

City of Rapid City

**2008 Annual Energy Report
for City Buildings**

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Energy Plant Manager
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INTRODUCTION

It is estimated that the City of Rapid City could conservatively save \$260,000 annually by following the operational and behavioral guidelines outlined in the City Energy Policy. Studies and experience have shown that these operational and behavioral changes result in a 10-50% annual savings in energy use and costs.

An estimated additional \$275,000 annual savings could be achieved by making capital investments in higher efficiency heating, ventilating and air conditioning equipment for existing City buildings and facilities. Most improvements and/or upgrades to mechanical systems result in a 10-50% improvement in efficiency. Many of these improvements would pay for themselves in under 10 years.

The following report is presented to show where energy is used and the associated costs for the City buildings and facilities. This information is presented to help City Department Heads determine priorities in upgrading and/or replacing City facilities.

If you have specific questions please contact me, Gunar Dzintars, 394-2660, or the Department Head that oversees the building you are interested in. Detailed information regarding energy use and costs is available for all the City buildings and facilities.

CITY OF RAPID CITY BUILDING'S 2008 SQUARE FOOTAGES

The following list of City buildings and facilities have their utility costs paid by the City of Rapid City. Some City-owned buildings and facilities are not listed because their utility costs are paid by outside entities, e.g. softball, baseball, soccer associations, etc.

<u>Facility Name</u>	<u>Ft²</u>
1. 450 St. Joseph Street Parking Lot	
2. St. Joseph Street / 5 th Street Parking Lot	
3. Main Street / 6 th Street Parking Lot	
4. Main Street / 7 th Street Parking Lot	
5. Main Street / 8 th Street Parking Lot	
6. Memorial Park Tennis Courts	
7. North Middle School Tennis Courts	
8. Sioux Park Tennis Courts	
9. South Middle School Tennis Courts	
10. Stevens High School Tennis Courts	
11. Wilson Park Tennis Courts	
12. Wilson Park Restrooms	215
13. College Park Restrooms	230
14. Landfill Site Building	240
15. College Park Shelter	280
16. Jamie Johnson Pony League Field Restrooms	290
17. Whitehead Softball Fields Concession	400
18. Wilderness Park Restrooms	450
19. Sioux Park Restrooms	600
20. Elk Vale Lift Station	650
21. Roosevelt Park West Shelter	715
22. Mt. View Cemetery Storage Garage	720
23. Landfill Scale Building	840
24. Street Department Brown Storage Shed	895
25. Canyon Lake Park #2 Shelter	1,050
26. Canyon Lake Park #3 Shelter	1,050
27. Robbinsdale Park South Shelter/Restrooms	1,050
28. Robbinsdale Park West Shelter/Restrooms	1,050
29. Storybook Island Entrance Booth & Restrooms	1,255
30. Canyon Lake Park #1 Shelter & Storage Shed	1,275
31. Storybook Island Office	1,065
32. Whitehead Softball Fields Shelter/Restrooms	1,065
33. Thomsen Park Shelter/Restrooms	1,090
34. Water Reclamation Lift Stations	1,160
35. Parks Department Complex Shelter	1,175
36. Child & Family Guidance Center	1,295
37. Horace Mann Park Shelter	1,300
38. LaCroix Golf Course Clubhouse & Pumphouse	1,345
39. Mt. View Cemetery Office/Shop	1,400
40. Street Department West Quonset Shed	1,470
41. Executive Golf Maintenance Shop	1,600

42.	Storybook Island Shop	1,800
43.	Memorial Park Band Shell	1,910
44.	Parks Maintenance Division Office	2,000
45.	Executive Golf Course Clubhouse & Pumphouse	2,020
46.	Storybook Island Gift/Concession/Restroom Building	2,310
47.	Light Vehicle Maintenance Shop	2,360
48.	Airport Sand Storage Building	2,400
49.	Meadowbrook Golf Course Maintenance Shop	2,400
50.	Steele Avenue Evidence Storage	2,400
51.	Steele Avenue Water Department Cold Storage	2,400
52.	Landfill West Shop	2,600
53.	Street Department West Garage/Storage	2,700
54.	Landfill East Shop	2,715
55.	Sioux Park Pavillion	2,850
56.	Street Department Sander Building	3,200
57.	North Side Fire Station #7	4,040
58.	Southwest Fire Station #5	4,130
59.	Halley Park Building	4,590
60.	Water/Water Reclamation Garage	4,720
61.	Water Reclamation/Water Garage	4,720
62.	South Side Fire Station #4	4,990
63.	Aircraft & Rescue Fire Fighting Station	5,040
64.	Street Department South Dome #1	5,070
65.	Street Department Northwest Dome #2	5,070
66.	Meadowbrook Golf Course Carpenter Shop	5,325
67.	West Side Fire Station #3	7,005
68.	Airport TSA Building	7,400
69.	St. Joseph Street Evidence Storage (50%)	7,500
70.	Street Department Canvas Dome #3	8,000
71.	Youth & Family Services Head Start Building	8,550
72.	Fire Station #6	8,930
73.	Milo Barber Transportation Center	9,185
74.	Traffic Operations Building	9,250
75.	Minneluzahan Sr. Citizen Center	9,300
76.	Water Department Pumphouses	9,855
77.	Airport Federal Aviation Administration	10,100
78.	Meadowbrook Golf Course Clubhouse & Pumphouse	10,325
79.	Parkview Pool & Bathhouse	10,630
80.	Street Department Office/Shop	10,895
81.	Airport SRE Maintenance Facility	12,800
82.	Horace Mann Park Pool & Bathhouse	14,445
83.	Water Reclamation Plant	18,870
84.	Airport Interagency Dispatch Center/Old Terminal	19,085
85.	Jimmy Hilton Pool, Bathhouse, & Concessions	19,140
86.	Main Fire Station #1	24,255
87.	Dahl Fine Arts Center & Annex	26,710
88.	Parks Maintenance Division Shops, Storage & Greenhouse	29,270
89.	City/School Administration Center (60%)	38,100
90.	Police Evidence, Transportation and Traffic Building	38,560

91.	Roosevelt Park Ice Arena	39,700
92.	Roosevelt Park Swim Center	45,575
93.	Public Library	47,680
94.	Journey Museum	48,300
95.	Public Safety Building	60,690
96.	Airport Terminal	80,000
97.	Water Treatment Plant	82,410
98.	Material Recovery Facility & Co-Compost Buildings	153,880
99.	<u>Rushmore Plaza Civic Center</u>	<u>498,565</u>
	Total Ft²	1,535,940

CITY OF RAPID CITY'S 2008 UTILITY COSTS

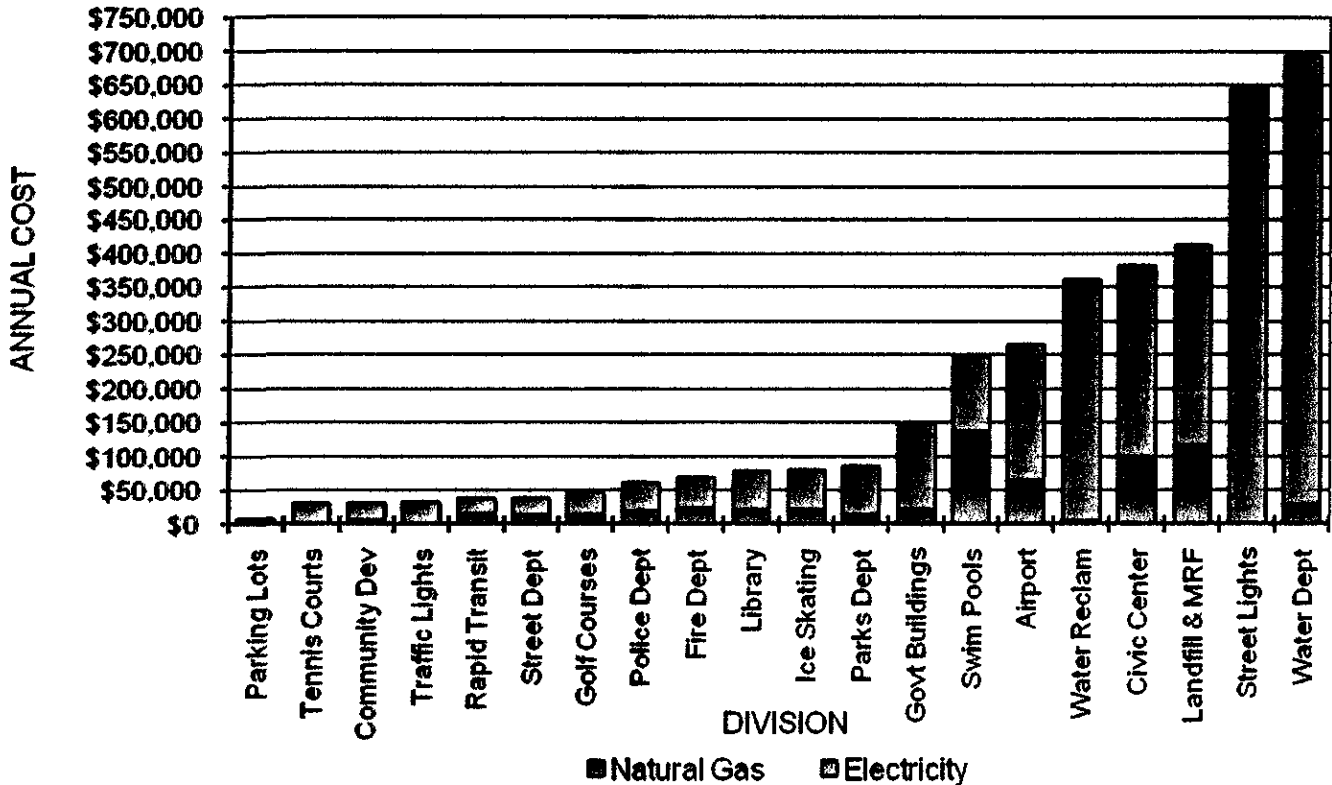
City of Rapid City 2008 Total Utility Costs

Electricity	\$ 3,138,231
Natural Gas	\$ 621,972
<u>Heating Fuel Oil</u>	<u>\$ 1,743</u>
Grand Total	\$ 3,761,946

City of Rapid City Division's 2008 Total Utility Costs

The graph and accompanying table on the following page shows the 2008 Utility Costs by Division. The electricity and natural gas costs are shown separated.

City Department's 2008 Utility Costs



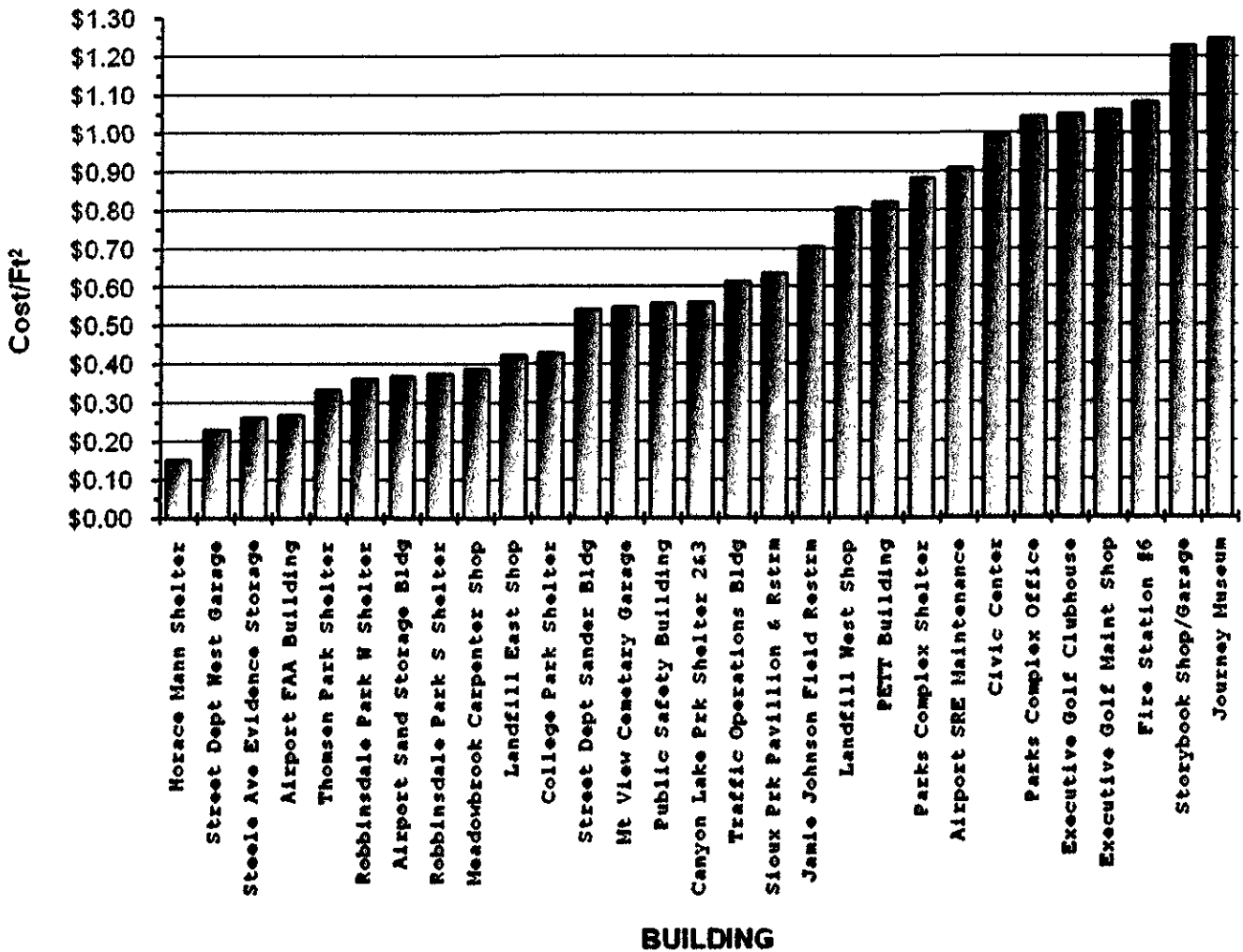
Department Rank	Department Name	Electricity Cost	Natural Gas Cost	Total Cost
1	Parking Lots	\$8,534.22	---	\$8,534.22
2	Tennis Courts	\$31,031.82	---	\$31,031.82
3	Community Dev	\$25,104.83	\$6,880.99	\$31,985.82
4	Traffic Lights	\$32,111.80	---	\$32,111.80
5	Rapid Transit	\$23,122.19	\$15,620.95	\$38,743.14
6	Street Dept	\$25,246.31	\$13,973.33	\$39,219.64
7	Golf Courses	\$33,757.35	\$14,203.37	\$47,960.72
8	Police Dept	\$41,339.98	\$20,448.73	\$61,788.71
9	Fire Dept	\$44,989.49	\$23,195.23	\$68,184.72
10	Library	\$56,400.82	\$22,294.99	\$78,695.81
11	Ice Skating	\$57,815.52	\$22,360.54	\$80,176.06
12	Parks Dept	\$71,837.01	\$13,247.42	\$85,084.43
13	Govt Buildings	\$129,338.12	\$21,414.04	\$150,752.16
14	Swim Pools	\$111,491.04	\$136,550.71	\$248,041.75
15	Airport	\$199,694.52	\$64,221.24	\$263,915.76
16	Water Reclam	\$357,325.49	\$4,029.29	\$361,354.78
17	Civic Center	\$284,149.37	\$98,423.96	\$382,573.33
18	Landfill & MRF	\$295,970.61	\$116,610.18	\$412,580.79
19	Street Lights	\$645,603.41	---	\$645,603.41
20	Water Dept	\$663,367.32	\$28,496.62	\$691,863.94
GRAND TOTAL				

CITY BUILDING'S 2008 COST/FT²

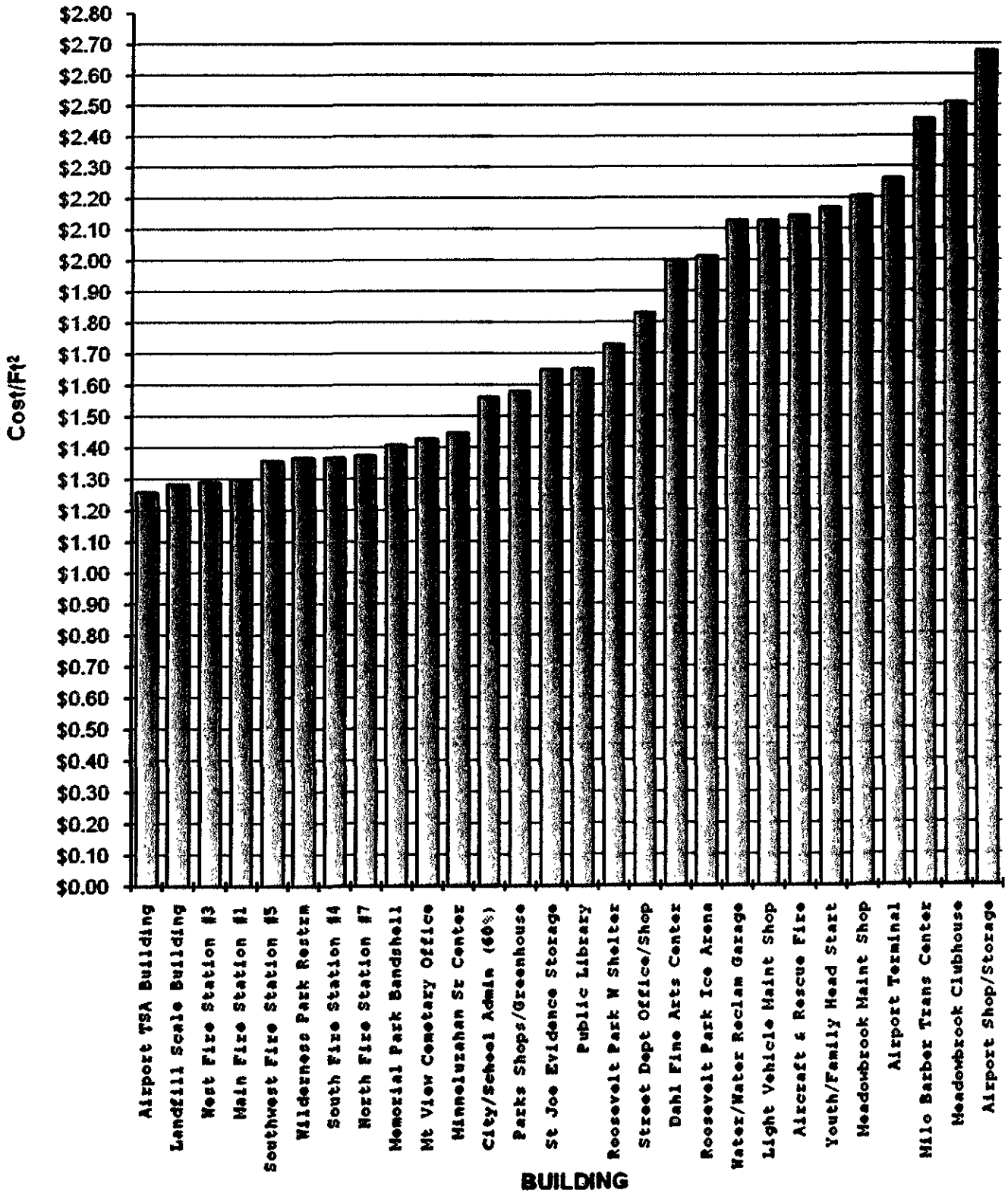
The next two graphs compares City buildings based on the Cost per ONE square foot of building.

Some facilities (swimming pools, operating plants, buildings with high outside lighting loads) are not shown because comparing them on a cost/ft² basis isn't a valid comparison with buildings used for normal occupancy.

Comparison of Energy Cost/Ft² for Buildings up to \$1.25/Ft²



Comparison of Energy Cost/Ft² for Buildings over \$1.25/Ft²

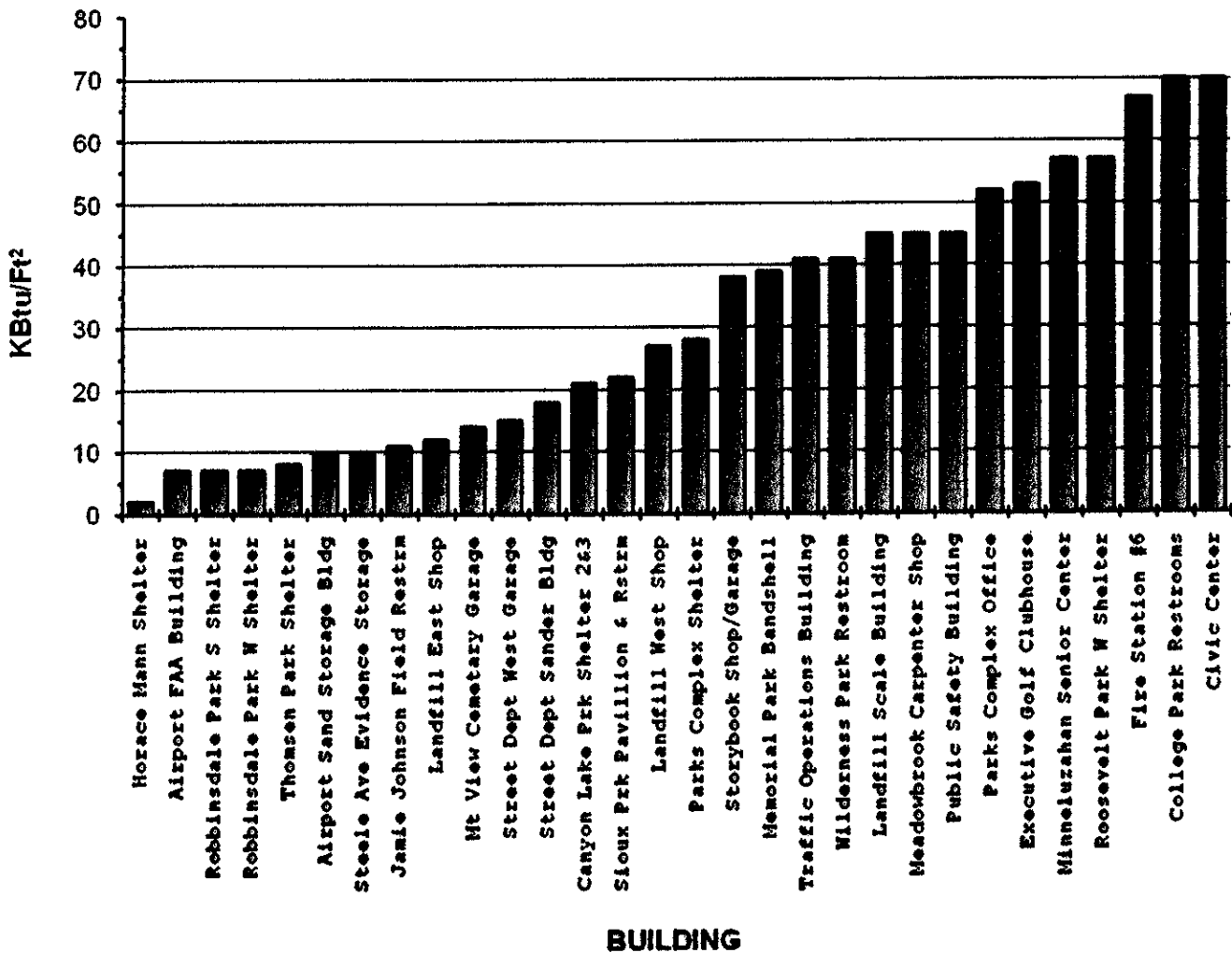


CITY OF RAPID CITY BUILDING'S 2008 KBTU/FT²

The next two graphs compares City buildings based on the amount of Kbtus (1000 btus) of energy used per ONE square foot of building. These graphs combine the Kbtus used by electricity, natural gas, and heating fuel oil. The lower the Kbtu/ft² use the more efficient the building's use of energy.

Some facilities (swimming pools, operating plants, building with high outside lighting loads) are not shown because comparing them on a Kbtu use/ft² basis isn't a valid comparison with buildings used for normal occupancy.

Comparison of Energy Use/Ft² for Buildings using up to 70 Kbtu/Ft²



Comparison of Energy Use/Ft² for Buildings using over 70 Kbtu/Ft²

