

Become Your Corporation's Environmental Change Agent

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Maybe you've heard it. Maybe you've thought it. Maybe you've even said it. Over the past few years, sustainability has been a word filled with nuance and burdened by colorful marketing ploys. But sustainability is not a trend or a movement. It's not hopelessly idealistic or unrealistically expensive. And it's much more than greenwashing or a public relations tactic.

What really is sustainability?

At the end of the day, sustainability is an outcome. It's the direct result of a society, organization or individual facility that is more aware, communicates better through social networks and learns faster through diversified and accessible media content. In the context of the built environment, sustainability is the cumulative effect of the



improved design of buildings, systems and products and the mindful operation and management of existing buildings. It's driven by a greater level of awareness of both building management and occupants and enabled by the proper use of technology.

Where technology comes in

The evolution of technology has closely paralleled the growth of sustainability and these two interconnected trends will help elevate the facility management profession. Initially, leading thinkers saw the growth of technology as a negative environmental impact. Paul Ehrlich, a noted biologist and demographer, proposed a formula to summarize a population's environmental impact: $I = P \times A \times T$ (Impact = Population x Affluence x Technology)¹. However, as entrepreneurs and innovators have applied technology toward addressing environmental issues, the formula is up for revision. Ray Anderson, a green business thought leader and CEO of Interface Inc, believes that the formula should be as follows: $I = P \times A / T^2$ (Impact = Population x Affluence / Technology).

Technology can be an integral part of transforming the environmental impact of a society. Anderson's change in the formula, shifting "T" into the denominator, illustrates that technology can be part of the solution—not part of the problem. Even as the population increases and growing affluence adds to each individual's environmental footprint, technological advances can help to dramatically reduce the overall impact on the environment. This principle can be applied to the population of a nation or the population of your facility.

While technology is a broad label—and can cover anything from more efficient building mechanical systems to a volatile organic compounds-free, recycled carpet—information technology (IT) plays a special role. The world is in the midst of a revolution driven by information—a rich and broad base of information that supports cyclical, whole-systems thinking rather than linear, myopic growth. In much the same way Henry Ford's assembly line transformed work during the first industrial revolution. IT has the potential to revolutionize the work of facility managers. It can help track, manage, evaluate and ultimately, make sense of the dizzying array of possibilities that facility managers face in making buildings more sustainable.

Intelligent design and operations

If you can apply technology intelligently to the design and operation of buildings, you can realize significant environmental results. The built environment is global and ubiquitous and its scope of environmental impacts is broad. From energy and water use to building air quality and proper daylight, buildings are ripe for a thoughtful revision and technology is the ally. What's more, the potential financial impact of a more sustainable built environment is huge. With approximately 4.9 billion commercial buildings in the US³ that consume 72 percent of the country's electricity and emit 39 percent of the carbon footprint⁴, just a small percentage reduction in consumption could produce dramatic results.

Facility managers are in a position to implement this much-needed revision and technology can provide the tools to achieve it. The most logical and obvious interface between facilities and technology is an Integrated Workplace Management System. Using this tool, facility managers can begin to diagnose inefficiencies and develop enterprise-wide strategies.

With an IWMS system, facility managers can manage the triple bottom line that has long been the foundation of sustainability—finance, people and environment (both interior and exterior).

Three keys to being sustainable

There are three key challenges to realizing sustainable operations currently facing the facility management profession, as established by a recent research project conducted by the enterprise software company FM:Systems. The 2010 FM:Systems Sustainability Research Program sought to better understand the attitudes and behaviors of real estate and facility management professionals as they relate to sustainable initiatives in their organizations. The questionnaire was based on a recent survey conducted by the International Facility Management Association (2008)⁵. FM:Systems contacted 125 clients to participate in the study and obtained a response rate of 28 percent, or 35 participants. It found three universal themes relative to the adoption or rejection of sustainability initiatives within companies—cost, planning and people (bearing a striking similarity to the triple bottom line).

The cost paradox

Most facility managers know that sustainability is inherently linked to the economic sustainability of their facilities. However, putting that knowledge into practice has proven difficult. The survey found a paradox in how facility managers look at costs for sustainability projects. Facility managers believe environmental projects will drive cost savings. However, 73 percent of the participants also cited "financial challenges" as a key obstruction to launching sustainability initiatives.

A roadmap to sustainability

Given the baggage that accompanies sustainability, people have a tendency to become overwhelmed and wonder where to begin. Start by following three easy steps—gauge your current performance, initiate and implement projects, and evaluate your progress.

Performance

As a facility manager, you begin by examining the current state of things. Measure and record all inputs and outputs of your building—water, gas and electricity usage are a good place to start. Once this information is amassed, it can then be uploaded to a data management system like an IWMS or shared with external benchmarking systems. The U.S. Environmental Protection Agency has developed one of the most powerful and accessible benchmarking systems (Portfolio Manager) which is offered through

their ENERGY STAR® program. Portfolio Manager can provide usage statistics and carbon emission-equivalents derived from weather-normalized, locally sensitive information.

Project implementation

Once data points are established, trends and patterns arise. Resource use tendencies are then analyzed, followed by a plan of action. Develop sustainability projects to address concerns regarding resource consumption, building inefficiencies and/or occupant behavior. Each project must consider its social, environmental and financial ramifications. Once projects are implemented, their progress can be tracked. The projects that yield the best results can be labeled as best practices and distributed throughout the organization so others can have similar success.

Evaluations

By leveraging existing rating schemas and scorecards, any facility manager can evaluate the progress of a building. With the broad adoption of Leadership in Energy and Environmental Design (LEED®) rating systems and the growing adoption of Green Globes, third-party rating systems are becoming more and more accessible. These pre-established rating systems can provide a framework for evaluations as well as indicate prospective projects for facility managers. Using existing and validated evaluation methodologies will bolster internal and external communication of corporate social responsibility and environmental stewardship.

What's behind this contradiction? Upon further conversations with the survey participants, it was found that it is driven by the frame of reference that facility managers use to view investments: long-term vs. short-term. Projects that require a large, upfront investment frequently offer a large return on that investment, albeit long-term. While many companies don't want to make that initial capital outlay, others realize the long-term benefits of doing so.

Information is vital in helping executives make the decision to invest for the long-haul. Facility managers often lack the skills, tools or data to conduct lifecycle forecasts of project costs and benefits and, as a result, they default to evaluating initiatives solely on the basis of initial costs. First, you need to build comprehensive cost and benefit models that allow you to forecast the financial and environmental impacts of various projects over time. Then using established capital planning methods, such as Net Present Value or Internal Rate of Return, you and your management can look at costs over the project's lifecycle to identify the most financially and environmentally beneficial options.

Act, don't react

A second key challenge is the lack of strategic direction and planning of sustainability initiatives. The good news? Green building concepts are gaining momentum with 68 percent of all participants having specific and measurable goals related to sustainability. However, 83 percent of participating companies do not have a master plan for implementing sustainable facility initiatives and instead apply green concepts in their projects on a case-by-case basis. For example, in the case of energy utilization, a strategic approach would be setting specific, measurable goals for energy reduction and then proactively building a list of projects to achieve those goals. In reality, most facility managers look for ways to fit in energy saving measures when projects are undertaken for other reasons.

While reactive efforts are better than no efforts at all, these facility managers are missing the opportunity to realize the full potential of cost savings and environmental improvements. How can facility managers move toward a more strategic approach?

The first step is establishing baselines. Understanding your current operating conditions through detailed tracking and

management of building metrics provides the necessary information to identify buildings with below average performance. Continuing with energy use as our example, gathering and recording energy use for our buildings over time allows you to define a baseline for energy consumption. Also, programs such as the U.S. Environmental Protection Agency's (EPA) ENERGY STAR® program provide an excellent way of benchmarking performance against other buildings and calculating your building's carbon footprint.

Next, conduct an assessment of your buildings. Look at areas for improvement and build a list of projects (analyzed using a lifecycle approach as mentioned above). Use the forecasted impacts of those projects to set targets for performance in future years. The most progressive companies that participated in the study often implemented incremental small-scale pilot projects to build more solid business cases for a broader rollout of a given initiative. This proactive strategy reduces financial uncertainties while fueling innovative solutions.

People make the difference

A third key challenge that facility managers identified in the survey was changing



occupant behavior. The best-designed building will not realize its sustainability potential without engaged occupants. A facility manager can influence occupant behavior from both a top-down or a bottoms-up, grass roots perspective. It is from this perspective that facility managers should look for ways to engage occupants directly. For example, online surveys or suggestion forms allow occupants to have a voice in your sustainability initiatives.

Facility managers can also use technology tools to communicate the policies and results of sustainability initiatives.

From a top-down perspective, they can work with their peers in human resources and management to encourage programs that reduce environmental impacts—such as providing hot-desking space to support workplace mobility programs.

Occupant behavior impacts all aspects of a building's performance and it is essential to factor in behavior when implementing any initiative, whether it is one of technology or policy.

Becoming the facility leaders of tomorrow

Facility managers have the potential to be change agents who can alter corporate culture and make the current building stock

as cost efficient and sustainable as possible. Infusing smart, green alternatives in every area of operations with a well-developed sustainability master plan, a facility manager can dramatically reduce operating costs and environmental impacts—and in the process, win a seat at the decision-making table, becoming a true strategic asset to any organization. **FMJ**

Notes

1. Ehrlich, Paul R. and John P. Holdren. "Impact of Population Growth." *Science* 171 (1971): 1212-17 http://www.sciencemag.org/cgi/pdf_extract/171/3977/1212
2. Anderson, Ray C. "Can Paul and Anne Ehrlich's environmental impact equation lead to happiness?" <http://www.climateutralcampus.com/whitepaper/environmental-impact-equation.html>
3. U.S. Energy Information Administration, Commercial Building Energy Consumption Survey (CBECS), 2003 <http://www.eia.doe.gov/emeu/cbecs/contents.html>
4. U.S. Energy Information Administration, EIA Annual Energy Outlook, 2008 <http://www.eia.doe.gov/oiaf/aeo/demand.html>
5. International Facility Management Association, Green Practices Study, September 2008 <http://www.ifma.org/tools/research/surveys/GreenSurveyResults2008.pdf>



As vice president of product management, Marty Chobot helps FM:Systems better understand the needs of its customers and brings new products to the market.

Chobot has more than 18 years of experience with enterprise software. Prior to joining FM:Systems, he served in a number of roles for enterprise software companies and founded two consulting firms focused on serving technology companies.



Nick McEvily received his bachelor's degree in facilities planning and management from Cornell University in 2009 and is pursuing a graduate degree at Cornell in the department of design and environmental analysis, concentrating on sustainable design studies.

McEvily is currently working on his thesis and developing a software program that facilitates the decision-making process for organizations and institutions considering demolishing or preserving existing buildings.



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