

## *APPENDIX C*

# APPENDIX C - COST ANALYSIS

## FORT SNELLING STATE PARK REUSE STUDY - 2006 UPDATE\*

Building	Original Use	Year Built	Year Vacant	Number of Floors	Basement	Building Footprint	Gross Floor Area	Re-build Porch	2006 Ext. Cond	2006 Int. Cond	Demo Costs	Mothball Costs	Exterior Rehab Cost	Reuse Abate Cost	Low Intensity Reuse Cost	High Intensity Reuse Cost
53	Gym/Service Club	1903	1993	2	Yes	5,250	15,750	No	2	2	\$110,250	\$99,750	\$582,750	\$259,000	\$1,968,750	\$2,598,750
54	Med. Detachment	1939	1997	2	Yes	5,900	17,700	1,120	4	3	\$123,900	\$112,100	\$654,900	\$441,000	\$2,212,500	\$2,920,500
55	Post Hospital	1898	1992	2.5	Yes	14,575	51,013	3,500	2.5	1	\$357,088	\$313,363	\$1,887,463	\$609,000	\$6,376,563	\$8,417,063
56	Hospital Stew. Qtrs.	1900	1993	2	Yes	900	2,700	No	3	2	\$18,900	\$17,100	\$99,900	\$119,000	\$337,500	\$445,500
57	Band Barracks	1903	1993	2.5	Yes	2,800	9,800	No	3	3	\$68,600	\$60,200	\$362,600	\$148,400	\$1,225,000	\$1,617,000
62	Morgue	1933	1997	1	Yes	1,600	3,200	No	4	3.5	\$22,400	\$22,400	\$118,400	\$49,700	\$400,000	\$528,000
63	Quarter Master**	1879	1980	2	Yes	4,000	12,000	No	0	0	\$84,000	\$0	\$0	\$0	\$0	\$0
64	Fire Station	1903	1980	2	Yes	1,800	5,400	No	2.5	3	\$37,800	\$34,200	\$199,800	\$85,400	\$675,000	\$891,000
65	Prison	1891	1980	1	Yes	8,500	17,000	No	2.5	2.5	\$119,000	\$119,000	\$629,000	\$141,400	\$2,125,000	\$2,805,000
66	Telephone Exchange	1939	1995	1	Yes	4,900	9,800	No	4	3.5	\$68,600	\$68,600	\$362,600	\$85,680	\$1,225,000	\$1,617,000
67	Post Headquarters	1879	1997	2	Yes	6,300	18,900	No	3	3	\$132,300	\$119,700	\$699,300	\$326,200	\$2,362,500	\$3,531,776
76	Civil. Empl. Qtrs.	1938	1987	1	Yes	5,900	11,800	No	3.5	3.5	\$82,600	\$82,600	\$436,600	\$88,760	\$1,475,000	\$1,947,000
101	Barracks	1889	1981	2	Yes	14,600	43,800	5,800	1	1	\$306,600	\$277,400	\$1,620,600	\$476,000	\$5,475,000	\$7,227,000
102	Barracks	1889	1981	2	Yes	14,600	43,800	5,800	1	1	\$306,600	\$277,400	\$1,620,600	\$429,800	\$5,475,000	\$7,227,000
103	Barracks	1889	1981	2	Yes	14,600	43,800	5,800	2	1.5	\$306,600	\$277,400	\$1,620,600	\$486,200	\$5,475,000	\$7,227,000
112	Post Bakery	1891	1987	1	Yes	1,900	3,800	No	3.5	3.5	\$26,600	\$26,600	\$140,600	\$95,480	\$475,000	\$627,000
151	Bach. Officer's Qtrs.	1904	1980	2	Yes	6,800	20,400	No	2	2	\$142,800	\$129,200	\$754,800	\$296,800	\$2,550,000	\$5,302,925
152	Officer's Quarters	1879	1970	2	Yes	1,400	4,200	350	2	1	\$29,400	\$26,600	\$155,400	\$66,360	\$525,000	\$693,000
153	Officer's Quarters	1892	1970	2	Yes	1,400	4,200	350	2	2	\$29,400	\$26,600	\$155,400	\$68,320	\$525,000	\$693,000
154	Officer's Quarters	1879	1970	2	Yes	1,600	4,800	350	1.5	1	\$33,600	\$30,400	\$177,600	\$68,600	\$600,000	\$792,000
155	Officer's Quarters	1892	1970	2	Yes	1,440	4,320	350	2	2	\$30,240	\$27,360	\$159,840	\$75,040	\$540,000	\$712,800
156	Officer's Quarters	1880	1970	2	Yes	1,440	4,320	400	2	1.5	\$30,240	\$27,360	\$159,840	\$76,300	\$540,000	\$712,800
157	Officer's Quarters	1905	1970	2	Yes	3,350	10,050	1,500	2	2	\$70,350	\$63,650	\$371,850	\$236,180	\$1,256,250	\$1,658,250
158	Officer's Quarters	1880	1970	2	Yes	1,600	4,800	350	2	2	\$33,600	\$30,400	\$177,600	\$64,540	\$600,000	\$792,000
159	Officer's Quarters	1892	1970	2	Yes	1,400	4,200	350	2	2	\$29,400	\$26,600	\$155,400	\$58,380	\$525,000	\$693,000
160	Officer's Quarters	1880	1970	2	Yes	1,600	4,800	350	2	2	\$33,600	\$30,400	\$177,600	\$64,680	\$600,000	\$792,000
161	Officer's Quarters	1892	1970	2	Yes	1,400	4,200	350	1.5	1.5	\$29,400	\$26,600	\$155,400	\$67,620	\$525,000	\$693,000
T-175	Club House	1940	Leased	1	No	700	700	No			\$4,900	\$6,300	\$25,900	\$0	\$87,500	\$115,500
<b>Sub Totals</b>						130,855	377,053				2,639,368	2,332,683	13,506,943	4,917,480	45,631,563	62,583,864
Streets, Curb & Gutter, & Parking Lot Work											\$275,800	\$0	\$490,000	\$0	\$490,000	\$490,000
Utility Upgrades											\$0	\$86,800	\$0	\$0	\$383,600	\$1,405,600
Landscape Upgrades											\$0	\$0	\$280,000	\$0	\$280,000	\$280,000
<b>Totals</b>											<b>\$2,915,168</b>	<b>\$2,419,483</b>	<b>\$14,276,943</b>	<b>\$4,917,480</b>	<b>\$46,785,163</b>	<b>\$64,759,464</b>

\*See the accompanying "Key to Building Analysis and Cost Estimate Spreadsheet" on page 78 for an explanation of this spreadsheet.

The total cost to mothball from SAT Grant submitted in March, 2006 = \$575,200. That cost utilizes Hennpin County "Sentence to Service Homes" (STS) labor, thus the significant reduction in cost. If STS labor is not used, the costs shown in the column titled "Mothball Costs" would apply.

\*\* Cost to erect an 6' high ornamental fence around building #63 is \$79,800

## *APPENDIX D*

The buildings are constructed with exterior masonry bearing walls. Wood framing bears into them and provides lateral support to the walls. Rot within wood members that bear in exterior masonry walls is difficult to detect but obviously can result in serious structural conditions. In order to remedy this condition, tuck pointing is necessary to prevent water from penetrating into masonry walls. Heavy deterioration of the Platville limestone foundations typically exposed above grade also will allow water to enter in these locations. Remedial repair work is required for these walls as well.

There is little evidence of damaging differential settlement in the building structures. It is probable that most foundations rest on rock or on high bearing capacity soil. The conditions of Building Nos. 65 and 151, however, suggest that damaging settlement has occurred in them. Soil borings should be made to assess the subgrade conditions. The installation of drilled piers would be one method to provide structural stabilization for these buildings.

Observations relevant to structural inspection of the listed buildings.

Building No. 53 (6271 Taylor Ave.):

The foundation walls may be limestone that has been coated with a layer of Portland Cement mortar for protection against deterioration. No further additions to the MDA report are given.

Building No. 54 (6281 Taylor Ave.):

Brick exterior walls show no significant structural cracks. No further additions to the MDA report are given.

Building No. 55 (6301 Taylor Ave.):

No further additions to the MDA report are given.

Building No. 56 (6321 Taylor Ave.):

No further additions to the MDA report are given.

Building No. 57 (6341 Taylor Ave.):

A segment of the north brick façade over the east window in the first story has canted outward from the adjacent construction as is reported in the MDA report. The failure line follows a classic corbel failure outline. No apparent cause is evident and no similar failure has been noted in any other building facades of this survey. No other additions to the MDA report are given.

Building No. 62 (6305 Sibley Ave.):

No further additions to the MDA report are given.

Building No. 63 (6345 Sibley Ave.):

The roof, second floor and exterior masonry walls for the center section of the building have collapsed. The condition of the first floor in this area is not known. The roof construction for the two remaining sections of the building shows major damage and it is probably that rot from water has damaged floors and roof of these areas as well. Despite this damage the masonry exterior shell appears to be fairly sound and plumb (inspection from a distance only) except for the south wall which bulges out of plane and would need reconstruction for reuse.

Building No. 64 (6375 Sibley Ave.):

The building has been constructed in several phases. The south half is one story in height and a masonry crack between north and south sections may indicate foundation settlement. No other additions to the MDA report are given.

Building No. 65 (6365 Sibley Ave.):

A continuous wood porch along the west façade is completely rotted. Vertical cracks occur at the northwest corner on the west wall, cracks on the north wall and cracks on the east wall at the northeast corner indicate possible settlement. The adjoining garage has cracks in arches over the windows in the west wall. Noticeable deterioration of masonry at the southwest corner of the garage is present. Cast iron columns with wood beams and steel beams supporting wood joists comprise the interior framing system of this building. No other additions to the MDA report are given.

Building No. 66 (6415 Sibley Ave.):

The concrete stairs at the north entry are completely deteriorated. No other additions to the MDA report are given.

Building No. 67 (6401 Taylor Ave.):

Brick masonry arch over the main (west) entry has a noticeable corbel crack pattern. Two steel tie rods in the first floor and two in the second floor run north-south (presumably) through the entire structure. Evidently the north and south walls were thought to require stabilization at one time. No exterior wall conditions that could be associated with such a problem were noted. No other additions to the MDA report are given.

Building No. 76 (6455 Sibley Ave.):

No other additions to the MDA report are given.

Building No. 101 (6451 Taylor Ave.):

No exterior wall conditions were noted to explain the necessity for steel tie rods as reported in the MDA report. An interior line of cast iron columns supports wood (assumed) beams and wood joists. The limestone foundation and the brick work immediately above it on the east façade are noticeably disintegrating. Corbel failure in the masonry over several windows has occurred. No other additions to the MDA report are given.

Building No. 102 (6491 Taylor Ave.):

No exterior wall conditions were noted in this building to explain the necessity for steel tie rods as reported in the MDA report. Interior framing of cast iron columns, wood beams and joists occur in this building. The east façade contains noticeable deteriorated limestone and brick sections. Masonry firewalls that penetrate and extend slightly above the roof, together with concrete mortar caps, are noticeably deteriorating. No other additions to the MDA report are given.

Building No. 103 (6531 Taylor Ave.):

The condition of this building is virtually the same as reported for Building No. 102 except that no steel tie rods were noted. Deterioration and partial collapse of the two chimneys (east elevation) are also evident. No other additions to the MDA report are given.

Building No. 112 (6535 Sibley Ave.):

The building was built with a limestone foundation system constructed to provide a crawl space below wood joists. Later a partial basement was constructed with CMU walls in order to allow for a boiler installation. No other additions to the MDA report are given.

Building No. 151 (5791 Leavenworth Ave.):

The first and second floors are constructed of wood beams, masonry interior bearing walls and wood posts which support wood joists. A long porch extends along much of the north façade. The second floor of the porch is constructed of reinforced concrete. A major separation crack between the masonry of the porch construction and the main building occurs at the east and west ends. Several brick piers that support the exterior masonry of the porch façade have vertical cracks in them that extend virtually full height. A heavy vertical crack occurs in the exterior masonry wall from the roof to the foundation wall on the east façade. No additions to the MDA report are given.

Building No. 152 (6450 Taylor Ave.):

Exterior masonry walls are virtually crack-free. Interior bearing walls are brick masonry. A porch was evidently added at a later time and slight separation cracks at the main house are evident. No additions to the MDA report are given.

Building No. 153 (6460 Taylor Ave.):

A slight crack pattern in the exterior masonry of the south wall at the west end (over the first story window). Interior bearing walls are brick masonry. No additions to the MDA report are given.

Building No. 154 (6470 Taylor Ave.):

A slight vertical crack in the exterior masonry wall at the west façade is evident. Interior bearing walls are brick masonry. No additions to the MDA report are given.

Building No. 155 (6480 Taylor Ave.):

The east (front) porch has separation cracks between it and the main house. Floor joists are supported on interior masonry bearing walls. No additions to the MDA report are given.

Building No. 156 (6490 Taylor Ave.):

Floor joists are supported on interior masonry bearing walls. No additions to the MDA report are given.

Building No. 157 (6500 Taylor Ave.):

This unit was evidently built for two different occupants. A wood framed porch occurs along the front (east) façade and wraps around the north and south walls. The porch framing is heavily rotted. The wood framed rear porch is supported on steel pipe "piers." Floor joists are supported on interior masonry bearing walls. A heavy crack occurs in the exterior masonry of the first story window lintel in the west elevation of the "north" unit. No additions to the MDA report are given.

Building No. 158 (6510 Taylor Ave.):

Floor joists are supported by interior masonry bearing walls. A slight vertical crack occurs in the exterior brick of the west elevation at the window jamb. No additions to the MDA report are given.

Building No. 159 (6520 Taylor Ave.):

Floor joists are supported by interior masonry bearing walls together with wood beams and posts. No additions to the MDA report are given.

Building No. 160 (6530 Taylor Ave.):

Floor joists are supported by interior masonry bearing walls. No additions to the MDA report are given.

Building No. 161 (6540 Taylor Ave.):

Floor joists are supported by interior masonry bearing walls together with wood beams and posts. No additions to the MDA report are given.