UNL Conducts Facility Assessment with Efficiency

By Matt Adams, P.E.

The need for our institutions to conduct ongoing facility condition assessments is ever present. However, the cost can be an obstacle.

Regardless of your approach; contracting with consultants or using in-house staff, an Facilities Condition Assessment (FCA) requires time and resources, which are both in short supply. Some institutions have tried to save funds by using sampling techniques and assessing only a portion of the campus. Others go further and simply apply formulaic analysis to their campuses. Naturally, the latter approaches cost less, but they also deliver less. At the University of Nebraska Lincoln (UNL), the Department of Building Systems Maintenance Services (BSM) has discovered improvements to the FCA process that have resulted in robust results at a significantly reduced cost.

REENGINEERING THE PROCESS

Under the direction of Jim Jackson, the UNL BSM team has essentially reengineered the process of facility condition assessment. BSM established an FCA working group that was charged with two critical goals:
1) design FCA reports with the minimum of data required to support the UNL capital budgeting process, and
2) improve upon current industry best practices in order to delivery only those required deliverables but without any unnecessary cost or overhead in the process.

Put another way, the first task was to redesign industry standard FCA reports to include only that data that is required, and present that data more effectively. Next redesign the assessment process to greatly reduce the cost required to supply the new reporting standards. Without revealing specific budgets, the goal was to reduce the total cost of the FCA process by more than 50 percent of the industry average cost for FCA services.

The first stage of the process was the "top-down" report design process. This group effort, managed by the FCA program manager, Mike Placke, involved a working group with participants from BSM, IT, Facilities Management and Planning, and the Controller's Office. This multidisciplinary team worked to understand the specific capital renewal and facility planning process at UNL in such an acute manner to allow for identification of single data points of criticality. Conversely—and just as important—was the effort to purposefully exclude many data points that are typical within the industry for peer FCAs, but unnecessary for UNL planning purposes.

It was recognized and stated as a business rule at the start of the process, that every extraneous data point cost UNL resources in two ways. The additional cost of assessment and data/report publication of extraneous data points is approximately two hours per assessor per building repeated thorough the entire multi-year process. This waste of resources was compounded by the ongoing update and reassessment process that endures for years. Suffice it to say, when the team recognized the magnitude of the opportunity cost for each selected and rejected data point, great care was taken.

This minimalist reporting model design process could not be achieved using the traditional specification process.

Analysis and interviews with the senior facility administrators never included open-ended questions that are heard on other projects, e.g., "What features would you like?" Rather the question is posed as, "How are the budgets and priorities established?" This is followed by an iterative series of proposed data sets starting with too little, and only adding when full justification was proven. This is then contrasted with an industry typical approach of offering the senior administrators anything and everything in an effort to impress and, thus, over-deliver on a task. In the end, the same capital renewal modeling is achieved with about 30 percent less data points than typical FCAs.

IMMEDIATE UTILIZATION

As this process came to a close another benefit was realized. This benefit was one of immediate utilization. Unlike other FCA projects were thick reports are produced in a format unfamiliar to the stakeholders, these reports are directly a result of input from stakeholders and fully usable by them for each planning and budgeting purpose without any translation or reformatting whatsoever. Oddly enough, many peers have experienced a final step once an FCA project was completed. That step was to try to interpret, translate, and eventually utilize the data produced. This is most typically a result of FCA assessors not beginning the process with the "top-down" model and report re-design as utilized by UNL.

Once the refined renewal model and reporting designs were in place, the FCA working group turned its sights

to reengineering of the assessment and data collection process. For UNL, the field assessments are conducted by the BSM trade staff professionals and engineers. Two representatives for most disciplines were chosen for the FCA, and they generally helped each other out as a team but split field assessment responsibility. Despite this being an "in-house" project UNL created new account codes for every aspect of the FCA project and all work was charged accordingly. This is what provides the evidence of success for the initial goals of the project: cost reduction.

BY THE BOOK

Essentially, the primary method of savings for the field assessment phase of an FCA is to reduce field time as subsequent data form population. For UNL, a rigorous analysis of each was conducted and reengineering produced significant

results. First of all, the scope of the data set to be collected for the FCA renewal model was already redacted from the top-down process described earlier. As such, there would be cost reductions realized without any change to the field process. However, a key resource was recognized and exploited and this dramatically reduced the total hours of field assessment required. This resource was the profound knowledge of the UNL facilities by the BSM staff.

The theory, now proven correct, was that if properly trained and given a full understanding of the final deliverables of the FCA, the BSM staff could rely heavily on their pre-existing knowledge of the facilities to populate the FCA assessment templates without the field assessment time required by outsiders of new hires unfamiliar with the campus. The one key to the success of the utilization of the knowledge resources

was the introduction of a new perspective to the BSM staff. Ongoing meetings provide training and support to offer the perspective not of repair and getting by with less (as if often the mentality on the shops) but to assess as if maintenance and renewal were to occur as they should—by the book! This ongoing reinforcement of a new perspective, one of capital budgeting and renewal and not basic maintenance allows the BSM staff to perform like professional FCA contractors but with the additional profound knowledge of their buildings and respective systems.

RESULTS

The top-down design resulted in highly refined and standardized data collection templates that are easy to prepopulate without field assessment when the information is at hand or "in-the-head" of the assessor. Assessment meetings are held prior to any field time to share multi-trade information and collect and populate as much data as possible prior to field visits. This results in field visits that are basically validation and reinforcement of pre-existing knowledge. In general, each trade representative is utilizing 2 hours of field time for every 8 hours of typical industry best practice. In other words this is a 1 to 4 ratio.

The FCA program is now ten months old and is continually streamlining and costs are at or below targets and gradually dropping further. While still carrying the full burden of BSM responsibilities, the UNL team is working to complete at least 4 million gross square feet of its facility condition analysis each year. The entire general fund campus of 12 million GSF will be completed in three years time and update process will start all over again. The BSM if proud undertake and succeed at this effort in these difficult economic times and keep working on "Important but not Urgent" projects. 🖊

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