



When Do You Repair and When Do You Replace?

“When do you repair and when do you replace” is always a good question to ask oneself pertaining to things that make up your home and all those pieces of furniture, etc. there that you haven’t got around to fixing. For facility managers and their counterpart asset manager, this question is far more pressing because, at some point in time, building equipment and materials e.g., roof will need repair when maybe replacement would be the wiser choice. The answer to this question should be based on repair versus replace return-on-investment analysis.

We have discussed several topics all associated with facility management and asset management that contribute to making the best decision based on knowledge of the building. Please refer to those links noted at the end of this column for a refresher on facility conditions and the Facility Condition Index (FCI) method that assists building management in choosing the optimum answer to repair versus replace question.

Footnote: Published in 1991, the book *Managing the Facilities Portfolio* by the National Association of College and University Business Officers, introduced the concept of FCI to the educational community. From there the approach has been used by a wide variety of organizations and institutions outside the educational community.

If one were to take the “repair cost” of a piece of equipment and divide it by the “replacement cost”, the equipment’s FCI can be determined. For example, \$5,000 repair divided by \$60,000 replacement cost will equate to a 0.083 FCI. This means the equipment is in the category of



“Comprehensive Stewardship” based on the FCI ratios and categories defined as follows:

- < 0.05 = Showpiece Facility
- 0.06 to 0.15 = Comprehensive Stewardship
- 0.16 to 0.29 = Managed Care
- 0.30 to 0.49 = Reactive Management
- > 0.50 = Crisis Management

For the layperson, the FCI status can be explained as follows:

Showpiece Facility: This would be the status of equipment and building systems when new and preserved as long as possible, however this should not be a facility goal to be maintained over the coming years. The continuation to maintain this status would require an excessive cost with no real financial return-on-invest when these funds could be better spent on other facility and asset

management annual budget needs.

Comprehensive Stewardship: This can be considered a similar return-on-investment financial tradeoff as the Showpiece Facility category. A building should retain this status as long as possible without investing an absorbent amount of money.

Managed Care: Over the equipment and material service life this category should be the ideal financial level of investment to maximize usefulness service life without paying a premium for preventive maintenance and repairs that, in the remaining year(s), the equipment or materials may extend its usefulness until unscheduled failures begin to occur.

Reactive Maintenance: This is the opposite to “Managed Care” when unscheduled failure will often lead to urgent and costly premium to answer the response. Often, other issues and concerns may arise from the urgent response e.g., labor cost to resolve the problem in the evening or on a weekend resulting in paying the responder(s) time and a half or double-time to complete the work.

Crisis Management: This is exactly what it is; often resulting in the equipment or material being urgently replaced as the only practical solution. Unfortunately, “Crisis Management” will usually result in a financial premium to resolve the problem and can often have other negative impact to the facility such as the building needing to be shut down for a period that disrupts the facility’s uses by its occupants.

Determining the estimated FCI of the building’s equipment database, as well as the condition of the building structure may challenge reasonable estimates because of associated costs, e.g., demolition and disposal cost, etc. With the help of an estimator, historical data can be obtained and then by maintaining accurate database, educated replacement planning can be reached. It is important to note that FCI status doesn’t go from “managed care” to “crisis management” within a

couple of months or even a year. Staying current with the condition of the building and its infrastructure is critical to the long-range management of the facility.

The “when do you repair and when do you replace” question is best reviewed annually as the building’s facility management budget is being developed for the coming year and the budget, when approved should be forwarded for discussion with the asset management group.

For other *Focus on Facilities* columns to cross reference with this column that are integral with this month’s topic please go to:

Facility Management:

[September 2020, Completing an Infrared Building Exterior Survey](#)

[July 2021, Failure to Plan-Plan to Fail](#)

[August 2021, Creating Your Own Database—Part 1](#)

[September 2021, Creating Your Own Database—Part 2](#)

Asset Management:

[February 2019, A Capital Project Roadmap](#)

[June 2019, Facility Assessment = Your Building Condition Index](#)

[November 2020, Creating a Deferred Maintenance Plan](#)

[February 2021, Master Planning and Asset Management](#)

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