

Lean & Green

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Well, we're getting older. The official news is in and every day we age a little bit. The question is, are we getting any wiser? Wisdom is the intelligent application of information we have learned and transformed into knowledge. The action of learning is, of course, the key step, which means we always have to be open to new ideas.

Information could be called the foundation of reality. We cannot acquire knowledge and apply it wisely if we don't have a true sense of what's happening in the industry. In that regard, we have to pay heed to what our peers are saying, we have to actively research new ideas and concepts, and we have to be open to different approaches in our work. We can never assume that the way we do things is the right way. We must be continually challenging our activities and benchmarking them or we run the risk of becoming stagnant. To successfully operate in the facility management arena, we must always be on the lookout for trends and practices that will assist us in improving our performance—to run our operations lean and green.

Sustainable buildings

The U.S. Green Building Council (USGBC) has produced standards that will enable facility professionals to quantify and measure the performance of our buildings. If we refer to and adhere to established metrics and if we are sensitive to the environmental impact of our buildings, we can effect change. These guidelines can help us run our facilities more efficiently and with less cost.

Most of us have heard of the USGBC's LEED program (Leadership in Energy and Environmental Design). Many don't realize the benefits these standards offer. Some facility professionals have struggled for years trying to prove to management that we are more than just a debit in business operating expenses. Utilizing LEED guidelines can not only save money, but these contributions to the company can be quantified and proven.

Building and operating green has many benefits

- We can reduce operating costs within the facility.
- We can increase occupant productivity.
- We can enhance building and organizational marketability.
- We can create a positive impact on public health and the environment.
- We can help create a sustainable community.
- Legislation encourages it.

Formal education in facility management always stresses that our first and primary role in the workplace is to ensure the safety and well-being of personnel. Unfortunately, when we experience real world facility management, we come to realize pretty quickly that money talks and everything else is subsidiary. It becomes our job, then, to still take care of our customers, but in a cost-efficient manner. Coincident with that mission is the understanding of what is available to us.

A systems approach

Operations and maintenance in a facility can be segregated into different components, but they still must be treated as a whole. In purist terms, there are only four building systems: the roof, the slab, plumbing/mechanical and electrical. However, we have to take this a step further and define the equipment and accouterments that support these systems. In this area, the most important common denominators are energy efficiency and the attempt to truly integrate all the systems so that they complement each other.

The ideal situation is one in which we provide a comfortable, healthy, stimulating workplace while minimizing operating costs. Energy usage is the one area in which we can show measured and measurable results.

We now have guidelines that are designed to assist in achieving high levels of system performance while optimizing energy efficiency. This is the type of holistic approach that facility managers are known for—creating a synergy among all the building systems.

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There are standards that have been set by the EPA and other governing bodies. Maintaining an EPA rating of at least 60 as defined by Energy Star is a practice that needs to be installed and then instilled in our operations. This can be established through a model on Energy Star's Web site (www.energystar.gov).

We also can reduce energy costs as compared to the energy cost budget for systems regulated by ASHRAE/IESNA Standard 90.1-2004. This can be demonstrated by a whole building simulation using the Energy Cost Budget Method. We can track both regulated energy systems (HVAC, service hot water and interior lighting) and non-regulated systems (plug loads, exterior lighting, garage ventilation and vertical transportation.)

We need to perform continuous tracking and optimization of systems to ensure that they are running at peak efficiency. We should implement monitoring systems for temperature, humidity and carbon dioxide. These are directly related to human health and comfort and can also provide early notification of weaknesses or failures in the

building systems. These shortcomings in performance cost us money.

If possible, we can install enhanced meters for all the utilities. The more specific a meter is in regard to location or areas served, the easier it will be to remediate problems. This will also allow us the ability to be more finite in the tracking of energy and water usage and help us improve those systems.

A lot of what we have talked about so far has revolved around monitoring, tracking and documenting, and this applies to the sustainable building cost impacts, both negative and positive that arise. The running of a sustainable building does tend to shift attention to administrative and reporting tasks. But, if we think about it, an efficient building will not need as much attention on a daily basis, so it just entails a re-ordering of duties.

Energy Management Systems (EMS) will make the job of monitoring, adjusting and tracking energy usage much easier than running around the building with meters and gauges. EMS can help with regulated systems in a building. It is a great tool that can document usage, pinpoint problems and help quantify savings.

After all, to get credit where credit is due, this data has to be reported up the ladder. So another area in which we need to hone our skills is in the reporting and/or presenting of all this material. The more good news we can present to upper management, the better we will look. The best public relations for the facility department must come from within. No one else will be doing it for us.



Introspection

Many of the responsibilities that fall under our purview really should be defined through established policies and procedures. Sustainable building operations entail adjusting our current practices to pay more attention to the impacts our actions have on the people, places and things that are depending on us for care.

In purchasing and maintaining office equipment and furnishings, as well as in taking care of the facility as a whole, one thing should be paramount in our decisions: *is the product safe?* Was it made with, or does it contain, components that could harm our customers, or the environment as a whole?

We should be specifying low-emitting materials in all the products we introduce to the facility. This way we can reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of installers and occupants.

To ensure a healthy workplace, the VOC (Volatile Organic Chemical) content of products used must be less than the current VOC content limits of South Coast Air Quality Management District (SCAQMD) Rule #1168 and all sealants used as fillers must meet or exceed the requirements of the Bay Area Air Quality Management District Regulation 8, Rule 51. There are four classifications of materials which should be researched before their application: adhesives and sealants, paints and coatings, carpets and composite wood. We must be extremely diligent in checking manufacturers' specification sheets before we buy products that can be composed of detrimental materials.

We need to maintain a sustainable purchasing program that would also cover office paper, office supplies and building materials, looking not only at chemicals and VOC content in sealants, carpets, paints and furniture coverings, but also the recycled content in paper and other supply items and the impact their use will have on the environment.

These tenets also apply to the cleaning materials used both inside and outside the facility. We need to work with the janitorial and maintenance staff to see that they utilize green cleaning practices. This would entail making sure all cleaning materials carry the Green Building or GreenSeal GS-37 standard, if possible and that disposable paper products and trash bags meet the minimum requirements of the EPA's comprehensive procurement guidelines.

Low-impact cleaning equipment is also now on the market. You should work with your janitorial staff or provider to utilize equipment that maximizes the effective reduction of building contaminants with a minimum environmental impact.

Another benefit of the sustainable building process is that it has created a demand for these types of alternatives

and with the increased supply of sustainable products now available, they are no more expensive than standard materials. For a good reference guide on cleaning products, you can go to the GreenSeal Web site (www.greenseal.org); for all other materials, a little more caution and diligence must be exercised.

Grounds and exterior elements

How we manage the outside of the facility has challenges of its own. We cannot ignore the external factors of our site and still maintain it adequately.

We should monitor and ensure proper landscaping. We can try to minimize irrigation by using drought resistant plants or low-water irrigation systems. We should, at the least, ensure that there are no incidences of overwatering, as this causes runoff that can deteriorate the ground cover and soil. This also saves on the water bill.

We should control erosion on site. We can work with the landscaping crew to ensure that good ground cover exists, and provide walkways so that foot traffic doesn't kill the existing vegetation. We can introduce semi-pervious materials for paving or stepping stones to allow water to seep into the ground.

Low impact pest management programs are just as important. There are low-toxic alternatives to herbicides and pesticides. Any substance that can kill is a danger to the environment as a whole. If these must be used, then all employees must be notified not less than 72 hours before application of the chemicals. If we have a pest control management plan in place that is effective, this minimizes the need to use toxic chemicals.



We want to encourage exterior management practices that have the lowest environmental impact on the site.

We also need to monitor and measure storm-water mitigation effectiveness. With a little care and attention to the quantity and quality of the water that goes into our storm drains, we can keep our freshwater and saltwater sources healthy. Rain and water runoff picks up varied (and staggering) amounts of pollutants. We need to eliminate the use of fertilizers, chemical-herbicides and pesticides and cleaning materials that can get into the storm-water waste system. There are a number of ways in which we can minimize the amount of untreated water that finds its way back to our natural waterways, as well as measures that can be taken to limit the amount of toxins in this process.

Tip of the iceberg

LEED standards are extensive. They present a myriad selection of guidelines that can be applied to existing buildings, renovations or new construction. But, you have to start somewhere. LEED Certification is a great milestone for any company. It evinces confidence that a building is operating at its optimum. A facility professional will know that the buildings being managed are an asset to the company—economically, energy efficiently and environmentally. However, the most important aspect of the LEED process does not have to be a certified building. It is the understanding and application of sustainable building practices, and the standards set forth in the guidelines established by the USGBC that will benefit us the most. All we have to do is have the wisdom to use them. FMJ

About the Author:

Bill Conley CFM, CFMJ, LEED-AP is one of the principals of Ciminesi, Conley Facility Management (CFM2), a facility management consulting company. Conley is a recipient of IFMA's Distinguished Member of the Year Award, is a past president of the Orange County Chapter, and is Vice President of the Facility Managers Consultant Council. He also works with the IFMA Foundation in the Western Region and is a frequent contributor to the *FMJ*. Conley recently became a LEED Accredited Professional through the U.S. Green Building Council. His professional experience in facility management spans almost 30 years. E-mail Conley at bill@cfm2.net.

