

Sustainability Strategies & Labor Force Optimization Solutions for Facilities

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“The “Great Recession” has forced Universities & Colleges to start practicing what they preach”

Building operations and maintenance is at the top of the expense column for every facility no matter the size or use. During the recent past recessionary cycle, owners and operators of sophisticated real property assets have been grappling with the impacts of the “Great Recession” and a recent period of rising energy costs. One of the hardest hit sectors during this period has been the [Higher Education](#) market, where university and college leaders have felt the pressure from a triple hit of sorts—rising tuition costs, coupled with high unemployment has yielded smaller incoming freshmen class sizes which has a residual impact on the university revenue, coupled with larger endowment losses. The collective effect of the boom of the last decade saw Higher Ed institutional budgets that grew at a faster pace than federal spending and in order to keep this pace, endowments in many elite institutions become the anchor-funding source for this spending. Case in point, Stanford University until recently was funding over 30% of their annual operating budget from their \$12B endowment. From 2008 to the beginning of 2010, Stamford’s endowment lost nearly 26% of its value---creating an austerity environment at one of the most revered institutions in the world. John S. Griswold Jr., executive director of the Common fund Institute, states in a recent NY Times interview that “most universities continue to spend at a healthy rate despite the large declines in their [endowments] value.”

Further, many state university systems have been hit by a final wave of cuts from their main funding source—their State, who are all under mounting fiscal pressures and some states such as California where the budget effects are more draconian. This trifecta of financial constraints have pressed university presidents into taking a hard look at their own operations and spending and to find creative ways to change decades of poor management—the Ivory Tower has come to realize that while they have been preaching cutting edge management theory to their students, they now must embrace these practices to ensure their own future sustainability.

Solutions that have a financial and environmental payoff

Many institutions however have taken a proactive approach to identifying inefficiencies in their schools operations and maintenance. Yale University, for example has dealt with the financial recession by taking a long term strategic review of how they operate every facility on their campus that has an inventory of over 15M Sft. Yale and other schools with large campuses have taken a hard critical look at their building operations, energy efficiency, environmental sustainability issues and even custodial effectiveness. All of these items represent most school’s second largest expense, after teaching and administrations salaries. In 2008, Yale asked leading sustainability and facility professionals to assist the school in creating a new operating procedure for how the university runs its facilities. Leading industry experts were asked to review the universities “High Performance Cleaning” standards to ensure that they were meeting new industry best practices and conforming to the US Green Building Councils LEED certification standards. This type of industry out reach has helped Yale control escalating operating costs and continues their committed leadership to environmental stewardship.

Other schools such as Vassar College, set in the scenic Hudson Valley of New York, with over 100 academic and residential buildings has recently undertaken an initiative to streamline their operation by addressing inefficiencies in their custodial programs. Vassar’s facilities department which is responsible for caring for the college’s diverse buildings, ranging in style from collegiate gothic to modernist, including two National Historic Landmarks. The most recent additions include the Vogelstein Center for

Drama and Film—with state-of-the-art screening rooms, studios and production facilities, and Kenyon Hall—with a dedicated dance theater.

The college's facility group, which is responsible for the comprehensive cleaning, operations and maintenance of the entire campus, was also under direct pressure from the university and parents to help contain mounting operating costs. While Vassar has maintained a commitment not to out source their services, they maintain an in-house crew of 68 custodians and an equal amount of engineers handling all of the day-to-day operations, in addition to cleaning services for special event functions and lodging for summer programs. The facility group looked for ways to create a more efficient approach to servicing the entire campus with a goal to increase the level of the team cleaning effectiveness and to reduce operating costs as they related to managing such a large labor force. The college brought in an industry specialist, Bob Cummings who works with schools, commercial real estate owners and other facility professionals to bring a level of science and analysis to cleaning operations. Bob's company, Pro-C Systems are experts at designing maintenance programs that "re-engineer the operation and focus on labor optimization" by taking a holistic approach to designing the program from the bottom up. The college's facility team has commented that:

"In short order, it became evident that his approach was unique, Bob created a customized cleaning program using some of the great techniques which helped us to improve labor analysis, vacuuming methods, dusting routines and an overall work flow plan. Bob trained our supervisors to be capable of training our custodians how to perform the required cleaning tasks correctly the first time in one pass, which reduced wasted motion and greatly improved quality."

The maintenance crew at all universities and college's has a narrow window of opportunity before classes start early in the morning to finish the academic buildings. They then reroute to the dorms after students have departed, creating numerous scheduling efficiencies and redundancies. Bob and his team designed programs that take all of these factors into account, however they firmly set progressive standards for efficiency and cost containment that most facility management teams have not been able to create on their own. Because each campus and set of buildings is unique, the system is highly tailored to the schools needs, but each has the following common elements:

Analytical Approach to Labor Distribution

The success of the program is anchored in the science of motion. Before a program can be designed, each buildings dimensions, floor plans and use is reviewed for the true "cleanable" square footage. Further, the operating specification is considered for the amount of labor required for each task and frequency. All of this information is then loaded into a financial model that allocates the labor in an optimized schedule based on the production rates set by industry groups such as APPA and ISSA.

The system is developed by incorporating the efficient methods that already exist within an organization coupled with a proven and improved cleaning techniques in such a manner that the success of system change implementation is much easier to achieve. "It takes the mystery out of how to properly use more efficiency equipment such as backpack vacuums," Cummings recently noted. The program illustrates how indoor debris and air particulates are removed from the facility's floor surfaces and above-floor surfaces in an accelerated method, to not only reduce labor dollars but to also improve overall health, in-door air quality and cleaning effectiveness.

Cost Containment Benefits

When you look at the incremental cost of one hour of labor, the cost benefits of saving this unit of labor input can be staggering for any facility. For example, 1 hour per day @ \$11.00 per hour (this includes labor burden) X 5 days a week equals \$55.00. A labor reduction of \$55.00 X 52 weeks in a year equals



\$2,860.00 of direct bottom-line costs. This is a small example of potential cost savings; it's not uncommon to see a 10%-20% or better reduction in labor costs dependent on current cleaning methods. It's impossible to put a value on improved cleaning quality, which contributes to a healthy environment and even in some studies, the student & occupant productivity rates.

The training of service-workers on the proper use of equipment and how to improve cleaning techniques provides only half of the solution to a complete high performance cleaning system. The second part of the equation is to establish key performance indicators and provide an easy-to-follow road map, which guides the service worker throughout his area of responsibility. Correct work loading and color-coded floor plans describe who, what, where, when, and how the cleaning tasks are to be performed. A professional organization cannot rely on line workers to determine when and where service should be delivered. This is a top-loaded management decision process, that when properly communicated to the field personnel can have an exponential impact on an operating environment.

Conclusion

The short term and long term benefits are much more than creating a more efficient operation that saves the institution money; morale of the operations team is a central dividend as is true pride of ownership. As universities and colleges continue to tend to their financial challenges, each will look to their facility management groups for strategies that address both the fiscal and environmental realities that face all institutions in the post recessionary era. The schools that address the operating challenges head on with cutting edge solutions and methods that address more than just how to keep the cost of tuition down will create healthy learning environments for generations to come.

About the Author

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