

14. Mechanical Systems Renewal

Goal C20

C20. Development of technical and financial impact for key building systems components that will require significant renewal or replacement during the life of the Master Plan (electrical, mechanical, plumbing and life safety).

Problem Statement

The College's original three main campus buildings were built (West and Bonnell) or redeveloped (Mint) in 1982. Many building systems components installed at that time required extensive updating or replacement. Similarly, more recent buildings (Winnet, Gymnasium, Parking Garage, and the three Regional Centers) will require major system maintenance and/or replacement during the life of the Master Plan.

At the onset of the Master Plan, the College lacked a comprehensive guide to planning, managing and budgeting for building systems in a way that would ensure the long-term integrity and viability of the College's physical plant. To address this issue, McHugh Engineers was asked to undertake a comprehensive assessment of all of the College's buildings to document current conditions and future maintenance and replacement requirements.

Proposed Solution

A comprehensive report which details 1-2 year, 3-5 year, 5-10 year and 10-20 year infrastructure, maintenance and replacement needs has been developed by McHugh Engineering. This report addresses four major areas: mechanical systems, plumbing systems, electrical systems and life safety systems.

Cost Estimate

See phased cost data from McHugh Report on pages 84 and 85.



**CCP MASTER PLANNING EXPENDITURES
COSTS/REPAIRS/REPLACEMENTS BEYOND ROUTINE MAINTENANCE**

1 - 2 yrs. 3 - 5 yrs. 5 - 10 yrs. 10 - 20 yrs.

MINT BUILDING

- Mechanical	\$165,000	\$512,900	\$202,800	\$68,560
- Plumbing	\$45,250	\$50,500	\$44,200	\$28,800
- Electrical	\$22,500	\$62,675	\$22,750	\$204,000
- Life Safety	\$59,250	\$86,825	\$59,800	\$203,200
- Total	\$292,000.00	\$712,900.00	\$329,550.00	\$504,560.00

BONNELL BLDG.

- Mechanical	\$187,500	\$437,000	\$2,367,300	\$536,000
- Plumbing	\$53,950	\$43,125	\$90,350	\$50,880
- Electrical	\$47,000	\$51,750	\$26,000	\$240,000
- Life Safety	\$49,500	\$45,770	\$70,070	\$218,400
- Voice Evacuation		\$57,500		
- Total	\$337,950.00	\$635,145.00	\$2,553,720.00	\$1,045,280.00

WEST BUILDING

- Mechanical	\$125,000	\$355,350	\$185,900	\$59,760
- Plumbing	\$39,800	\$79,522.5	\$62,725	\$23,840
- Electrical	\$27,500	\$31,625	\$22,750	\$216,000
- Life Safety	\$61,500	\$49,737.5	\$56,550	\$176,800
- Total	\$253,800	\$516,235.00	\$327,925.00	\$476,400.00

STUDENT LIFE

- Mechanical	\$26,000	\$160,770	\$205,400	\$167,680
- Plumbing	\$11,600	\$19,320	\$49,400	\$70,640
- Electrical	\$25,000	\$20,125	\$22,750	\$203,200
- Life Safety	\$16,500	\$22,770	\$44,135	\$138,880
- Voice Evacuation		\$57,500		
- Total	\$79,100.00	\$280,485.00	\$321,685.00	\$580,400.00

GYMNASIUM

- Mechanical	\$36,000	\$126,845	\$47,840	\$28,800
- Plumbing	\$16,250	\$25,645	\$20,670	\$15,680
- Electrical	\$45,000	\$57,500	\$1,950	\$12,000
- Life Safety	\$18,900	\$34,327	\$20,670	\$32,000
- Voice Evacuation		\$86,250		
- Total	\$116,150.00	\$330,567.00	\$91,130.00	\$88,480.00



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GARAGE

- Mechanical	\$4,300	\$ 6,670		\$8,400
- Plumbing	\$16,500	\$ 27,370	\$24,310	\$18,880
- Electrical	\$5,000	\$198,375	\$19,500	\$176,000
- Life Safety	\$162,000		\$81,250	\$94,800
- Total	\$187,800.00	\$232,415.00	\$125,060.00	\$298,080.00

WEST PHILA

- Mechanical	\$58,200	\$235,750	\$309,400	\$36,480
- Plumbing	\$18,350	\$37,375	\$18,915	\$12,480
- Electrical	\$45,000	\$1,725	\$3,900	\$152,000
- Life Safety	\$27,750	\$6,325	\$72,150	\$37,200
- Total	\$149,300.00	\$281,175.00	\$404,365.00	\$238,160.00

NORTH WEST PHILA.

- Mechanical	\$105,000	\$977,500	\$88,400	\$240,800
- Plumbing	\$49,100	\$35,650	\$52,650	\$52,240
- Electrical	\$50,000	\$414,000	\$9,750	\$12,000
- Life Safety	\$29,500	\$35,650	\$100,750	\$181,600
- Total	\$233,600.00	\$1,462,800.00	\$251,550.00	\$486,640.00

NORTHEAST PHILA.

- Mechanical	\$21,550	\$158,700	\$1,299,350	\$203,760
- Plumbing	\$11,500	\$15,582	\$47,580	\$63,920
- Electrical	\$20,000	\$1,725	\$1,950	\$540,000
- Life Safety	\$12,500	\$12,075	\$99,905	\$94,320
- Total	\$65,550.00	\$188,082.50	\$1,448,785.00	\$902,000.00

TOTAL **\$1,715,250** **\$4,639,804.50** **\$5,853,770** **\$4,620,000**

NOTE:

1. Life Safety includes fire alarm, emergency and exit lighting and fire protection (sprinklers).

Revised 12-18-02

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