



Implementing Total Cost of Ownership

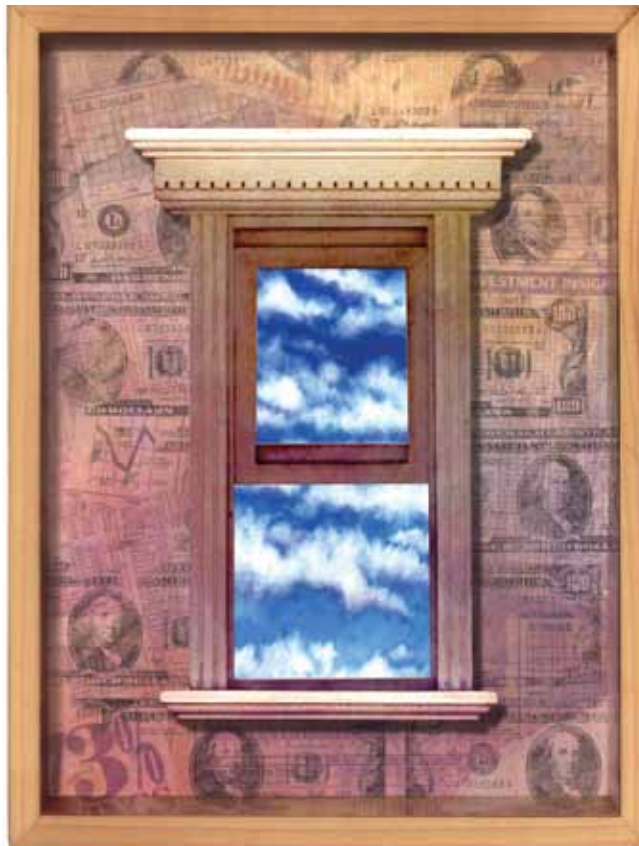
A CFaR Research Project Update

By Douglas K. Christensen, APPA Fellow

The book by APPA *Buildings...The Gifts That Keep on Taking* answered many questions about what the industry is doing to deal with capital renewal and deferred maintenance. The results suggested that the concept of dealing with **assets as investments** was a critical step. In reality, buildings were nothing more than a group of systems working together to produce a space. That space could be put to many different uses. In fact, space became an asset also supported by many systems. We learned that an asset has many different names and meanings. For example: a building is an asset, space is an asset, systems are assets, and components are assets. Based on what we learned, *all* investments are assets and need all need to be managed to get a return on investments.

The next learning was that assets have three kinds of costs. In every industry we studied, they were taking care of all three costs. The first cost was the Birth & Burial costs, which were non-recurring. There was a beginning and an end. These costs were part of the organization's project delivery system.

The second cost was Maintenance and Operations. These costs were annual recurring costs. Usually a budget or a draw from designated reserves was required to get all of the care needed to keep the assets running. The third cost



was Recapitalization. These costs were periodic recurring costs. These capital funds were need as retrofits, improvements, or replacements were needed. They were needed when needed.

These three costs make up the Total Cost of Ownership. Every asset has these three kinds of cost. It was obvious to us that the Total Cost of Ownership was a critical need for the educational industry. The industry needs to master TCO.

From this research we had learned that in order to get a handle on deferred

maintenance and capital renewal another study was needed. It was obvious that any change in practice would require policy and/or procedure change. The current paradigm was not producing the right results. To do a research project that would compel educational institutions to change their practices seemed like a daunting task. Since we did not know what daunting meant, we decided to do a follow up research project and call it "Implementing TCO in the Educational Industry."

Our approach was to survey 25 institutions and get their feedback on two issues. First, collect the kind of data needed to cover the TCO principles, and second, to determine from each institution if TCO should be implemented. We did not ask in the survey if the institution would implement TCO

because of the politics. The survey wants to know if institutions thought it would be beneficial to implement TCO in the educational industry.


STATUS

I presented the formal request to APPA's Center for Facilities Research (CFaR) to do the research. I asked Terry Ruprecht and Jack Dempsey to serve as key advisors in doing this research. Terry was a carryover from the previous research. As the management team for

this research we wanted to make sure the vision of what we wanted to accomplish was clear and doable. We have completed the initial steps of setting up the CFaR project as a "Peer Reviewed Research" project. This meant that we were going to do original research that is conceived, conducted, and interpreted specifically for the industry. The research will support or discourage TCO and educational industry. The project received a research grant from ASHRAE to fund the study. ASHRAE is interested in TCO but have very few policies on TCO for equipment, so they asked to partner with the results. The survey will be collecting data for ASHRAE to further study their issues along with ours.

We have completed the development of the survey tools with AgileOAK as our contractor. They have been great in assistance and support. We completed

an eight-institution Beta test of the instrument which worked out a lot of problems. We have made the corrections and added tutorials to the survey. Then in September 2011 we organized and launched the survey by sending out invitations to those that had shown interest in being a part of the survey. In addition to APPA members we have had businesses, military bases, federal facilities, and others involved with the survey.

The survey was completed in December 2011, and the data is being scrubbed for the institutional reports. Once the institutions have been addressed, the report will be written and presentations will be made at ASHRAE, IFMA, NACUBO, and APPA 2012. 

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