



Facility Audit Overview

An audit is conducted to assess the physical condition of the campus buildings and utility systems. The results of the audit provide a score defined as the Facility Condition Index (FCI). In basic terms, it is the repair cost divided by the replacement value.

The audit results provide a useful tool for facility planning. The magnitude of building system deficiencies is identified and summarized on score sheets. The deficiencies can be prioritized by individual system or by building and used to justify funding requests for Controlled Maintenance and Capital Construction. The audit results give the campus administration an indication of the usefulness and long-term outlooks for the campus' physical assets.

Audit Data

Summary sheets were prepared for each component used in calculating the FCI. The summary sheets provide the following information:

Facility Identification- the facility is identified by building name, year built, and replacement cost.

Building Evaluation Table- the building evaluation table summarizes the audit data for the building. It contains the following:

Component- each building is broken down and scored by major components including the foundation, roof, plumbing, etc. These components will vary from building to building (e.g., all buildings do not have elevators.)

Component Condition Value Multiplier- the auditor rates each building component as to how the current condition has deteriorated from the new condition. A score of 10 would indicate that no deterioration has taken place and the component is in the same condition as it was when it was new. The rating is a subjective score assigned by the audit team.

Component Percentage of Total Cost- is the fraction of the building's cost associated with the component based on the RS Means Square Footage Costs. For example, a roof with a multiplier of 8 means that the cost of the roof is 8% of the total building cost. The sum of all the factors by definition would add up to 100%.

Component Current Value- is determined by multiplying the Component Condition Value Multiplier by the Component Percentage of Total Cost



for each component. This is a measure of how a component relates to the overall building condition.

Component Estimated Useful Life Remaining- is based on the RS Means Facilities Maintenance and Repair Cost Data estimated useful life. It is calculated by subtracting the component age from the estimated useful life. It gives an indication of how close the component is to needing replacement.

Overall Building Rating- is an average of the Component Condition Value Multiplier in %. A new building would rate 100%.

Facilities Condition Index (FCI)- is a comparative indicator of the relative condition of facilities. The FCI is expressed as a ratio of the cost of remedying maintenance deficiencies to the current replacement value. The FCI provides a method of measurement to determine the relative condition index of a single building, group of buildings, or the total facility (physical plant). This calculation also provides the facility professional a corresponding rule of thumb for the annual reinvestment rate (funding percentage) to prevent further accumulation of deferred maintenance deficiencies. A new building will have an FCI of 99.

$$FCI = 1 - \frac{(\text{Replacement cost} - \text{Current value})}{\text{Replacement cost}} \times 100$$

General Notes on the Audit Data

The audit provides a valuable assessment of the condition of the physical asset. The data gathered provides a benchmark for the present condition of the building and can easily be updated. It should be noted that the rating score for each building component is a subjective score assigned by the audit team. The same personnel were used to score particular building components in each building so that the scoring criteria would be consistent. This makes the results very accurate for relative comparisons between buildings. While the relative scoring is very accurate, the absolute scoring and resulting FCI should be recognized as having a subjective component.

Another important item to recognize is that the replacement cost should be distinguished from actual construction project costs. For example, a building may have a replacement cost for plumbing of \$24,000. This cost would provide for repairing and/or replacing plumbing piping, valves, and fixtures to restore the system to the condition that it was when the building was new. However, the replacement cost does not include cost for drywall, painting, floor covering, ceiling, and roof repairs that could be required to gain access to the plumbing components or the cost of meeting current code. The replacement cost is a good order of magnitude measure and is valuable when comparing relative costs between buildings or systems.



COLORADO SCHOOL OF MINES

EARTH ENERGY ENVIRONMENT

Facilities Management • 1318 Maple St, Golden, CO • 80033 • 303-273-3330

BUILDING EVALUATION SUMMARY

Building Information

Facility Name: <i>Mines Park Community Center III</i>	Building Code: <i>XN</i>
Date: <i>7/29/2013</i>	Auditor: <i>R Slavik / M Ray</i>
Year Constructed: <i>2004</i>	
Gross Sq. Ft: <i>6,310</i>	Net Sq. Feet: <i>5,666</i>
Replacement Value: <i>\$613,222.00</i>	

Component Rating

Component	Building Component Percentage of Total Cost	Building Component Replacement Cost (\$)	Building Component Condition Value Multiplier	Building Component Current Value	Building Component Capital Renewal Target FCI=85.00	Building Component Estimated Useful Life (years)	Building Component Age (years)	Building Component Useful Life Remaining
Substructure	6.50	\$39,859	8.50	\$33,881	\$0	75	9	66
Superstructure	8.00	\$49,058	8.40	\$41,209	\$491	50	9	41
Exterior Enclosure	13.20	\$80,945	8.25	\$66,780	\$2,024	50	9	41
Roofing	2.10	\$12,878	7.67	\$9,877	\$1,069	25	9	16
Interiors	25.00	\$153,306	8.47	\$129,850	\$460	20	1 to 9	1 to 16
Conveying	None	None	None	None	None	None	None	None
Plumbing	19.50	\$119,578	7.93	\$94,826	\$6,816	25	9	16
HVAC	11.90	\$72,973	8.44	\$61,590	\$438	25	9	16
Fire Protection	2.70	\$16,557	8.83	\$14,620	-\$546	50	9	41
Electrical	11.10	\$68,068	7.93	\$53,978	\$3,880	35	9	26
TOTALS	100.00	\$613,222		\$506,608	\$14,630			

FCI=Repair cost/Replacement value: 82.61
 Building Capital Renewal Target \$14,630
 FCI=85.00