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## Several surveys concerned with the Building Services Department of the Division of Business Services for 1972.

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SEVERAL SURVEYS  
CONCERNED WITH THE  
BUILDING SERVICES DEPARTMENT  
OF THE  
DIVISION OF BUSINESS SERVICES  
FOR 1972



**MADISON PUBLIC SCHOOLS**

**SEVERAL SURVEYS  
CONCERNED WITH THE  
BUILDING SERVICES DEPARTMENT  
OF THE  
DIVISION OF BUSINESS SERVICES  
FOR 1972**

## MADISON PUBLIC SCHOOLS

Included in this report are the following studies which were made at the request of Dr. Jean McGrew, Assistant Superintendent of Schools, and W. N. McDaniels, Director of Business Services.

1. Comparison of Various Heating System Costs
2. 1972 Work Order Analysis
3. Cost Breakdown of Custodial Overtime for 1972
4. Custodian Sick Leave, Absences and Vacations for 1972
5. Survey of Glass Breakage for 1972

This report will serve as a beginning for the systematic collection of information. Some of the reports are not significant in themselves; however, with continued collection of this information on an annual basis, future comparisons will be possible.

March 9, 1973

## MADISON PUBLIC SCHOOLS

### Comparison of Various Heating System Costs

This document must be used with the analysis of 15 schools dated February 28, 1973.

These 15 schools were selected because they had roughly the same area and provided similar facilities. These buildings have five types of heating systems, and none have air conditioning built into the basic system.

Construction costs for different years were calculated on a 1913 base established by the American Appraisal Company as shown in Column No. 9.

Column No. 10 shows the cost per square foot for heating and ventilating only based on the 1913 index. From these figures Hoyt, Huegel, Leopold, Lincoln, Lindbergh, Muir, Sandburg and Thoreau were in the highest 50 percentile of installation costs. In addition to the heating and ventilating contract cost for Lindbergh and Muir Schools, extra tunnels had to be built by the general contractor. At Lindbergh School the heating contract plus the cost of the extra tunnels of \$8,721 on the 1913 index is \$18.85, and the actual cost is \$2.16. At Muir School the heating contract plus the cost of the extra tunnels of \$10,122 on the 1913 index is \$17.47, and the actual cost is \$1.98.

Five of eight schools with the highest heating and ventilating contract costs have roof top units, hot air furnaces, or a large number of large fans and sheet metal duct work to distribute air throughout the large open areas of these five schools.

Lincoln, Lindbergh, Muir and Thoreau had the highest fuel and electrical costs per square foot. Leopold School would also be in this category had the Madison Gas and Electric Company not made serious errors in billing from the

opening of school to now. This situation has been corrected by Financial Services. The annual fuel bills that are reflected in the school budget are two to three times as great as some of the conventional package boiler, steam unit ventilator systems. The lowest cost per square foot for fuel was Odana School, and the highest cost per square foot was Lindbergh School, which has a large hot air furnace, two tunnels around the perimeter of the building and duct work to the I.M.C., gymnasium and shower rooms.

In addition to the highest fuel cost per square foot for Lindbergh School the electrical cost is second highest, which does reflect the cost of large fans required to move air from the furnace room to the farthest classroom.

At Lindbergh, Muir and Thoreau Schools the heating and ventilating contracts represented average initial contract costs in relation to the total contracts. Leopold roof top units had to heat eight classrooms and the activity room at the lower level. Lindbergh and Muir Schools also had extra heat tunnels built by the general contractor instead of sheet metal ducts by the heating and ventilating contractor.

Many sales engineers and manufacturers have stated that by using roof top units the total costs for a building could be reduced by approximately \$1.00 per square foot. Looking at Columns No. 7, No. 10, No. 21 and No. 22 and comparing the costs, the above statement does not appear to be correct.

The architects and engineers for the last large addition to James Madison Memorial High School strongly objected to roof top units. This was pointed out in planning notes dated April 14, 1970 and June 2, 1970.

The architects and engineers for Thoreau School were requested by the Board of Education and staff to design the heating system around roof top units. They studied this in detail and reluctantly agreed to roof top furnaces. This was also true with the planning at Leopold School.

From Column 10 using the 1913 adjusted costs, it does appear that for smaller schools the steam package boiler and unit ventilator wet heating system does appear to be more economical to install.\* The Buildings and Grounds Department finds that the present 29 roof top furnace units require considerably more time for maintenance than the boiler unit ventilating systems. On the basis of past performance it does appear that roof top units and large furnaces will cost more to maintain than the boiler-unit ventilator systems. The life of boilers and unit ventilators show a normal life of 40 to 50 years while it is anticipated that roof top units and furnaces will have a 20 year maximum life. This more frequent replacement cost will also reflect higher annual operating budgets.

The Madison Public Schools has built about \$50,000,000 worth of schools during the past 20 years and has used a variety of heating systems based on the professional advice from architects, engineers, and staff. It now appears that when all factors are considered the efficient package steam boiler and unit ventilators and possibly some modification for special areas is as good as any system now on the market for long life, low initial cost, low fuel, electrical and maintenance costs.

\*Note: The staff is sure that for larger schools boilers and a wet heat system with large coils and duct work for small areas away from outside walls is the most economical. The original LaFollette High School and James Madison Memorial High School are examples of this type of heating system.

Building Services Department  
3/9/73  
ht



## MADISON PUBLIC SCHOOLS

### 1972 Work Order Analysis by Buildings & Grounds Department For Ten Maintenance Mechanics Only Housed in the Maintenance & Service Building

Columns 1, 2 and 3 of the attached table show the number of work orders, the number of hours worked; the cost is the actual time card costs.

East and West High Schools have had custodians who are highly skilled and with the two school maintenance men knowing how to do most of the work. This accounts for the low cost of these two schools.

Schools such as Jefferson, Lapham, Longfellow, Marquette and Sherman required considerable work for special projects that were budgeted.

Columns 4 and 5 are hours spent on budgeted items. The hours were multiplied by an average \$5.00 per hour to arrive at the cost. These figures appear to be very modest.

Column 6 indicates the number of purchase orders issued by Buildings & Grounds for materials used by the ten maintenance staff workers. These are issued when the maintenance man has to stop work and go to a hardware store or to a wholesale supply house to purchase a stock part.

Columns 7, 8 and 9 indicate the number of work orders, hours spent and cost at \$5.00 per hour for repairing rooftop heating units. When Madison contractors are called in to make major technical repairs, the cost to the Madison Public Schools is \$12.00 to \$14.00 per hour. If specialists for the furnaces and temperature controls are called in from Milwaukee, the cost is \$20.00 per hour plus travel. As a result the Buildings & Grounds staff tries to take care of all of the rooftop work that is within their capability.

For approximately \$30,000,000 worth of mechanical contracts in school buildings at today's replacement costs, these costs do appear to be modest.

## MADISON PUBLIC SCHOOLS

1972 Work Order Analysis by Buildings & Grounds Department  
 For Ten Maintenance Mechanics Only  
 Housed in the Maintenance & Service Building

	1	2	3	4	5	6	7	8	9	10
	Total Work Orders Issued	Total Hours on Work Orders	Amount for Work Order	Hours on Budget Items	Amount on Budget Items @\$5.00	Purchase Orders for Material Only	Work Orders Roof Unit Heat & AC	Hours on Roof Units	Amount for Roof Units @\$5.00	Total Cost
141 East	13	127	\$635			10				635
142 LaFollette	75	628	3,140	47	235	45	18	108	540	3,915
145 Memorial	63	630	3,150	28	140	23	2	24	120	3,410
146 Mansfield	3	36	180							180
143 West	22	336	1,680	122	610	21				2,290
001 Allis	58	401	2,005	41	205	3				2,210
002 Badger	12	60	300	8	40	3				340
203 Cherokee	50	321	1,605	12	60		4	34	170	1,835
004 Crestwood	22	148	740	75	375	10				1,115
005 Dudgeon	18	205	1,025			2				1,025
006 Elvehjem	34	202	1,010			6				1,010
007 Emerson	10	96	480	28	140	4				620
011 Falk	18	97	485			5				485
008 Franklin	23	272	1,360	146	730	3				2,090
009 Glendale	38	311	1,555	58	290	4				1,845
210 Gompers	43	259	1,295			9				1,295
012 Hawthorne	11	75	375	10	50	7				425
013 Hoyt	19	124	620	14	70	3				690
038 Huegel	10	45	225	8	40	6				265
245 Jefferson	19	259	1,295			5				1,295
036 Kennedy	25	169	845	30	150	7				995
014 Lake View	29	150	750	38	190	2				940
015 Lakewood	22	137	685							685
016 Lapham	34	284	1,420	113	565	8				1,985
072 Leopold	36	198	990			9	16	100	500	1,490
237 Lincoln	32	225	1,125	26	130	8				1,255
071 Lindbergh	10	57	285	4	20	4				305
018 Longfellow	30	391	1,955	182	910	3				2,865
019 Lowell	17	163	815	64	320	3				1,135
220 Marquette	51	842	4,210	181	905	3	5	16	80	5,195
021 Mendota	22	159	795	32	160	2				955
022 Midvale	16	154	770	16	80	2				850
017 Muir	17	110	550			4				550
023 Odana	17	83	415			11				415
225 Orchard Ridge	62	470	2,350	106	530	7				2,880
026 Randall	11	187	935	73	365	5				1,300
053 Sandburg	28	129	645	9	45	7				690
227 Schenk	54	603	3,015	106	530	1	5	20	100	3,645
242 Sennett	12	51	255			7				255
228 Sherman	33	462	2,310	36	180	1	6	79	395	2,885
029 Shorewood	30	232	1,160	100	500	3				1,660
031 Spring Harbor	16	83	415	12	60	6				475
032 Stephens	13	51	255			7				255
033 Sunnyside	3	16	80							80
023 Thoreau	20	141	705			1	5	34	170	875
234 Van Hise	34	227	1,135	12	60	8				1,195
301 Administration	49	279	1,395	20	100	5	AirCond	58	290	1,785
663 Community Center	2	18	90							90
302 Central Stores	18	84	420							420
<b>TOTALS</b>	<b>1,304</b>	<b>10,787</b>	<b>53,935</b>	<b>1,757</b>	<b>8,785</b>	<b>293</b>	<b>61</b>	<b>473</b>	<b>2,365</b>	<b>65,085</b>

March 2, 1973

MADISON PUBLIC SCHOOLS

1972 Work Order Analysis by Buildings & Grounds Department  
 For Ten Maintenance Mechanics Only  
 Housed in the Maintenance & Service Building

East Area	1	2	3	4	5	6	7	8	9	10
	Total Work Orders Issued	Total Hours on Work Orders	Amount for Work Order	Hours on Budget Items	Amount on Budget Items @\$5.00	Purchase Orders for Material Only	Work Orders Roof Unit Heat & AC	Hours on Roof Units	Amount for Roof Units @\$5.00	Total Cost
141 East	13	127	\$ 635			10				\$ 635
007 Emerson	10	96	480	28	\$ 140	4				620
210 Gompers	43	259	1,295			9				1,295
012 Hawthorne	11	75	375	10	50	7				425
014 Lake View	29	150	750	38	190	2				940
016 Lapham	34	284	1,420	113	565	8				1,985
071 Lindbergh	10	57	285	4	20	4				305
019 Lowell	17	163	815	64	320	3				1,135
220 Marquette	51	842	4,210	181	905	3	5	16	80	5,195
021 Mendota	22	159	795	32	160	2				955
053 Sandburg	28	129	645	9	45	7				690
228 Sherman	33	462	2,310	36	180	1	6	79	395	2,885
<b>TOTALS</b>	<b>301</b>	<b>2,803</b>	<b>\$14,015</b>	<b>515</b>	<b>\$2,575</b>	<b>60</b>	<b>11</b>	<b>95</b>	<b>\$475</b>	<b>\$17,065</b>

March 2, 1973

MADISON PUBLIC SCHOOLS

1972 Work Order Analysis by Buildings & Grounds Department  
 For Ten Maintenance Mechanics Only  
 Housed in the Maintenance & Service Building

LaFollette Area	1 Total Work Orders Issued	2 Total Hours on Work Orders	3 Amount for Work Order	4 Hours on Budget Items	5 Amount on Budget Items @\$5.00	6 Purchase Orders for Material Only	7 Work Orders Roof Unit Heat & AC	8 Hours on Roof Units	9 Amount for Roof Units @\$5.00	10 Total Cost
142 LaFollette	75	628	\$ 3,140	47	\$ 235	45	18	108	\$ 540	\$ 3,915
001 Allis	58	401	2,005	41	205	3				2,210
006 Elvehjem	34	202	1,010			6				1,010
009 Glendale	38	311	1,555	58	290	4				1,845
036 Kennedy	25	169	845	30	150	7				995
227 Schenk	54	603	3,015	106	530	1	5	20	100	3,645
203 Sennett	12	51	255			7				255
<b>TOTALS</b>	<b>296</b>	<b>2,365</b>	<b>\$11,825</b>	<b>282</b>	<b>\$1,410</b>	<b>73</b>	<b>23</b>	<b>128</b>	<b>\$640</b>	<b>\$13,875</b>

March 2, 1973

MADISON PUBLIC SCHOOLS

1972 Work Order Analysis by Buildings & Grounds Department  
 For Ten Maintenance Mechanics Only  
 Housed in the Maintenance & Service Building

Memorial Area	1 Total Work Orders Issued	2 Total Hours on Work Orders	3 Amount for Work Order	4 Hours on Budget Items	5 Amount on Budget Items @\$5.00	6 Purchase Orders for Material Only	7 Work Orders Roof Unit Heat & AC	8 Hours on Roof Units	9 Amount for Roof Units @\$5.00	10 Total Cost
145 Memorial	63	630	\$3,150	28	\$ 140	23	2	\$120	\$ 3,410	
146 Mansfield	3	36	180						180	
004 Crestwood	22	148	740	75	375	10			1,115	
011 Falk	18	97	485			5			485	
038 Huegel	10	45	225	8	40	6			265	
245 Jefferson	19	259	1,295			5			1,295	
017 Muir	17	110	550			4			550	
225 Orchard Ridge	62	470	2,350	106	530	7			2,880	
031 Spring Harbor	16	83	415	12	60	6			475	
032 Stephens	13	51	255			7			255	
<b>TOTALS</b>	<b>243</b>	<b>1,929</b>	<b>\$9,645</b>	<b>229</b>	<b>\$1,145</b>	<b>73</b>	<b>2</b>	<b>\$120</b>	<b>\$10,910</b>	

March 2, 1973

**MADISON PUBLIC SCHOOLS**  
**1972 Work Order Analysis by Buildings & Grounds Department**  
**For Ten Maintenance Mechanics Only**  
**Housed in the Maintenance & Service Building**

	1	2	3	4	5	6	7	8	9	10
West Area	Total Work Orders Issued	Total Hours on Work Orders	Amount for Work Order	Hours on Budget Item	Amount on Budget Items @\$5.00	Purchase Orders for Material Only	Work Orders Roof Unit Heat & AC	Hours on Roof Units	Amount for Roof Units @\$5.00	Total Cost
143 West	22	336	\$ 1,680	122	\$ 610	21				\$ 2,290
002 Badger	12	60	300	8	40	3				340
203 Cherokee	50	321	1,605	12	60		4	34	\$ 170	1,835
008 Franklin	23	272	1,360	146	730	3				2,090
013 Hoyt	19	124	620	14	70	3				690
072 Leopold	36	198	990			9	16	100	500	1,490
007 Lincoln	32	225	1,125	26	130	8				1,255
018 Longfellow	30	391	1,955	182	910	3				2,865
022 Midvale	16	154	770	16	80	2				850
024 Odana	17	83	415			11				415
026 Randall	11	187	935	73	365	5				1,300
029 Shorewood	30	232	1,160	100	500	3				1,660
023 Thoreau	20	141	705			1	5	34	170	875
234 Van Hise	34	227	1,135	12	60	8				1,195
<b>TOTALS</b>	<b>352</b>	<b>2,951</b>	<b>\$14,755</b>	<b>711</b>	<b>\$3,555</b>	<b>80</b>	<b>25</b>	<b>168</b>	<b>\$840</b>	<b>\$19,150</b>

March 2, 1973

**MADISON PUBLIC SCHOOLS**

1972 Work Order Analysis by Buildings & Grounds Department  
 For Ten Maintenance Mechanics Only  
 Housed in the Maintenance & Service Building

	1	2	3	4	5	6	7	8	9	10
	Total	Total	Amount	Hours	Amount	Purchase	Work	Hours	Amount	Total
	Work	Hours	for	on	on	Orders	Orders	on	for	Cost
	Orders	on	Work	Budget	Budget	for	Roof	Roof	Roof	
	Issued	Work	Order	Items	Items	Material	Unit	Units	Units	
	Orders	Orders			@\$5.00	Only	Heat		@\$5.00	
							& AC			
Miscellaneous										
005 Dudgeon	18	205	\$1,025			2				\$1,025
015 Lakewood	22	137	685							685
033 Sunnyside	3	16	80							80
301 Administration	49	279	1,395	20	\$100	5	AirCond	58	\$290	1,785
663 Community Center	2	18	90							90
302 Central Stores	18	84	420							420
<b>TOTALS</b>	112	739	\$3,695	20	\$100	7	--	58	\$290	\$4,085

March 5, 1973

MADISON PUBLIC SCHOOLS

Cost Breakdown of Custodial Overtime for 1972

The attached table shows the cost breakdown of custodial overtime for the Madison Public Schools for 1972 by building permits and other categories.

The Class I total of \$7,706.43 is for school activities where the custodian had to work overtime to have the building ready for school the next morning.

The total of \$16,499.63 for Class II permits denotes shared costs provided in the 1972 budget.

The Class III, IV and V permits costing about \$1,000 each are nominal.

The "Other" total of \$2,861.28 is for miscellaneous work such as emergencies in connection with boilers, steam, water and sewer lines and other mechanical equipment.

Building checks costing \$20,577.48 involves the highest priced men checking the building, exits and mechanical equipment on weekends and holidays. The person checking the mechanical equipment has to be familiar with this equipment and know how to take any emergency steps to correct a problem. These men find many problems such as broken steam valves, non-operating boilers, flooded toilets, broken water lines, frozen pipes, etc.

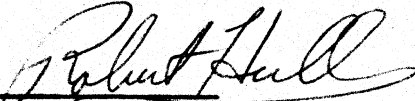
Halloween, snow plowing and sanding costing \$3,752.42 has been a modest amount the past two winters.

The union agreement for night differential pay does not add any hours of custodial work; however, the cost of \$27,165.44 is a significant budget item. Custodians can not clean a school when children and teachers are present, and this differential is mandatory. Contract cleaning could reduce this cost.



The total cost for custodial overtime is actually \$65,511.17. When the night differential of \$27,165.44 is added to the overtime, the total amount is \$92,676.61 for overtime and night differential pay.

Because of payroll procedures the amount listed is always for the preceding month's work.



Submitted by Earl Powers and Robert Hull

MADISON PUBLIC SCHOOLS

Cost Breakdown of Custodial Overtime 1972

	1	2	3	4	5	6	7	8	9	10	11	12
	CLASS I School Permit Functions	CLASS II Recreation Reimbursed and YMCA	CLASS III Overtime only Out- side only Scouts	CLASS IV Paid Per- mits, Audi- toriums Profit	CLASS V Paid Per- mits, Vo- cational & City	SUBSTITUTE Absence not covered by 6 Reg.Subs	OTHER Misc. Emer- gencies, Boilers, Steam, Water	BUILDING CHECK	HALLOWEEN & SNOW PLOW & SANDING	TOTAL	DIFFERENTIAL NIGHT No Added Hours of Work	TOTAL (GRAND TOTAL)
JANUARY	\$ 824.72	\$ 2,763.99	\$191.11	\$123.48		\$ 1,188.67	\$ 447.01	\$ 1,485.14	\$ 187.88	\$ 7,212.00	\$ 3,052.93	\$10,264.93
FEBRUARY	481.59	2,952.09	244.59			779.49	98.41	1,870.10	1,183.93	7,610.20	3,243.79	10,853.99
MARCH	371.39	2,160.28	121.55	140.69	\$ 895.60	951.04	100.90	2,053.14	526.05	7,320.64	3,566.30	10,886.94
APRIL	730.51	882.88	139.60	69.10	11.57	1,212.04	47.49	1,469.12		4,562.31	2,471.35	7,033.66
MAY	1,223.82	662.39	6.66	23.85	6.34	754.43	334.60	1,435.95		4,448.04	3,497.63	7,945.67
JUNE	413.98	608.86	123.22	29.87				1,335.17		2,736.40	540.86	3,277.26
JULY	240.32	744.67		336.40				1,236.71		3,021.22	144.15	3,165.37
AUGUST	460.37	336.49		42.40		52.10	171.48	2,045.60		3,108.44	323.63	3,432.07
SEPTEMBER	959.75							1,941.88		3,116.45	323.63	3,440.08
OCTOBER	393.13	1,551.19		31.35		2,841.60	347.34	2,271.94		7,436.55	3,416.81	10,853.36
NOVEMBER	964.63	1,269.27	91.18	91.08	84.91	1,502.46	51.73	1,412.60	1,854.56	7,322.42	3,486.05	10,808.47
DECEMBER	642.22	2,567.52	31.27	2.09	6.92	1,987.27	359.08	2,020.13		7,616.50	3,098.31	10,714.81
<b>TOTAL</b>	<b>\$7,706.43</b>	<b>\$16,499.63</b>	<b>\$949.18</b>	<b>\$890.31</b>	<b>\$1,005.34</b>	<b>\$11,269.10</b>	<b>\$2,861.28</b>	<b>\$20,577.48</b>	<b>\$3,752.42</b>	<b>\$65,511.17</b>	<b>\$27,165.44</b>	<b>\$92,676.61</b>

MADISON PUBLIC SCHOOLS

Memorandum

February 7, 1973

To: W. N. McDaniels, Director of Business Services  
From: Robert J. Hull, Assistant Director of Building Services  
Subject: CUSTODIAN STUDY - Sick Leave, Absences and Vacations

Following is a summary of the amount of time men have had for vacation during the year 1972:

27 Buildings & Grounds staff have maximum of 20 days vacation  
34 Buildings & Grounds staff have 17½ to 20 days vacation  
42 Buildings & Grounds staff have 15 to 17½ days vacation  
177 Buildings & Grounds staff have 12 to 15 days vacation  
280 Total

The total number of days based on the average vacation period multiplied by the men involved are:

27 men have 540 days  
34 men @ 18.75 days 637 days  
42 men @ 16.25 days 682 days  
177 men @ 13.5 2389 days  
Total of 4248 days

4248 days divided by 40 hours equals 106 weeks of work or approximately two men's employment on an annual basis.

In the past Mr. Powers scheduled these people during the summer months. In this year's contract agreement the custodial and maintenance people do have an opportunity to take their vacation at any time during the year. This is discouraged as much as possible.

From the above data the custodial and maintenance staff is comprised of younger people.

Following is a breakdown of employee absences for 1972:

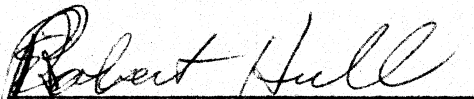
Sickness 2028 man days  
Death leave 75½ man days  
Jury duty 29 man days  
Absent without pay 308 man days  
Workmen's Compensation 341½ man days  
2782 man days or an approximate average

of 11 absences per working day. This does not reflect the man days lost because of delays in filling positions which on a promotional opening can be a significant amount of time. Buildings and Grounds has a permanent force of only six substitutes and with an average of eleven absences per day, the substitute force is inadequate to handle the absences without considerable amounts of overtime being paid.

In order to obtain more detailed information by individuals and schools regarding salaries, overtime, vacations, sickness, death leave, jury duty, absence without pay, workmen's compensation, etc., it would be necessary to involve Mr. Howard L. Sampson and Management Information.

If further information is desired, please inform me so that we can obtain it.

Respectfully submitted,



Robert J. Hull

RJH/ht

March 2, 1973

MADISON PUBLIC SCHOOLS

Survey of Glass Breakage

This survey was made to locate the schools where there is excessive glass breakage. All of these costs represent purchase orders to the T. C. Esser Glass Co. of Madison. Most of this breakage involves large pieces of glass or glass in aluminum frames with special gaskets.

Schools like Franklin, Lowell, Longfellow and West High School have small panes of glass which are cut to size and delivered to the schools as stock. When a small pane of glass is broken the custodians replace it.

From the dollar totals it appears that for 1972 the schools with higher than average glass replacement costs follow:

1. Cherokee	\$1,766.03
2. Elvehjem	1,563.69
3. Gompers	1,492.91
4. Lincoln	896.95
5. Mendota	856.74
6. Orchard Ridge	1,499.89
7. Schenk	2,643.53
8. Van Hise	2,755.42

The average cost for glass breakage per pupil is \$.83. This represents total waste as far as the educational program is concerned and attempts should be made to reduce this waste. Syracuse, New York, had \$48,970 worth of glass breakage; the enrollment is 29,368 pupils. The cost per pupil is \$1.68. Figures for school systems the size of Madison are not available.

The staff recommends that the following steps be taken:

1. Send a copy of this report to the Patrol Division of the Police Department and request more frequent checking of the schools listed.
2. Ask the principals of the eight schools to have the teachers and custodians attempt to find out if the vandals are from the school or outsiders. Ask the students to help with the problem.
3. Employ security guards to check schools with high break-in rates and high glass breakage rates. Costs are being obtained from private security guard companies to make evening, weekend and holiday checks.

SURVEY OF GLASS BREAKAGE - 1972

SCHOOL	JAN. - JUNE 1972	JULY - DEC. 1972	YEAR TOTAL
Allis	120.28	210.83	331.11
Badger	91.69	---	91.69
Cherokee	713.63	1,052.40	1,766.03
Crestwood	241.68	293.18	534.86
Dudgeon	---	---	---
Elvehjem	490.63	1,073.06	1,563.69
Emerson	349.06	160.32	509.38
Falk	31.52	62.53	94.05
Franklin	---	13.93	13.93
Glendale	286.41	468.27	754.68
Gompers	710.11	782.80	1,492.91
Hawthorne	427.33	294.36	721.69
Hyatt	464.49	234.94	699.43
Huegel	160.17	122.62	282.79
Jefferson	---	---	---
Kennedy	26.31	42.14	68.45
Lake View	156.18	281.15	437.33
Lakewood	---	219.40	219.40
Lapham	88.25	---	88.25
Leopold	---	30.59	30.59
Lincoln	434.71	462.24	896.95
Lindbergh	42.54	---	42.54
Longfellow	---	---	---
Lowell	44.30	21.49	65.79
Marquette	218.35	120.88	339.23
Menota	472.03	384.71	856.74

SCHOOL	JAN. - JUNE 1972	JULY - DEC. 1972	YEAR TOTAL
Midvale	52.10	307.11	359.21
Muir	305.28	---	305.28
Odana	25.27	412.55	437.82
Orchard Ridge	1,183.27	316.62	1,499.89
Randall	286.37	444.42	730.79
Sandburg	15.09	---	15.09
Schenk	1,537.00	1,106.53	2,643.53
Sennett	671.72	313.76	985.48
Sherman	383.88	374.27	758.15
Shorewood	28.59	27.56	56.15
Spring Harbor	---	33.67	33.67
Stephens	8.91	25.75	34.66
Thoreau	---	---	---
Van Hise	1,064.02	1,691.40	2,755.42
East	380.06	165.35	545.41
La Follette	367.80	152.86	520.66
Memorial	704.97	989.02	1,693.99
West	873.09	442.99	1,316.08
Administration	62.55	---	62.55
Central Stores	193.20	48.00	241.20
TOTALS	\$ 13,712.84	\$ 13,183.70	\$ 26,896.54



March 2, 1973

SURVEY OF GLASS BREAKAGE - 1972

EAST AREA

<u>School</u>	<u>Jan. - June 1972</u>	<u>July - Dec. 1972</u>	<u>Year Total</u>
Emerson	\$ 349.06	\$ 160.32	\$ 509.38
Gompers	710.11	782.80	1,492.91
Hawthorne	427.33	294.36	721.69
Lake View	156.18	281.15	437.33
Lapham	88.25	---	88.25
Lindbergh	42.54	---	42.54
Lowell	44.30	21.49	65.79
Marquette	218.35	120.88	339.23
Mendota	472.03	384.71	856.74
Sandburg	15.09	---	15.09
Sherman	383.88	374.27	758.15
East	380.06	165.35	545.41
<b>TOTALS</b>	<b>\$3,287.18</b>	<b>\$2,585.33</b>	<b>\$5,872.51</b>

March 2, 1973

SURVEY OF GLASS BREAKAGE - 1972

LA FOLLETTE AREA

<u>School</u>	<u>Jan. - June 1972</u>	<u>July - Dec. 1972</u>	<u>Year Total</u>
Allis	\$ 120.28	\$ 210.83	\$ 331.11
Elvehjem	490.63	1,073.06	1,563.69
Glendale	286.41	468.27	754.68
Kennedy	26.31	42.14	68.45
Schenk	1,537.00	1,106.53	2,643.53
Sennett	671.72	313.76	985.48
La Follette	367.80	152.86	520.66
<b>TOTALS</b>	<b>\$3,500.15</b>	<b>\$3,367.45</b>	<b>\$6,867.60</b>

March 2, 1973

SURVEY OF GLASS BREAKAGE - 1972

MEMORIAL AREA

<u>School</u>	<u>Jan. - June 1972</u>	<u>July - Dec. 1972</u>	<u>Year Total</u>
Crestwood	\$ 241.68	\$ 293.18	\$ 534.86
Falk	31.52	62.53	94.05
Huegel	160.17	122.62	282.79
Jefferson	---	---	---
Muir	305.28	---	305.28
Orchard Ridge	1,183.27	316.62	1,499.89
Spring Harbor	---	33.67	33.67
Stephens	8.91	25.75	34.66
Memorial	704.97	989.02	1,693.99
	<hr/>	<hr/>	<hr/>
TOTALS	\$2,635.80	\$1,843.39	\$4,479.19

March 2, 1973

SURVEY OF GLASS BREAKAGE - 1972

WEST AREA

<u>School</u>	<u>Jan. - June 1972</u>	<u>July - Dec. 1972</u>	<u>Year Total</u>
Badger	\$ 91.69	\$ ---	\$ 91.69
Cherokee	713.63	1,052.40	1,766.03
Franklin	---	13.93	13.93
Hoyt	464.49	234.94	699.43
Leopold	---	30.59	30.59
Lincoln	434.71	462.24	896.95
Longfellow	---	---	---
Midvale	52.10	307.11	359.21
Odana	25.27	412.55	437.82
Randall	286.37	444.42	730.79
Shorewood	28.59	27.56	56.15
Thoreau	---	---	---
Van Hise	1,064.02	1,691.40	2,755.42
West	873.09	442.99	1,316.08
<b>TOTALS</b>	<b>\$4,033.96</b>	<b>\$5,120.13</b>	<b>\$9,154.09</b>

March 2, 1973

SURVEY OF GLASS BREAKAGE - 1972

MISCELLANEOUS

<u>School</u>	<u>Jan. - June 1972</u>	<u>July - Dec. 1972</u>	<u>Year Total</u>
Dudgeon	\$ ---	\$ ---	\$ ---
Lakewood	---	219.40	219.40
Administration	62.55	---	62.55
Central Stores	193.20	48.00	241.20
	<hr/>	<hr/>	<hr/>
TOTALS	\$255.75	\$267.40	\$523.15

# MADISON PUBLIC SCHOOLS

## COMPARISON OF VARIOUS HEATING SYSTEM COSTS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
SCHOOL	TYPE OF SYSTEM	GROSS AREA SQ. FT.	YEAR OF CONTRACT	COST INDEX AMERICAN APPRAISAL CO. 1913 100%	ACTUAL HEATING VENTILATING CONTRACT \$	TOTAL COST H.R.V. CONTRACT \$	ADJUSTED HEATING VENTILATING CONTRACT \$ 1213 BASE	TOTAL ADJUSTED HEATING VENTILATING CONTRACT \$ 1213 BASE	1913 ADJUSTED COST PER SQ. FT. H.V. CONT.	ACTUAL COST PER SQ. FT. H.V. CONT.	1972 FUEL COST	1972 FUEL COST PER SQ. FT.	1972 ELECTRICITY COST	1972 ELECTRICITY COST PER SQ. FT.	1971 FUEL COST	1971 FUEL COST PER SQ. FT.	TOTAL BUDGET COST BUILDING BY UNITS \$	TOTAL COST BUILDING \$	BUDGET COST PER 50. FT. BY UNITS \$	TOTAL AVERAGE BUDGET COST BUILDING SQ. FT. \$	% OF H.V. CONTRACT TO TOTAL BUILDING CONTRACT COL. 7 & COL. 19	
ELVEHJEM	STEAM-UNIT VENTS	51,184	1962	750	52,048	\$	390,360	\$	\$	\$	\$	\$	\$	\$	\$	\$	512,284	\$	16.97	\$		
			1964	790	14,700		116,130											169,546		15.84		
			1967	890	25,466	92,214	226,647	733,137	1432	180	4900	.095	6,113	.119	3,909	.076	209,095	890,925	20.30	17.40	10.35	
FALK	STEAM-UNIT VENTS	41,525	1962	750	49,511		371,333										475,674		15.54			
			1967	890	15,735	65,246	140,042	511,375	12.31	1.57	3218	.092	4,078	.098	3,473	.084	199,281	674,955	18.24	16.25	9.67	
HAWTHORNE	STEAM-UNIT VENTS	42,783	1958	695	49,635		344,963										493,278		15.19			
			1961	730	13,645	63,280	99,609	444,572	10.39	1.48	4131	.097	4,230	.099	3,561	.083	180,498	673,776	17.51	15.75	9.39	
			1956	625	37,591		234,944											371,529		18.21		
HOYT	STEAM-UNIT VENTS	33,900	1958	675	27,660		186,705										221,548		19.27			
			1967	890	11,467	76,718	102,056	523,705	15.45	2.26	3590	.106	5,218	.154	2,958	.087	55,415	648,492	27.71	19.13	11.83	
HUEGEL	STEAM-UNIT VENTS + CENTRAL FAN	33,000	1965	820	67,110	67,110	550,302	550,302	16.68	2.03	3332	.10	3632	.110	2,862	.087	604,227	604,227	18.31	18.31	11.11	
			1960	720	64,957		467,690											496,500		16.47		
LAKEVIEW	STEAM-UNIT VENTS	40,500	1963	775	11,885	76,842	92,109	559,799	13.82	1.89	2,755	.068	3,095	.076	2,368	.058	144,587	641,093	13.96	15.83	11.99	
LEOPOLD	HOT AIR ROOF TOP UNITS	68,200	1969	1000	124,000	124,000	1,240,000	1,240,000	18.18	1.82	5,073	.074	9,140	.134	12,206	.179	1,029,167	1,029,167	15.09	15.62	12.05	
LINCOLN	STEAM-UNIT VENTS	52,950	1964	790	108,500	108,500	857,150	857,150	16.19	2.25	6,703	.127	8,005	.151	3,072	.058	973,921	973,921	18.39	18.39	11.14	
LINDBERGH	HOT AIR FURNACE	34,475	1967	890	64,300	64,300	572,270	572,270	16.60	1.87	6,411	.186	5,309	.154	5,234	.15	628,499	628,499	18.23	18.23	10.23	
MUIR	HOT AIR FURNACE	40,500	1967	890	69,352	69,352	617,233	617,233	15.24	1.71	6,202	.153	5,233	.129	7,360	.182	711,803	711,803	17.57	17.57	9.74	
			1958	695	47,073		327,157											310,767		14.99		
			1960	720	11,940		85,968											116,361		13.00		
ODANA	HOT WATER UNIT VENTILATORS	38,130	1965	820	12,288	71,301	100,762	513,887	13.48	1.87	2,506	.066	4,235	.111	2,642	.069	122,636	549,764	14.51	14.42	12.97	
SANDBURG	STEAM-UNIT VENTS	36,000	1967	890	70,870	70,870	630,743	630,743	17.52	1.97	3,331	.093	4,144	.115	2,950	.082	659,381	659,381	18.32	18.32	10.75	
			1958	695	58,148		404,129											468,322		20.41		
SPRING HARBOR	STEAM-UNIT VENTS	32,234	1959	725	5,621	63,769	40,752	444,881	13.80	1.98	2,323	.072	2,885	.089	2,295	.071	72,287	540,609	7.79	16.77	11.80	
			1960	720	54,945		395,604											457,813		16.03		
STEPHENS	STEAM-UNIT VENTS	37,450	1964	790	13,484	68,429	106,524	502,128	13.41	1.83	3,792	.101	4,521	.121	2,609	.07	149,677	607,490	16.82	16.22	11.26	
THOREAU	HOT AIR ROOF TOP UNITS	42,000	1970	1120	68,224	68,224	764,109	764,109	18.19	1.62	7,020	.167	9,251	.22	5,324	.127	802,088	802,088	19.10	19.10	8.51	



