

Using a Formal Facilities Asset Management Program to Improve Communication with Trustees, Deans, Senior Administration, and Other Customers, and to Maximize the Value of Renovation and Improvement Projects

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Abstract:

To protect nearly \$800 million in physical assets, the University of Miami Department of Facilities Administration developed and implemented a formal Facilities Asset Management Program that enables the department to document facilities conditions, prioritize renewal efforts, and measure each building as a customer. The program contains three main sections:

- *An ongoing facilities assessment ensures that most urgent needs are addressed to minimize service interruptions, and it ensures that renovation projects address all renewal and deferred maintenance needs.*
- *A five-year financial plan captures projected funding that ties into strategic and capital funding plans.*
- *The facilities maintenance program developed for each building and each component measures the building as a customer through completion rates and preventive maintenance work orders, thereby maximizing the useful life of building components and systems.*

Data produced from the program is disseminated to the Board of Trustees, deans, vice presidents, and various campus stakeholders, and serves as further evidence of the department's strong commitment to the stewardship of the University of Miami's facilities assets. Since 1992, the University of Miami Department of Facilities Administration has eliminated \$57.2 million in deferred maintenance backlog and has reduced its facilities condition index, from 12.3% in 1992, to 3.8% in 2001.

Introduction of the Organization

Founded in 1925, the University of Miami is a private four-year research university with four distinct campuses and 14,436 students as of fall 2001. The University of Miami offers approximately 180 undergraduate, 125 masters, and 60 doctoral programs, including degrees in medicine and law.

The Coral Gables campus, with its two colleges and ten schools, including the School of Law, is located on a 260-acre tract in suburban Coral Gables, Florida. The medical campus, located near downtown Miami, consists of 12.5 acres within the University of Miami/Jackson Memorial Medical Center Complex, one of the largest medical centers in the country. The complex includes numerous facilities including two University-owned hospitals: the University of Miami Hospital and Clinics/Sylvester Comprehensive Cancer Center and the Bascom Palmer Eye Institute/Anne Bates Leach Eye Hospital. The marine campus, which houses the Rosenstiel School of Marine and Atmospheric Sciences, is located on a 16-acre waterfront campus on Virginia Key. The 136-acre South campus, located ten miles southwest of Coral Gables, is used for conducting various research and development projects.

Total gross square footage of the University of Miami's facilities assets is approximately 6.2 million gross square feet with an estimated replacement value of \$800 million.

Statement (restatement) of the Problem/Initiative

In the late 1980s, University of Miami campus conditions were poor. Air conditioning systems were inefficient and unreliable, buildings needed painting, roofs were failing due to age

and neglect, utility costs were rising, and plumbing and electrical systems were deteriorating. However, because the University had no identified deferred maintenance budget to address these issues, most repairs were performed on an emergency basis. This often resulted in costly repairs and sometimes dangerous situations.

Furthermore, major renovation projects did not include deferred maintenance items within the scope of the work. This scenario led to future disruptions and avoidable expenses following the completion of renovation projects when deferred maintenance evolved into emergencies. Concurrently, the Board of Trustees recognized that there was no methodical program in place to address the deferred maintenance backlog and campus conditions.

In 1990, however, the Department of Facilities Administration developed and implemented the comprehensive Facilities Asset Management Program, intended to maintain and improve campus conditions and to preserve institutional assets. This flexible information tool promotes effective communication with stakeholders. The key to implementing this program was the creation of a thorough and reliable knowledge base, managed with the latest database software.

Design

In attempting to identify the best program (that is, a "best practice") to improve and protect the University's tremendous investment in facilities, we could not find a suitable model. This was especially critical, given the University's limited funding for facilities improvements.

Therefore, we set out to create our own program, one built upon the following:

1. A thorough and up-to-date knowledge of building conditions.
2. A spending plan based upon most-urgent needs.
3. A comprehensive facilities maintenance program, developed in-house, and tailored to each individual building and its components, thereby allowing us to treat each individual building as a customer.

Prior to spending any money, we recognized our need for highest needs assessment based on thorough knowledge of current campus conditions. In this regard, it should be noted that many colleges and universities use outside consulting firms to conduct their facilities assessments. In such cases, although the institution's facilities staff is usually involved, the outside consultant inevitably retains most of the responsibility, and much of the acquired knowledge. Also, given the extraordinary expense, these facilities departments often rely upon the consultant's reports for five or more years, even though the data rapidly becomes outdated.

Therefore, in light of the high cost and the short-term benefits of hiring an outside consultant, we elected to perform our assessment in-house. That bold decision has allowed our department to develop and maintain an intimate knowledge of the condition of each component, in each building, and the history of these components. Consequently, our facilities managers are much better equipped to handle problems as they arise, and better yet, we are able to make educated decisions that allow us to prevent many emergencies from occurring in the first place.

In addition, our facilities managers' knowledge of conditions within their respective zones helps them defend and clarify what needs to be addressed during renovation projects. On the contrary, an outside consultant might be unavailable, or too costly, to bring back for the purposes of clarifying matters on an as-needed basis. Furthermore, a consultant's value diminishes over time, because he has subsequently turned his attention to unrelated projects.

Since its inception, our documented and computerized Facilities Maintenance Program has included maintenance schedules geared toward keeping the University's facilities in tip-top condition. Facilities managers constantly review and modify these schedules so that appropriate frequencies of maintenance will ensure the lowest life-cycle costs for physical assets. The plan enables the physical plant director and our team of facilities managers to coordinate maintenance projects, thereby avoiding unnecessary duplication of labor and materials.

In short, our program allows for consistent and methodical improvement in maintenance conditions and maximizes the useful life of the University's facilities assets.

Additionally, our Facilities Asset Management Program generates current and useful data that we can regularly present to the Board of Trustees, deans, and senior administration, thus allowing us to build our department's reputation as a good steward of the University's valuable investment in facilities assets.

This effort has been aided by the unique funding scenario we forged with the University in the early 1990s, an arrangement that allows us to invest operational savings into facilities renewal and campus improvements.

Implementation

Development of any effective facilities asset management program must begin with an accurate assessment (performed in-house if at all possible). The assessment is accomplished by developing an inspection form to capture component descriptions, needs priorities, and estimated costs for repair or replacement.

By gathering and managing such data themselves—instead of hiring an outside consultant—facilities managers will learn a great deal about their areas. At the University of

Miami, our facilities managers work with us in developing a list of highest-priority needs. The physical plant director, in turn, coordinates spending with the associate vice president.

Armed with data about the condition of the campus facilities, we believe that a physical plant director can inform the institution's planning and construction department regarding needs that must be addressed in forthcoming renovations projects. The first year's projects list should be based upon the highest-priority needs. At the University of Miami, that list is submitted to the associate vice president for Facilities Administration, who reviews and funds the list based upon available capital resources. The list also contains proposed projects for subsequent years. When capturing conditions, facilities managers should catalog all components that need to be addressed in the facilities maintenance program and they should identify renewal priorities for the balance of the upcoming five-year period.

In our own practice, once we had substantially completed our assessment, we began to prioritize our needs and to validate our priorities in the context of the University's academic mission.

In this effort, we met with the deans to ensure that the priorities of the Department of Facilities Administration were, in fact, in step with the deans' five-year program.

This department recognized early on the importance of addressing the most urgent needs on an annual basis as opposed to presenting a comprehensive list all at once. By restricting our view to a five-year window, we were able to present a more manageable plan to our administration and our Board of Trustees. The presentation of an absolutely comprehensive list will only serve to overwhelm those charged with making the funding decisions.

Benefits

In short, the University of Miami's Facilities Asset Management Program provides detailed and up-to-date information about the University's facilities assets, assets that exceed the value of the institution's endowment. The Facilities Asset Management Program provides an excellent platform for communicating how well the Department of Facilities Administration is fulfilling its responsibilities.

Annually, and on a rotating basis, we renew our commitment to the University's academic pursuits by meeting with one third of the deans individually to discuss facilities conditions. At the meeting, the dean and his or her staff, receive a booklet containing a comprehensive list of renewal and deferred maintenance projects scheduled for the next fiscal year, list of completed projects over the last five years, and a detailed condition report for all spaces controlled by that dean.

During the meetings, the deans share strategic thinking about existing programs and planned changes, and indicate whether our renewal priorities are complimentary with their goals. In this effort, we create mutually agreeable plans. These meetings also offer the deans an opportunity to discuss other facilities issues and for the department to monitor customer satisfaction.

On a larger perspective, the Department of Facilities Administration brings together facilities conditions for four diverse campuses through the Facilities Coordination Committee. This group is comprised of facilities directors from each University of Miami campus and

auxiliary area. The Department of Facilities Administration (the group submitting this report) receives updated assessments and funding projections that are then consolidated into an annual report, formally presented to the Board of Trustees, and then incorporated into the University of Miami's five-year capital plan. Facilities conditions are measured by the Facilities Condition Index (FCI) for each building, each campus, and university-wide. The Facilities Condition Index is the deferred maintenance backlog divided by the replacement value of the area being measured. By having such comprehensive measures, the Board of Trustees and the University community can track our department's progress from year to year.

It should be noted that the Facilities Asset Management Program keeps the institution, from the Department of Facilities Administration, all the way up to the Board of Trustees, focused on a set of objectives for preserving and improving the University's valuable facilities assets.

In fact, since the program's inception, the department has helped the University of Miami to eliminate \$57.2 million in deferred maintenance backlog, and has reduced the University's FCI from 12.3% in 1992 to 3.8% in 2001.

Of course another institutional benefit has been the increased efficiency in terms of operating and maintenance (O&M) costs. In fact, O&M costs have increased by less than one percent annually, on average, for the past ten years. This is due, in large part, to renewal efforts and the efficiency that the Facilities Asset Management Program has created.

Through the Facilities Maintenance Program, the department tracks monthly preventive maintenance work order completion rates. This gives them a measure of the building as

customer, and it helps facilities managers document that these important tasks are being accomplished. Over the last three years, completion rates have risen to 100%.

All in all, the Facilities Asset Management Program enables the University of Miami's Department of Facilities Administration to achieve its mission statement goal of providing the best facilities for students, faculty, and staff, operated and maintained at the least cost per square foot.

Retrospect

All too often, the answer to facilities problems is to seek additional funding. At the University of Miami, however, we found a way to generate our "additional funding" through costs savings that the administration allows us to spend as we see fit.

Certainly we could have completed our initial facilities assessment faster by hiring an outside concern; however, the cost of an outside assessment would have been tremendous. Furthermore, by completing our assessment in-house, we initiated a thorough and ongoing awareness of our campus conditions, and given our department's outstanding employee retention rate, our investment in ourselves continues to pay off year after year.

On the other hand, although an in-house assessment is advised, it is not required. An outside assessment can be obtained more quickly, it can effectively calculate FCIs, and it can identify deferred maintenance projects; however, we believe that this approach brings less long-term value to the institution.

In retrospect, we are quite pleased with our results, and our healthy and innovative partnership with the University of Miami administration testifies to our ongoing commitment to efficiency and innovation.