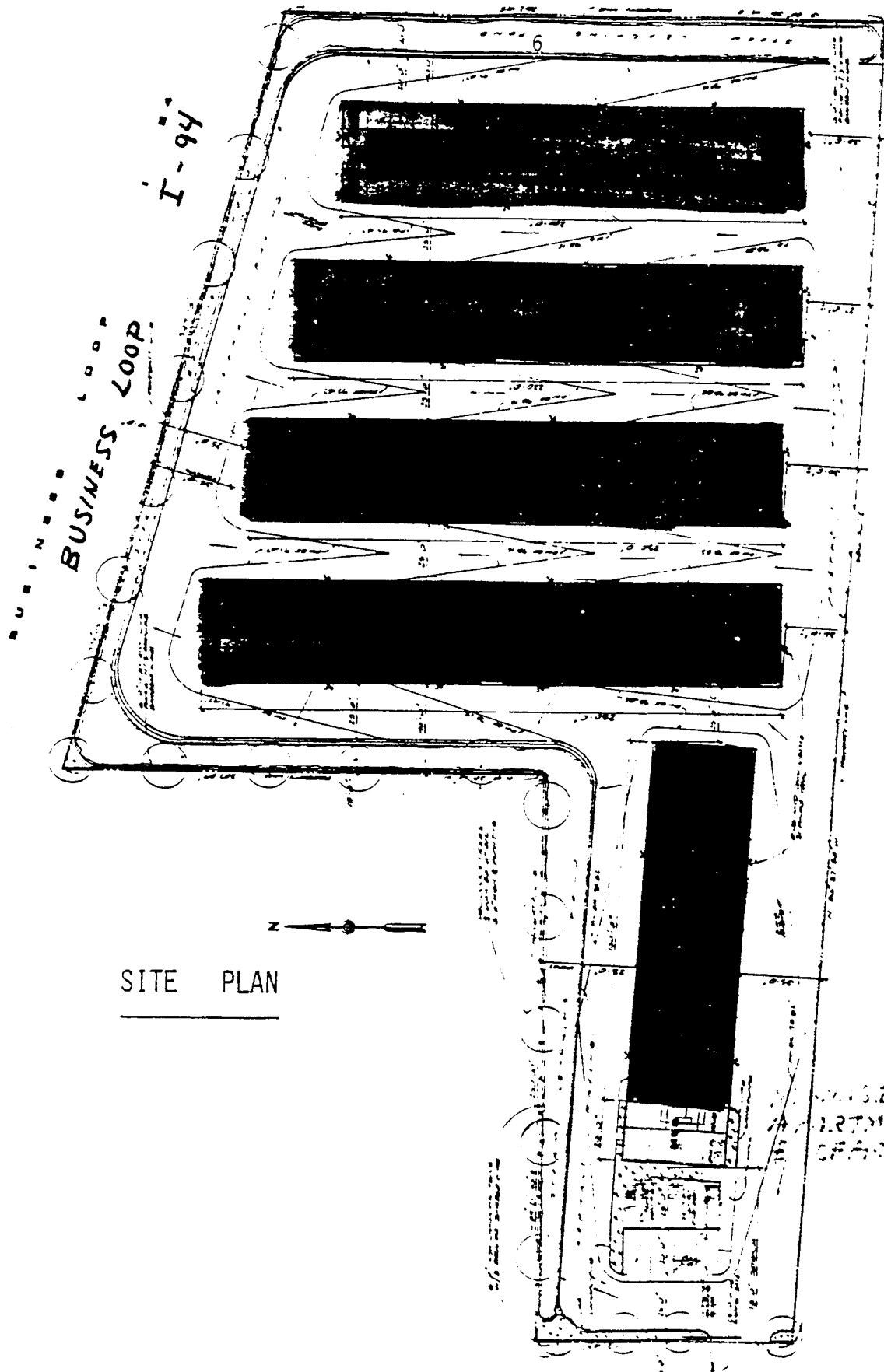
SITE PLAN

TOTAL   554 Units

BLDG AREA 47,700

OFFICE/APT 1,170

TOTAL   48,870

SPRINKLE RD

FEASIBILITY   RESEARCH   GROUP

MARKET FEASIBILITY ANALYSIS
FOR MINI-WAREHOUSE DEVELOPMENT

OBJECTIVES

The objectives of the following market analysis are:

(1) To provide the reader with a picture of the underlined overall market potential for mini-warehouse development in Kalamazoo, Michigan.

> *(e.g. How many potential mini-warehouses and how many total square feet of mini-warehouse development will the Kalamazoo market support?)*

(2) To provide a projection of the potential mini-warehouse demand at a specific site.

> *(e.g. How many square feet of space will the market support in the subject trade area?)*

(3) To measure the probable impact of existing and potential competition on the proposed subject mini-warehouse.

> *(e.g. How much (if any) potential business within the subject trade area could be lost to competition?)*

OVERALL MARKET POTENTIAL FOR KALAMAZOO MARKET

UNIT OF
MEASURE

The unit of measure is square feet of mini-warehouse space per person.

Previous market analysis in the southwestern U.S. by Bill Aard Associates revealed an overall demand projection of 1 to 1.5 square feet of mini-warehouse space for each person in the overall population. Mature markets may support 2 square feet per person but Kalamazoo is only in the early stages of development.

MARKET
POPULATION

The total population of the Kalamazoo market (SMSA) totals 201,550 as of 1970. For the purpose of this market analysis we have used the urbanized area population of 152,083 as a basis for analysis.

KALAMAZOO COUNTY (SMSA)	201,550*
KALAMAZOO URBANIZED AREAS	152,083*
KALAMAZOO CITY	85,555*
PORTAGE CITY	33,590*

The urbanized area as of 1970 <u>understates</u> the 1978 population but includes Comstock Township and other urbanized township areas outside the cities of Kalamazoo and Portage.

BASIC
DEMAND

The basic overall mini-warehouse demand projection is 152,000 to 228,000 total square feet.

CONSERVATIVE

152,083
x   1 square foot

152,083 call
152,000 square feet

PROBABLE

152,083
x   1.5 square feet

228,125 call
228,000 square feet

Assuming a typical mini-warehouse development of about 50,000 square feet, a total of three to five mini-warehouses could be supported by the Kalamazoo urbanized market area.

$$\frac{152,000 \text{ square feet}}{50,000 \text{ square feet}} = \frac{3.04}{\text{call } 3} \qquad \frac{228,000 \text{ square feet}}{50,000 \text{ square feet}} = \frac{4.56}{\text{call } 5}$$

TOTAL
MARKET
POTENTIAL

Based upon the above analysis the Kalamazoo urban area can support:

·Three to five mini-warehouses of $\pm$50,000 square feet

·152,000 to 228,000 square feet of mini-storage space

*Source: 1970 U.S. Census

*F*ᴇᴀꜱɪʙɪʟɪᴛʏ   *R*ᴇꜱᴇᴀʀᴄʜ   *G*ʀᴏᴜᴘ

POTENTIAL DEMAND AT SUBJECT SITE

LOCATION: 2135 Sprinkle Road corner I-94 Business Loop, Kalamazoo (Comstock Township), Michigan.

TRADE AREA: Experience in the western U.S. as also verified in Washtenaw County (Ann Arbor market), Michigan indicates that the majority of mini-warehouse users live within three to five miles of a mini-warehouse site.

SUBJECT
POTENTIAL: Compilation of the census tracts within three to five miles of
MARKET   the subject site reveals the following potential demand:

DISTANCE:	3-MILE TRADE AREA		5-MILE TRADE AREA	
POPULATION:	41,688	41,688 *	104,581	104,581 *
DEMAND:	x1 SQ FT	x1.5 SQ FT	x1 SQ FT	x1.5 SQ FT
TOTAL:	41,688 SQ FT	62,532 SQ FT	104,581 SQ FT	156,872 SQ FT

TRADE AREA: The subject trade area can adequately support the proposed sub-
POTENTIAL   ject mini-warehouse.

CONSERVATIVE POTENTIAL	PROPOSED	PROBABLE POTENTIAL
41,688 to 62,532 SQ FT MINI-STORAGE	47,700 SQ FT MINI-STORAGE	104,581 to 156,872 MINI-STORAGE

* SOURCE: 1970 U. S. Census (see Table A for Trade Area analysis
         of 1,2,3,4, and 5 mile radius of subject site.)

T A B L E   A

POTENTIAL MARKET WITHIN 1 MILE RADIUS OF SITE:

# PEOPLE	4,544	
# HOUSEHOLDS		
SINGLE FAMILY	1,297	89 %
RENTAL***	168	11
TOTAL HOUSEHOLDS	1,465	100 %

POTENTIAL MARKET WITHIN 2 MILE RADIUS OF SITE:

# PEOPLE	20,792	
# HOUSEHOLDS		
SINGLE FAMILY	5,271	73 %
RENTAL	1,963	27
TOTAL HOUSEHOLDS	7,234	100 %

POTENTIAL MARKET WITHIN 3 MILE RADIUS OF SITE:

# PEOPLE	41,688	
# HOUSEHOLDS		
SINGLE FAMILY	10,491	73 %
RENTAL	3,830	27
TOTAL HOUSEHOLDS	14,321	100 %

POTENTIAL MARKET WITHIN 4 MILE RADIUS OF SITE:

    # PEOPLE   77,428

    # HOUSEHOLDS
        SINGLE FAMILY   18,272 69 %
        RENTAL   8,038 31
            TOTAL HOUSEHOLDS   26,310 100 %

POTENTIAL MARKET WITHIN 5 MILE RADIUS OF SITE:

    # PEOPLE   104,581

    # HOUSEHOLDS
        SINGLE FAMILY   24,584 70 %
        RENTAL   10,340 30
            TOTAL HOUSEHOLDS   34,924 100 %

* Source: 1970 U.S. CENSUS
**Includes mobile homes
*** Includes structures with 2 or more units

CENSUS TRACTS IN THE KALAMAZOO, MICH. SMSA

TRADE AREA MAP OF SUBJECT AND COMPETITION

POTENTIAL DEMAND AT SUBJECT SITE: 3 MILES 5 MILES
POPULATION POPULATION
41,688 104,581
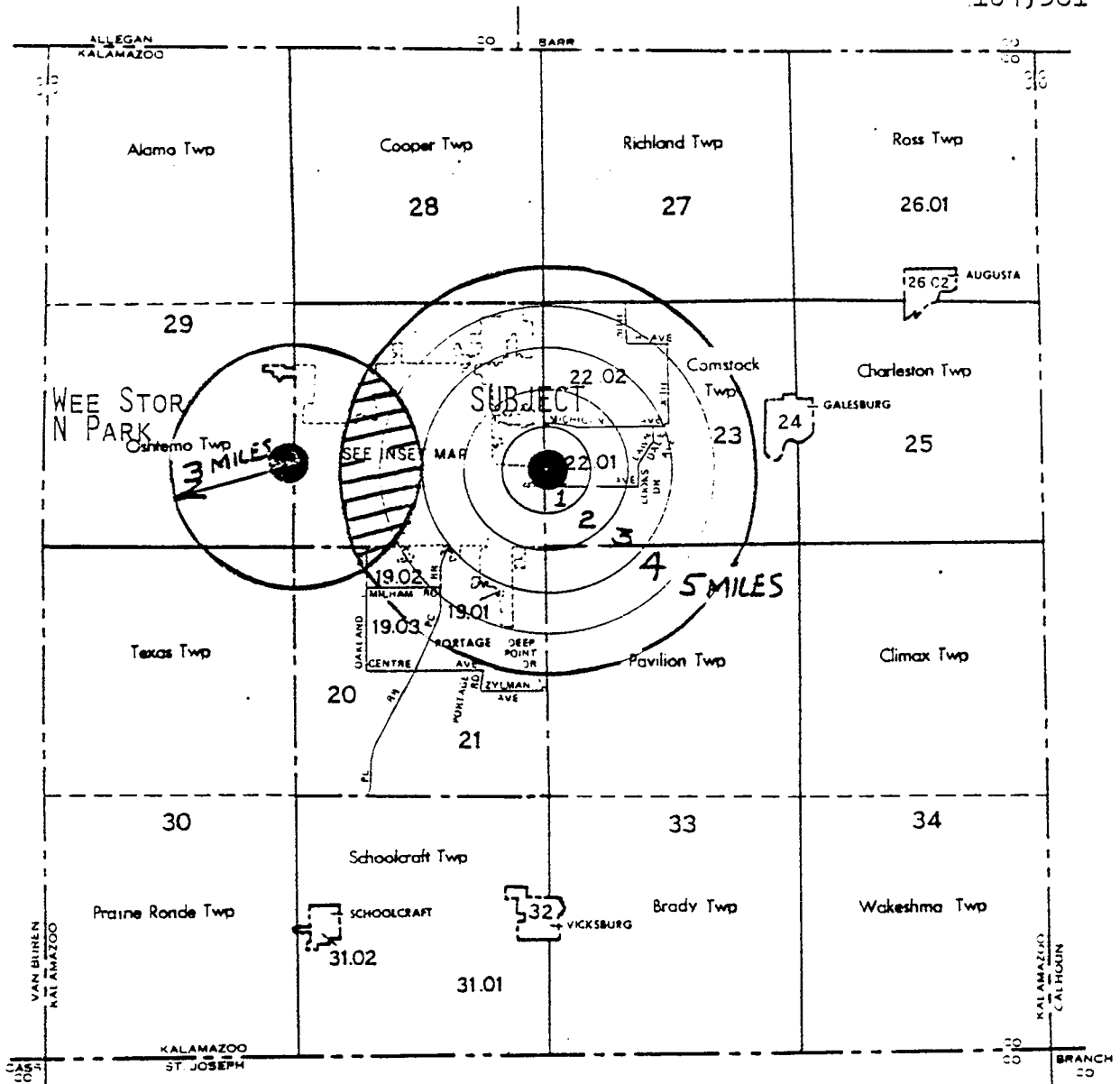
BOUNDARY SYMBOLS

Census Tract Boundaries:
County
Corporate Limit
Minor Civil Division
Other Tracts

Boundaries Which Are Not Tracts
Minor Civil Division

POTENTIAL DEMAND LOST TO COMPETITION
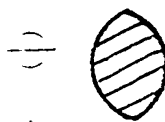
POPULATION WITHIN SUBJECT 5 MILE ZONE AND WITHIN 3 MILES OF WEE STOR N PARK ON 11TH ST. 16,196

1970 Census of Population and Housing
CENSUS TRACTS
KALAMAZOO, MICH
STANDARD METROPOLITAN STATISTICAL AREA
Final Report PHC(1)-98

U.S. DEPARTMENT OF COMMERCE

CENSUS TRACTS IN THE KALAMAZOO, MICH. SMSA
INSET MAP - KALAMAZOO AND VICINITY

$F_{EASIBILITY}$ $R_{ESEARCH}$ G_{ROUP}

THE COMPETITION

EXISTING

One existing competitor is located west of Kalamazoo. The Wee Stor-N-Park mini-warehouse on 11th Street is outside the subject's three-mile trade area. The subject's five-mile trade area, however, overlaps the competitor's three-mile trade area. (See Competition Maps on pages 12, 13 and 15.) We have assumed the subject will lose those potential customers in the subject's five-mile trade area only where this overlap occurs. The U-Haul mini-storage at 1004 Portage is considered to be too small to be significant competition. The two small mini-storage buildings on South Sprinkle Road and the one building on Lovers' Lane, both located in Portage, are marginal competition.

POTENTIAL COMPETITION

Our investigation reveals that two potential developers are looking for sites on the west and south sides of Kalamazoo but no sites are known to be acquired with site plans approved for mini-warehouse use. Contact was made with both the city and county Planning Departments, but no rezoning requests or pending site plans for mini-storage facilities were discovered.

COMPETITION IMPACT

Competition with the subject's three-mile trade area could have a negative impact but there is no existing competition within three miles. If competition does develop within the three-mile trade area the subject's management and promotion could lessen the impact of future competition. The five-mile trade area is large enough to support two 50,000 square foot mini-warehouse developments, using conservative projections. Recognizing even this potential competition the impact on the subject is not likely to reduce the subject occupancy level level below a normal vacancy level.

The best defense against potential competition is selecting a prime site with high visibility, a high traffic count and close proximity to the potential user population.

The proposed subject facility is located adjacent to the easterly edge of the city of Kalamazoo on a highly visible site with exposure to both Sprinkle Road and the I-94 Business Loop. The 24-hour traffic count on Sprinkle Road ranges from 20,458 (south of I-94) to 28,103 (north of I-94 Business Loop). Except for the potential loss of customers located near the Western Michigan University campus, which is closer to Wee Stor-N-Park location, the subject site, in our opinion, has a better location than all four existing Kalamazoo area mini-storage sites.

Analysis of the overlapping trade area with Wee Stor indicates 16,000 to 24,000 square feet of potential demand should be deducted. To arrive at the final estimated storage space demand at the subject site the total square footage of the three existing small storage companies should also be deducted.

COMPETITION MAP: LOCATION AND SQ.FT.SIZE
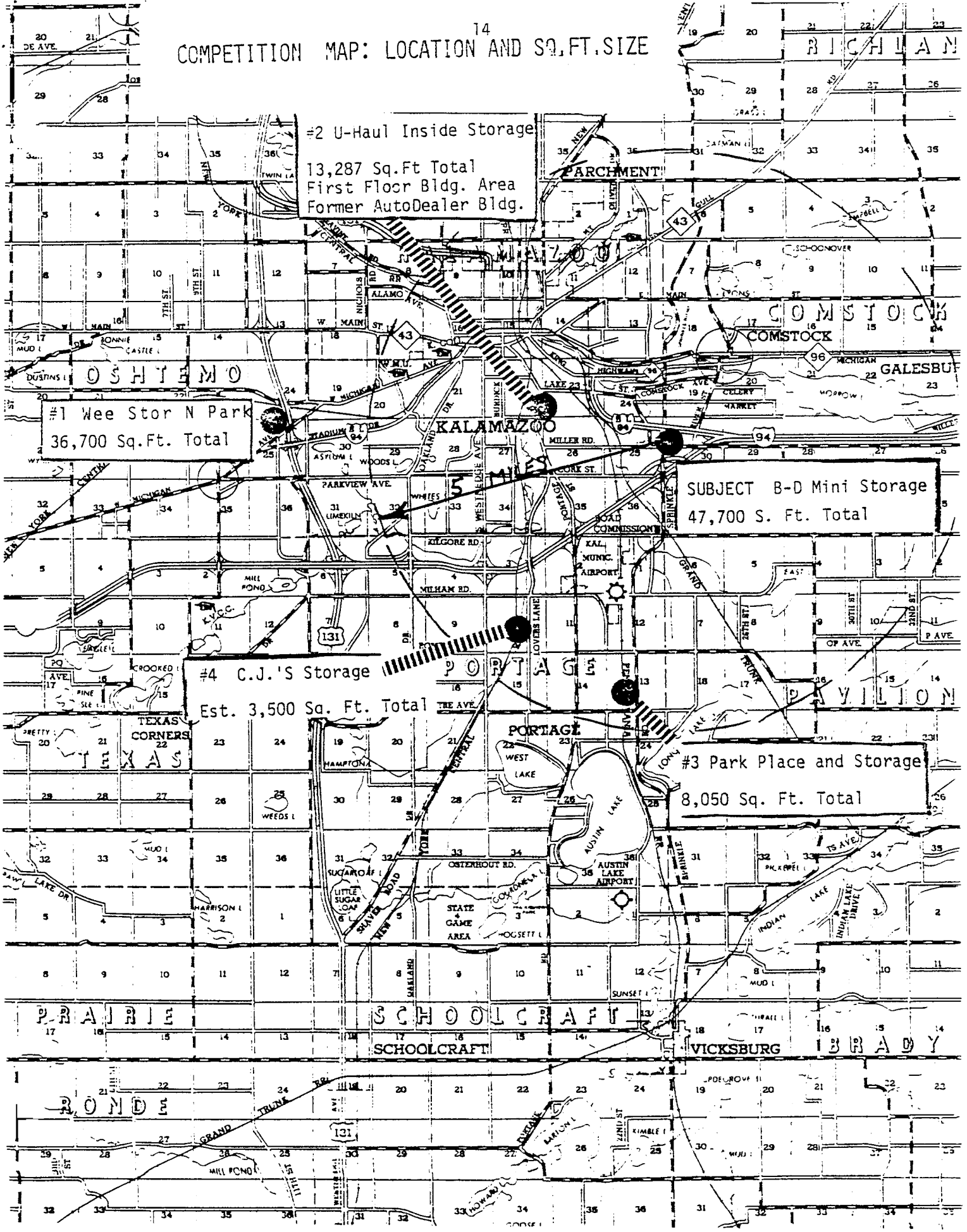
#2 U-Haul Inside Storage

13,287 Sq.Ft Total
First Floor Bldg. Area
Former AutoDealer Bldg.

#1 Wee Stor N Park
36,700 Sq. Ft. Total

SUBJECT B-D Mini Storage
47,700 S. Ft. Total

#4 C.J.'S Storage

Est. 3,500 Sq. Ft. Total

#3 Park Place and Storage

8,050 Sq. Ft. Total

*F*EASIBILITY *R*ESEARCH *G*ROUP

MINI-WAREHOUSE MARKET ANALYSIS
POTENTIAL COMPETITION IMPACT SUMMARY

		1 SQ. FT.	1.5 SQ.FT.	
1.	TOTAL DEMAND IN SUBJECT TRADE AREA:	104,581 *to*	156,872	SQUARE FEET

2. *LESS* EXISTING COMPETITION IN TRADE AREA:

		1 SQ. FT.	1.5 SQ.FT.	
#1 Wee Stor N.Park *(Partial Overlap)*		16,000 *to*	24,000	SQUARE FEET
#2 U-Haul	(Downtown)	13,287	13,287	
#3 Park Place and Storage	(Portage)	8,050	8,050	
#4 C.J.'s Storage	(Portage)	3,500	3,500	

3. INDICATED DEMAND FOR SUBJECT (1-2) = 63,744 *to* 108,035 ◁ SQUARE FEET

4. PROPOSED SUBJECT SPACE: 47,700 *to* 47,700 ◁ SQUARE FEET

5. EXCESS DEMAND   (3-4) = 16,044 *to* 60,335 SQUARE FEET

CONCLUSION: *The largest existing competitor #1 would only absorb excess demand.*
The three small facilities are within the subjects 5 mile trade
area, but have less desirable sites and/or lower traffic counts.
There is excess demand for 16,000 to 60,000 Sq.Ft. more than subject.

SUBJECT VS. COMPETITION RANKING

(EQUAL =)   (SUBJECT IS SUPERIOR +)   (SUBJECT IS INFERIOR -)

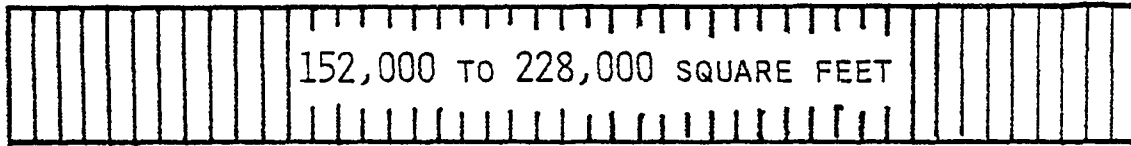|	SUBJECT *B-D Mini*	COMPETITION *#1 Wee Stor*	COMPETITION *#2 U-Haul*	COMPETITION *#3 Park Place*
LOCATION	+ *Sprinkle*	*11th St(west)*	*PortageSt(Dntn)*	*Sprinkle(Portge)*
SITE VISIBILITY	+ *Excellent*	*Good/Fair*	*Good*	*Good/Fair*
TRAFFIC COUNT	+ *20-28000*	*3000*	*N.A.*	*10,500*
BUSINESS USE *Estimate*	+ *25-30%*	*15%*	*5%*	*5%*
RESIDENTIAL USE	*75-70%*	*85%*	*95%*	*95%*
UNIT SIZES	+ *12*	*8*	*4*	*4*
PRICE	*$9.75-69.75*	*$9-80*	*$16-45*	*$30-50*
MANAGEMENT (ONSITE)	*Full time*	*Part time*	*Full time*	*Part time*
MANAGEMENT (OFFSITE)	*Professional*	*Unknown*	*Franchise*	*Owner/Mgr.*
PROMOTION	*Experienced*	*Yellow Pgs&?*	*Thru U-Haul*	*Limited*
OVERALL RANK	*First*	*Second*	*Third*	*Fourth*

CONCLUSION: *The proposed B-D Mini Storage facility is superior to the*
existing competition in location, site visibility, traffic
count in front of site, and has a potentially higher business
user demand. The unit sizes offered increase the competitive
edge of the subject over existing and potential competition.

The monthly rentals are competitive and should compete very
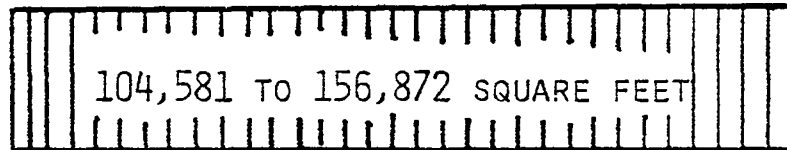*effectively with both mini-storage and moving company storage.*

Full time on site management with off site back up for monitoring
promotion and performance indicate a potential first class facility.

OVERVIEW
MINI-STORAGE MARKET DEMAND

TOTAL KALAMAZOO MARKET DEMAND

152,000 TO 228,000 SQUARE FEET

MARKET DEMAND IN
SUBJECT 5-MILE TRADE AREA
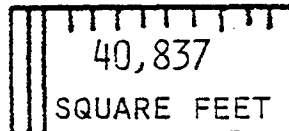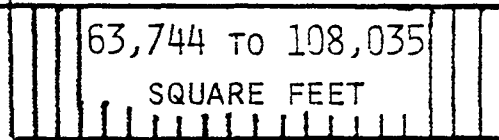
104,581 TO 156,872 SQUARE FEET

LESS
COMPETITION

40,837
SQUARE FEET

DEMAND FOR SUBJECT

63,744 TO 108,035
SQUARE FEET

PROPOSED
SUBJECT
SPACE

47,700
SQ. FT

EXCESS
DEMAND

16,044 TO
60,335 SQ. FT.

FEASIBILITY RESEARCH GROUP LTD.
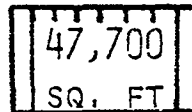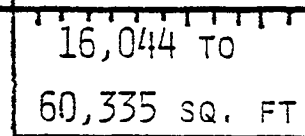
CONTEMPORARY REAL ESTATE APPRAISAL & FEASIBILITY METHODS

july 18-23, 1976

This seminar is an intensive introduction to principles, concepts, and applications which are taught as the core of the University of Wisconsin graduate program in Appraisal & Investment Analysis. These ideas may contradict or expand appraisal doctrine and techniques advocated by the various professional appraisal societies. THUS THIS COURSE IS NOT APPROVED OR SPONSORED BY ANY PROFESSIONAL REAL ESTATE CERTIFICATION GROUP. IT DOES NOT CARRY CREDIT TOWARD ANY PROFESSIONAL DESIGNATION OR REQUIREMENT. Nevertheless, its techniques are practical and tested in appraisal and investment counseling and will expand the professional's ability to serve the needs of his client on matters requiring systematic real estate analysis.

Instructors

Prof. James A. Graaskamp, SREA. CRE, Chairman - Department of Real Estate & Urban Land Economics

Prof. James C. Canestaro, a Registered Architect and City Planner who teaches the Basic Appraisal, Property Development, and Construction Management courses in the UW School of Business

Prof. Harry P. Sharp, Prof. of Sociology, Director of UW Survey Research Institute

Prof. Dan Willard, Institute for Environmental Studies

James R. DeLisle, Marketing and Financial Analyst, Ph.D. candidate, Real Estate and Urban Land Economics

Franz E. Fischer, Production and Marketing Analyst, Ph.D. candidate, Real Estate and Urban Land Economics

Michael L. Robbins, Environmental and Systems Analyst, Ph.D. candidate, Civil and Environmental Engineering

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CONTEMPORARY REAL ESTATE APPRAISAL & FEASIBILITY METHODS

Seminar - Lowell Hall Center
July 18-23, 1976

SUNDAY

4:00-6:00 p.m.   Registration and Cocktails

6:00-7:00   Dinner

7:00-8:30   Introductory Lecture (Graaskamp)

1. Relationship between feasibility and appraisal analysis
2. Current redefinition of highest and best use

MONDAY

8:30-10:15 a.m.   Critique of Traditional Appraisal Methods

1. Summary of Ratcliff critique
2. Concept of most probable sales price

10:15-10:30   Coffee Break

10:30-12:00   Most Probable Use, Most Probable Buyer, and Most Probable Price (Graaskamp)

1. General procedure in application
2. Implications for organization of appraisal report format

12:00-1:00   Lunch

1:00-3:00 p.m.   Site Analysis (Robbins & Canestero)

1. Static attributes
2. Legal Attributes
3. Definition of building envelope alternatives
4. Linkage attributes
5. Dynamic attributes
6. Definition of alternative marketable uses

3:00-3:15   Coke Break

3:15-4:30   Best Use Selection Matrix (Robbins & Canestero)

1. Comparison of alternative uses compatible with static, legal, linkage, and dynamic attributes
2. Alternative profit centers for alternative uses
3. Selection of most fitting use
4. Identification of most probable buyer group

4:30-7:00   Recreation and Dinner Break

7:00-8:30   Environmental Constraints on Future Use Option (Willard)

TUESDAY

8:30-10:15 a.m.   Basic Statistics for Appraisers (Knitter)

1. Concept of averages
2. Concept of normal distribution
3. Concept of standard error and dispersion

10:15-10:30   Coffee Break

10:30-12:00   Statistics Continued (Knitter)

1. Simple linear regression
2. Explanation of MKTCOMP

12:00-1:00   Lunch

1:00-3:00 p.m.   Application of Statistics to Market Comparison Approach (Graaskamp)

1. Simple averages
2. Appraisal of single family home using linear regression of market comparison scoring

3:00-3:15   Coke Break

3:15-4:30   Linear Approach Applied to Vacant Land (Graaskamp)

1. Defining capacity for saleable units
2. Definition for absorption and capture rates
3. Definition of bail-out price
4. Linear regression comparison

4:30-7:00   Dinner and Recreation

7:00-8:30   Workshop for Statistical Exercises

WEDNESDAY

8:30-10:15   Market Survey for Buyer-User Profiles in Feasibility and Appraisal (Graaskamp & Sharpe)

10:15-10:30   Coffee Break

10:30-12:00   Telephone Survey Techniques (Sharpe)

1. Sampling
2. Drafting questions
3. Interview techniques
4. Organizing survey data for presentation

12:00-1:00   Lunch

1:00-3:00 p.m.   Introduction to Investors Simulations (Graaskamp & DeLisle)

1. Evolution of present value techniques
2. Simple cash flow problem exercise
3. Front door - back door format

3:00-3:15   Coke Break

3:15-4:30   Basic After Tax Cash Flow Model (Graaskamp
                                              & DeLisle)
             1. Assumptions required
             2. Mini-Mod computer output
             3. Ratio analysis

4:30-7:00   Recreation and Dinner Break

7:00-8:30   Introduction to Computer Terminal Appraisal
             Systems (Robbins & Fischer)

             1. Ellwood
             2. IMV model

THURSDAY

8:30-10:15 a.m. Case Demonstration of Best Use and Appraisal
             of Obsolete Building (Canestero & Graaskamp)

             1. Class provided with data bank,
                photo summary
             2. Class determines reuse from physical
                analysis
             3. Class determines most probable buyer

10:15-10:30 Coffee Break

10:30-12:00 Class Teams Prepare Initial Valuation
             Estimate (Graaskamp)

             1. Linear Regression estimate
             2. Investment value estimate

12:00-1:00   Lunch

1:00-3:00 p.m. Report Writing Techniques (Hanson)

             1. Definition of Audience
             2. Structuring the argument
             3. Data presentation

3:00-3:15   Coke Break

3:15-4:30   Report Writing Techniques Continued (Hanson)

             1. Writing styles
             2. Graphic materials for multiple copies

             Evening is Open

FRIDAY

8:30-10:15 a.m. Appraisal, Feasibility, or Counseling?
                                  (Graaskamp)

             1. Defining the clients problem
             2. Defining the professional team

10:15-10:30 Coffee Break

10:30-12:00 Professional Practice Problems (Graaskamp,
                                  Hastings, & Thorne)
             1. Fees
             2. Ethics
             3. Soliciting clients

             Lunch - Meeting Adjourned

CONTEMPORARY REAL ESTATE APPRAISAL & FEASIBILITY METHODS

july 18-23, 1976

real estate program
graduate school of business
university of wisconsin

Real Estate Market Segmentation and Analysis
A Seminar Sponsored by U. of Wis.-Extension
Department of Engineering
THE WISCONSIN CENTER

Office Space Market Segmentation
Instructor: Prof. James A. Graaskamp

I. Initial premises and concepts

A. Free enterprise is the art of creating a temporary monopoly by
    providing a unique solution to a need or resolution of an irritation,
    anxiety, or fear.

B. There is no such thing as an office market, therefore, but rather
    a large variety of special subgroups of office users, each of which
    have unique priorities and linkage requirements.

C. In this light one can evaluate various strategies of marketing office
    space for the degree of control (risk management) each permits of
    the revenue assumptions which convert space-time to money-time:

    1. The overspill theory - aggregate demand and supply
    2. The interception theory - linkage to channeled movement
    3. The piracy theory - capitalizing on irritations
    4. The market control theory - naming the prospect

D. Site in search of a market or market in search of a site.

II. The owner of a site in search of a market enjoys fewer options because
    the attributes of a site and the building have already segmented and
    reduced his marketing alternatives.

A. Static attributes of the site - physical dimensions, access, size,
    shape, A class or B class space

B. Dynamic attributes - behavioral relationships to the site -
    visibility, people flows, background

C. Linkages to demand generators

    1. Space users who primarily visit clients
    2. Space users whose clients primarily visit them

D. Define the competitive trade area of competitive office alternatives
    (Madison case)

E. Testing the implicit assumptions of site and building among potential
    customers for significant misfits (the Chicago case)

III. The case of a market in search of a site

A. What may be the correct unit of sale, rent modular, or method of
    measuring profit among tenants.

    1. Sales per square foot or per office
    2. Revenue per room or per event
    3. Space per doctor or per clinic

B. Related to the revenue unit is identification of who will sign the check to rent or buy:

1. The home office vice-president or the district manager
2. The salesman or his employer
3. The ticket buyer or the promoter of the event

C. Assuming a revenue unit and a customer prospect, name the competitive alternatives.

1. Define and measure the quantity of competitive space
2. Define the attributes of competitive space to determine competitive standards.
3. Analyze the source of customers for competitive space and the marketing strategy employed.

D. To search for the competitive edge, survey the competitive alternative tenants by name:

1. The reverse directory
2. The building directory
3. Determine relocation motivation
4. Determine remaining disatisfactions
5. Determine who is left at the previous locations (the yellow section of the phone book)
6. Determine, where possible, which linkages are primary determinants for which kinds of office space users.
7. Determine compatability of market segments (need for homogeneity or heterogeneity)

E. Survey techniques which are applicable and cheap

1. Direct interview of a representative sample
2. Professional telephone interview survey
3. Direct mail survey to properly constructed mailing list
4. The use of the survey is to set up a series of segmentation ratios and identify preferences which may identify a competitive edge.

IV. Product of market and merchandising research should be both a pre-architectural program and a prospect list.

A. The theme and market target
B. Product size, mix, and price
C. Product features by competitive standard and competitive edge
D. Market potential, capture rate, and elasticity of demand, if any
E. Negative static or dynamic site factors to be neutralized by design
F. Marketing-investment trade-offs

Pages 3-5 not found

Total population for surrounding counties	x .0046	Average Sunday participation rate	x .9	trips per year	1.86	days per trip
+ Three people per room	x 2.5%	conservative capture rate	= 208	rooms per average weekend day		

C. Our first two speakers will suggest how to use aggregate data effectively and how to segment that data to identify a specific consumer group.

D. This afternoon we will explore methods for profiling the needs of particular consumer groups and segmenting the supply side available as alternatives for a particular consumer group.

E. Segmentation of the supply side is interested in defining a special subset of competitive alternatives, then measuring the amount of supply, and finally identification of a supply gap which could be served.

   1. Define the competitive standard.
   2. Identify a competitive edge.

F. The ultimate objective of market segmentation is to take the risk out of the key variable to development success by defining:

   1. A consumer with an unmet need
   2. The number of those consumers in the market
   3. The primary motivations of those consumers
   4. The means of those consumers to provide effective demand for a product
   5. The location, product, and competitive edge which will permit monopoly pricing and an acceptable capture rate

FOURTH ANNUAL CORPORATE REAL ESTATE MANAGEMENT PROGRAM

Univeristy of Wisconsin Extension
Wisconsin Center Building
Madison, Wisconsin

Professional Concepts & Personnel
James A. Graaskamp
Chairman, Real Estate & Urban Economics

I. Real Estate at the University of Wisconsin

A. School of Business offers a full program in real estate with
a five man department.

B. Real estate is a multi-disciplinary discipline and faculty reflect
this diversity:

1. One ex-developer
2. One architect/city planner
3. One lawyer
4. One traditional land economist
5. One land and recreational econometrician

C. In addition students must take the non-business electives in:

1. Civil engineering
2. Air photo and remote sensing
3. Landscape and environmental design
4. Urban and regional planning
5. Political science
6. Law school

D. Graduate student research for corporations has included:

1. Land development analysis for Kimberly Clark
2. Land inventory analysis for Consolidated Paper
3. Surplus plant disposition analysis
4. Real estate tax appeal preparation
5. Computer systems for real estate management

E. A student at Wisconsin can receive a BS in Construction Administration,
a BBA with a real estate major, an MBA in General Management with
real estate emphasis, an MS in Real Estate Investment Analysis,
or a Ph.D. in Real Estate & Urban Land Economics.

F. Our Construction Administration majors and MS students are
particularly well trained and immediately productive for positions
in corporate real estate and many have gone that route, almost
entirely by accident since corporate personnel offices don't
know they exist.

G. An interesting myth is a theory in corporate real estate management
that one must steal an appraiser or broker from another firm who
is experienced.

H. An alternative myth is that it is easier to train anybody within the corporation to be a corporate real estate officer by sending him to a few institutes to learn while he earns.

II. Some basic definitions

A. Real estate is artifically delineated space with a dimension in time and a fixed reference point on the earths surface

B. The real estate process is the interface of land as a public utility, a social activity with space need, and improvements representing capital and services. Improvements evolve to delineate space and reduce the irritation between natural man and natural landscape.

C. The real estate business is the conversion of space-time requirements to money-time by providing money and services. It is a service industry which uses some very big hardware.

D. There are no irrevocable rights inherent land; only its cash equivalent is private property.

E. A successful solution to a real estate problem must be judged by the fit or degree of misfit that is achieved between the form of the solution and the context in which it operates - as an ensemble of precise and correct definition of the problem and efficient and rational packaging of a solution.

F. A feasible solution is defined by yours truly as follows:

"A real estate project is 'feasible' when the real estate analyst determines that there is a reasonable likelihood of satisfying explicit objectives when a selected course of action is tested for fit to a context of specific constraints and limited resources."

G. Elements of a total feasibility analysis

1. Strategic objectives and tactics (policies)
2. Market trends and opportunity areas
3. Merchandising targets with monopoly characteristics
4. Legal-political constraints
5. Ethical-esthetic constraints
6. Physical-technical constraints
7. Financial constraints

H. The basic elements also name the professional reports which might be sought:

1. Strategy study: selection of objectives, tactics, and decision criteria
2. Market analysis: economic base studies or other related aggregate data review
3. Merchandising studies: consumer surveys, competitive property analysis, marketability evaluation, etc.
4. Legal studies: opinion on potential legal constraints, model contracts or forms of organization, and political briefs.

     5. Compatability studies of project to community planning, conservation standards, or other public policies.

     6. Engineering, land planning, and architectural studies

     7. Financial studies: economic modeling, capital budgets, present value and discounted cash flow forecasts, rate of return analysis, financial packages.

III. The availability of outside expertise for corporate real estate.

A. Many functions of corporate real estate management are not required with sufficient frequency to justify in-house capability. The real estate manager should be an expert on experts.

    1. Advisory real estate organizations
    2. Professional associations with advisory panels
    3. Individuals with professional designations

B. Real estate advisory organizations tend to be of three types:

    1. Economic consultants - applied land economics
    2. Planners with orientation on design of land use compatible with natural resource
    3. Technical consultants for engineering, traffic, architecture, finance, construction, etc.

C. Beware of firms such as architects who now do economic studies or economic consultants who have captive construction services. Their expansion of services is a sales device to increase the number of profit centers available from a single client.

    1. Beware of extra services under AIA contract
    2. Contracts for specific services of an individual
    3. Negotiate and define issues and methods
    4. Define hourly billing rates against an upset price
    5. Define contract checkpoints which establish percent of completion for contract termination

D. Many professional organizations offer outstanding panels of experts who wil critique your project both at the preliminary and final planning stages. No need to reinvent the wheel.

    1. ULI-the Urban Land Institute
       1200 18th Street, N.W.,
       Washington, D.C. 20036

    2. BOMA - Building Owners and Managers Association International
       224 S. Michigan
       Chicago, Ill. 60604

    3. ICSC - International Council of Shopping Centers
       445 Park Avenue,
       New York, N.Y. 10022

E. Professional designations are extremely difficult to evaluate because the National Association of Realtors (NAR) has pursued an education program with a merit badge syndrome. Disregard all of them with the possible exception of those that follow, ranked in order

of my personal observations. (Each group publishes a directory available free from their association offices.)

1. SREA-Senior Real Estate Analyst - highest ranking in Society of Real Estate Appraisers, 7 South Dearborn Street, Chicago, Illinois 60603. (There are less than six hundred and each must be requalified every five years.)

2. CRE-Counselor in Real Estate-American Society of Real Estate Counselors, 155 East Superior, Chicago, Illinois 60611. (Less than five hundred members; membership by invitation; membership recognizes successful developers or individuals who achieve national recognition for advising clients as contrasted to simply appraising property.)

3. MAI-Member of Appraisal Institute-American Institute of Real Estate Appraisers, 155 E. Superior St., Chicago, Ill. 60611. (Many lenders ignore certified designation with a number below eight hundred or so; designation is comparable to the SRPA designation of the Society of Real Estate Appraisers.)

4. CRI-Commercial Realtor Institute, a division of NAR, is noteworthy as it shows a willingness to master a number of tough courses, well taught, which crunch numbers in some detail.

5. CPM-Certified Property Manager, is a designation of the Property Management Institute, a division of NAR. It operates an excellent educational system and sets qualifications which weed out the sometime property manager. Professors are not allowed unless they take all exams and meet all requirements, so it must be good.

F. In selecting a real estate professional, be sure he is equipped to answer your questions. The appraisers "fair market value" does not answer the question of what you should pay for it and possibly, not what you should ask for it.

1. Weight age, designation, certificate number, and recommendation
2. Pay a worthwhile fee. The good ones are expensive because they're in demand. Be loyal if you want consistently objective results.

IV. Critiquing the Appraisal Report

A. Understand your own need for an appraisal - Does it set an asking price, purchase price, mortgage loan, insurance, or asset allocation, as a result of merger or other accounting problems.

B. Define the audience for the report, you, IRS, lender, judge, your critics, SEC. Then have your attorney define which approach to value that particular audience prefers. (for example SEC has appraisal specifications; see "What the Real Estate Appraiser Should Know About Real Estate Securities". Fred Chippendale. Monograph available from Real Estate Appraisers Institute.)

C. It is then possible to choose appraisers who tend to specialize in that methodology and have the data banks to do it.

1. For example American Appraisal Company has the manpower and the reference material to value a large variety of physical assets

aquired by merger and to convince the IRS of the thoroughness of
the analysis.

    2. For a residential appraisal don't pay $35 to any broker. Pay
$75-$100 to the firm that specializes with an automatic data bank
for the mortgage lenders or check with the mortgage guarantors
to see whom they use in a city where you have considerable manage-
ment transfers etc.

D. Instruct your appraiser as to the definition of value to be used
and understand its editorial implications.

    1. Society of Real Estate Appraiser: "The price which a property
will bring in a competitive market under all conditions requisite
to a fair sale, which would result from negotiations between a
buyer and a seller, each acting prudently, with knowledge, and
without undue stimulus." (SREA, Real Estate Appraisal Principles
and Terminology [Chicago, 1960], p.85).

    2. American Institute of Real Estate Appraisers: "the highest price
estimated in terms of money which a property will bring if ex-
posed for sale in the open market allowing a reasonable time to
find a purchaser who buys with knowledge of all the uses to which
it is adapted and for which it is capable of being used." (AIREA,
Appraisal Terminology and Handbook, 5th Edition [Chicago, 1967],
p.131).

    3. "The most probable price is that selling price which is most likely
to emerge from a transaction involving the subject property if it
were to be exposed for sale in the current market for a reasonable
time at terms of sale which are currently predominant for properties
of the subject type." (Richard U. Ratcliff).

E. Three approachs to value can be included or excluded as appropriate

    1. Market comparison approaches today include:
       a. conventional comparisons
       b. attribute comparisons
       c. linear regression of price to attribute transformation
       d. multiple regression sales comparison

    2. The income approach to value could be:
       a. net income multiplier or cap rate
       b. the Ellwood capitilization rate and resale assumption curve
       c. discounted pre-tax cash flows
       d. after-tax cash flow valuation of equity and mortgage by
computer

    3. The cost approach could use:
       a. advisory service manual
       b. contractors estimate
       c. functional unit average price (per bed, per person, per seat)
       d. observed depreciation including functional and economic
obsolescence
       e. depreciation from market comparison of sales to cost to replace
       f. depreciation by determination of capitilized income value
compared to cost to replace

F. The really sophisticated appraisers who feel a professional obli-
gation to use the best techniques rather than acceptable techniques
have computer terminal capabilities on services like GE Mark III
time sharing or on Tymshare Inc.

    1. Distinguish between models for capital budgeting with rate of
return analysis and appraisal models

    2. Distinguish between using models to establish value or to test
value conclusions of others (ie. tax assesers)

G Limiting conditions and assumptions of the appraisal report which
makes it a fictional scenario for investment.

    1. implicit assumptions
    2. explicit waivers for soils, engineering, zoning, etc.

H. Synthesis of conclusions

    1. weighted averaging
    2. evaluation or rejection on basis of reliability of data
    3. selecting probable method to be used by probable buyer

REAL ESTATE DEVELOPMENT FOR ARCHITECTS, ENGINEERS, & PLANNERS
A Seminar Sponsored by University of Wisconsin-Extension
Department of Engineering
THE WISCONSIN CENTER

Elements of Feasibility Analysis
Instructor: Prof. James A. Graaskamp

I. Basic Concepts and Definitions for Land Use Decisions

A. Real estate is defined as artificially delineated space with a fourth
dimension of time referenced to a fixed point on the face of the earth.
To this space-time abstraction one can add any type of attribute
required to house some form of activity.

B. The real estate process is the dynamic interface of people (cultural
preference expressed through the body politic or individual trans-
actions), upon land, a finite natural resource and public stewardship,
as modified by artifacts and services in a money system to produce
units of space-time with a required set of attributes.

C. These abstract forces are specific vested interests--space users
(society and consumer), a space producer (developer-invester), and
public suppliers of service infrastructure.

D. Each of these three decision actors represent an enterprise, i.e.,
an organized undertaking. Most of these enterprises are cash-cycle
enterprises constrained by a need for solvency, both short and long
term.

E. Real estate enterprise (public or private) is the process of converting
space-time needs to money-time, matching receipts and outlays to
remain solvent.

F. A socially desirable equilibrium occurs when the real estate process
serves the needs of cultural preference within the constraint of·
land as a resource in a manner which permits the consumer, producer,
and governmental cash cycle to achieve solvency including the cash
costs of money.

G. Implicit in all of the above are:

1. Solvency of the total process, not value, is the critical issue.

2. A community real estate need is a captive market of services and
the business of real estate is a service industry which has some
big hardware in its tool kit.

3. Land is a trust, only some of which is a commodity, so that equity
to property owners is freedom from bankrupcy. Cash is the only
ultimate private property.

H. The artist concept of context, form, fit, and the ensemble is useful because in the planning stages the feasibility analyst is attempting to define the context to which the project must fit; when confronted with the completed project design, the analyst is searching for the critical misfit which would lead to failure.

I. The general theory of enterprise management is appropriate to and can be converted to real estate semantics:

Enterprise values, objectives, standards, screens, or criteria	Strategic format
	Market trend analysis
Search for opportunity alternatives	Merchandising target with
Selection of an opportunity	monopoly character
	Legal-political constraints
Program to capture opportunity	Ethical-aesthetic constraints
	Physical-technical constraints
	Financial constraints
Construction of program	Project Development
Operation of program	Property Management
Monitoring and feedback	Real Estate Research

J. The systems engineer sees the eventual form of an enterprise, in terms of both its configuration and behavior, as representing a negotiated consensus between two general sources of power--the power of the environment to dectate form and behavior of the organization on one hand and the power of the organization to decide for itself what its characteristecs and behavior will be on the other.

K. Combining the concept of enterprise and the concept of fit leads to this definition of the elusive concept "feasibility":

"A real estate project is 'feasible' when the real estate analyst determines that there is a reasonable likelihood of satisfying explicit objectives when a selected course of action is tested for fit to a context of specific constraints and limited resources."---

II. Elements of a Total Feasibility Analysis

The basic forces or elements of context which make a feasibility problem manageable also lead to understanding of the proper report titles as it is seldom that one does a complete feasibility study as a single report.

A. The subject matter can be classified as:

1. Strategic objectives and tactics (policies)
2. Market trends and opportunity areas
3. Merchandising targets with monopoly characteristics
4. Legal-political constraints
5. Ethical-aesthetic constraints
6. Physical-technical constraints
7. Financial constraints

B. These elements also name the report type:

1. Stategy study: selection of objectives, tactics, and decision criteria.
2. Market analysis: economic base studies or other related aggregate data review.
3. Merchandising studies: consumer surveys, competitive property analysis, marketability evaluation, etc.
4. legal studies: opinion on potential legal constraints, model contracts or forms of organization, and political briefs.
5. Compatability studies of project to community planning, conservation standards, or other public policies.
6. Engineering, land planning, and architectural studies.
7. Financial studies: economic modeling, capital budgets, present value and discounted cash flow forecasts, rate of return analysis, financial packages.

III. Elements of Financial Feasibility

A. Identification of selected profit centers

B. Specification of the common denominator - a time line - schedule of outlays and receipts

C. The capital budget (source & application)

1. Construction costs
2. Carrying costs

D. Operating budgets (source & application)

1. Pattern of sales revenues
2. Fixed management costs
3. General sales costs and investment

E. Financing plan

1. Credit amounts and terms
2. Equity amounts and terms
3. Holding power

F. Profits classified as to type and tax

1. Cash from operations
2. Cash from capital gains
3. Cash surplus from financing
4. Cash from tax savings on other income
5. Cash from reduction or shift of fixed outlays
6. Indirect non-cash benefits

G. Selected measures of profitability

1. Definition of investment
2. Definition of profit

H. Selected measures of risk

    1. Payback periods
    2. Capacity for variance
    3. Variance control methods

I. The process of risk management involves methodical analysis of enterprise assumptions and establishment of priorities relative to various possible contingencies.

    1. The functions of risk management include:

        a. Identification of significant exposures to loss
        b. Estimation of potential loss frequency and severity
        c. Identification of alternative methods to avoid loss
        d. Selection of a risk management method
        e. Monitoring execution of risk management plan

    2. Risk management methods available include:

        a. Risk avoidance (Don't deal with FHA or build projects for which there is no proven demand)
        b. Reduce frequency of loss (mortgage underwriting)
        c. Reduce severity of loss (contingent contracts, options, liquidated damages)
        d. Shift the risk of variance by contract
        e. Limit liability (corporate shell, limited partnership)
        f. Hedge (sale and lease back, the mortgage as a spread position - a put and call)

    3. The mortgage closing is a systematic risk management stabilization of assumptions about title, location, damage to improvements, unknown leans, default due to appraisal error, or underwriting bias, etc.

J. Finance assumptions provide both constraints and tests of alternative solutions (see Exhibit 1).

    1. Front door approach converts total cost to annual requirements for equity dividends, debt service, operating expenses, and vacancy cushion. Annual requirement divided by rental unit equals rent.
    2. The back door approach to feasibility converts the ability to pay of the user to maximum project cost acceptable - the major design constraint.

K. Customer acceptance is the primary cause of unfavorable financial results since the cash cycle begins with a sale at a price higher than cost.

    1. For dynamic risks, market intelligence is your major risk management device.
    2. Marketing research reduces variance in the critical assumptions of acceptable price or rent, scale of market potential, capture rate, and payback period.
    3. Financing packages are then prepared compatible with potential variance in marketing assumptions and service contracts negotiated to allocate risk to provide motivation or control.

IV. Market Segmentation and Product Definition

    A. Think small - real estate enterprise depends on very small micro-markets.

        1. A 30,000 square foot office building means $180,000 in annual sales or more and possibly $750,000 of investment at $25 a square foot.

        2. A 24-unit apartment building at $250 a month rent is almost $72,000 gross a year and a $360,000 investment.

        3. In each case you have higher sales and more assets per customer than almost any other buisness in the United States. Even large projects are simply groups of small micro-markets served by a single project.

    B. First try to name the revenue unit or method of measuring profit per sales unit -

        1. Paper company profits per acre
        2. Cash flow in dollars per apartment
        3. Office rental per floor

    C. Consider the revolution in recreational land development from selling lots, to lakeshore to water recreation access, to escape, to consumption of a weekend, to riskless adventure.

    D. Try to identify the customer unit - who signs the check?

        1. The doctor or the clinic?
        2. The salesman or the firm?
        3. The ticket buyer or the promoter?
        4. The building committee chairman or the staff member who really knows what he is doing?

    E. Correct identification of the sales unit and the customer unit leads to -

        1. Identification of competitive projects and the competitive standard
        2. Generation of a prospect list or customer spotting strategy
        3. Focus of aggregate market potentials

    F. The customer profile and consumer survey

        1. Scaling the market opportunity with a market model (see Exhibit 2)
        2. Estimating the capture rate
        3. Study of the competition to define the competitive standard and supply gaps
        4. Surveying the consumer to identify a competitive differential
        5. The objective is to define a product and price with monopoly characteristics in order to control variance in capture rates

    G. Before drafting questions for a survey:

        1. Determine what ratios are needed for aggregate data breakdown
        2. Determine precise data to be supplied and pre-architectual program

3. Eliminate questions which don't need to be asked
4. Determine budget and time constraint to select survey technique
5. Direct mail, telephone, and personal interview alternatives
6. Statistical elegance can be sacrificed for primary intelligence data

H. The key questions should probe dissatisfaction with competitive project, motivation for moving, and site dynamics.

I. Use of survey professionals is cheap and more sophisticated than low budget in-house surveys.

EXHIBIT I

Demonstration of Back-Door, Front-Door Calculations for an Apartment Building with some Commercial Space

(example   by James R. DeLisle)

			What is Rent?	What is TIV?
			Front Door 1.4m TRC	Back Door* $220/mo./1 bdr.
1	Total Replacement Cost (TRC)	Sp $%	1400000	
2	Mortgage @ % TRC	Sp % in decimals	.90	
3	Equity @ % TRC	(1 – Ln 2)	.10	
4	Mortgage Constant	Sp in decimals	.0907	
5	Equity Constant	Sp in decimals	.08	.08
6	Net Income Required	(Ln1)[(Ln 2)(Ln4)+ (Ln3)(Ln5)]	125580	115500
7	Mortgage @ % NIR	Sp % in decimals	.90	.90
8	Mortgage NIR	(Ln6)(Ln 7)	113000	103955
9	Mortgage Investment Value	(Ln8) ÷ (Ln4)	1246000	1146135
10	Equity Net Income	(Ln6)-(Ln8)	12580	11545
11	Equity Investment Value	(Ln10)÷(Ln5)	157250	144300
12	Equity Constant-Residual	(Ln1)-(Ln9) Backdoor		
13	Total Investment Value (TIV)		1403250	1290500
14	Expenses,Taxes,Reserves @ %GBR	Sp % in decimals	.40	
15	Expense, Taxes & Reserves	[(Ln6)÷(1-Ln14)]-(Ln6)	83720	77000
16	Required Effective Gross	(Ln6) + (Ln15)	209300	192500
17	Occupancy %	Sp % in decimals	.93	.93
18	Required Annual Gross	(Ln16)÷(Ln17)	225000	206980
19	Required Monthly Gross	(Ln18) ÷ 12	18750	17750
20	Fixed Source Contribution to Gross			
21	Fixed Source #Reserve Units	Sp #		
22	Fixed Source Revenue/Unit/Mo.	Sp $'s		
23	Fixed Source Contribution Gross	(Ln21) x (Ln22)		
24	Allocated Mo. Gross	(Ln19) - (Ln23)	18750	17750
25	Basic Revenue Unit, #(BRU)	Sp #	45	
26	s.f./unit	Sp. s.f.	560	
27	Relation to Basic Rev. Unit			
28	Type R-2 #	Sp #	9	
29	Type R-2 Relation	Sp % in decimals	1.3	
30	Type C-1 # s.f.	Sp. s.f.	8668	
31	Type C-1 Relation	Sp % in decimals	1.4	
32	Factors			
33	BRU	Ln25	45	
34	R-2 (#in BRU)	(Ln28)(Ln29)	11.7	
35	C-1 (#in BRU)	[(Ln30)÷(Ln26)](Ln31)	21.7	
36	Total Factors	(Ln33) + (Ln34)+(Ln35)	78.4	
37	$/BRU Unit/Mo.	(Ln24)÷(Ln36)	$239	$220*
38	$/R-2/Mo.	(Ln37) x (Ln29)	$311	$286
39	$/C-1 s.f./Mo.	(Ln37) x(Ln31)÷(Ln26)	.60	.55

EXHIBIT 2

DEMAND FOR ELDERLY RESIDENTIAL CARE UNITS

Persons in County age 65 and over in 1970		21,914
Adjustment 1970-1974 to reflect the number of persons moving into the 65+ bracket and the application of mortality rates by age and sex		245
Estimated persons in County age 65 and over in 1974		22,159
Less persons 65+ presently in nursing and residential care facilities in County	1,792	
Less persons 65+ presently in government subsidized housing for the elderly	638	
		2,430
Persons age 65+ in the conventional housing market in County in 1974		19,729
Estimated number of persons financially qualified for and seriously interested in moving into the proposed residential care development		4,270
Household equivalent (+ 1.519 persons per household)		2,811
Less estimated number who will not convert serious interest into any form of action (50%)		1,406
Less the percentage who, while seriously interested, said (before they heard the hypothesis) that their next home would probably be outside County (13.3% from survey questionnaire)	187	
Less those disqualified because their current health status necessitates care beyond the scope of services to be provided in the residential care units (5.4% (from survey)	76	
		263
Elderly households in County qualified for and seriously interested in moving into the proposed development		1,142
Plus an allowance for those elderly households coming from outside County to enter the proposed development(10%)		127
Elderly households qualified for and seriously interested in moving into the proposed development		1,269

Share of market opportunity area who stated in survey
that for their next dwelling unit their first preference
would be an apartment, in a highrise, midrise, or garden
building:

Highrise or midrise	28.0%	
Garden	49.1	
	77.1%	978
Less estimated numbers of households who might move into competitive developments available supply of units		270
Households that can be considered candidates for the proposed development		708

That share of households who said they would be willing to move:

Within 1 year from now	15.6% -	110 households
Within 2 years	31.2% -	220 "
Within 5 years	53.4% -	378 "
		708

A project of 100 units requires a capture rate of:

91% for a 1 - year absorption rate
$30\,2\rightarrow$ 90% for a 2 year   "   " $30\%\times 330 = 99$
14% for a 5 year   "   "

Real Estate Feasibility Analysis Seminar
A Seminar Sponsored by University of Wisconsin-Extension
Department of Engineering
THE WISCONSIN CENTER

Merchandise Analysis for Office Space
Instructor: Prof. James A. Graaskamp

I. Market Segmentation and Product Definition

    A. Think small - real estate enterprise depends on very small micro-markets.

        1. A 30,000 square foot office building means $180,000 in annual
           sales or more and possibly $750,000 of investment at $25 a
           square foot.

        2. A 24-unit apartment building at $200 a month rent is almost
           $60,000 gross a year and a $360,000 investment.

        3. In each case you have higher sales and more assets per customer
           than almost any other buisness in the United States. Even large
           projects are simply groups of small micro-markets served by a
           single project.

    B. First try to name the revenue unit or method of measuring profit per
       sales unit -

        1. Paper company profits per acre
        2. Cash flow in dollars per apartment
        3. Office rental per floor

    C. Consider the revolution in recreational land development from selling
       lots, to lakeshore to water recreation access, to escape, to consumption
       of a weekend, to riskless adventure.

    D. Try to identify the customer unit - who signs the check?

        1. The doctor or the clinic?
        2. The salesman or the firm?
        3. The ticket buyer or the promoter?
        4. The building committee chairman or the staff member who really
           knows what he is doing?

    E. Correct identification of the sales unit and the customer unit leads
       to -

        1. Identification of competitive projects and the competitive standard
        2. Generation of a prospect list or customer spotting strategy
        3. Focus of aggregate market potentials

II. The Customer Profile and Consumer Survey

A. Scaling the market with a body count and opportunity gaps

B. Classifying the body count by preferences

C. Study of the competition to define the competitive standard and supply gaps

D. Surveying the consumer to identify a competitive differential

E. The objective is to define a product and price with monopoly characteristics in order to control variance in capture rates.

F. Before drafting questions for a survey:

1. Determine what ratios are needed for aggregate data breakdown.
2. Determine precise data to be supplied and pre-architectural program
3. Eliminate questions which don't need to be asked
4. Determine budget and time constraint to select survey technique

G. Direct mail, telephone, and personal interview alternatives

H. Statistical elegance can be sacrificed for primary intelligence data

I. The key questions should probe dissatisfaction with competitive project, motivation for moving, and site dynamics.

J. Use of survey professionals is cheap and more sophisticated than low budget in-house surveys.

III. Description of a Madison Case Study for an Office Building

REAL ESTATE FEASIBILITY SEMINAR

Second Day

Presented By:
Professor James A. Graaskamp, CRE, SREA
University of Wisconsin, School of Business

I. Although macroeconomic theory argues a tendency toward perfect competition, the individual project should be striving toward a monopoly. Market analysis is the research necessary to create and maintain a competitive edge in order to stabilize investment performance against the profit decline of perfect competition, against inadvertent clash with community attitudes, and against future user rejection.

    A. Given that premise, market research is risk management. The levels of market research would be:

        1. Intuitive positioning to reflect attitudes about the future long-term trends of society, demographics, the economy, etc.
            a. For example, if government, education, and high tech are attitudes, then positioning might lead one to focus on state capitols with universities having technical rather than liberal arts emphasis.
            b. Attitudes might be set by futuristic books such as <u>Megatrends</u>, <u>Third Wave</u>, or <u>The Ten Countries of North America</u>.
            c. An old precept is "sell if everybody's buying, market to the gap that everyone overlooks." Thus market positioning might take an established idea in first and second tier cities and introduce it in the third and fourth tier cities.

        2. Next marketing would stratify within a narrow band of a broader demographic market of intuitive positioning.

        3. Stratification would consist of several segments of the broader band of preference (elderly breakdown or thirteen housing segments).

        4. Identifying issues and symbols which would trigger adverse reactions of the collective consumer.

        5. Evaluating demand/supply relationships to determine need for sensitivity to specialized consumer needs.

        6. Focusing the project to provide relief from anxiety, a reduction in physical discomfort, improved efficiency of an activity house, or improvement of self-esteem of the targeted user/customer group.

        7. Defining and controlling the window for presentation of the concept (the approach zone, the sales center office, the formal introduction and interview, etc.).

        8. Identifying alternative markets and basic product features necessary to permit marketing campaign for an alternative second course, a fallback position.

B. The real estate project marketing program must keep in mind the
features required to neutralize the collective consumer who might
oppose entitlements, the features and codes which will motivate the
space consumer at a price which provides financial viability, and
the overall six strategic attributes to be marketed to the investor
At the very least market and merchandising research should be able
to eventually produce a marketing program which suggests:

1. Where the developer/investor should position his effort relative
to demographic and economic trends given a desired scale of
operation.

2. The unmet needs in the marketplace in terms of mostprobable user
groups, their total number, and their effective demand constraints.

3. The time span of their effective demand in the marketplace

4. The competitive standard product minimum required for entry into
the market.

5. The competitive product/service/margin necessary for monopoly
advantage

6. The project image most likely to neutralize collective opposition

7. Essential media and themes required for promotion programs

8. Financial parameters required to attract investors, mortgage
or equity

II. The first step is to reduce aggregate data about user groups which is
plausible but overly general information to a scale which will focus
on a sub-segment with a proper rationale or hierarchy. To do that
requires an analytical model and in most cases, each situation requires
the analyst to create his own model with which to structure the data
available and to discover the missing links in the logic diagram which
must be researched.

A. Models organize the anlyst, the report, and the client

1. Models explain what you are going to do.

2. Models make relationships and key assumptions explicit.

3. Models permit clients to understand logic of conclusion and to
test his own set of assumptions.

B. A market research model should be careful to recognize?

1. What are the questions

2. What data is available which is relevant?

3. What theory is available to focus data on the questions?

4. How will the results be communicated?

5. What are the abilities of the analyst?

6. What is the cost benefit ratio between the model method and the
question?

EXHIBIT I

SEGMENTATION LOGIC TREE
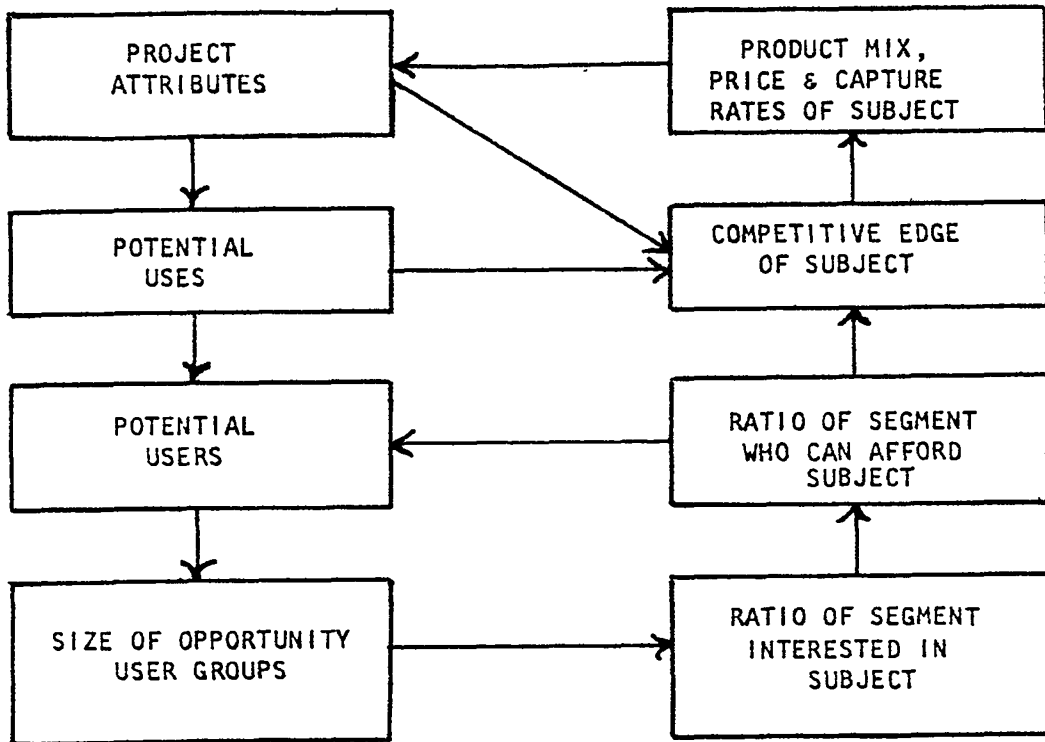
```
┌─────────────────┐                    ┌──────────────────┐
│    PROJECT      │◄───────────────────│   PRODUCT MIX,   │
│   ATTRIBUTES    │◄──┐                 │  PRICE & CAPTURE │
└─────────────────┘   │                 │  RATES OF SUBJECT│
         │            │                 └──────────────────┘
         ▼            │                          ▲
┌─────────────────┐   │                 ┌──────────────────┐
│   POTENTIAL     │───┼────────────────►│ COMPETITIVE EDGE │
│     USES        │───┘                 │   OF SUBJECT     │
└─────────────────┘                     └──────────────────┘
         │                                       ▲
         ▼                                ┌──────────────────┐
┌─────────────────┐                      │ RATIO OF SEGMENT │
│   POTENTIAL     │◄─────────────────────│  WHO CAN AFFORD  │
│     USERS       │                      │     SUBJECT      │
└─────────────────┘                      └──────────────────┘
         │                                       ▲
         ▼                                ┌──────────────────┐
┌─────────────────┐                      │ RATIO OF SEGMENT │
│ SIZE OF OPPORTUNITY│────────────────►  │  INTERESTED IN   │
│   USER GROUPS   │                      │     SUBJECT      │
└─────────────────┘                      └──────────────────┘
```

C. Market data refers to aggregate data, secondary information, the easy
    to acquire data from census tracts, traffic counts, building permits,
    and so on. It is useful to scale the size of the market potential,
    of the opportunity area but by itself aggregate market data is relatively
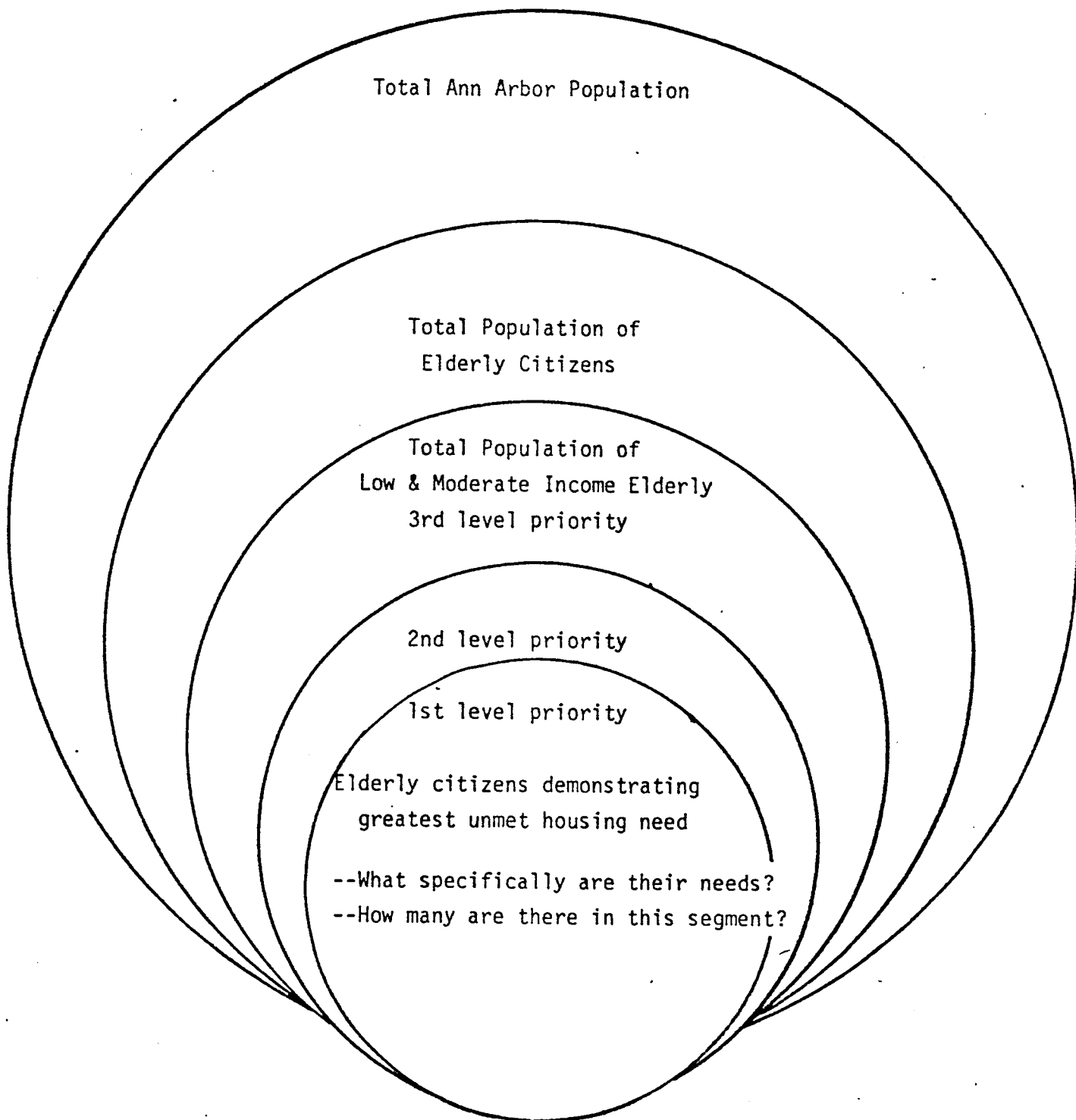   unimportant to the success of most projects.

D. <u>Merchandising data</u> is generally primary information generated by the analyst about specific competitive projects and specific user groups which will permit an estimate of what percentage of the opportunity group can be captured for a specific project.

    1. <u>Absorption rates</u> apply to aggregate market data to determine the total size or amount of market activity in terms of how many lots were sold, how many apartments in a rental range were newly rented, or how many square feet of leased office space were occupied.

    2. <u>Capture rates</u> are the product of merchandise research and are the ratio of the total opportunity potential which might be secured for a project or must be secured to achieve financial goals. The capture rate will reflect a careful judgment of product mix, amenities, pricing, and timing.

E. A flow chart of the market research process is provided in Exhibit 1.

F. Most multi-tenant or multi-user land uses are susceptible to a retail trade area model. A retail model is a device analogous to establishing a retail trade area perimeter for a super market to segregate households which have a reasonable probability of using the outlet from those who don't because of convenience, distance, age, or income. Thus the analyst should establish a preliminary hypothesis for:

    1. Primary market area to be served.

    2. Secondary market area to be served.

    3. Principal competitors.

G. Consider Exhibit 2 as a simple market model to define the size of an opportunity area in a selected county for elderly persons requiring residential care units.

    1. For lines with asterisks the key ratios for reduction were derived from a survey of the elderly generating primary data for this county.

    2. For example, while 37% of the elderly were financially qualified, only about 60% of those were interested in considering a residential, minimal care facility or 22% of those in the convential housing market — hence the reduction from 19,700 to only 4,200. This chart should have showed the ratios from the survey.

    3. Failure to convert serious interest into action was a round number based on experience of those which had marketed similar developments in the past, as was an allowance for potential customers coming from outside the county to be closer to relatives, etc.

III. Market data provides a measure of potential scale of a market opportunity; the most important aspect of market analysis is forecasting the degree of market penetration or capture rate of remedial development.

A. To reduce aggregate market data to a merchandising hypothesis, the first clue to segmentation may be found in correctly understanding the essence of buyer motivation or of the activity to be housed.

EXHIBIT 2

FOCUSING IN ON THE VARIOUS SEGMENTS OF THE ELDERLY POPULATION

TO DETERMINE RELATIVE LEVELS OF HOUSING NEED

AND THE URGENCY OF THAT NEED

Total Ann Arbor Population

Total Population of
Elderly Citizens

Total Population of
Low & Moderate Income Elderly
3rd level priority

2nd level priority

1st level priority

Elderly citizens demonstrating
greatest unmet housing need

--What specifically are their needs?
--How many are there in this segment?

1. Retailing is a break point for goods (a warehouse grocery), or a service industry, or a theater using lighting, staging, and mood to reinforce a role played by the buyer.

2. A restaurant may be to provide a quick food break (high turnover, pedestrian flow, conditioned ordering), or to provide recreational entertainment and consumption of an evening, or to provide a staging for business, social, or publicity roles.

3. A motel for transients, for resorts, or for terminal traffic uses all of its facilities and location to sell a "room-night" of occupancy because that is an 80% gross margin. Anything done after that is justified by its contribution to "room-night" sales or its reduction of average cost to capture a customer per "room-night."

4. The revenue unit may be related to the method of measuring profit of the project in question such as per acre, per camper pad, per event, per front foot of shoreline, per stool or table, etc., not to mention sq. ft., per frame at a bowling alley or per tennis court hours, or per hour of ice time.

5. Sometimes the prospect is identified by who really signs the check for a particular type of real estate.

   a. The salesman or the management paying his travel costs
   b. The doctor or the clinic
   c. The district manager or the corporate real estate manager
   d. The ticket buyer or the promoter
   e. The bowling league, team business manager, travel agency tour guide

6. The market segment may be defined initially by the source for a prospective user list - people who share a common address, hobby, professional specialty or some other identifier.

   a. A reverse directory or criss-cross telephone book
   b. Building directories of comparables
   c. Mailing lists of specialty publications
   d. License number spotting
   e. Guest registers
   f. Charge account mailing addresses

B. The objective of these approaches, revenue unit, the decision maker, the prospect list source, is to segment the user market to a specific and relatively small group of potential customers who can be surveyed to generate original and relevant information about their space needs and motivations. Unlike most consumer markets, the number of prospects is always low; think small!

   1. Real estate is a series of micro-markets. A 24-unit building with one, two, three bedroom units has at least three sub-markets.

   2. A 24-unit building is a $500,000 enterprise with a $75,000 gross sales potential from only 24 customers!

EXHIBIT 4

```
              ┌─────────────────────────┐
              │   Population Forecast    │
              │    (Nine Trade Areas)    │
              └─────────────────────────┘
                           │
              ┌─────────────────────────┐
              │  Converted to Households │
              └─────────────────────────┘
                           │
              ┌─────────────────────────┐
              │   Converted to Disposable│
              │ Income for Retail Purchases│
              │        & Services        │
              └─────────────────────────┘
                           │
                   Potential for Region
```

A

Clothing	Home Furnishing	Durables	Food & Entertainment	Services	Other Retail

B

Actual CBD Cothing	Actual CBD Home Furnishing	Actual CBD Durables	Actual CBD Food & Entertainment	Actual CBD Services	Actual CBD Other Retail

```
              ┌─────────────────────────┐
              │    B/A = Capture Rate    │
              └─────────────────────────┘
                           │
              ┌─────────────────────────┐
              │ What can be done to improve│
              │      capture rate?       │
              └─────────────────────────┘
                           │
```

┌──┐
│ Survey for household opinion   │
│   1. Current irritation with downtown   │
│   2. Current preferences for transportation   │
│   3. Current shopping patterns and alternatives to CBD │
│   4. Design preferences   │
│   5. Shopping mix preferences   │
└──┘

```
              ┌─────────────────────────┐
              │ Remedial development impact on│
              │       capture rate       │
              └─────────────────────────┘
                           X
              ┌─────────────────────────┐
              │ Forecasted disposable income│
              │      by trade area       │
              └─────────────────────────┘
                           =
              ┌─────────────────────────┐
              │ CBD sales in selected future│
              │     years by category    │
              └─────────────────────────┘
                           ÷
              ┌─────────────────────────┐
              │ Sales per sq. ft. per category│
              └─────────────────────────┘
                           =
              ┌─────────────────────────┐
              │ Supply of retail and service space│
              │       by category        │
              └─────────────────────────┘
                           -
              ┌─────────────────────────┐
              │ Existing supply which is servicable│
              └─────────────────────────┘
                           =
              ┌─────────────────────────┐
              │ Sq. footage and type of new space required│
              └─────────────────────────┘
```

C. A survey of existing properties and alternatives available to a selected market segment defines only the <u>competitive standard</u> - namely the minimum product and price necessary to be in the market.

    1. Comparison shopping further identifies where there may be gaps in the supply of alternatives, a market opportunity gap, or where the oversupply is so significant as to portend the last competitive alternative before bankrupcy - namely price cutting.

    2. Comparison shopping should not only identify the physical characteristics of the product and price but the nature of the promotion effort as well.

    3. Promotion comparison should consider pedestrian and vehicle approaches, model location, furnishings, and sales people.

    4. Review of the promotion campaign should reveal whom the competitors believe to be their prospect.

D. A survey of users, is designed to reveal or to identify the <u>competitive differential</u> attributes which would provide that monopoly element required of every successful project.

    1. A second product of consumer survey is the ability to develop locally relevant ratios which permit disaggregation of market data into market segments and the conversion of potential numbers of people into potential dollar sales over time.

    2. Survey questions to create ratios require previous construction of a market model hypothesis.

    3. Survey questions can discover latent political issues or provide a calm base for citizen input from those who rightfully dislike public hearings.

    4. Survey questions and execution should not be done by planners or appraisers.

IV. A good example of modeling market data through segmentation and survey for renovation in a small community is a project by Gruen Gruen + Associates for Santa Maria, California. The study was begun in 1972. Project is operating as the Santa Maria Town Center with retail sales ahead of forecasts.

A. The Gruen's were able to convince the redevelopment agency to avoid any physical planning until a detailed analysis of the demand for alternative services that could attract people back to the downtown area was done. This EMAS study (economic market analysis study) outline is in Exhibit 3 had the following outputs:

    1. First, a full analysis of economic data and retail data was utilized to generate information about the type of tenancies that could realistically be expected to penetrate downtown markets. (Table of Contents Exhibit 4)

EXHIBIT 5

POTENTIAL MARKET SEGMENTS

I.   Singles — Unmarried, active, mobile, many interests, entertain informally, few financial burdens, recreation oriented. Buy basic furniture, basic kitchen equipment, cars, stereos, and vacations.

II.   Young Marrieds, #1 — Young couple, working wife, entertain informally, amateur gardeners, planning on family. Better off financially than they will be in the "family formation" future. Buy durables — cars, kitchen equipment, furniture, and vacations. Rate housing as a need for more living space.

III.   Young Marrieds, #2 — Discretionary income available, deferring family, active, entertain informally and often, some formal entertaining, independent, dual-person working household, do-it-yourself buffs, sports car. Rate housing as an investment.

IV.   Compact Family/Move Down — Discretionary income available, interested in no maintenance, informal living, some formal entertainment. Away from home often, occasional visits from family or guests, focus on both active and passive recreation.

V.   Divorcees/With Children — Family oriented activity, limited entertainment, informal lifestyle, limited maintenance.

VI.   Full Nest, #1 — Home purchasing at its peak, even though liquid assets are low. Dissatisfied with financial position, and amount of money saved. Conscious of monthly payments, family activities. Unemployed female with numerous interests, mostly child oriented. Lifestyle is casual and informal. Interested in new products, buy washers, dryers, T.V.'s, baby food, dolls, wagons, etc.

VII.   Full Nest, #2 — Family move-up market, as financial position gets better, some wives work. Interested in larger sized packages. The most price/size sensitive group.

VIII. Established Family — Making monthly payment comfortably, some discretionary income as more wives work, approaching peak of economic and social lifestyle curve, some formal entertaining, older children and teenagers, many interests.

IX.   Luxury Families — Have arrived, tremendous discretionary income, very formal house, don't entertain often, but when they do, it's formal, dine out often, no maintenance, privacy mandatory.

X.   Empty Nester - Home ownership at its peak, more satisfied with financial position. Small or no debt. Family is often away from home, occasional visits from family. Mobile in attitude, but permanent in residence, near grandchildren, many hobbies, one child in college, one or two children married, self-sufficient couple.

XI.   Active Retired — Still working two or three days per week, active either socially or politically in community or church affairs, self-sufficient, many hours away from home, do not entertain often, but when they do, it's semi-formal. Winter/summer residences. Likely to sell home before retirement.

XII.   Retired — Drastic cut in income, dependent, limited activities outside community. Winter/summer residences.

D. Consider the elderly housing market chart in Exhibit 2. . Notice that the ratios required for market segmentation follow a logical reduction pattern. The analyst has made several working assumptions - namely that his market is over 65 and overwhelmingly from Dane County because these assumptions are both reasonable and conform to break-out points in the raw data.

E. The ratio sought by the survey follow a precise reduction pattern:

1. How many will consider moving?
2. Of those, how many would consider staying in town?
3. Of those, how many would consider an apartment?
4. Of those remaining who would consider an apartment in town, how many would consider a specific location?
5. Notice the reduction process defines a subset of the elderly market - a micro-market.

F. Each of these ratios suggests a specific calculation or perhaps a short table of statistics. The specific title on the table of data and its sub-columns should be written before the questions are drafted and the collection of data begun. Notice the research begins with careful definition of the questions to be answered. All answers become relevant and all unnecessary questions are avoided. These types of questions depend on knowing the precise character of secondary data available to which the ratios must be applied in the systematic model devised for the problem.

1. Confine vocabulary to basic 1000 words; avoid lingo.

2. Structure questions to permit check-off, or branching to set up subsets. (See Exhibit 6)

3. Always test the quesionnaire on half a dozen prospects or friends to reveal misunderstandings before using on the market.

4. Questions may take different formats. (See Exhibit 6)

G. The second type of question is generally attempting to measure either anxieties or preferences. Both are dangerous survey areas for amateurs as well as professionals and it is often cheaper to subcontract these particular functions to consumer research specialists. Nevertheless, a little common sense can generate considerable useful information on the competitive edge.

1. Probe for dissatisfaction with existing space or life style.
2. Probe for anxieties about uncontrollable trends and events.
3. Probe for desired social structure ties, real or imagined.