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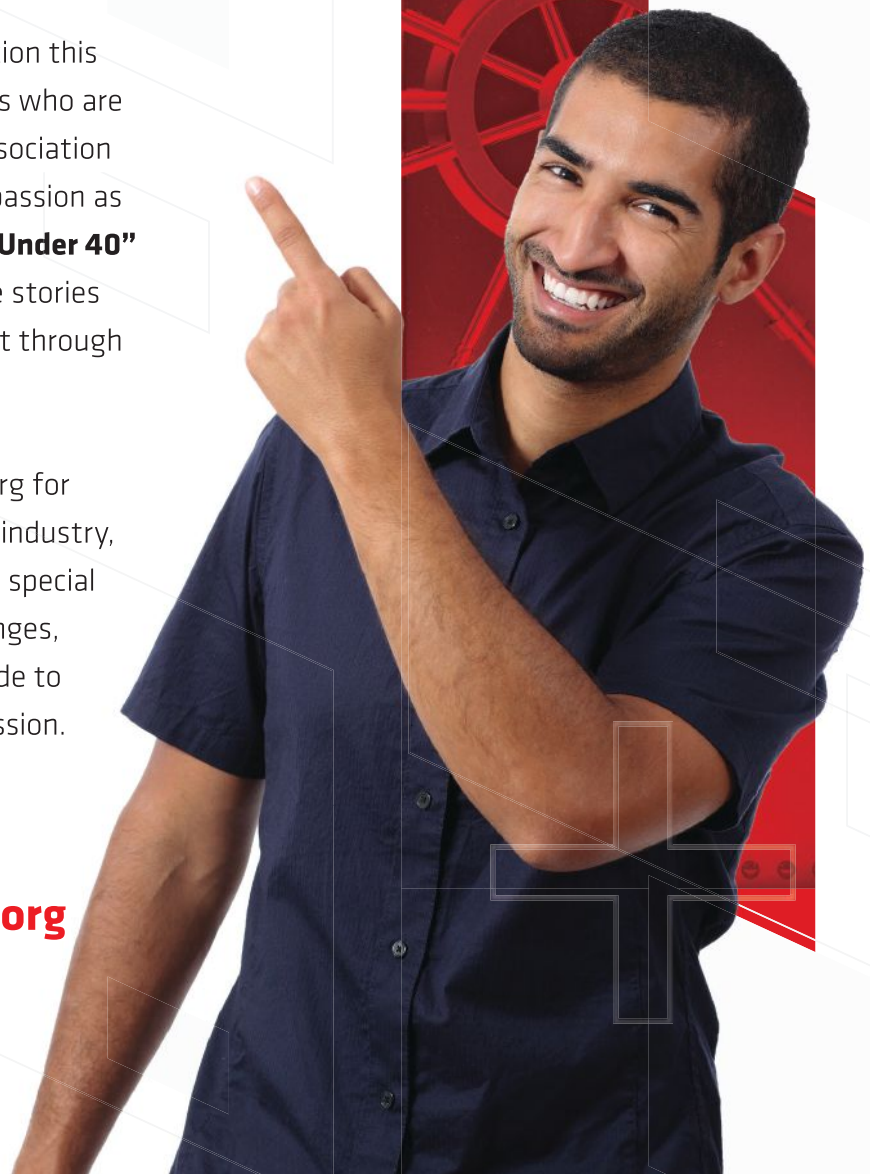
Nominate Them as One of IFMA's Forty Under 40.

As part of IFMA's 40th anniversary celebration this year, we are looking for young professionals who are influencing both the profession and the association as remarkably and with the same level of passion as IFMA's founders. IFMA's upcoming **"Forty Under 40"** initiative will collect, applaud and share the stories of FMs under 40 who are making an impact through initiative and ingenuity.

Nominations are being accepted at IFMA.org for those making a positive impact on the FM industry, whether through innovation and discovery, special achievements, overcoming extreme challenges, making notable contributions, rendering aide to others or bringing recognition to the profession.

Learn more at

<https://fortyunder40.ifma.org>



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ABOUT IFMA IFMA is the world's largest and most widely recognized international association for facility management professionals, supporting 24,000 members in more than 100 countries. This diverse membership participates in focused component groups equipped to address their unique situations by region (136 chapters), industry (16 councils) and areas of interest (six communities). Together they manage more than 78 billion square feet of property and annually purchase more than US\$526 billion in products and services. Formed in 1980, IFMA certifies professionals in facility management, conducts research, provides educational programs and produces World Workplace, the world's largest series of facility management conferences and expositions. For more information, visit www.ifma.org.

FMJ FMJ (ISSN 1059-3667) is published six times a year (January/February, March/April, May/June, July/August, September/October, November/December) by the International Facility Management Association, 800 Gessner Road, Suite 900, Houston, Texas 77024-4257 USA. Periodicals postage paid at Houston, Texas and at additional mailing offices. One electronic copy of each issue is supplied to IFMA members. Printed copies are available to members at an additional US\$48 per year. Nonmembers can purchase a subscription for US\$84 per year. To receive a subscription, mail a check to FMJ, attn: Subscriptions; 800 Gessner Road, Ste. 900; Houston, Texas 77024-4257 USA or visit www.ifma.org/fmj/subscribe. For advertising rates call +1-281-974-5674 or email diana.maldonado@ifma.org. FMJ is printed in the United States. FMJ reserves the right to edit any articles received or solicited for publication. This right includes the discretion to select titles, artwork and layout. Opinions expressed in articles are those of the authors, not necessarily those of FMJ staff. © 2019 International Facility Management Association.

POSTMASTER Send address changes to: FMJ, 800 Gessner Road, Suite 900, Houston, Texas 77024-4257 USA.

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Check out the online issue of FMJ for a special section that follows the end of the print magazine and includes additional articles not available in the print edition. Read the extra articles listed below for contributions from councils and communities, and other supplementary content.

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FMJ, the official magazine of IFMA, is written for and by professionals who develop and maintain productive workplaces.

It is the only industry publication that draws on the collective knowledge of IFMA's highly connected global network of FM thought leaders to bring you insights on current and upcoming facility management trends.

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Editor's Note Bobby Vasquez

Late last year, the world became aware of a highly contagious respiratory virus. As the novel coronavirus began to spread, we were advised to wash our hands and practice social distancing. Then COVID-19 became a pandemic, and life and work as we knew it changed.

Local, state/provincial and federal governments issued quarantine/stay-at-home orders. An untold number of global events were canceled out of an abundance of caution. Buildings emptied. Parks closed. A world without outside activity and operating offices became commonplace.

In mid-March, IFMA became part of the new normal. With Harris County in Houston, Texas, USA, issuing a "Stay at Home, Work from Home" order, IFMA's Service Center of Excellence closed its doors and staff were sent home to work

Just like so many of you, our staff came together while being apart. Our main objective is to continue providing our members with valuable resources, which includes FMJ. The FMJ team produced this issue virtually, and we will do so until it is safe to do otherwise.

As our staff works from home, we are trying to find the best avenues to convey information, best practices, how-tos and so much more for the FM community, many of whom have stayed at their facilities to keep them operational, sanitized and ready for when the all-clear is given to return to the workplace.

Remote work has its challenges— internet connectivity, family distractions (both the two- and four-legged kind) and the mental adjustments of being at home while not concentrated on home life.

However, these distractions are not always bad. They have allowed us to reconnect with our loved ones as we spend more time with them. In the old days, while they were at work or school, we were in our own offices and worlds. In the new normal, they are working and studying right beside us. Working side-by-side with family members may not always be easy, but they're facing the same challenges. It's important to take a few moments to disconnect from work mode and take advantage of being at home. Take a walk around the block. Get everyone in the kitchen to make dinner together. Do a short 15-minute chore that seems to always get put off. Do something that changes your day or scenery.

Hopefully, the proverbial light at the end of the tunnel is near. Maybe at that time, we'll have our commutes and watercooler talks with our teammates. When it comes, the FM industry will be at the forefront, where you've always been, ensuring the safety, sanitation and reliability of our on-site workplaces.

Cheers (and stay healthy)!


Bobby

Interested in writing for FMJ?

Email bobby.vasquez@ifma.org article ideas to be considered for future issues of FMJ.

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From the **Chair & COO**

**JOHN
CARRILLO**

CFM, IFMA
FELLOW

*Chair, Board of
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DON GILPIN

*IFMA President
& COO*

In March, we emailed all members to express our deep understanding of the FM's role amid the COVID-19 pandemic, and to share ways in which IFMA is addressing your concerns and supporting your needs. As we are all still focused on response and recovery efforts, our sentiment and support remain the same, with a few updates from the original letter.

Since the start of the year, our expertise and resolve have been put to the test. As an industry, we have accelerated efforts to mitigate risks and reassure our employers and building occupants that we've taken the necessary steps to protect life and property. As individuals, we are balancing crucial job responsibilities with concern and care for loved ones, while also managing disruptions in our daily lives.

No one understands the weight FMs are shouldering better than IFMA. This is what our association is here for – support, advice and resources when we need it most. IFMA exists for you, and we are committed to supporting you in times of crisis.

Perhaps our most valuable resource is connection to colleagues worldwide. Our community isn't just an organization of industry professionals – fellow IFMA members are our mentors, trusted advisors and friends. We stay in constant contact, asking and answering questions, sharing stories and advice, supporting each other's efforts and celebrating one another's achievements.

Over the past few months, many members have stayed in touch on Engage. Many have contacted peers directly to ask for tips, offer assistance or to simply check in. Many have reached out to IFMA. In response, we've worked quickly and thoroughly to provide useful resources and safe learning opportunities for managing needs in your facilities and communities.

The Coronavirus Preparedness Resource Center, which started in late January as a short post in our Knowledge Library, has grown into a comprehensive source for the latest COVID-19 information. The entire

FM community built this center into a robust collection of articles, webinars, guidelines and tools. Special thanks to our Corporate Sustaining Partners, alliance associations and members who have provided exceptional content.

Despite postponing or canceling four of our five annual events, our commitment to provide you with ongoing education and connection to colleagues inspired us to create two virtual conferences: the IFMA Global Virtual Event in mid-April, and the World Workplace Europe Virtual Event at the first of May.

IFMA and the FM Research and Benchmarking Institute launched a series of webinars addressing how COVID-19 has affected our jobs, our industry and our lives; what resources and practices have helped in preparedness efforts; and what we need to do moving forward.

Our chapters, councils and communities have contributed valuable data to our FM body of knowledge – from webinars to surveys, our components are sharing and collecting first-hand experiences of professionals on the front lines of pandemic response and recovery efforts.

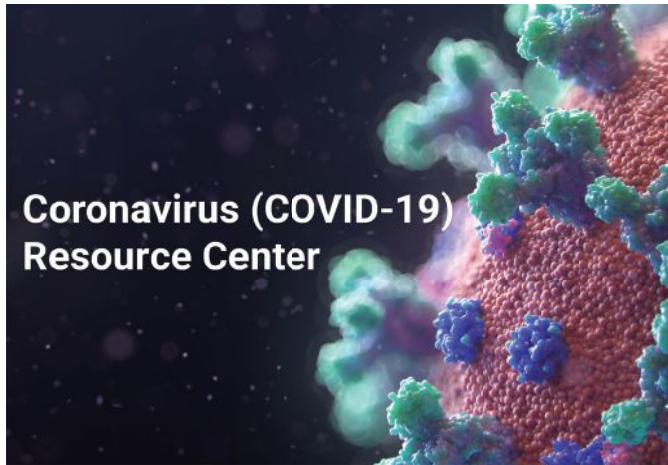
Keep posting, keep contributing, and keep finding ways to inspire yourself and others. Stay safe, stay strong and know that you have the support of a community of peers who are coping with similar concerns. Together, we will get through this.

Take care,

John Carrillo, CFM, IFMA Fellow
Chair, IFMA Board of Directors

Don Gilpin
IFMA President & COO

IFMA RESPONDS TO FM INDUSTRY'S NEEDS DURING GLOBAL PANDEMIC



Since concerns over the new coronavirus first emerged, IFMA has continuously monitored and assessed the impacts of this crisis on the facility management industry, which has played an essential role in keeping business and critical infrastructure operational during the COVID-19 pandemic. IFMA has responded quickly and thoroughly to deliver beneficial resources and safe learning opportunities to the FM community – the first being the online Coronavirus Preparedness Resource Center.

Created in late January 2020 as a blog post in the association's Knowledge Library, the Center has grown into a comprehensive resource designed to help FMs navigate the COVID-19 crisis and respond strongly and swiftly in their organizations. It features articles, webinars, guidelines and tools from the CDC, WHO, OSHA, ISSA, ECDC, ASHRAE, the IFMA Foundation and FMJ Magazine, as well as content submitted by corporate partners, IFMA components and professional members.

"We've encouraged all built environment professionals in every business sector to share existing practices and strategies," said Don Gilpin, IFMA President and COO. "What our community has already shared on Engage, through social media, in our Coronavirus Resource Center, in virtual events and webinars is an incredible contribution to the FM body of knowledge. Thank you for your insights and lessons learned, which have helped so many of us address safety and business continuity in our workplaces during this pandemic."

With the safety and well-being of attendees, speakers, exhibitors, sponsors and staff a top priority, IFMA and its partners made prompt decisions to postpone or cancel March-April conferences, including World Workplace Asia, World Workplace Europe and Facility Fusion. Originally scheduled for June, IFMA Global Canada was rescheduled for Sept. 2-3, 2020 in Toronto.

To ensure that FM professionals have opportunities to continue

"FMs are pulling double duty to protect life and property. It's our commitment to continue providing our industry with relevant education, timely information and connection to colleagues, especially in times of crisis."

– Don Gilpin, IFMA President and COO

building knowledge and skills during the COVID-19 pandemic, IFMA organized a Global Virtual Event in April featuring curated sessions from the Facility Fusion conference; and together with Facility Management Netherlands (FMN), launched the World Workplace Europe Virtual Event, held May 6-8.

At the first of April, IFMA launched a free series of "FM & COVID-19" webinars addressing how the new reality is affecting the industry, jobs, lives and the workplace experience. FM professionals with insights into the current situation with respect to their industry, organization and geography are being invited to share tips, methods and first-hand experiences.

"This is a unique situation – no one is a 'subject matter expert' on COVID-19, but FMs do have expertise in a range of competencies to confront challenges arising from the pandemic, sharing information to benefit colleagues seeking guidance," said Nickalos Rocha, MPA, Director of Research and Operations for the FM Research and Benchmarking Institute.

Corporate Sustaining Partners, FM Framework and Alliance partners are collaborating with IFMA on courses, webinars and content. "It's inspiring to see how the entire built environment community has come together to help one another and ensure that front-line workers responsible for facility health and safety have information and tools," said IFMA Chair John Carrillo, CFM, IFMA Fellow.

IFMA has rolled out additional benefits, programs and special offers to help members stay informed and stay connected, including 75 percent off a Knowledge Pass subscription to the Knowledge Library through May 31. IFMA also partnered with Mask Match, asking FMs to donate surgical and high-filtration masks to health care workers. The volunteer-run organization matches those who have masks with those who need masks.

Hong Kong Chapter of IFMA becomes PMSA Recognised Professional Body



In March, IFMA's Hong Kong Chapter was accepted as a Recognised Professional Body (RPB) by the Property Management Services Authority (PMSA). Certified Facility Managers® who are also Professional, Associate or Young Professional members of the Hong Kong Chapter can meet the criteria for holding a property management practitioner (PMP, Tier 1) license by PMSA.

In considering whether an organization is to be recognized, PMSA considers factors such as relevance to the property management profession in Hong Kong; membership criteria, including academic qualifications and work experience; codes of conduct and a mechanism to regulate professional conduct; members' continuing professional development; and whether the contribution of the organization to the profession and/or community is held in high regard.

UPCOMING EVENTS



IFMA Global Canada
Sept. 2-3, 2020
Toronto, Ontario, Canada
ifmaglobalcanada.ifma.org



IFMA's World Workplace 2020
Sept. 30 - Oct. 2, 2020
Chicago, Illinois, USA
worldworkplace.ifma.org

Industry News



WE survey to reveal insights on the impact of COVID-19 on the future of work

A global survey to gather much-needed data about the impact of COVID-19 on how and where people work was launched in late March by the Workplace Evolutionaries (WE), a Community of Practice within IFMA. "We want to help workplace leaders not only survive this crisis, but emerge from it with new insights, intelligence and approaches for the future," said Kate North, Co-founder and Global Chair of Workplace Evolutionaries.

The Work-From-Home Experience Survey was developed and analyzed by a collaborative team of WE members led by Dr. Anita Kamouri, Iometrics Vice President and Co-founder, and Kate Lister, President of Global Workplace Analytics, both recognized as industry experts and thought leaders on remote work and other emerging workplace strategies.

The Work-from-Home Experience Survey was sent to all IFMA members, as well as a broad range of associations and organizations to gain a wide representation of respondents across functions, industries and geographies. WE expects to begin sharing survey results in May, with findings covering:

- » What is and isn't working for people working from home during the pandemic
- » Correlations between work-at-home effectiveness and organizational, technological and employee readiness
- » Priorities for improving the work-from-home and workplace experience
- » The existing and potential impact of work-from-home on the employer, employee and environmental outcomes
- » Insights into the impact COVID-19 will have on the future of work

"The data will establish a benchmark for future surveys and give organizations the information they need to both improve the work-at-home experience now and plan for the future of work when the crisis is over," said Peter Ankerstjerne, MBA, COP, FRICS, IFMA Fellow, First Vice Chair, IFMA Board of Directors.

NEW REPORT HELPS FMS PREPARE TO ADDRESS TWO ASPECTS OF CLIMATE CHANGE

Published by IFMA's Environmental Stewardship, Utilities and Sustainability Community (ESUS) in partnership with the FM Research and Benchmarking Institute and BGIS, "Adapting to Climate Change for Facility Management Professionals" is a follow-up to the 2019 report, "Climate Change Fundamentals for Facility Management Professionals."

A primary goal of this report is to assist FMs in reducing vulnerability to the effects of climate change for the organizations they support. Facility management professionals will need to address two aspects of climate change – impacts to the business they support and reducing the business' impacts on the planet. In some cases, these two may overlap, but it is important to look at both aspects since assessments and action plans may differ for each.

Climate change is global, and while it is unlikely that any region will escape its effects, some regions may experience more drastic consequences than others. Regions will have differing impacts and need differing adaptations. Preparation for potential climate change impacts is vital to adaptation and survivability of the organization. This report helps the FM learn the language and skills associated with risk management and adaptation. A focus is provided on assessing climate risk for a specific property or geography; then providing resources to learn about potential adaptations for the assessed risk.

The report covers the major topics of risk management, how to conduct a climate change risk assessment, relevant climate change components, mitigation techniques associated with components, factors that impact mitigation and supplemental resources available to the reader. "Adapting to Climate Change" is available as a free download in IFMA's Knowledge Library.



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Applying Project Management practices to your ISO FM Management System Standard implementation

BY LAVERNE DECKERT & CASEY MARTIN

ISO 41001 Facility management — Management systems — Requirements with guidance for use was published in 2018. It is the first document of its kind, a standard with a singular focus on how to develop a robust process for managing the FM organization while ensuring alignment to the strategic objectives of the demand organization. Since its publication, several articles and presentations have been created to demonstrate the importance of the adoption of this management system. Here is a framework for preparing an organization for certification.

In today's environment where the world often seems to change at a pace too rapid to keep up and facility managers face ever-increasing complexity in the FM scope, having a management system standard in place to ensure process continuity will provide benefits in the near term, long term and during unanticipated events. If not yet implemented, the task of putting that system in place might seem overwhelming. However, as with any significant initiative, planning and executing an ISO management system standard (MSS) starts with applying basic project management principles to create a clear path of intentional steps culminating in certification to ISO 41001 or any other that might fit the demand organization's strategic objectives.

The Project Management Institute released a new project management framework for 2020 that organizes activities and tasks into three domains: people, process and business environment. The following is an adaptation of this framework to organize the activities to implement an MSS into manageable and understandable components.

For more information about the PMI framework, go to bit.ly/2WWSNG5.

PEOPLE

When beginning to implement an MSS, the "people side" cannot be overstated. Within ISO 41001, there is a need to obtain a commitment from top management and determine resources, competence and knowledge requirements for the FM organization and to maintain the MSS.

In terms of project management, FMs will:

- Build a shared understanding.
- Build and lead the team.
- Empower team members and stakeholders.

A critical first step to establishing the MSS is to develop shared goals and objectives for its implementation of the MSS. Identify all stakeholders and include them in this activity. Develop a business case for implementing or aligning to the FM MSS to the demand organization's strategic objectives. Demonstrate the benefits of the project, such as improving operational efficiency or facility readiness to gain top-level management support.

Expect that there will be some conflict in every project and proactively work to analyze the potential sources and timing of the conflict. Common conflicts may be found around the priority of the need for an MSS that will require funding over other organizational initiatives, the demand of resources competing with daily job functions, or the perceived authority the MSS may give to the FM organization because of the "shall" statements. Proactively monitoring and addressing conflicts will help break down barriers to completing the project.

To build a team and promote engagement of staff and stakeholders, be sure to:

- Communicate the value, or the “WIIFM” (what’s in it for me), of an MSS. Be sure the team has the capacity and support to tackle the project before assigning roles. No one wants to be assigned additional responsibilities when they are already overwhelmed with daily tasks.
- Seek diversity and inclusion. The team needs to represent all the essential stakeholders in the organization, which includes understanding all the different perspectives of the people that will be affected by the project.
- Adopt a collaborative leadership style. For an FM MSS to be successful, it must be a collaborative effort and include buy-in and support from all the stakeholder groups.
- Support team performance. Evaluate skill sets and make sure team members are adequately trained for the task at hand. Continuously assess and refresh team capabilities.
- Address and remove impediments, obstacles and blockers for the team.

BUSINESS ENVIRONMENT

The requirements clauses of ISO 41001 and all ISO management systems begin with “Understanding the Context of the Organization.” This means understanding the needs and expectations of stakeholders and determining how the MSS can successfully support meeting the strategic objectives of the demand organization.

- The project manager will analyze the organization and the context of the project across the organization.
- Plan and manage project compliance.
- Evaluate and deliver project benefits and value.
- Evaluate external business environment changes for impact on the scope.
- Support organizational change.

Keep in mind, the objective of this project is to comply with the MSS, whether ISO 41001 or another. It is important to understand how compliance affects other business units; therefore, it is also important to:

- Deliver project benefits. Monitor and track the delivery of the intended project benefits to ensure they are being realized at appropriate stages of the project. The project must deliver value to the organization, which is easy to accomplish with the well-planned implementation of a management system standard.
- Monitor and address external changes to the business environment. This could include changes to the business units outside of the FM organization or broader changes outside of the demand organization. The project should continually evaluate these changes and adapt the project implementation to address them.
- Support change through the organizational culture to establish the new norm that will be inevitable with the implementation of an MSS as a result of new policies, processes, and procedures for the organization.

PROCESS

In the MSS framework, the “People and Business Environment” encompass Clauses 4-7: Context of the organization, Leadership, Planning and Support. The final three Clauses, 8-10, would be the heart of the MSS: Operations, Performance evaluation and Improvements.

In the same manner, process is where the rubber meets the road for this project. This will define how the business value is delivered and is critical to the success of the MSS implementation.

Process activities include:

- **Engaging stakeholders**

Every organization has a culture that will direct how team members are expected to interact with one another. Understanding how work is executed within the context of the organizational culture will frame the ground rules of engage-

ment and communication for both internal and external stakeholders. Project information and updates should be communicated on a regular basis to keep all stakeholders informed and engaged.

- **Executing the project with urgency**
Implementing ISO 41001 should be executed with a high sense of urgency because the benefits realized can transform the FM organization and deliver benefits to the bottom line, the quality of the workplace and the well-being of the building occupants.

- **Establishing a project governance structure**

A governance plan will be needed before project execution so that any conflicts can be resolved, or any project issues can be addressed in a structured manner. A governance plan should incorporate a resolution methodology and an escalation path. This will help mitigate personal agenda, address prioritization of deliverables and resources or questions of authority.

- **Planning and managing the:**

SCOPE

Determining the scope, or boundaries, of the MSS is solely up to the organization and is not dictated by the standard. The project team must understand the capabilities and capacity of the team to implement and maintain the MSS and of the demand organization to support it in the future.

The defined scope from the planning phase should be used to baseline and manage the project scope and address scope creep.

SCHEDULES

Applying an integrated approach to scheduling so the team can see the critical path and effects of missed deadlines will help all stakeholders understand their role in the overall project.

Progress should be continually monitored and measured against the planned schedule milestones. A dashboard that demonstrates budget, schedule and quality at predetermined intervals will provide a foundation for tracking basic project progress.

RESOURCES

Aligning project needs, both financial support and human intellect, will be critical to ensuring the balance between cost, quality and time are proactively managed.

Release resources. After validating that the project objectives have been met, i.e., certification to the MSS is achieved, and the project is ready for closeout. Remember, a requirement of any MSS is to ensure the resources to maintain the system.

RISKS

Continual assessment and mitigation of risks is a typical project management task that cannot be overlooked when implementing any MSS. This effort should continually evaluate and prioritize potential risks.

There are two risks to consider:

1. the risk to the project itself (e.g., falling behind schedule or being over budget);
2. the risk that the MSS will not achieve its intended outcomes or delivers undesired effects.

QUALITY OF DELIVERABLES

After determining the metrics for evaluating quality at the different stages of the project, consistent quality reviews should be conducted to validate the project deliverables meet the MSS requirements and deliver value to the demand organization.

PROJECT CLOSURE AND TRANSITION

Closure, in this case, is that point when the organization is ready to apply for certification. Assuming a successful closure, the project will transition from implementation of the MSS to maintaining and improving it (clause 10 of the MSS requires continual improvement). This requires an honest retrospective review of the project.

Document and review lessons learned. Understanding gaps, deficiencies and strengths can be very useful for identifying areas for future improvement.

Additionally, maintain historical records of the decision-making process and develop a means for knowledge transfer and sharing. A clean paper trail will support the final stage of the project closeout and provide a basis for evaluating the project performance.

While implementing an MSS will require planning, time and resources, it does not have to be an overwhelming event. A solid plan and a competency in project management will see you to the finish line. The prize is a dynamic FM organization that is prepared to meet the challenges of today's business environment while continuing to ensure the quality of life and productivity of people in the built environment.



Laverne Deckert is an independent consultant who provides on-site and off-site strategic business consultation, team facilitation, project development, briefs and management, process, operations and communications support, including special project initiatives, and project overhauls. She is a member of the U.S. Technical Advisory Group for ISO/TC 267 and served as administrator to this group from June of 2012 to July 2017.



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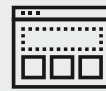
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got meetings?

**SIX CRITICAL STEPS FOR
EFFECTIVE PROJECT MANAGEMENT
DURING MEETING ROOM RENOVATIONS**

BY AARON McARDLE

Like most business leaders, today's facility managers have their hands full with day-to-day tasks: maintaining outside service contracts, inspecting the property for safety, ensuring building codes are enforced, and monitoring a facility's budget and staff. Sometimes that means little bandwidth is left over for the big picture projects. But recent research shows one area where a renovation could lead to fewer day-to-day fires: the meeting room.

According to the 2020 State of the Meeting Room survey, almost 60 percent of meeting leaders lose at least five minutes whenever a technology challenge occurs, and 25 percent lose more than 11 minutes. And it's not just technology that's causing problems: 33 percent say the meeting room environment is a challenge, too. Uncomfortable furniture, awkward viewing angles because of poor room design, poor ventilation can all contribute to decreased productivity. At the end, only 1 in 10 meeting leaders say at least 75 percent of their meetings are productive.

Given these sobering statistics, meeting room renovation might be the answer a company's productivity challenges. As the demand for telecommuting rises and more companies look to seamlessly connect offices around the world, such a renovation could raise engagement and productivity. There are ways to properly execute a renovation to ensure all parties have their needs met, without stretching the facility management team too thin.

Here are six tried-and-true steps, broken down into three stages: pre-renovation, renovation and post-renovation (or, if planning, new construction, pre-build, build and post-build). With thorough planning and continual communication with all stakeholders at every step in the process, FMs can guide their team through a pain-free meeting room renovation.

Pre-Renovation: Assess and Personalize

Before starting a meeting room upgrade or a similar project, identify and understand who will be using the room and how they will use it. Doing so helps ensure a consistent user experience. By assessing the needs of the employees or those who will be working in the space day in and day out, FMs can determine the exact goals for the meeting room renovation.

As part of the assessment process, FMs should ask internal stakeholders questions like: How will employees most likely use the room — for small “huddles” or for 20-person meetings? Will the various departments within the organization use the space differently? Will the company need customer-facing meeting spaces, or will only employees use the space?

These answers matter because if employees use the room for meetings with clients or prospects, for instance, the furniture, wall coverings and other items would likely be higher quality than if the meeting room is exclusively for internal meetings. The physical space matters, too. It will be easier to plan the renovation of a

meeting room with no windows than for one having windows on multiple walls.

Personalizing the room also requires a detailed understanding of users' technology needs. Most of today's meeting rooms are built with an eye for teleconferencing — bigger TVs, better visibility of participants for both those in the room and those dialing in, and superior audio.



However, the audience itself will determine other technology needs. If a room will be used by employees only, the technology will have different wireless connectivity requirements versus a meeting room used by guests. The technology must be able to accommodate sharing content by people from outside the company — a tricky ask, as FMs cannot control the type of devices brought into a meeting for sharing content. For example, visitors may not be permitted to load necessary software onto their computer to share their screen, per employer requirements. Or, guest laptops might lack an HDMI port — rendering a room's HDMI cables useless.

Therefore, make sure multiple connectivity options are provided to ensure that anyone using the meeting rooms has the

ability to easily access the content needed for a successful meeting.

Renovation: Assemble and Install

During meeting room renovations, it is critical that FMs work closely with internal and external teams to ensure schedules are aligned and deadlines are met. Pre-plan carefully so when technology is installed, it can be up and running when it is supposed to be.

Many times, installation timelines are aggressive, so efficiency is a must. One option is to work with a meeting room technology integrator who can assemble parts of the new room off site — for example, the TV, its stand and any cabinetry holding the wires. The more a partner can assemble off site, the more efficient it can be on

site. Another benefit of off-site assembly is the ability to eliminate and recycle waste responsibly.

Another essential detail is scheduling with all partners. During installation, the technology vendor will likely have a small window, say a day or two, to come in to set up furniture and technology and make sure the meeting room space is ready for use. Because of this, it is critical the FM team communicates with the construction company and the technology partner to ensure schedules align and there is adequate time to install and certify equipment.

A final note on installation: one of the biggest challenges to a meeting room renovation is keeping the space open and not used. This is especially true if the business is already strapped for meeting space. It is



critical FMs begin communication with employees well before the days the room will be offline. In the weeks leading up to the renovation, be sure to set up temporary meeting space in an unused office, if available, and ensure furniture/technology is available to reduce inconvenience.

Post-Renovation: Certify and Improve

Now that the room is renovated and the technology is installed, how can FMs be 100 percent sure the room is user-ready? Has every single HDMI cable been tested, or is it assumed since one worked well, they all do? FMs can save themselves – and the building’s employees or tenants — headaches by ensuring a newly installed room is properly tested.

FMs should work with their technology partners to confirm every aspect of the system is delivered as intended and works as it should. When, for instance, technicians plug in an HDMI cable to share content and that content shows up in the meeting room, they must also certify that it works with anyone who’s remotely participating. When they test one mute button and it works, they should make sure the tech team checks every mute button, certifying that the system works in its entirety.

Until a few years ago, once the vendor confirmed everything worked, the project would have been considered complete and the partner would not have been contacted again until something broke. But today’s meeting room technology is different. It provides granular data around how the room is being used so that the technology continues to improve well beyond installation on day one. Facility managers who understand this can ensure their rooms are fully being used and avoid situations where a team unnecessarily books a videoconference room when videoconferencing capabilities aren’t needed.

Similarly, today’s technologies allow FMs to use a single dashboard to track rooms in use, the number of occupants in each room, the prevalence of meetings and volume of attendees. They can find zombie rooms — spaces booked with recurring meetings, but not actually being used — and release those rooms back into inventory. In short, FMs, through data analytics, can make better decisions about meeting rooms and improve their use in the future.

It’s all about the process

It is a given that meeting room renovations and new build-outs take a lot of upfront work to ensure they go well. Typical challenges will always crop up — like too many cords with no defined purpose, awkward seating arrangements, poor Wi-Fi signals — but they can be easily circumvented through due diligence and proper planning... and a proven process.

When starting this type of project, at a minimum, be sure to take a deep dive into stakeholder requirements before renovating, strive for better communication with internal and external teams during renovation, and build with continuous improvement in mind. Doing so will ensure the investment lasts well beyond day one of installation.

By communicating and holding construction and installation parties accountable, FMs can successfully eliminate complexities and variables, create consistency, and deliver dependable results for their organization. **FMI**



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As recently as the early 1970s, the notion of supply-chain management, and with it, the concepts of procurement and purchasing, were unknown within American industry. Businesses, government agencies, manufacturers, as well as facility managers and building owners, were selecting the products they needed based on a business model developed during the industrial revolution.


THE ESSENCE OF THAT MODEL WAS:

- **When a manufacturer needed parts, they ordered enough to meet current needs.**
- **The manufacturer made products using those parts, but just enough to meet current demand.**
- **Distributors ordered the products and a few days or weeks later, the product was delivered to the distributors.**
- **Once delivered, the distributors sold the products to their customers.**

This model worked well for decades. However, by the 1960s and into the 1970s, suppliers and distributors were looking for a more strategic approach to distributing products. The goals, among many, were to cut costs, improve efficiencies (e.g., shorten delivery times, reduce waste), and ensure products were available whenever needed, not just when they were ordered, helping to avoid product delays.

Manufacturers made specific changes to achieve these goals, and words like supply chain management, supply-cost management, supplier integration, strategic sourcing and others also became part of the lexicon.

What spurred such a revolution? It seems all parties in the distribution process — from manufacturer to end-customer — realized



PURCHASING & PROCUREMENT

BY MICHAEL WILSON

that streamlining the supply chain offered even more benefits than they first suspected.

Soon, the federal government started encouraging if not requiring some form of streamlined supply-chain management program from its vendors. In the 1970s, the U.S. Air Force discovered it could save as much as 30 percent on its annual purchases with a supply-chain management program in place.

The new program helped eliminate waste and the Air Force had the products it needed when it needed them, which helped to reduce downtime. The Air Force was able to take advantage of bulk-ordering price discounts and rebates. Under the supply-chain management model, the entire distribution process worked more like a smooth-operating electric clock, instead of a stop-and-go traffic light.

Now it was up to end-customers such as facility managers to take the next step. Would they look for ways to streamline their ordering so they too could take advantage of greater efficiencies and, with them, cost savings?

At that time, FMs had to realize there is a significant difference between purchasing and procurement. Although the two terms can be used interchangeably, they do not mean the same thing.

PURCHASING

Purchasing products is what facilities had done for decades before the concept of supply-chain management was considered. It is very simply the process of purchasing goods when needed and as needed.

As to how it compares to procurement, here is a significant distinction:

- Purchasing is a verb; it is an action.
- Procurement is a noun; it involves strategy.

For example, when purchasing, an FM places an order with a distributor to purchase cleaning supplies. A couple of days later, the order is delivered. An invoice is sent to the FM and is paid. That is the end of the process: ordered, delivered, paid.

The entire process is typically quick (one of its main advantages), very casual, even personal. The FM may have worked with the same distributor for several years, making the process an old habit. They have a cordial, if not friendly, relationship. When supplies are needed, that distributor is the one to call and other considerations are often left out of the equation.



Procurement & Sustainability

Cost savings are just one of the many benefits of a procurement program. A key concern for many FMs is to have a procurement program that also promotes sustainability.

Bulk purchasing is one example where procurement can aid in sustainability. Many cleaning solutions, for instance, can be purchased in five-gallon containers. In these sizes, and especially if they are green-certified, the solutions are often far more concentrated.

This means they last longer, which supports sustainability in several ways:

- » Reduces delivery and transport needs
- » Minimizes the amount of packaging materials and the associated waste
- » Decreases fuel consumption and with it, greenhouse gas emissions
- » The same can be true with the purchase of many other types of products used regularly in facilities, closing the link between procurement and sustainability.

PROCUREMENT

Procurement involves strategy. Although it does include purchasing products, it has a much broader scope, usually involving several stages:

Determining what kinds of products are needed

Just as FMs must prepare a "scope of services" description before taking janitorial bids and submitting requests for proposals for cleaning, they also need to create something similar when it comes to products. This does not include which products to select but what type or category of products to select, such as degreasers, sanitizers or an autoscrubber.

Identifying potential suppliers

Some FMs prefer to select products from a local distributor. However, a local distributor may not always be able to address all their needs and, therefore, is not always the best fit for a procurement program. In such cases, a distributor that is part of a national network may be a better choice.

Determining which specific products to select

With the list of needed products in hand, FMs can work with potential suppliers to determine which specific products best meet their needs. Some suppliers have access to online dashboard systems that help them select products such as clean-

ing supplies, paper goods, liners and other items used daily. These dashboards allow both the FMs and the distributor to compare products based not only on pricing but also on features and benefits, whether the products meet green and sustainability requirements and other criteria. This information helps determine which of a wide range of products to purchase. (See sidebar: *Procurement and Sustainability*.)

Selecting suppliers based on price, payment options and terms

Once products are selected, procurement typically involves purchasing large quantities at one time. In such situations, price negotiation plays a vital role. With some management companies, it can take 45 days or longer to pay invoices. This may be too long for a smaller distributor, making it a consideration when selecting distribution services. Establishing payment terms that are agreeable to all parties is part of the procurement process.

Formalizing a conflict-resolution platform


As with all business relationships, problems may arise between distributor and FM. In purchasing, there is typically no set procedure for how to resolve issues should they occur. With procurement, there is a mediation process so all parties know what steps they can take to resolve a problem.

Evaluating delivery and logistics solutions

The farther away a destination is from the distributor, the longer it may take to receive products. To alleviate this issue, some distributors are part of a nationwide network. This means if Distributor A in Omaha does not have certain products in stock, it can turn to sister Distributor B in Tulsa, which does have the products in stock, and have that distributor deliver the products to the customer. This can eliminate product delays.

Having a Plan B

Why do distributors need a plan B? Sometimes a product may be temporarily or permanently unavailable. Sometimes, there is a delivery disruption such as a warehouse fire, climate change or impact from coronavirus. Having a Plan B ensures that one or more comparable products have already been selected. Last-minute purchasing tends to become a form of "hope for the best" purchasing. Having a backup plan prevents this.

Procurement is much different from purchasing. It involves vetting different suppliers, determining what types of products are needed, considering payments and terms, negotiating and other factors. It also involves creating a strong relationship among all stakeholders for the benefit of the facility. Satisfying the needs of the facility, along with building users, is the ultimate goal of an effective procurement strategy. 



Michael Wilson is vice president of Marketing and Packaging for AFFLINK, a global leader in supply chain optimization, packaging, and developers of ELEVATE, providing clients with innovative process and procurement solutions to drive efficiencies in today's leading businesses.

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Understand the Life Cycle of Your Property:

THE BENEFITS OF BIM FOR FMS

BY MITCH HUGHES

The rise of **Building Information Modeling** and digital twin collaboration tools have transformed the AEC industry. There is an increasing amount of knowledge, data and information gathering that takes place during the design and construction process. However, what happens once the keys to the property are handed over to the facility manager?

A recent colloquium at the Getty Center in Los Angeles, California, USA, determined the average lifespan of a conventional building, built using masonry and/or wood, is about 120 years, while that of a reinforced concrete and glass curtain wall building — such as a modern office building — is about 60 years.

However, if it only takes two years to design and build the average commercial building, then the design and construction phase accounts for roughly 2 percent of the overall life cycle of the building. Though the building phase is brief, it is critical for intelligence. Nearly 100 percent of the information needed to manage a building is collected during design and construction, but most of that information is lost or made virtually inaccessible at the handoff from the design and construction team to the owners and FMs.

Imagine the value to future property owners if all the knowledge being collected about the building in the design and construction phase, such as who the designers and installers were and what the

warranty and service requirements could be used during the remaining 98 percent of the property's life. So, what are some of the things that stand in the way of this vision?

A considerable hurdle in effectively realizing longer term value for BIM is that much of that building information tends to be lost or exceedingly difficult to find and accessed by building operators, managers and occupants.

The use of BIM technology in the operational phase of a building's life cycle is just beginning to emerge. These advances are encouraged as building owners look for new ways to improve the effectiveness of their facility operations, but significant obstacles must be overcome for the array of incredible cost and operational benefits to be realized. A significant obstacle to the use of BIM data for building owners and managers is the expertise needed to access the information, and then the lack of usable and integrated tools to streamline the use of the information. However, this is beginning to change.

Upcoming innovations promise to bring cost savings and operational benefits by allowing greatly simplified access to information that, through artificial intelligence, is geared specifically to the needs of the building owners for the operational phase of the property. These advances will start collecting usable information from the beginning of the design process, through construction, and then continue through building renovations and ultimately to the end of the property use.

*Nearly 100 percent
of the information
needed to manage a
building is collected
during design and
construction.*





When smart information is associated with easily accessible, interactive and immersive building models, or virtual twins, that contain the entire life history of the property, the value is magnified.

FMs can use BIM for their benefit through improved space planning, utilization, retrofits and renovations.

Historically, digital building models were only for use at the planning phase of construction, but that is changing today.

There are tremendous benefits to having a living, three-dimensional model with a historically accurate memory for FMs to utilize once the facility is built. There is value in having a model available once things are already in it, and value when reimagining the space for ways it can potentially be improved. Some very basic advantages have already been realized in the real-estate market, with reimagined furniture layouts that help people visualize redecoration. But, adding intelligence and historical information to the model alters the benefit from a single event to an entire lifespan.

An organization might want to use their digital assets to plan for changes in shelving, moving it around in the model until they

find an optimal layout. Finding out what and what does not work in a real-world environment and making changes and improvements before the plan is brought to life equals time and cost savings.

Another company might find that immersive visualization is particularly valuable in assessing safety and risks. Imagine visualizing in a model where and how people in forklifts might interact or seeing exactly where your means of egress are throughout the building during or even before the redesign phase.

In these cases and more, the high values of the digital twin are clear.

Streamlined Maintenance

According to the Facilities Management and Operations Committee of the Whole Building Design Guide, the long-term operational success and viability of a new facility is dependent on three components: facility readiness, people readiness and information readiness. Even if the building has not suffered compromises during the pre-occupancy phase and was perfectly planned and constructed, all the infor-

mation must be shared in a manner that facilitates the ability to operate, maintain and repair the structure, all in a readily accessible format.

In the digital world, self-aware equipment can understand its own maintenance requirements and warranty, with access to the manuals and install information as well as a complete history of who supplied, installed and maintained the equipment from the day of install. Tied to equipment feedback monitors, equipment can even monitor whether its bearings are running hot or when it is time for service. With the right tools, buildings could have central repositories for information. There are thousands of examples of how this kind of information is collected in real-time for different products and equipment, but the idea of a central, unified model and repository of informational remains somewhat elusive.

Enhanced Day-to-Day Property Management, Operation

While some types of software take a vertical product focus, building tools that have a specific purpose can serve as the 3D

model, and importantly, the integration point for any other application.

Day-to-day property management at an apartment complex may require task assignment, management and coordination of multiple crews simultaneously. Being able to do this remotely while simultaneously providing real time knowledge to and feedback from the people in the field, is an advantage to all the parties involved. Keeping equipment warranty and service records, with the virtual equipment twins providing real-time maintenance requirements and feedback is a major opportunity for cost savings.

Now picture the leaders of a large apartment conglomerate having access to this kind of information at scale, across hundreds of properties. With integrated BIM and historical knowledge within a “self-aware” property, the possibilities are endless for property management and operations.

Communication About the Property

Three-dimensional models are already used to “wow” potential investors whenever a significant construction project is seeking funding. With the right tools in place, these models combined with intelligence can enable significant efficiencies and cost savings for the entire life cycle of the property to all stakeholders, whether property managers, owners or residents.

Imagine how much help an intelligent 3D model could be to the management team at the apartment complex leasing

office, helping attract new tenants with interactive, immersive models that allow potential residents to visualize and interact with their potential new home.

Picture the usefulness of two organizations trying to broker a sale without having to physically go on site to inspect each and every detail, while still seeing the benefits of each property.

Consider the ability to answer questions, such as how close the building is to the interstate. How easy is it for trucks to get in and out? Where are the loading docks? How close are you to a railroad track? What will the facility look like? What are the advantages and disadvantages of building versus buying?

But for these benefits to be realized, virtual twin models must be easily interacted with by layman and expert alike. The expertise required to interact with design applications is a hurdle to managers, executives, property managers, owners, and essentially everyone associated with the building except for a portion of the engineers on the design team.

In fact, only a small percentage of the staff within the combined design and construction teams have the ability to access and use the information of the BIM model. But upcoming innovations are starting to change this.

Lower Operational Costs

The U.S. Green Building Council (USGBC) and its partners published findings in the Sustainable Building Technical Manual,

which found that just 2 percent of the first 30-year cost of a building is construction, while 6 percent come from operational costs and 92 percent from personnel costs.

For example, the costs of change orders during construction have dropped dramatically since the advent of BIM, along with advances in project management software. Energy requirements, which according to the Building Owners and Managers Association account for roughly 22 percent of the operational costs for building, have also improved with the combination of BIM, government mandates, improved design practices, and initiatives such as LEED Certification.

A smarter BIM drives efficiency. Costs are lowered with improved personnel and project management, implementation of proper maintenance, and greater customer and staff feedback and collaboration, all while reducing risks. Improved historical information means equipment stays in compliance with the warranty. When things break down, the right people have data, intelligence and 3D models to share.

In the long run, this new version of BIM empowers facility managers to operate effectively and efficiently while enhancing the experiences of the individuals who inhabit the building. And best of all, it lowers operational costs. It pays for itself with the currency of efficiencies gained and value added. **FMI**

With integrated BIM and historical knowledge within a “self-aware” property, the possibilities are endless for property management and operations.



Mitch Hughes is the CEO of ViZZ

— the first computer solution to change the relationship between people and technology by visualizing everything, from thought to object. As one of the original thought leaders behind Building Information Modeling (BIM), Hughes leads the design and implementation of ViZZ to offer a new form of technology that establishes a smarter way to visualize and live life, where we live, work and play. Over his 40 years of experience, he has been owner or partner in numerous technology, engineering, and construction organizations.



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Protecting
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DOWNSTREAM
RISKS

BY CHERYL L. KOZDREY
& JEREMIAH M. WELCH

Effective risk management processes, including contractual risk transfer and insurance protections from downstream parties, are essential for a successful facility management practice. Yet, the industry's heavy reliance on third-party vendors and creates a complex risk management system that can be difficult to navigate without the proper resources and expertise. Specialized legal counsel can provide guidance regarding industry-specific risk transfer procedures, but, as a general practice, FMs can mitigate risk using three simple tools:

- » **effective contractual indemnification and defense agreements,**
- » **vendor-specific insurance requirements, and**
- » **ongoing insurance review protocols.**

Utilizing this three-step risk process to optimize risk management will not only provide financial protections to the FM, but will also serve as a selling point to business owners and prospective customers who, as a result, will benefit from pass-through risk transfer to downstream vendors.

Contractual Indemnification and Defense Agreements for Effective Downstream Risk Transfer

Contractual indemnity and defense agreements are a critical component of facility-manager-vendor contracts and/or service level agreements (SLA). The purpose of such a provision is to shield the indemnitee — usually the FM — from losses flowing from third-party claims related to the SLA. This is accomplished by shifting financial responsibility for such claims to the indemnitor — typically the vendor. This risk transfer structure makes business sense because the vendor, acting as an independent contractor and specialist in its respective trade, is in the best position to control the risk associated with its services.

Consider the following scenario:

An FM is implementing a new open Wi-Fi network for customers to use freely while on the premises. The FM contracts with Wi-FiVendor to set-up the hardware and equipment, and to provide ongoing maintenance of the same. The FM also contracts with TechVendor to provide data management software and ongoing service of the same. The FM serves hundreds of customers each day, many of whom enjoy using the open Wi-Fi network. Two years later, while one of the FM's construction subcontractor, SubVendor, is onsite performing building repairs and renovations, the power goes out and, the next day, a major network security and data breach has occurred, resulting in the dissemination of sensitive customer information. The impacted customers commence a class-action lawsuit against the business owner and FM. It is initially unclear what caused the security breach, but it's almost certainly related to the services provided by Wi-FiVendor, TechVendor and/or SubVendor. The business owner and FM begin to incur substantial attorneys' fees to defend against the suit, as well as multi-million-dollar settlement obligations.

The business owner will want to shift its financial obligation to the FM, and the FM will want to shift its obligations to one

or all the potentially at-fault vendors. Because the FM may have damages caps on its own insurance policies, he or she will also want to assist the business owner with obtaining pass-through risk transfer to the at-fault vendors by way of additional insured coverage on their policies. However, shifting third-party risk downstream *ex post facto* (i.e., after a claim has arisen) can be difficult, especially when the stakes are high and it is not immediately clear who is at fault.

One way to preemptively resolve these issues is with effective indemnity agreements written into each SLA at the inception of the FM-vendor relationship. These provisions should be carefully drafted, with two goals in mind — establishing adequate risk transfer between the parties and ensuring enforceability in the state in which the vendor services will be performed. Specifically, vendors and service providers should be required to assume liability to the full extent permissible under the law, including defense costs, settlements and judgments, associated with any claim or lawsuit brought by a third party against the FM and/or business owner. The failure to impose a duty to defend in the indemnity provision is overlooked far too frequently. Defense costs can be exorbitant especially when related to catastrophic loss events, like the class-action lawsuit described above.

FMs should also take care to draft indemnity provisions in compliance with the anti-indemnity statute applicable in the state where the vendor will be performing its work. These statutes vary significantly from state-to-state and are intended to limit the scope of indemnity one party can legally require from another. States fall somewhere on a spectrum from “broad,” to “intermediate,” to “limited,” with respect to permissible indemnity agreements. Broad indemnity states generally have no governing statute and may permit an FM to require contractual indemnity from its vendor for all negligence, up to and including the FM's own sole negligence. In intermediate states, the FM can hold the vendor liable for full indemnity even if the vendor is only partially at-fault.

If the FM's contracts had a full-indemnity provision, it could immediately shift



100 percent of its defense and settlement obligations, as well as the business owner's obligations, onto SubVendor, even if it were later determined that the power outage caused by SubVendor's work was only a small contributing factor that, in conjunction with Wi-FiVendor's grossly outdated hardware and TechVendor's unencrypted data management software, ultimately led to the security breach. This provides the FM and business owner with prompt and complete protection from financial exposure and forces the vendors to use their own resources to fight amongst themselves about what each party should have to contribute toward the loss.

Alternatively, some intermediate states only permit partial indemnity, whereby the FM can only hold the vendor liable to the extent of its fault (e.g., if SubVendor is only 45 percent responsible for the loss, it will only pay that portion of the defense fees and settlement value, and the FM will have to pursue Wi-FiVendor and TechVendor itself to recover the remainder of its losses). Finally, in limited states, the vendor can only be made to indemnify the FM for negligence that the vendor *solely* at fault for (i.e., where there is no concurrent negligence).

In addition to scope limitations, anti-indemnity statutes also vary in their application to certain industries. For example, several states only impose restrictions on indemnity provisions in construction and/or maintenance contracts or in a select group of other industry-specific contracts. In such states, the FM and business owner from the above scenario may only be permitted to seek partial or limited indemnity from a construction contractor like SubVendor. Meanwhile, the FM could potentially impose broad or full indemnity on Wi-FiVendor and/or TechVendor. Further, in some states, an indemnity provision that does not scrupulously comply with the state's anti-indemnity statute may be rendered unenforceable and stricken from the contract altogether.

These are all strategic considerations that must be understood and implemented from the outset of the FM-vendor relationship, before the SLA is drafted and signed. Often, FMs oversee vendor work in different states and may benefit from the advice of counsel to determine which contractual indemnity and defense agreements are valid and enforceable for each SLA.

1. ESSENTIAL VENDOR-SPECIFIC INSURANCE REQUIREMENTS

Despite proactive efforts with respect to contractual indemnity and defense agreements, financial solvency can nevertheless inhibit an FM's accessibility to resources from its at-fault vendors. Accordingly, it is critical that FMs implement adequate insurance coverage requirements and actively vet their vendor's policies before executing an SLA.

Vendor-specific insurance requirements should be expressly stated in the SLA, including the types of coverage, policy limits, and additional insured coverage in favor of both the facility manager and the business owner on a primary and non-contributory basis. Insurance requirements should not be drafted in a one-size-fits-all boiler plate provision. Instead, they should be detailed and tailored to each contract, considering the unique risk posed by each vendor.

For example, it may seem obvious that Information Technology vendors, such as Wi-FiVendor and TechVendor, should be contractually required to carry a cyber liability insurance policy. It is less intuitive, however, that SubVendor should be required to provide cyber coverage as well.

Yet, cyber loss is precisely the type of risk triggered by the hypothetical fact pattern above. Although it still may not necessarily make sense to require the identical scope of cyber coverage from SubVendor and the other two vendors, who are solely engaged in IT operations and maintenance.

As a baseline, all vendors should be required to carry commercial general liability insurance, including excess or umbrella coverage, with policy limits commensurate to the value of risk associated with the scope of work set forth in the SLA. All vendors who own and operate commercial automobiles should also present proof of business auto coverage, even if only using those vehicles to drive to and from the facility. These policies should be verified by the FM to ensure that, at a minimum, the policies provide proper additional insured designations, primary and non-contributory coverage with respect to policies held by the FM and business owner, and waivers of subrogation. In addition, verifying that

the vendor holds workers compensation coverage, with limits and terms consistent with the statutory guidelines of the state in which the work will be performed is imperative. Beyond these bare-minimum requirements, the FM should work alongside specialized legal counsel to evaluate the unique risks posed by each vendor and determine whether additional insurance requirements or coverages types (e.g., cyber liability, employment practices liability, professional liability, etc.) should be imposed on its vendors.

2. ESTABLISHING AND MAINTAINING ONGOING INSURANCE REVIEW PROTOCOLS

Even with a carefully drafted vendor contract, the FM cannot guarantee continuous downstream insurance protection for itself and the business owner without establishing a system for vetting subcontractor insurance policies from the outset of

the FM-vendor relationship and maintaining those practices on an annually recurring basis. This is a critical tool for mitigating the consequences of vendor-related risk on a continuing basis. Unlike a vendor contract or SLA, which are stagnant documents that typically remain unchanged throughout the course of the vendor's work, insurance policies may change annually. Those changes may be the difference between coverage and no coverage for the FM and business owner.

Some FMs rely on cert-tracking companies to collect and catalog certificates of insurance, and select endorsements, from vendors on an annual basis. While convenient, these digitized systems can lack the sophistication necessary to ensure proper insurance placement and coverage. For example, all additional insured endorsements are not created equally. Simply verifying the mere existence of an additional insured endorsement on a vendor's policy is not enough. The additional insured en-



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dorsement is quite possibly the single most important policy provision to ensuing coverage for the FM and business owner. Yet the specific terms and conditions are seldom analyzed with any degree of scrutiny, and deficiencies in the language of the endorsement can quickly negate or severely limit the FMs and/or business owner's scope of coverage.

For example, "blanket" additional insured endorsements are intended to provide coverage to all parties owed coverage under a written contract. However, undesirable privity language can limit the scope of coverage to only those parties that have an executed contract directly with the vendor. Usually, this is sufficient to cover the FM, with whom the vendor directly contracts with, but it would not provide coverage for the business owner. This can be

problematic to the FM who has contractually promised the business owner that it will require all vendors to provide additional insured coverage to both the FM and the owner, thereby leaving the FM open to a breach of contract suit by the owner.

Causation triggers can also significantly reduce the scope of coverage available to the FM and owner. For example, language triggering coverage for losses "caused in whole or in part" by the vendor is far broader than coverage that is triggered "if and only to the extent" that losses are caused by the vendor's negligence. Accordingly, the FM should consider supplementing or finding alternatives to simple digitized cert-tracking systems that typically provide only a cursory review of minimum policy requirements. **FMJ**



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Kozdrey advises insurance brokers, risk managers, and construction industry professionals regarding optimal risk transfer strategies and insurance solutions, including key considerations for Commercial General Liability, D&O, and Commercial Property policies. She assists clients with initial policy reviews, as well as renewals and modification(s) of existing policies to ensure coverage needs are satisfied. She also represents policyholders throughout the claims process, and in coverage dispute litigation against insurance carriers. She is currently working on some of the largest construction defect cases in the country. Kozdrey is a published author and is admitted to practice in the State of California and all federal district courts within the State.



Jeremiah Welch serves as Managing Partner of Saxe Doernberger & Vita, P.C.'s California office and as a member of the firm's Executive committee. He has represented major

stakeholders in some of the most significant construction disasters of the past decade, including the Florida University bridge collapse, the Louisiana Hard Rock Hotel collapse, and the "tilting" San Francisco Millennium Tower. His experience deems him one of the foremost leaders in handling complex insurance challenges that require creativity and tenacity. Outside the courtroom, Jeremiah is amongst the insurance industry's most-respected scholars. He provides education, training, and advice as a consultant to insured corporations and several of the world's largest retail and wholesale brokerages. Overall, Welch's practice is focused on leveraging a 25-year culmination of knowledge and experience very few insurance professionals have — litigation of some of the country's most significant insurance disputes, combined with day-to-day challenges facing brokers and their clients, and placing complex coverage for many of the largest commercial and civil construction projects.





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Data-driven Operations and FM:

How


CRE
DATA

is creating a
future-ready CRE industry

BY PRABHU RAMACHANDRAN



A series of paradigm shifts and emerging challenges face the contemporary commercial real estate industry, which it can no longer address using outmoded strategies and legacy systems. Rising operating and labor costs are making a purely reactive approach to operations and maintenance untenable. A rapidly changing regulatory environment, in response to the climate change crisis, could make some of the more inflexible of existing business models redundant. Meanwhile, an entirely new demographic of customers adds another set of challenges, not the least of which are growing millennial expectations for more personalized, responsive and lifestyle enhancing occupant experiences.

 Most assets and conveniences in a modern building — including electricity, escalators, elevators, water, sprinkler systems and fire-fighting equipment — are automated and siloed within disparate systems across large portfolios. Further complicating this scenario is these automated systems are supplied by a multitude of vendors, each with their own product specific software protocols.

Effective digital tools are the obvious candidate to unify operations of such complexity. However, existing solutions have been either too inflexible to accommodate the continuous industry changes, or too narrowly defined to integrate the entire spectrum of technology and automation embedded in a modern CRE portfolio. Building owners have depended on CMMS, as the standard approach to provide a digital operations layer to automation in recent decades, but this is a choice inherently limited in its scope and efficacy. For truly predictive and responsive automation and asset optimization, CRE needs its own revolution in data-driven operations, enabled by digital solutions created specifically for the industry, rather than repurposed solutions from other sectors and verticals.

Why the CRE industry has been slow to adopt data-driven operations

The smarter, more effective model for CRE portfolios is one that deploys AI-led cloud platforms, which allow owners and FMs to acquire, aggregate and harness operational data from multiple sources across siloed systems, to generate actionable insights, predict and resolve anomalies, and achieve optimal operational outcomes. The FM role is transforming towards tech-enabled value creation and connected services data-driven operations, allowing FMs to be proactive rather than reactive. Understanding why the industry has lagged in adopting such an approach, until now, requires FMs to take stock of some of the industry's previously established practices and business models.

CRE is a huge industry, albeit a fragmented one involving multiple stakeholders, which has been one of the reasons that developing software and technology that is fit for purpose is challenging. The truth is that the CRE industry been slow to adopt data-driven operations in FM for a multitude of reasons:

- The data required to manage CRE is vast and includes multi-vendor automation systems, dealing with regulations, interacting with tenants and vendors, overseeing portfolio-wide operations and managing operating cost. Several unique workflows are required to meet these needs and until recently, no truly comprehensive solution was on offer.
- The CRE industry was stuck in a traditionalist mindset, and for the most part had been managed more by instinct and a “gut feel” style of management. Industry leaders were reluctant to change, on a “why fix what isn’t broken?” premise.
- Although the industry has incorporated some digital tools, the compiling, cleaning, storing and leveraging of real-time data is still overall sub-par.
- The legacy software used today does not support data integration very well, so it is hard to consolidate all the information gathered. This has been the biggest drawback for CRE FM and why it has been playing catch-up to other industries.
- Despite sizable CRE operations garnering huge volumes of data, most of it is not subjected to analysis. Even in instances where some decisions are based on data, the scope is limited and not at enterprise scale, or available to all stakeholders.

Predictive insights on facilities' failure and condition

The most empowering impact of IoT on CRE operations, both at a single venue and portfolio wide scale, is that all its previously siloed systems and assets can now be integrated to enable true granular visibility and transparency across all the facets of an entire business. Powerful AI-based analytical tools and machine learning algorithms can then render this highly specific data into accurate diagnosis and actionable insights, which in turn lead to reliable decision making. Instead of predetermined or reactive maintenance, facility and asset managers can be predictive and proactive, by being able to extract information from current performance and context from medium to long term system behavior.

Preventing a system breakdown, instantly identifying the “bottle-neck” in an issue, and continuous monitoring of each individual asset, is not only cost-effective but also decisively restricts downtime and enhances tenant experiences. Such positives enhance brand perception and

new preferences, priorities and behavior profiles. The contemporary consumer is accustomed to real-time services and an experience economy, hence the rise of app-based service provision, such as Airbnb, Zomato and Uber. The new generation of customers is used to seamless access and instant gratification. The consumers most invested in this technology are millennials and GenZ, who are citizens of a digital age, and this growing demographic is leaving an especially indelible mark on the CRE industry.

According to an article in Forbes, “It’s not news that millennials have a huge impact on the workplace. Already accounting for 50 percent of the workforce and set to make up nearly 75 percent by 2025, they’re certainly not going anywhere.” Millennials and GenZ are young and tech-savvy and will accept nothing less than a smart office experience in their professional lives. CRE owners and FMs must evolve in step with these changing customer expectations and this is yet another emerging trend that embracing data-driven operations helps address.

panies could also leverage technologies such as IoT, AI and predictive analytics to (re)develop and tailor existing or new buildings to suit changing tenant preferences and to anticipate tenant needs.”

Future-ready CRE is Data-driven CRE

Moving forward, connected buildings empowered by data-driven operations (IoT, AI and ML) will be the norm and the non-negotiable standard. They are the future and it is already here. Smart buildings are the building blocks of smart cities and owners must recognize that their physical assets need to be effectively mapped into digital data for their business to be future-ready. To this end, FMs are now being brought on board at the conception stage, even before construction begins; existing building stock is being retrofitted to be digitally compatible and a new era of cognitive technologies embraced, by CRE operations.

A growing trend that is rapidly gaining prominence in the industry is the use of enterprise scale platforms that allow facility and property managers to access real-time data and monitor assets at portfolio level. Seamless connectivity, streamlined operations, increased productivity and data-informed decision making will differentiate the leaders from the also-rans in commercial real estate. Far from a mere exciting innovation that can be leveraged by a privileged few to extract competitive advantage, the IoT, AI and ML based centralized software platform model looks set to emerge as a new standard operating procedure, for CRE businesses. **FMJ**

Millennials and GenZ are young and tech-savvy and will accept nothing less than a smart office experience in their professional lives.

competitive differentiation, maximizing occupancy rates and leading to better ROI. These advantages are not lost on the CRE industry. In the “2020 State of CRE Operations 3.0” report issued by FM software platform provider Facilio Inc., 77 percent of respondents among CRE developers identified creating “experiential spaces with impressive uptime of facilities” as the strategy driving their budget allocations.

Evolving consumers: Attracting Millennials and GenZ

CRE facility and asset managers are realizing their customers have evolved to

Differentiating on ROI in a competitive market

As with any commercial activity, effective ROI is a great measure of success in real estate as well. That CRE businesses are considering, or actively migrating to, the data-driven buildings strategy is largely due to their need to capture a market share that makes their business model viable. According to Deloitte’s 2019 Commercial Real Estate Outlook, “CRE companies should reimagine tenant experience by weaving technology throughout the tenant life cycle. This can help strengthen tenant stickiness and therefore valuations... Com-



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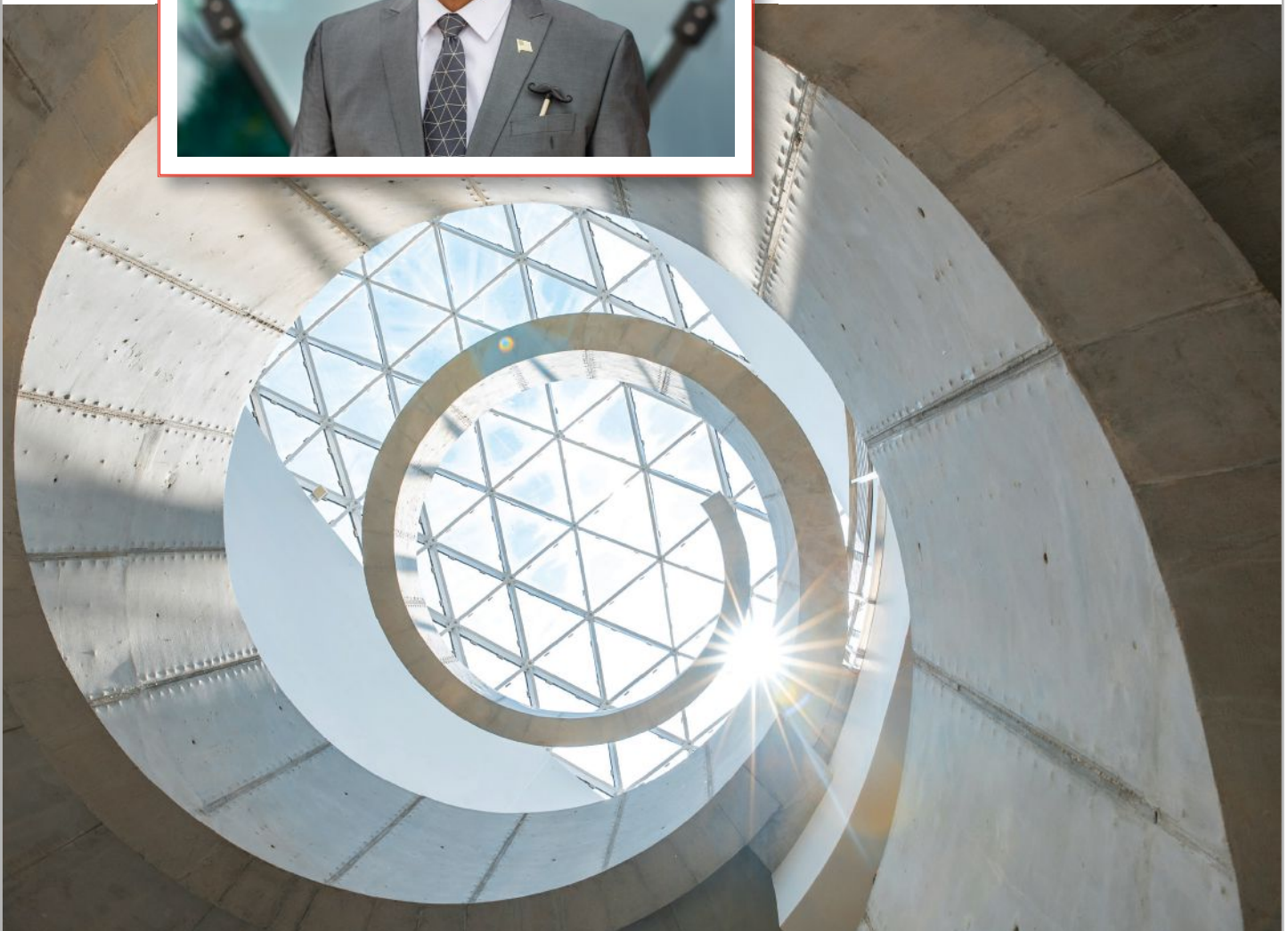




At the Salvador Dalí Museum, the surreal becomes real. The waterfront gallery in St. Petersburg, Florida, USA, houses the largest collection of the Spanish artist's work outside of Europe, including seven of Dalí's masterworks. IFMA member Brian Iacofano and his FM staff oversee the museum and its Avant-garden grounds, safeguarding The Dalí's priceless holdings against everything from everyday incidents to destructive hurricanes.



Photos Courtesy of The Dalí Museum





FMJ: *Tell us about yourself and how you got into FM?*

IACOFANO: I have been in the home improvement and construction management industry all my adult life. I have been fortunate enough to be exposed to all facets of construction, from carpentry to tile work to plumbing and electrical. Jack of all trades if you will....

My family and I moved from Cleveland, Ohio, USA, to Tampa, Florida, in 2008 during the height of the retail, housing and construction crash. I was working for a nationwide insurance corporation in their Corporate Real Estate division and my life in FM began! Shortly after, I became a member of IFMA and earned my FMP credential. A few years later the opportunity came my way for accepting the responsibility and honor of caring for the most complete and expansive collection of Salvador Dalí artwork outside of Spain, and the magnificent building it is housed in.

FMJ: *What is day-to-day life like at the Dalí?*

IACOFANO: The Dalí Museum is a single artist museum where we also curate two or three visiting exhibitions per year. The permanent collection consists of 96 oil paintings, 120 watercolors and drawings, 1,300 graphics and sculptures, photographs, and an extensive archival library.

We have venue rental and an extremely expansive education program for everyone from toddlers to school-age children to adults and seniors. Our events calendar is full all the time, with programming as well as corporate events and weddings. In addition, we have one of the most successful museum retail stores in the world and a full catering kitchen and café to enhance our visitors' experience. We have a staff of around

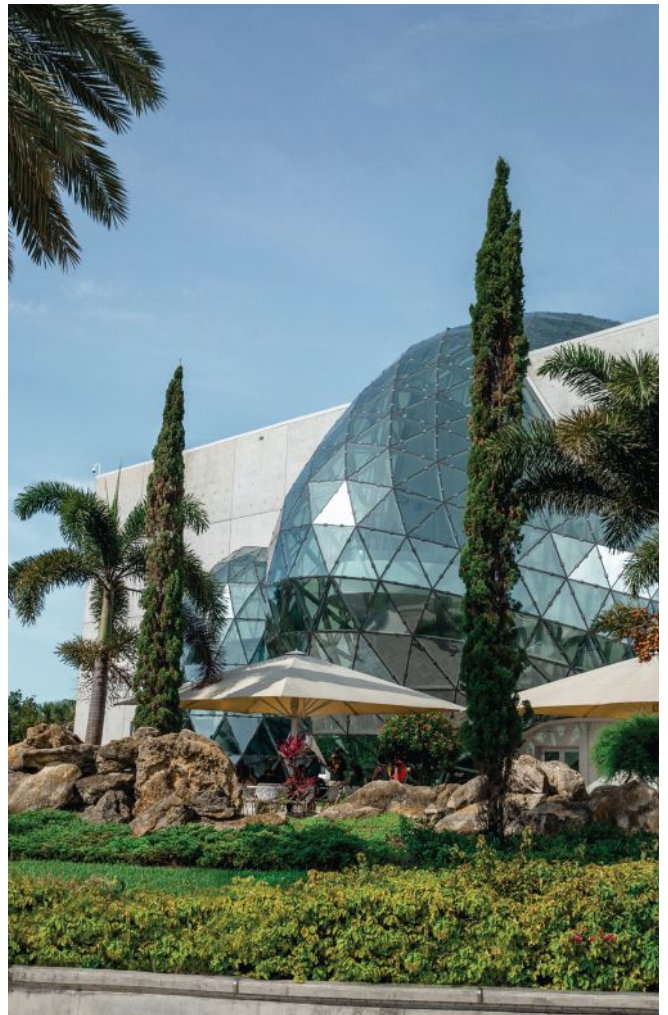
90 people full time and part time, not to mention one of the best assembled team of volunteers I have ever seen. Our programming includes workshops, films, opera nights in the Gran Sala, kid's days and even yoga.

Our facilities and IT teams take care of all day-to-day needs to keep the building in excellent condition both operationally and in appearance. In addition to a mind-blowing collection of Dalí artwork, we stretch the imagination with technological elements that enhance the experience with Augmented Reality, Virtual Reality and Artificial Intelligence components. With our large attendance numbers during our busy season, these elements take a lot of care and maintenance to keep them running and avoid downtime leading to poor visitor experience. We pride ourselves in very little to no downtime of any of the facility amenities or basic needs like restrooms and an always-clean environment.

In addition to "typical" (if there is such a thing) facility work, my team and I are heavily involved with our curatorial staff to project manage and execute everything from AV installation, "set" design, including building temporary walls, and anything and everything else that we are called upon to build for the next great visiting exhibition at The Dalí Museum.

FMJ: *Why is the Dalí unique and what kind of unique challenges do you face managing the facility?*

IACOFANO: Many museums try to incorporate the surrounding area in which their building is located to avoid potential disasters or damage to the collection. It was very important to us and the original owners of the collection, Reynolds and Eleanor Morse, to incorporate the coastal surrounding of





GETTING TO THE BOTTOM OF WASTE

BY ROSS GUBERMAN

There is a saying that nothing in life is certain except death and taxes, but FMs know there is a third constant — waste.

No matter where a facility is located, what business it serves or the number of people working at the site, there will always be waste. In addition to overflowing bins, there are contamination issues to worry about, rising disposal costs and more. The good news? Addressing waste is one of the easiest ways to make an impact on a facility's sustainability goals, operational efficiency and bottom line, all at the same time.

To tackle waste, an FM must understand what is thrown out in all their waste streams, from trash to materials being collected for recycling and composting. This involves some down-in-the-dirt investigative work called a waste audit.

Put simply, a waste audit is a waste investigation, where waste “detectives” in hazmat suits examine the contents of bags of waste from every waste stream they are auditing. The data they gather can be very illuminating.

MOST TRASH ISN'T TRASH

A survey of the results of 100 waste audits in the United States revealed 77 percent of what is found in most commercial trash is not actually trash at all, but recyclable materials: 34 percent is made up of organics, 23 percent is paper, 19 percent is glass/metal/plastic, and 1 percent is e-waste.

Only 23 percent of what many businesses are regularly throwing away could be considered “trash” in that the materials cannot be easily recycled and have reached what is considered their end life. This means that 77 percent of materials many businesses are paying to dispose of in landfills should not be going to landfills in the first place. Businesses are throwing away resources and money along with their trash. And that cost is rising.

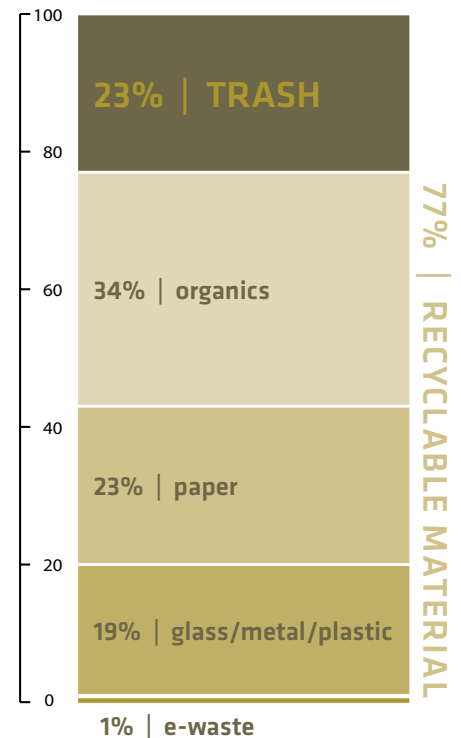
WORLDWIDE TREND: RISING WASTE, RISING COSTS

In a 2018 report, the World Bank cautions that the amount of waste generated worldwide is expected to increase by 70 percent by 2050.¹

With the Chinese ban on the import of contaminated recyclables affecting almost every market in world, recyclable material which would previously have been shipped to China for processing, is now filling up landfills worldwide.

China is now only accepting recyclables with contamination rates under 1 percent. The U.S. recycling contamination rate can be as high as 25 percent. Since the China import ban began in 2013, U.S. waste haulers and recyclers have been scrambling to figure out what to do with all the contaminated recyclables they receive. As a result, they have been charging higher fees to do more sorting at facilities, find new markets for the recyclables, or treat the contaminated recyclables as trash. In January 2019, analysts at Cass Information Systems detailed a 400 percent spike in contamination fees, with extra charges ranging from US\$150-\$250 per container.²

Even in this volatile market, where the value of recyclables are generally dropping, the cost of recycling is still less than the cost of trash disposal. This is especially true as tipping fees — the charge for



dumping trash in a landfill, which is often passed down to consumers—are constantly pushed up with the increasing amount of material headed to landfills.

According to a 2018 report from the Environmental Research and Educational Foundation, U.S. landfill tipping fees showed an average year-over-year 4.4 percent increase nationally from 2016 through 2018. Their report noted large increases in the Midwest (+18.3 percent), Northeast (+15.8 percent), and Pacific (+11.9 percent) over this period.³

The Waste Business Journal also sees this upwards trend, predicting U.S. tipping fees would increase 6 percent to \$53.53 per ton by 2021, from an average cost of \$50.30 per ton in 2017.⁴

With the waste industry still figuring out how to process all the waste material being generated, consumers, including business and buildings, are stuck with higher costs, unless they take control.

THE KEY TO CONTROL: WASTE AUDITS

Those who control information, control the world. In this scenario, waste audits are the key to controlling waste.

Waste audits are so important that in 2018 the San Francisco, California, USA, board of supervisors, passed an ordinance requiring the city's largest waste generators to conduct waste audits every three years.⁵

A waste audit provides a detailed waste characterization of a facility's waste streams. It identifies what is being thrown away, what is being recycled or diverted through other means, and the amounts of each type of material by weight or volume.

How many recyclables are ending up in the trash? Is trash contaminating recyclables? What is the most common type of waste being generated by a facility? Is a facility's waste program operating efficiently? Is a facility paying too much for waste disposal? A waste audit will provide data to answer all these questions, pinpoint problems, identify solutions and more. Here's how:

CASE STUDY 1:

Waste audit helps identify big waste problem, reduce waste and costs.

A waste audit at an office building revealed that a large percentage of their trash was made up of food scraps, which is heavy. By implementing an organics program to capture the food waste, the facility was able to make their waste load 25 percent lighter, significantly reducing their waste disposal fees, which was calculated by weight.

CASE STUDY 2:

Waste audit helps reduce frequency of waste pickups and cost.


The dumpster at a manufacturing facility kept filling up rapidly and was constantly overflowing. The facility was forced to pay for more frequent pickups, which led to higher waste costs. A waste audit revealed that three-quarters of the dumpster was choked up with materials that could be diverted from the landfill. The facility began pulling recyclables out of the waste stream. In less than a month, the facility was able to divert 15 tons from the landfill, and the volume of trash going to the landfill decreased by a 3 to 1 ratio, saving the facility an estimated 30-40 percent on its annual cost.

CASE STUDY 3:

Waste audit helps with food waste strategy.

A U.S. fast-casual dining chain had policies and procedures in place to minimize food waste but their program did not distinguish between high quality, surplus food that could be donated, and inedible surplus food. A special food waste audit revealed that 64.8 pounds of quality food could be rescued and donated from three locations audited. The audit also revealed that without any reduction in food waste generation, the restaurant chain could rescue an average of 26.7 percent of its daily food waste to feed the hungry. The audit provided the data the company needed to move forward with a planned regional food donation program, and to estimate their impact nationally as they considered a long-term food waste reduction strategy.

GO FOR ZERO

With rising waste costs, the long-term solution for any facility is to move towards zero waste, following the lead of some of the world's biggest companies, including Unilever, Procter & Gamble, GE and Subaru, along with a growing number of cities with zero waste goals. Whether facilities decide to go for zero waste in the long term, or to just focus on waste reduction for the short term, waste audits are a must. Without data from waste audits, FMs will not be able to get to the bottom of their waste problem and go for zero. 

PLANNING A WASTE AUDIT

- » **Every facility should plan a waste audit at least once a year. Not only will this give the FM crucial data to make informed decisions, but it will also verify data that might be provided by the hauler. Accurate data is important for operations and billing. Incorrect data can lead to unnecessary fees, and can affect yearly waste hauler contract renegotiations. Data from annual waste audits might also be used to fulfill certain sustainability reporting and LEED certification requirements, and to benchmark a facility's year-over-year waste reduction performance.**
- » **Avoid planning an audit if there are any major events happening, such as construction or when occupancy is changing. The waste audit is supposed to reflect what happens on a normal day.**
- » **Keep building tenants and all other stakeholders informed to ensure the audit runs smoothly. Set aside time to do a pre-audit visit to discuss the waste audit process and goals.**
- » **Waste audits can be as broad or as targeted as necessary to accomplish whatever goals a facility has in mind. For example, if a building is trying to determine tenant waste billing, a waste audit could be done just focusing on tenant waste streams.**
- » **A waste audit can be done internally, but requires experienced personnel to assemble a team with training to ensure that accurate data is being collected. Professional waste audit services should be secured if a facility does not have the expertise to ensure accurate waste data collection and analysis.**

WHAT CAN A WASTE AUDIT REVEAL?

Here is a snapshot summary of one waste audit conducted at a skyscraper housing a mix of offices and retail tenants. (All figures are in pounds.)

MATERIALS BREAKDOWN	DESKSIDE TRASH	PANTRY TRASH	RETAIL TRASH	PAPER RECYCLING	GMP RECYCLING	CARDBOARD RECYCLING
TRASH	550.96	340.93	687.14	180.97	184.85	0.00
LIQUIDS	19.00	35.80	72.58	4.84	21.10	0.00
PAPER	402.61	98.37	92.63	246.85	49.60	0.00
PAPER CUPS	74.02	14.95	29.30	18.91	18.97	0.00
SOILED PAPER	198.00	44.50	45.13	155.16	52.70	0.00
GLASS	29.50	20.00	7.20	17.71	25.53	0.00
SOILED GLASS	4.20	5.20	45.44	1.69	21.04	0.00
METAL	40.96	20.93	38.35	7.46	28.31	0.00
SOILED METAL	3.09	3.10	89.85	3.45	1.08	0.00
PLASTIC	79.60	59.34	71.55	67.24	62.34	0.00
SOILED PLASTIC	95.40	73.96	61.27	101.94	62.07	0.00
ORGANICS	178.00	272.05	2009.92	127.24	84.17	0.00
CARDBOARD	20.80	0.00	602.33	20.80	2.00	344.51
SOILED CARDBOARD	7.20	8.08	0.21	17.80	3.40	0.00
E-WASTE	2.10	0.00	26.32	0.00	0.00	0.00

Based on this waste audit:

- » It is clear that the building stands to gain enormous benefit from implementing an organics program.
- » The results also show a need for the building's tenants to receive reminders and additional training.
- » The building could benefit by eliminating glass from its waste streams, since glass is heavy, breaks easily (becoming a safety hazard), and is increasingly becoming labeled as "trash" by most waste haulers.
- » This building should consider removing deskside bins and moving to a system of collecting waste and recyclables in a centralized location. This would increase its paper capture.

A quick analysis of this data tells us:

- » The building generated 8,515.6 pounds of waste (from all streams), and only 954.52 pounds of clean recycling was diverted from the landfill. This put the building's diversion rate at 11.21 percent.
 - » Organics was found in significant quantities across all the waste streams, but the amount present in the building's retail trash - 2,009.92 pounds of organics - was especially stunning. With an organics program in place, the building's diversion would be 43 percent instead of 11.21 percent.
 - » The building's paper recycling was not performing as well as it should be. 180.97 pounds of trash was found in the paper recycling stream.
- Furthermore, 155.16 pounds of paper collected was soiled (some of the paper was probably contaminated by the 4.84 pounds of liquid found in this stream.)
- » The building's GMP recycling stream was about 70 percent contaminated by 184.85 pounds of trash, 21.10 pounds of liquid, 52.70 pounds of soiled paper, 21.04 pounds of soiled glass, 1.08 pounds of soiled metal, 62.07 pounds of soiled plastic, 84.17 pounds of organics, and 3.40 pounds of soiled cardboard.
 - » More paper (402.61 pounds) was found discarded in deskside trash bins than was collected in the paper recycling stream (246.85 pounds).

1. "What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050," World Bank, Sept. 20, 2018
2. <https://openknowledge.worldbank.org/handle/10986/30317>
3. "Predictions for Waste Expenses," Cass Information Systems, Jan 16, 2019. <https://www.cassinfo.com/waste-expense-management/waste-and-recycling-blog/predictions-for-waste-expenses-2019-costs-on-the-rise>
4. "Analysis of MSW Landfill Tipping Fees," Environmental Research and Educational Foundation, April 2018
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7. <https://www.wasteinfo.com/news/wbj20180613A.htm>
8. "How important are waste audits? San Francisco's mandate speaks volumes," Waste Dive, Jan. 23, 2019.
9. <https://www.wastedive.com/news/how-important-are-waste-audits-san-franciscos-mandate-speaks-volumes/546441/>

RELATED LINKS:

- Great Forest white paper on centralized waste bin system <http://greatforest.com/whitepaper/>
- How To Reduce Contamination, Maintain The Value Of Your Recycling, Control Costs (In 6 Steps)
- How to Really Increase (and Maintain the Value of) Your Recycling
- Case Study: What A Food Waste Audit At A National Restaurant Chain Revealed



Ross Guberman is CEO of Great Forest, Inc., a pioneering sustainable waste management consultancy that has been working with clients across the U.S. and internationally since 1989. Under his guidance, Great Forest has emerged as a leader in waste audits. Ross is a certified TRUE Advisor, trained in the TRUE Zero Waste Rating System.



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Why FM's must lead the way in meeting



new sustainability legislation standards

BY AIDAN BELL

Climate Change: Why Action is Needed?

The Earth's climate has steadily changed throughout history alongside natural phenomena that has caused fluctuations in weather, temperature and climatic conditions. However, in just the last 650,000 years, Earth has seen an abnormal seven cycles of glacial advance and retreat¹, with the rate of Antarctica ice mass tripling within the last decade². The modern climatic era commenced with the sudden end of the most recent ice age, and a contemporary era of human civilization commenced with it. Within this era, the climate has been intensely affected by the rising industrial activity and technological advances of modern human lifestyles, with dramatic widespread responses being seen in the environment.

In Greenland, ice is melting at an astonishing seven times faster than it was in the 1990s, less than three decades ago. This is due to the rapid global warming experienced in the Arctic region which has seen a 0.75 C temperate rise in the past decade. If these rates continue, we could see a sea-level rise of 7 cm before the end of the century, merely from Greenland alone, resulting in severe consequences that will be experienced by everyone, all around the world³.

The Intergovernmental Panel on Climate Change's most recent report stated that carbon dioxide emissions must peak by 2020 in order to ensure the planet's temperature remains below 1.5⁴. Follow-

ing this, recent reports have suggested that the political actions taken in upcoming months will be crucial in acknowledging pressing environmental challenges⁵. If warming temperatures exceed 1.5 C, strong storms, rising sea levels, mass extinction and water scarcity are just several environmental reactions to be expected. These detrimental changes are mostly irreversible and will impact everyone.

The Climate Change Act of 2008 made the U.K. the first country to be legally bound into a long-term plan to cut carbon emissions, committing the Government to reducing emissions by 80 percent before 2050 through carbon budgeting,

trading schemes and targeted carbon limits⁶. Legislation like this is both essential for climate and motivating for the population, causing reason to monitor emissions at all scales. In order to prevent widespread disaster, efforts must be made to reduce greenhouse gas emissions globally. Whilst changes to government policy will be crucial in helping to tackle the climate crisis, there are plenty of easy ways to make sustainable changes at a local level to solve these challenges. These emission cuts will not happen overnight and will therefore require stable strategy alongside a widespread shift to more long-term mentalities.

The Built Environment: Impact and Impacted

In a report on long-term corporate health, the BBC emphasized that "the economic cost of [environmental] inaction is simply too great⁷." The negative consequences of environmental damage are increasingly falling on companies, who are often struggling to protect or replace the natural resources and materials that they depend on for business. It is known that business sustainability is a key factor in the long-term success of a company⁸. Therefore, corporate social responsibility, and more specifically sustainability, is becoming increasingly crucial in directing the future of global business strategy.



Construction has a significant impact on climate, and experiences many of its negative responses.

The built environment contributes around 42 percent of total carbon footprint in the U.K.⁹, presenting an influential element in the development of climate issues around the world. Half of this contribution is created from everyday home activities such as using electricity and cooking, as well as infrastructure, involving roads and railways. Incorporating sustainability into building regulations is a crucial step in reaching improvements within the built environment, where building owners and users must reconsider their policies to address corporate social responsibility.

Not only is the built environment a significant contributor to climatic issues, it is an area of human civilization that will experience the consequences of these issues most severely. In England, one in six properties are at risk of flooding, putting more than 5.2 million properties in danger¹⁰; a figure that will continue to grow alongside rising sea levels, caused by global warming. Recent flooding in Venice saw more than 80 percent of the city completely under water as a result of abnormally high tides¹¹. Last year, Australia's bushfires arrived much earlier than usual, with detrimental impacts on the built environment. This was largely a consequence of prolonged dry periods and stronger winds which intensified fires and enabled them to spread quickly; effects encouraged by climate change¹². Construction has a significant impact on climate, and experiences many of its negative responses.

From the early stages of planning to the final stages of construction, buildings have traditionally been mainly orientated around design and form, with the intention of leaving the processes of operation and function to facility managers and building engineering staff. Government policies targeted towards improving the efficiency of existing buildings have been reduced, and rates of insulation installation have halted. However, 80 percent of the buildings that will be constructed by 2050¹³ have already been built, suggesting that more focus should be applied to decarbonizing older, existing stock¹⁴, which is lagging behind its contemporary counterparts in sustainable development.

Greening Facility Performance

As this centralization around new buildings regarding sustainability starts to shift, the responsibility for upgrading current building stock falls into the hands of FMs, whose authority allows them to manage costs and control functions within the built environment. The traditional FM role remains, but more recent duties have extended to incorporate a new environmental focus, narrowing the relationships between design, operation and maintenance in light of contemporary environmental demands. Alongside their internal duties, FMs now face a new set of responsibilities, associated with the wider environment and society. High facility performance and green practice are now closely related, where FM should have sustainability as a key strategic objective. Improving a building to reach smooth and sustainable operation is a long process, requiring a well-crafted policy of maintenance and refurbishment. Some FMs may inherit dated building systems that are expensive and tricky to maintain, demanding additional attention and work towards achieving sustainable quality.

There are two main types of measures that can be used to reduce harmful effects of climate change; those targeted towards reducing harmful effects, and those that treat the effects at their source. Although the latter is often the preferred method, both include an integrated life cycle approach, reducing energy consumption and improving the quality of products and service. Although change is not always smoothly accepted, as “business as usual” can be difficult to disrupt, making small transformations are necessary and can be introduced gradually. Sustainable FM has developed into a role that is involved in a wider organizational culture, where innovation, proactivity and leadership are all effective elements in considering ways to improve sustainability throughout all areas of building operation process. There are beneficial results in owning and operating high-performance, green facilities, both financially, operationally and sustainably.

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Inspiring Potential Solutions

The key change in approach to sustainable FM involves a shift to longer-term thinking, where decisions made today should incorporate questions over their effects on the future of the building, and the wider environment in which it exists.

Buildings are significant aspects of climate change adaptation, especially with recent increases in weather conditions. Millions of properties remain in flood-risk areas, with 10 percent of paving sales in 2013 being permeable, and only 15 percent of planning applications for flood risk areas mentioning “sustainable drainage” in 2015. Contemporary FM should be proactive in securing properties from the possible impacts of weather damage, involving adaptation methods such as sustainable drainage systems and flood risk alleviation. Not only will this ensure the safety of the individuals and belongings of those within the building but will also contribute towards the long-term sustainability of the building itself.

Newly constructed buildings are more energy efficient, meaning that FMs must incorporate plans to decarbonize existing builds. 67 percent of total electricity supply in the U.K. in 2016 was used in the built environment, with rising emissions from fuel-use proving to be one of the largest tests ahead. Electricity and heating, combined, are responsible for 25 percent of global greenhouse gas emissions, created by the burning of coal, natural gas and oil¹⁵. Furthermore, 31 percent of energy demand comes from residential and commercial sectors in the U.S., through heating, ventilation, air conditioning, lighting and other related appliances¹⁶. Replacing local heating systems with improved, higher performance heating processes will improve building efficiency. Furthermore, insulation can easily be incorporated into a maintenance plan, maximizing resource efficiency and therefore reducing long-term costs.

The life span of appliances, building components and everyday products is essential in determining their sustainability¹⁷. It is therefore important for FM to seek long-lasting, durable products that will have a minimal impact in contrast to their short-lived alternatives that require continued replacements, both environmentally and financially. Sustainable FM involves the reduction of any unnecessary maintenance, requiring investment into more efficient, long-lasting components, from large systems to smaller appliances and everyday products. This involves improving the sustainability of building components rather than merely upkeeping old or traditional performance, adjusting values, behaviors and processes to both avoid risks and embrace environmental opportunities. Identifying issues in the building operation early is crucial in establishing a secure and sustainable estate, and therefore a successful business in the long-term¹⁸.

There is an important role to reverse the negative effects of anthropogenic climate change. FMs should strive to recognize areas where improvements are possible, from upgrading drainage systems, to improving energy efficiency and even creating green areas or planting trees. Not only will sustainability save unnecessary costs in the long term, it will lengthen property potential and enhance smooth operation. For example, the initial costs for installing insulation is relatively low in comparison to the combined costs of adding insulation or cover during a component’s life span or paying for the additional heating costs.

What is Effective FM?

Due to the built environments’ significant contribution towards the U.K.’s carbon footprint, and the requirement to improve the efficiency of existing buildings as well as new, facility managers are well-placed to implement environmental progress. Not only will incorporating sustainability into building function smooth its everyday operation, save financially and improve the long-term potential of the facility, it will positively counteract the impact of the built environment on the climate, which is currently severe. Effective FM is, involving all aspects of property supervision, from environmental education to energy-use. FMs who operate their spaces with environmentally conscious approaches have healthier and more productive environments, both attracting talented workers and retaining them¹⁹. The UKGBC highlights that a sustainable built environment is one that mitigates and adapts to Climate Change whilst eliminating waste and maximizing resource efficiency²⁰. **FMJ**

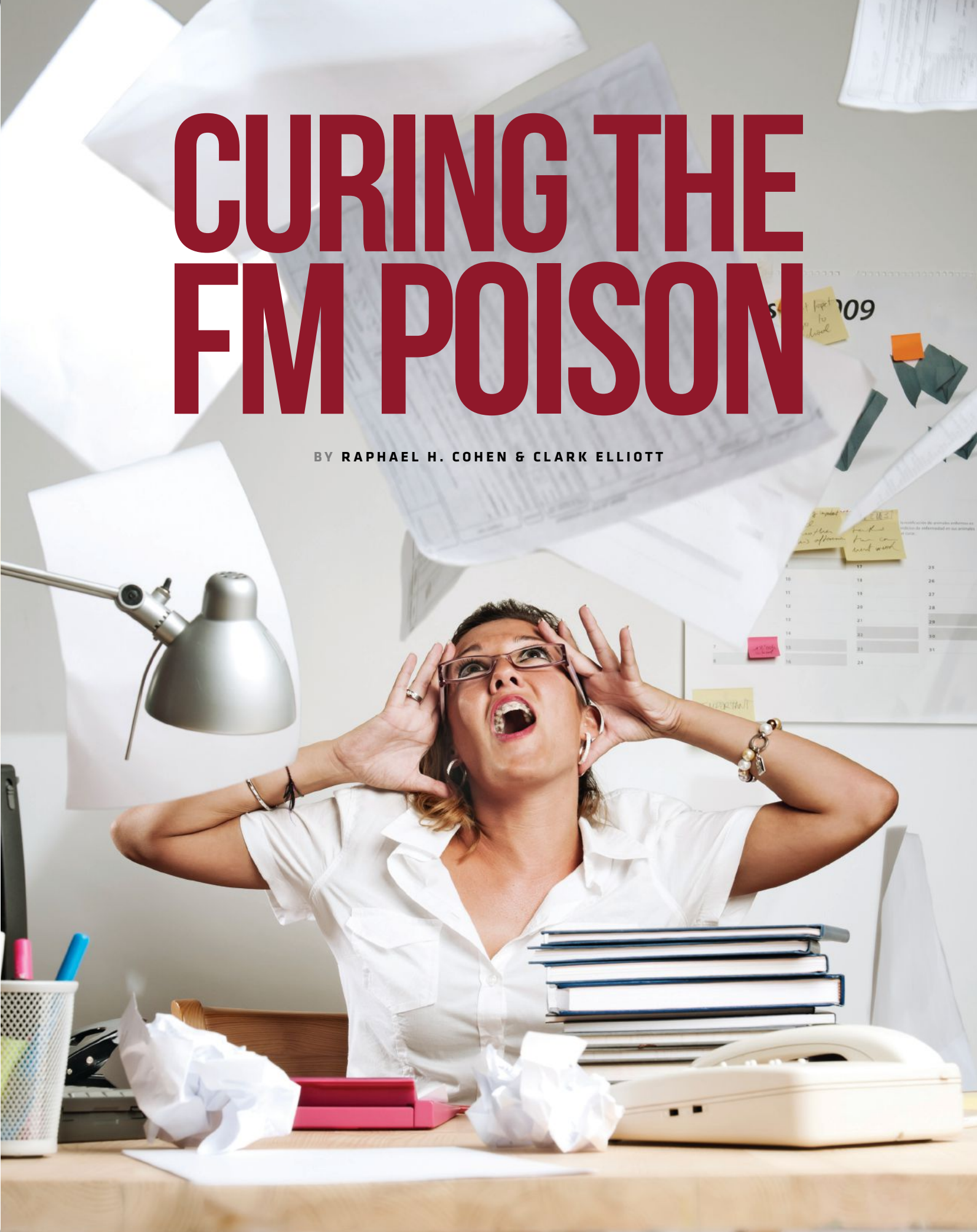


Aidan Bell is the co-founder of sustainable building materials company *Envirobuild*. Bell’s mission is to use recycled plastic materials to design sustainable cladding, decking and furniture to help mitigate the built environment’s contribution to climate change.

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CURING THE FM POISON

BY RAPHAEL H. COHEN & CLARK ELLIOTT




Measuring the level of team engagement is a paradigm change

If the culture or change-readiness surveys are useful to get a feel of the overall company culture and to provide some guidelines for FMs, it is not enough to predict a willingness to accept the proposed changes at the team level. What would help FMs is to know the mindset of each team to be affected by the changes to be introduced. As measuring team dysfunctionality could be delicate, it is easier to focus on team engagement. A dysfunctional team will never be as engaged as a healthy team. Consequently, a disengaged team will certainly not embrace and take full advantage of an improved workspace as an engaged team.

Because there are many routes for achieving a high level of engagement, only measure the end-result obtained by management instead of measuring what they do that may increase or reduce change-readiness. The end-result is the level of engagement of their team. The only assumption is that engaged employees trust their management and are committed to the success of their employer. The highest possible level of engagement will optimally support workplace transformations. Conversely, employees' disengagement is poison for FMs.

Measuring preexisting team engagement is a very helpful predictor of openness to change, which will have a big impact on the final outcome of what FMs can deliver. It should be the best practice for FMs to measure current team engagement before implementing or even designing the workplace transformation they intend to introduce. This indicator will tell them how any change will be received, regardless of the one they have in mind.

By measuring pre- and post levels of engagement, the boldest FMs could even measure the impact of their workplace transformation on the level of engagement.



THE HIGHEST POSSIBLE LEVEL OF ENGAGEMENT WILL OPTIMALLY SUPPORT WORKPLACE TRANSFORMATIONS.

CONVERSELY, EMPLOYEES' DISENGAGEMENT IS POISON FOR FMS.

As there are four kinds of engagement, it is important to distinguish between:

1. Intrinsic motivation: the personal trait of people who have doing a good job at heart.
2. Engagement for the cause: for example, people who are motivated to heal people or to help children learn important skills.
3. Engagement for an employer: employees who are proud to work for a prestigious firm.
4. Engagement generated by the manager's leadership: the extent to which a manager can build engagement.

Since it has been demonstrated that the manager's ability to generate engagement accounts for up to 70 percent of the total level of engagement, measuring the fourth kind of engagement is the most important. The good news is that it is also the easiest and most inexpensive engagement to measure. It can be measured with a simple and free software that asks a handful of questions such as:

1. On a scale of 0 to 5, and independently of company policies or work conditions, to what extent
2. does your manager give you the desire to contribute?
3. do you recommend your manager to others considering joining your team?
4. do you want to be led by your current manager?
5. is your manager capable of attracting and retaining talent?

For the result to be reliable, the respondents must be able to respond without fear. Because it guarantees total anonymity in producing an engagement score for each team and the questions can be customized to truly measure what FMs want, the free online solution provided by www.EazyMirror.com was used.

A new role for FMs?

If the engagement score is very low, the FM should begin by helping the team to become less dysfunctional. It might sound odd that FMs should get involved in management and leadership issues when their job is to take care of the conditions of the work environment. The real question is: "What is the consequence of not addressing the level of engagement?" The answer is rather simple: not addressing the level of dysfunctionality – the poison – will undermine the efforts of FMs and prevent them from delivering optimum outcomes. Because they will not deliver spectacular results, FMs will not be recognized for their contribution, regardless of what they do in the work environment. That's rather frustrating and wasteful.

Because the price of ignoring the level-of-engagement issue is high, FMs for their own success have no choice: they must tackle this issue one way or another. The FMs who do not (yet) have the skills to help teams become more engaged can easily team up with experts in employee engagement to obtain the desired outcome. Maximizing engagement is the antidote to the poisonous disengagement that will undermine FMs efforts.

A holistic approach is a prerequisite

FMs have another hurdle to address: how can they convince their internal customers that they should also be involved in team engagement levels? The answer is simple: because what happens in the workplace — level of engagement — is at least as important as how the workplace supports those activities, a holistic approach is indispensable to obtain the desired result from the changes to be introduced.

Furthermore, considering that engaged employees can improve profits and productivity by up to 35 percent, every decision-maker should be thankful for anyone who can help measure and possibly improve the levels of team engagement.



To help convince internal customers, there is the Engaged Team Charter, a tool with specific characteristics that differ from traditional team charters. They include fundamental governance principles and expected behaviors. Such guidelines can be essential in changing the way people will interact in the new workplace. Issues such as how to take private calls did not exist in closed office environments but have a big impact in activity-based settings. Agreeing on guidelines can considerably alleviate the pain of transitioning from one type of work environment to another. As codes of conduct and workplace optimization go hand in hand, a holistic approach makes a lot of sense.

One of the characteristics of the Engaged Team Charter is that it is designed by the whole team. As it also includes an enforcement mechanism, it creates engagement. The team debate for producing the Engaged Team Charter is a wonderful opportunity for FMs to truly understand the dynamics that drive each team. This understanding opens the door for identifying solutions in the work environment to help the teams interact better.

Harmonizing people's interactions with their workplace conditions provides a global approach that should yield better results than having FMs taking care of the workplace and other soft skills experts handling interactions separately. Integrating the work environment with the way people interact in the environment truly creates a virtuous circle.

Designing an Engaged Team Charter is best achieved with the help of a neutral facilitator who has no stake or involvement in the team, however, it is not always easy to find such trustworthy neutral facilitators. FMs could become those neutral facilitators and learning the necessary skills is not out of reach.

Improving team interactions and workplace experiences in parallel would not only expand the range of their strategic impact on organizations, it would at the same time make FMs' roles much more meaningful and essential, in turn bringing higher levels of recognition and appreciation. FMI



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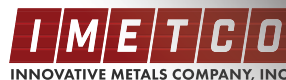
Clark Elliott, Workplace Strategies Consultant, is a Social Psychologist and Environmental Designer. Based in Geneva, Switzerland, Clark is one of the first Workplace Strategists in Europe. His career started in 1984 developing new ways of working at DEC Compaq HP. Since 1999, Elliott has provided advisory services to some of the world's largest organizations. He is a senior associate at AWA, Advanced Workplace Associates, specializing in workplace change management and is vice president and co-founder of IFMA's new Workplace Evolutionaries Swiss Hub.

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FMJ What research or product innovations is your working on that will help FMs be more successful in their roles?

SBRA Last November, SoftBank Robotics America launched Whiz, our autonomous vacuum sweeper, in North America. Whiz supports overworked janitorial teams in cleaning commercial spaces, such as offices, airports and hotels, by automating the tedious, often backbreaking task of carpet cleaning and allowing staff to focus on providing a deeper clean.

Powered by BrainOS, our partner Brain Corp's commercial operating system, Whiz is capable of navigating complex and dynamic environments autonomously, while ensuring the highest levels of cleaning performance and safety. Whiz can record up to 600 cleaning routes, which are initially taught by the staff while first implementing Whiz. The routes are stored in Whiz, so it can repeat the cleaning route on its own. From full-space cleans to drilled-down focus on your most high traffic areas, the teach and repeat model gives you exact control of how your space is autonomously cleaned.

Thanks to its unique Robotics as a Service (RaaS) model, which includes fleet service, customer care, and product upgrades, Whiz is constantly enhancing its software and delivering measurably improved business outcomes through regular software updates. Most notably, SBRA developed Whiz Connect, a data dashboard providing a centralized means of monitoring, measuring, and extracting a wealth of business insights from your Whiz fleet. FMs can use this data to measure the exact time and distance Whiz operates, which allows them to ensure staff are using the robots effectively and confirm the cleans of their facilities.

FMJ What's on the horizon in your field/industry, and how is your company meeting those challenges and opportunities?

SBRA The coronavirus pandemic has changed the world as we know it. In order to feel comfortable in our day-to-day lives, we are going to see heightened expectations for the spaces we inhabit. We will see increased demands for sanitation of high-touch areas and a desire to reduce non-essential face-to-face interaction. How are FMs and cleaning teams going to be able to meet this newly heightened level of scrutiny and help people trust commercial spaces in the future?

Robotics and automation companies are going to be tasked with proving their solutions can facilitate healthier environments and the safety of the service workers that keep these spaces clean. Automated solutions, such as SBRA's Whiz, can ease the strain that overburdened teams face. Automating tasks like vacuuming can cut cleaning time by up to 30 percent, giving staff the time they need to focus on deep clean-

ing and frequent disinfecting of high touch areas like door handles, elevator buttons, stair handrails, and restroom surfaces. Whiz and its HEPA filter reduces eight times more dust, allergens, and pathogens kicked up by manual cleaning by 8x, dramatically improving indoor air quality. Most importantly, robots can enable staff members to stay home when they are sick or faced with cleaning an especially infected area.

FMJ Tell us about your CSR efforts or projects. How have these contributed to the community?

SBRA As a company focused on augmenting the workforce through automation, we realize the responsibility we have in making sure the next generation is prepared to deliver true value through robotics.

Through our STREAM Education program, representing science, technology, robotics, engineering, art, and mathematics, SBRA is working with school districts and universities to inspire career paths needed in an automated future and increase accessibility to technical career paths. In 2018, we announced the donation of over 100 of SBRA's Pepper robots to public schools in San Francisco, Boston and British Columbia. This past March, SBRA launched Tethys, a visual programming software inspired by Pepper and designed to simplify the coding experience for students.

Pepper and Tethys are currently integrated into 21 schools and numerous classes, clubs and events. At partner schools, students are already seeing the next steps and opportunities for technical careers they previously had not imagined.

We are accepting new partners to sponsor Tethys for their local communities, allowing more students to have access to STREAM careers.

FMJ How can current employees successfully work alongside robots introduced into their workplace?

SBRA We strongly believe that the human workforce can be responsibly augmented through cobotics, which are collaborative robots that work alongside humans to perform tasks and elevate an employee's ability to complete their work. Cobots can perform repetitive and pervasive assignments, which then allows their human colleague to focus on skilled work, adding value for both the employee and the company.

A great example of how cobots can be successfully implemented can be seen at HSBC Banks in the United States. Since 2018, we have worked closely with HSBC to bring Pepper to select branch locations in an effort to both enhance the customer experience and streamline branch operations. Pepper has allowed bank staff to have deeper and more personal customer engagements by taking care of some of the more tedious tasks, including educating customers on basic product information, sharing the availability of self-service banking options, and asking initial questions to determine banking needs.

Whether it's banking, cleaning, inventory management, or making contactless coffee, cobots will be an increasingly important part of our day to day, building data-driven trust and alleviating arduous tasks.

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FMJ What research or product innovations is Gensler working on that will help FMs be more successful in their roles?

GENSLER We are a world leader in strategy and design. Our work relies on data, and we recognize the importance of well-managed space and occupancy information for effectively managing a workplace portfolio to answer timely questions including:

- Where can I find accurate CAD plans of our buildings?
- What’s our current occupancy?
- How much space is allocated for each department?
- We’re growing, downsizing, or merging. What are our options?

Gensler is committed to offering the best space management software and service for facility managers to easily retrieve and manage data with our proprietary solution, Wisp. Going beyond SaaS, we offer strategic advising and ongoing drawing maintenance services to offer deeper insights and value our clients.

Integrated workplace management is less about a single software system and more about access to multi-dimensional datasets. With a solid base of space and occupancy data in place, information from sensors, room reservations, badge data, and employee surveys can deliver a better view of what’s effective in the workplace and what isn’t.

We’re committed to the ongoing advancement of data integrations, reporting and analytics within Wisp—providing a launching point for workplace technology stacks that are nimble and can quickly respond to today’s ever-evolving workplaces.

FMJ What’s on the horizon in your field/industry, and how is your company meeting those challenges and opportunities?

G The nature of work is changing, and the workplace must evolve to support it. Our research shows that much of what drives employee satisfaction, productivity, talent attraction and retention comes down to offering choice in the workplace.

Choice means having the right tools and spaces for the job at hand. Proximity, layout, adjustability, noise management, and technology are key factors in a successful rollout of this type of environment. New types of spaces and ways of working and growing—such as dynamic seating, hoteling, and neighborhoods.

The Gensler Research Institute is constantly exploring the intersection of design, business, and behavior in pursuit of solutions that improve the built environment and enhance the human experience.

As IFMA celebrates 40 years of service to the facility management industry, we recognize the IFMA Corporate Sustaining Partners (CSPs) who have worked with us to bring quality content to our members. Their contributions of knowledge and resources are especially important in these days of workplace and facility disruption.

Who are CSPs and how do they help you succeed?

Much of the change we see in our facilities is driven by the cutting-edge products and services that make our facilities smarter, more efficient, healthier and safer. To be prepared for what’s next, we have to know what’s coming. Who better to provide insight into the tools that transform and support our spaces than the companies developing them?

As leaders in their respective industries, IFMA CSPs are constantly innovating. They share our desire to build and maintain a better built environment.

CSPs are dedicated to the goals and work of the association, supporting every resource IFMA offers. These best-in-class organizations make a substantial investment in the facility management community with no guarantee of a tangible return. As advisers, topic experts and change leaders, they are committed to the success of the professionals they support.

To help us make informed decisions about our facilities, CSPs:

- share survey and research results;
- share information on new methods and groundbreaking products;
- contribute industry white papers and case studies to IFMA’s Knowledge Library;
- contribute articles to FMJ magazine;
- partner with IFMA to fund research, benchmarking and educational projects.

CSPs depend on information from IFMA members. Tapping into our insights on present and future needs and hands-on knowledge of workplace strategies, CSPs create better, more sustainable and resourceful solutions to managing our people, places, processes and technologies.

With the generous support of our CSPs, we have the means to deliver the quality, cutting-edge information that you’ve come to expect from your association. A company bearing the CSP logo has made an investment in the continued advancement of the FM profession — they have made an investment in you.

Support the companies that support you. Look for CSPs when browsing content in the Knowledge Library, walking the expo floor at IFMA events, reading the latest industry news in FMJ, and deciding on products or services for your facilities.

CSP

IFMA™
CORPORATE
SUSTAINING
PARTNER

IFMA's **Corporate Sustaining Partners (CSPs)** are dedicated to the goals and work of the association, supporting every resource IFMA offers. These best-in-class organizations make a substantial investment in the facility management community with no guarantee of a tangible return. As advisers, topic experts and change leaders, they are committed to the success of the professionals they support.



Trusted

Credible



With the generous support of our CSPs, we have the means to deliver the quality, cutting-edge information that you've come to expect from your association.

A company bearing the CSP logo has made an investment in the continued advancement of the FM profession – they have made an investment in you.

PLATINUM


GOLD



SILVER



ACOUSTICAL/SOUND MASKING

Biamp Systems | www.biamp.com 
Lencore Sound Masking & Acoustics | www.lencore.com
LogiSon Acoustic Network | www.logison.com

BUILDING AUTOMATION

Honeywell BMS | www.honeywell.com

BUILDING ACCESSORIES FOR CONTROLLED ENVIRONMENTS

Controlled Environments Inc. | www.cespaces.com

BUILDING MAINTENANCE/REPAIR/RESTORATION

Otis Elevator | www.otis.com

CARPET/FLOORING/TEXTILES

MasterCorp | www.mastercorp.com
milliCare Floor & Textile Care | www.millicare.com

CEILINGS/CEILING CARE

Armstrong World Industries | www.armstrong.com

DISASTER RECOVERY/EMERGENCY RESPONSE

BELFOR USA Group Inc. | www.belforusa.com


ELECTRICAL/WIRE MANAGEMENT

Connectrac | www.connectrac.com
FreeAxez LLC | www.freeaxe.com

ENERGY SOLUTIONS/MANAGEMENT

EDF Renewables NA | www.edf-re.com


FLOORING INSTALLATION/MAINTENANCE

Corporate Care | www.corporatecare.com 
Forbo Flooring | www.forbo.com
Tarkett | www.tarkettna.com

FM CONSULTANTS/SERVICES/PROVIDERS

ABM | www.abm.com
Al-Hajry Overseas Co. LTD. | www.alhajry-overseas.com.sa
Al Shirawi Facilities Management | www.alshirawifm.com
Amentum | www.amentum.com
ARAMARK | www.aramarkfacilities.com
Barq Group | www.barqgroup.com/barq-facility-management.htm
Canadian Base Operators | www.canadianbaseoperators.com
City Facilities Management | www.cityfm.com
CGW Services | www.cwservices.com
EMCO Qatar | www.emcoqatar.com
EMCOR Facilities Services | www.emcorfacilities.com
FEA | FEApc.com
ISS Facility Services | www.us.issworld.com
New PIG Corporation | www.newpig.com
Renaissance Services SAOG | www.renaissanceservices.com
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FM SOFTWARE

Cloudbooking | www.cloudbooking.com
FM:Systems Inc. | www.fmsystems.com
IBM | www.ibm.com/us-en/
iOFFICE | www.iofficecorp.com 
Planon | www.planonsoftware.com
SpaceIQ | www.spaceiq.com
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FURNITURE

CORT | www.cort.com
Davies Office Inc. | www.daviesoffice.com
Kimball Office | www.kimballoffice.com
Steelcase Inc. | www.steelcase.com
Sunline Office, LLC | www.arnoldsofficefurniture.com
Tangram Interiors | www.tangraminteriors.com
Vari | www.varidesk.com
Versteel | www.versteel.com

HVAC

Shaqurri International Private Limited | www.shaqurri.com.pk

INTEGRATED FACILITIES MANAGEMENT

Amentum | www.amentum.com
United Facilities Management | www.ufm.com.kw

JANITORIAL SERVICES/CLEANING PRODUCTS

Excel Dryer | www.exceldryer.com

LANDSCAPE/MAINTENANCE/PLANTS/ SERVICES/SUPPLIES

Ambius | www.ifma.ambius.com

RESTROOM PRODUCTS

Kimberly-Clark Professional* | www.IFMAandChess.com

ROOFING

Astec Re-Ply Roofing Systems | www.whyreplace.com

SECURITY

HID Global | www.hidglobal.com
Kastle Systems | www.security.kastle.com
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TECHNOLOGY SOFTWARE TOOLS

ARC Technology Solutions | www.e-arc.com
OpenSensors | www.opensensors.com
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Spacewell | www.spacewell.com

WATER & FIRE RESTORATION

COIT Cleaning & Restoration Services | www.coit.com



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BY COREY LEE WILSON

PLANNING & PROJECT MANAGEMENT FOR ENERGY SAVINGS

Understanding a building's energy usage and managing it efficiently and effectively is a key risk mitigation factor in lowering a facility's operation costs, namely the electricity bill. With current green button technology available from most energy providers and utility companies, FMs can stay on top of their energy usage and also benchmark their building's usage using today's data-driven technology. Benchmarking a building's energy performance is critical and in California it is now the law per AB 802 — Mandatory Energy Benchmarking & Disclosure. With that free data and energy use analysis in hand, FMs can implement best practices for planning energy reduction policies and procedures.

Energy! It's one of any FM's major cost components. It is a hot topic and will continue to be so. For most facilities and properties, the cost of energy is not going down — only up. It is essential for FMs to reduce energy costs on their building(s) whether new or existing.

Energy management is an integral part of the day-to-day operations for FMs and property owners. Rising energy costs and increasing interest in sustainability are driving the need to reduce energy consumption in buildings and develop strategies for better management.

HOW THE UNITED STATES USES ENERGY

FMs must ask themselves how energy efficient is their property and how does a facility's overall energy efficiency compare to a portfolio of buildings? Or, how does it compare to other similar buildings regionally, nationwide or internationally? Many FMs and property managers assume they are using SMART goals in their efficiency plans.

SMART

SPECIFIC
MEASURABLE
ASSIGNABLE
REALISTIC
TIME-RELATED

SMART is an acronym for Specific, Measurable, Assignable, Realistic and Time-related. Sadly, this may not be the case. If they have not developed and implemented a Sustainable Energy Buildings Plan (SEBP) and are not utilizing a smart energy savings system (SESS), the chances are they are not reducing energy usage to its full potential.

The market for solar energy has grown quickly over the last decade, but ultimately, to tap into the full value of solar energy, businesses need a way to control the timing of that energy use. The best way to do that is with energy storage.

Electricity and natural gas have been, and continue to be, the two dominant energy sources in the commercial buildings sector. Together they accounted for about 93 percent of total energy consumed in 2012. Along with the increase in total electricity consumption, electricity increased its share of total energy consumed from 38 percent in 1979 to 61 percent in 2012.

Americans use a lot of energy in homes, businesses, throughout industry, and to travel and transport goods. Thirty percent of energy consumed in the commercial and industrial buildings is wasted. There are five energy-use sectors:

- » **The Industrial Sector:** facilities and equipment used for manufacturing, agriculture, mining and construction.
- » **The Transportation Sector:** vehicles that transport people or goods, such as cars, trucks, buses, motorcycles, trains, aircraft, boats, barges and ships.
- » **The Residential Sector:** homes and apartments.
- » **The Commercial Sector:** offices, malls, stores, schools, hospitals, hotels, warehouses, restaurants, and places of worship and public assembly.
- » **The Electric Power Sector:** consumes primary energy to generate most of the electricity to sell to the other four sectors.

In addition to primary energy use, the industrial, transportation, residential and commercial sectors also purchase and use most of the electricity (a secondary energy source) the electric power sector produces and sells. These four sectors are called end-use sectors because they buy or produce energy for their own consumption and not for resale.

THE GOOD, THE BAD AND THE UGLY

For California's buildings, a larger percentage (now 60 percent as of 2020) of the state's energy is supplied by renewable resources and of those renewal resources solar power is by far the largest. That's the good news!

As the transmission of energy moves from these sources to power substations, electrical energy is distributed to fill the various power needs of California's buildings. During that process between 61 and 86 percent of the generated power is lost, wasted, along the way and this power supply is also imbalanced, creating power surges and sparking electrical fires. The bad news!

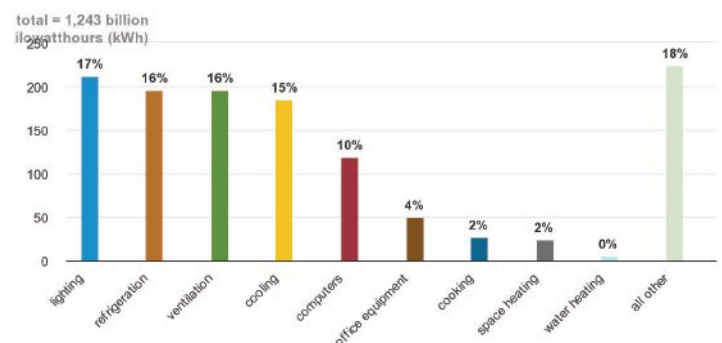
In addition, utilities have also increased demand charges by more than 100 percent over the last decade. The ugly news!

ENERGY RATES AND SOLAR POLICIES ARE IN FLUX

Because of solar power's success, utilities across the country are adopting pricing policies that place an increasing emphasis on time-variable rates and demand charges. For an average commercial energy user today, 60 percent of energy spent is based not on how much energy is used, but when it is used.

In California, for example, utilities have changed the timing and price of Time-of-Use (TOU) rates in a way that diminishes solar project economics unless developers pair solar with energy storage. In addition, utilities have also increased demand charges by more than 100 percent across the last decade.

Electricity use in U.S. commercial buildings by major end uses, 2012



Note: All other includes motors, pumps, air compressors, process equipment, backup electricity generation, and miscellaneous appliances and plug-loads.
Source: U.S. Energy Information Administration, 2012 Commercial Buildings Energy Consumption Survey, Consumption and Expenditures, Table E5, May 2016



That means businesses are getting charged more for their peak energy usage each month. If those peaks occur when time-based rates are highest, it can mean a huge energy bill, and can impact the savings from solar energy. Solar energy alone does not address the most expensive demand peaks, which now with the new rate structures, often occur in the late afternoon when solar production drops. By employing both solar and energy storage systems (ESS), businesses can reduce not only energy charges, but also address demand peaks that may occur when solar output goes down.

Solar will continue to expand but with the shift in energy demand to non-PV producing time frames in the evening when demand peaks, the newest and most promising renewable is the use of ESS and the Distributed Energy Resource (DER) technology that allows them to flatten end-user energy usage as well as distribute surplus energy back to the grid all the while reducing buildings energy costs and improving an organization's bottom line.

Be it financial and/or environmental, it is the best of both worlds as the following statistics show:

- » U.S. energy storage deployment nearly doubled in 2018 as the nation installed 350.5 MW, 777 MWh – over 80 percent more than was deployed in 2017 in terms of megawatt-hours, according to a new report.
- » Behind-the-Meter (BTM) storage accounted for 53 percent of the total deployment in megawatts while front-of-the-meter (FTM) installations accounted for 47 percent, according to the U.S. Energy Storage Monitor 2018 Year-in-Review. FTM installations often had durations of four hours or more.
- » Report authors from Wood Mackenzie and the Energy Storage Association expect the energy storage market to double in 2019, deploying 1,681 MWh. By 2024, they expect annual deployments to exceed 4.4 GW that are powered by DERs

SMART ENERGY SAVING SYSTEM (SESS) LOWERS BUILDING OPERATION'S ENERGY COSTS

As new rooftop solar and battery storage systems evolved, the technology to aggregate their extra energy capacity BTM and distribute it back to the power grid has arrived. It is called DER and it offers utilities the opportunity to meet bulk power sector needs by utilizing their smaller customers who have extra energy reserves to transfer back to the electrical distribution grid.

Solar energy produced during the day gets stored inside batteries for later use. When the solar production goes down in the late afternoon and time-based rates spike upward, businesses can draw energy from the batteries rather than paying for expensive power from the grid. Businesses can also use power from the batteries when their energy demand is highest to lower their demand charges.

A SESS can manage and regulate energy usage by purchasing it at the lowest peak usage rates and releasing it when energy

S M A R T

SPECIFIC MEASURABLE ASSIGNABLE REALISTIC TIME-RELATED

demand is at its highest. They also prevent energy spikes and excessive energy demand by modulating and flattening energy usage for peak performance. As more loads and generating resources are connected through DERs, power usage will decrease, outages will cease, and this nascent industry will graduate to a full-fledge grid resource, which is ready to happen.

Already, a small mix of aggregators and utility-run programs are starting to bring a wide range of resources together for facility property managers to reduce peak load, take stress off the system in key areas, and reduce the need to purchase expensive power. This could help defer or replace more costly investment in traditional grid infrastructure, as well as help integrate renewable resources and decrease sector emissions, all part of California's aggressive goal for a sustainable near future.

REDUCING ENERGY COSTS

The commercial and residential need for rooftop solar, electric vehicles and now battery storage shows no sign of slowing down and will accelerate to meet the nation's growing electrical requirements that are replacing non-renewable resources like coal, petroleum and natural gas.

Until now, getting from the grid of the past with demand response load reductions to the multi-resource network of today's of DERs was no easy task. It required not just managing the impacts of countless new resources on utility distribution systems but designing the software products and market models to allow the new aggregations to meet grid needs.

The same is true for DER, a catch-all term for rooftop solar, battery storage, and electric vehicles electrical and power sources attached to the distribution grid. For the typical commercial and industrial (C&I) facility, transforming and integrating their various power requirements with the latest solar, battery and EV technologies requires a SESS.

SESS FOR BATTERY STORAGE HAS ARRIVED


A limited number of certified open automated demand response program providers in California are offering SESS programs in 2019. There is no better return on investment for energy reduction savings in California than these promising SESS programs.

Because Energy Storage Systems providers collaborate and partner with their clients for the most effective and profitable

SESS, they design, install, operate and maintain their proprietary Aggregated Energy Resource Solutions (AERS) system using advanced building energy demand and emulation analysis that balances the energy rate as well as using the lowest rates available.

All their energy saving partners need to do is provide the necessary interior or exterior equipment space for a SESS and a copy of their energy usage data and electrical bill. Design to completion is typically three months or less and from then on, the SESS installer owns, operates and maintains the equipment and shares the energy savings per a mutually agreed percentage with its partner. Or, the partner can own, operate and maintain it as a capital investment and keep all the energy savings.

SESS network operation center specializes in lowering and flattening peak energy TOU by storing energy and releasing it as needed by utilizing a Qualified Balance Resources (QBR) system. QBR essentially releases stored energy during peak demand and TOU periods after purchasing the facility's peak power usage reserves during the time of day with the lowest TOU rates.

A SESS's AERS makes qualified balancing resources of electrical consumption using kw Demand Charge Management and kwh Energy Charge Management systems. These client and the SESS's integrated systems help control and distribute energy resources between the electrical power grid and the building's energy demand which maximizes a client's energy bill savings and helps balance the electrical grid. 



Corey Lee Wilson is a California native and founded the IFMA Inland Empire Chapter in 2013 and was its past president from 2013-19. He is the president of CLW Enterprises, and project manager for MicroNOC Inc. He holds a BS in Economics from California State Polytechnic University Pomona, is an IFMA FMP, LEED AP O+M Specialty, CMAA CCM, and a member of the USGBC-LA Chapter. He is an Energy Savings Consulting that facilitates cost-effective and efficient energy reduction and battery back-up systems that reduces energy usage that lowers operational costs.



ACCREDITED DEGREE PROGRAMS

SCHOOL NAME: Florida A&M University, Tallahassee, Florida, USA

FM-RELATED DEGREES OFFERED:

Bachelor of Science in Business Administration

with a program major in Facilities Management

Master of Science in Architecture: Facility Management Program

IFMA AFFILIATION: Since January 2009

WHAT COURSES ARE OFFERED?

- Design 1.1
- Intro to Professional Leadership Dev. I
- Computer Applications in Architecture
- Managerial Accounting Principles
- Advanced Topics in Digital Architecture
- Intro to Technology of Architecture
- Inter. Professional Leadership Dev. I
- Management Internship
- Corporation Finance
- Adv. Professional Leadership Development I
- Environmental Systems in Architecture
- Principles of Marketing
- Principles of Management
- Principles of Real Estate
- Services Marketing
- Legal Environment of Business
- Intro to Facility Management
- Financial Accounting Principles
- Intro to Professional Leadership Dev. II
- Cost Accounting
- Material and Methods
- Quantitative Methods & Business Decisions I
- Inter. Professional Leadership Dev. II
- Construction Management I
- Building Construction I
- Prof. Bus. Communication & Report Writing
- Adv. Professional Leadership Dev. II
- Management Internship II
- Construction Planning and Scheduling
- Occupational Safety and Health Facility Management
- Business Policy

WHY AND WHEN WAS THE PROGRAM INSTITUTED?

The bachelor of science in business administration with a program major in facilities management was a collective vision of the faculty and administration of both the School of Business and Industry and the School of Architecture and Engineering Technology to afford FAMU graduates the necessary didactic and practical experiences required to competently and professionally work in the FM industry. The FAMU bachelor's FM program is housed within the University's business school with the university's School of Architecture and Engineering Technology as its partner.

Florida A&M University received initial accreditation with IFMA at the Baccalaureate Program Level in 2012. The Baccalaureate Program was approved for reaccreditation September 2018.

WHAT TYPES OF PRACTICAL APPLICATIONS DO YOUR STUDENTS LEARN?

The FAMU bachelor's program is designed so that undergraduate students understand the FM history, practice, and profession; plan and manage projects; manage building systems, facility operations, occupant services, and maintenance; apply assessment, management and leadership principles of facility organizations and their stakeholders; apply fiscal management tools to the facility program and organization; apply human factor principles to the facility operation and stakeholders; become effective communicators; and apply FM computer applications.

TELL US ABOUT YOUR FORMER STUDENTS AND WHAT THEY HAVE GONE ON TO ACCOMPLISH.

FAMU FM bachelor's program graduates have gone on to employment within the university and at major companies where they are specialists and managers in their fields.

WHAT KINDS OF RESEARCH IS YOUR DEPARTMENT CONDUCTING AND WHAT ARE YOU MOST EXCITED ABOUT?

Quantitative research that primarily deals with investigating FM education domestically and abroad at the undergraduate and graduate levels, Facility Management Accreditation Commission (FMAC) institution accreditation, facility management curriculum development, value of FM program(s) to institutions/society.



FLORIDA A&M UNIVERSITY

Qualitative research including, but not limited to, case studies on FM pedagogy and assessment practices.

Magazine stories broaching the EuroFM perspective of FM education, FM standards, and the overall strengthening of the FM profession on an international and domestic perspective. FM sustainability, FM value, and FM industry futures.

WHAT ARE THE ISSUES FACING THE NEXT GENERATION OF FMS AND HOW WILL THEY BE ADDRESSED?

The highly competitive marketplace in combination with the world's rapidly depleted natural resources force a focus on long term sustainability. FMs need education that is no longer just technology based; they need access to experts in wide range global and domestic business markets (i.e., accounting, finance, marketing, human resource management, etc.) as well as the traditional business intellect associated with being a CEO and/ or CFO.

This need unearths a primary space for mankind, and that is a sustainability focus. Schwab has suggested that the First Industrial Revolution was initiated by water and steam power, the Second by electric power, and the Third by electronics and information technology. Now the Fourth is being created by "clusters of new technologies including artificial intelligence (AI) and robotics, additive manufacturing, neuro-technologies, bio-technologies, virtual and augmented reality, new materials, energy technologies, as well as ideas and capabilities we don't know yet."

A sustainable world can be accomplished by using new skills and processes to create an efficient world where we work with machines rather than being replaced



The Florida State Capitol building and Apalachee Parkway.



by them. This is accomplished by focusing on two skill sets that are key to humanics:

Human literacy that is concerned with communications and design, and Cognitive capabilities including, but not limited to higher order mental skills like entrepreneurship, and cultural agility along with systems and design thinking.

Going forward, FMs must be trained to run the entire corporation (i.e., becoming a corporate leader). Higher education organizations that can execute on understanding the technologies identified above, but more importantly, that can adjust to ever-changing critical thinking, required to effectively run an organization should prove to be the most value to future shareholders and the public.

Sanquist, Nancy, (2017) "Rifkin's Riff: Buildings as Nodes for Sustainable Development in the Fourth Industrial Revolution", eFMinsight Magazine, EuroFM.org, 45(June), 33-43.

WHAT ARE THE ACCOLADES OF YOUR ACADEMIC STAFF?

- » Only Endowed Chair in the US with FM focus, potentially in the world Centennial Eminent Scholar and Professor of Marketing and Facility Management
- » First European Facility Management Association (EuroFM) Ambassador to the United States of America
- » Facility Management Accreditation Commission (FMAC) Board of Commissioners
- » Former Academic Advisor to IFMA Foundation
- » FAMU Sustainability Institute Faculty Fellow 2016-2017

HOW CAN FAMU'S BACHELOR OF SCIENCE PROGRAM IN FM HELP MAXIMIZE THE PRODUCTIVITY OF THE NEXT GENERATION OF FMS?

The program offered at Florida A&M University, is a four-year, undergraduate degree program that prepares the next generation of FMs. The FM program is housed within the business school; however, it is a collaborative partnership with the School of Architecture and Engineering Technology. In our efforts to maximize the productivity of the next generation of Facility Managers, FAMU's program develops students with the competencies to analyze FM-related issues from an enterprise-wide perspective. The program consists of 120 credits hours, made up of general education core, as well as, business, architecture and construction courses. The nine credits in accounting, three credits in finance and 8 credits in professional leadership development (PLD) provide the next generation of FMs with the business acumen and background that are unmatched by FM in other institutions.

In addition, there are two-one credit internships required to provide students with experiential opportunities in the field to practice what they have learned in the classroom. Many of these opportunities are with external enterprises such as Leon County Facilities Management Department, Minor League Baseball, Atlanta Hartsfield-Jackson Airport, NASCAR, Jones Lang LaSalle, Sodexo and Aramark.

The program concludes with capstone courses in services marketing and strategic management, in which students demonstrate competency in facilities management and business through an applied FM report, business case analysis and public presentations.

Downtown Tallahassee

FLORIDA A&M UNIVERSITY MISSION STATEMENT

Florida Agricultural and Mechanical University (FAMU) is an 1890 land-grant institution dedicated to the advancement of knowledge, resolution of complex issues and the empowerment of citizens and communities. The University provides a student-centered environment consistent with its core values. The faculty is committed to educating students at the undergraduate, graduate, doctoral and professional levels, preparing graduates to apply their knowledge, critical thinking skills and creativity in their service to society. FAMU's distinction as a doctoral/research institution will continue to provide mechanisms to address emerging issues through local and global partnerships. Expanding upon the University's land-grant status, it will enhance the lives of constituents through innovative research, engaging cooperative extension, and public service. While the University continues its historic mission of educating African Americans, FAMU embraces persons of all races, ethnic origins and nationalities as life-long members of the university community.

Florida Agricultural and Mechanical University holds the following values essential to the achievement of the university's mission:

- Scholarship
- Excellence
- Openness
- Fiscal Responsibility
- Accountability
- Collaboration
- Diversity
- Service
- Fairness
- Courage
- Integrity
- Respect
- Collegiality
- Freedom
- Ethics
- Shared Governance
- Vision Statement

FAMU will be recognized as a premier land-grant, doctoral-research university that produces globally competitive graduates.





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FOUNDATION**
MAKING FM A CAREER OF CHOICE

Brings to you...



Gala invitation

The IFMA Foundation presents

Party Like a Gatsby: A Roaring 20s Grand Affair

IFMA's World Workplace | Sept. 29, 2020 | Chicago, Illinois, USA

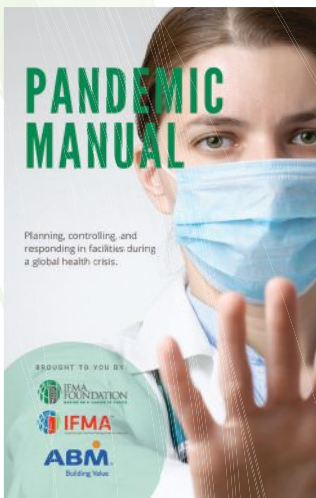
Join us for a party worthy of Jay Gatsby, guests are encouraged to wear their spats and fedoras, flapper dresses and cloche hats and prepare to dance the Charleston to ragtime jazz. Enjoy food, drink (no bathtub gin), mingling and celebrating the foundation's 30-year anniversary.

Learn more about sponsorship and registration:
foundation.ifma.org/event/annual-fundraiser-event

Featuring the Charleston Challenge

US\$750 entry fee

- Gather a team of six to compete.
- Each group is given two minutes to show off their dance moves.
- Five judges will score on: Roaring 20s attire, difficulty of movement, character and personality, originality and creativity.
- Winners receive a year of bragging rights, \$500 in casino chips for the team, and a Charleston Challenge award.



Pandemic manual release

Originally written in 2006 to provide FM professionals with a reference document to assist in planning for, controlling and responding to pandemic influenza threats, the IFMA Foundation's Pandemic Manual has been updated to help FMs address the COVID-19 pandemic, including their response, communications and business recovery/resumption.

The revised Pandemic Manual will cover these areas:

- Case studies from various industries on how FMs are managing during COVID-19
- Pandemic response checklists
- FM measures for influenza control and mitigation
- Using technology and working from home
- Business returning to normal following a pandemic
- Next-time preparedness

Learn more at

foundation.ifma.org/news/publications



Learning through serving:

*FM students implement strategy
at 100-year-old church*

BY JEFF ROSS-BAIN & DR. EUNHWA YANG



Service-learning is often found to be a more engaging and rewarding learning experience for students by learning within a subject field as well as helping within their communities¹. One of the most effective elements of service-learning is engagement in real world situations and interacting with actual building owners, users, and operators to explore solutions to actual problems. Furthermore, many of the students, by developing a personal interest and stake in the project circumstances, become fully engaged in researching solutions and developing creative problem-solving practices. Such an engagement sentiment is very difficult to replicate in case studies or theoretical constructs within the classroom only.

Graduate students in the School of Building Construction at the Georgia Institute of Technology had a service-learning inspired church project as a part of their master's capstone course. The FM capstone project was designed to demonstrate the students accumulated educational training of the master of facility management program and to provide students with the integrative curricular experience by conducting a single research project. Fourteen students worked on the facility condition assessment and development of a strategic facility plan for the College Park First United Methodist Church in College Park, Georgia USA.

The church complex consists of a 100-year-old sanctuary structure, an education building, an ancillary building, and a pastor's house, resulting in the approximate gross floor area of 42,800 square feet. The sanctuary building has an estimated seating capacity of 600 and has a fully equipped, commercial-grade kitchen. The education building is used for a preschool, and the ancillary building is used as a school for children with learning disabilities. The pastor's house, however, has not been used for years and remains vacant.

There were several challenging aspects of the churches' state found in the discovery phase of the student's assignment. One reality was a declining congregation and increasingly fewer funds for basic building operations. A challenge to the leadership and congregation was a need for re-alignment of the church mission and outreach while accepting that the practices used over the past century no longer apply. The changing demographics of the area, new needs of the population, and necessity for space use realignment must be part of any renewal plan.

The church's space is under-utilized with many classrooms and meeting spaces unused, a daycare facility that falls far short of modern quality expectations, and the use of the sanctuary and kitchen limited to Sunday's only operation. There is a new tenant for one of the previously unused spaces, but the interior finishes and general condition of the space has a worn out and dated feel.

Another critical concern is the aging and outdated mechanical, electrical and plumbing systems that are costly to replace, operate, maintain and would be priorities for replacement and/or major over-

haul. The FM practices are typical of a place of worship as funding is extremely limited faced with the scope of needs, volunteer parishioners manage FM oversight, and a custodial part-time employee is tasked with minor repairs and fixes. There does not appear to be professional operations and maintenance procedures that track performance, oversight of outsourced vendors, or preparation of long term, strategic plans.

Student teams presented a strategic FM plan to fulfill the church's vision, values and mission through creating a supportive built environment. They also delivered a comprehensive analysis of the use of facilities, FM practices, facilities' condition and energy performance. Through a site visit, interviews with the church's building and ground committee and staff, students were also able to identify challenges and opportunities for the church's FM.

After discovery of conditions and challenges, the students developed feasible and implementable suggestions using a scenario-based planning approach, from no-, low- and medium-cost building improvements to incremental capital budgeting strategies. At the very first level, there are no-to-low cost building improvements, such as monitoring and keeping the records of utility bills, retrofitting lighting with more energy-efficient components and re-commissioning HVAC systems to intended operational parameters. Understanding the current condition of facilities can help the church board members in many ways: prioritizing the deferred maintenance activities, planning for significant building improvements, and allocating annual and capital budgets accordingly.

One of the most interesting results of this exercise was the diversity of creative ideas and implementation strategies provided by the student teams. No two teams had the same solutions, yet each team contributed important strategies and ideas to be considered. There were substantial suggestions for phasing HVAC system replacements, developing key performance indicators to track improvements, re-purposing the sanctuary for "more than just Sunday" uses, upgrading the daycare to be more attractive, creating long term budgets that recognized increasing income (essential to remain viable), and revitalizing the kitchen to provide a food outreach to the local

Images provided by College Park First United Methodist Church



community. Taking the students' ideas, in aggregate, and applying the most relevant ideas was an outstanding delivery to the church leaders involved in the process. With the involvement of the Georgia Tech student teams, the church leaders have nascent strategies in place to create a roadmap for revitalization.

This real-world example gave the students an unfiltered demonstration of the linkage between the quality and role of FM functions and the quality of operation and maintenance of facilities, which could ultimately contribute to the realization of the church's mission and values. The students presented their findings to the church board members, including the chair of the Church Board of Trustees, Meredith Hodges, in December 2019 at Georgia Tech. At the conclusion of the student presentations, Hodges, as well as the other attendees and leaders of the church, commented on the quality and insights of the student presentations. The church leaders expressed a renewed sense of optimism and anticipation that the suggestions and insights from the student work would provide the foundations for the church's new direction and vision.


Operating and maintaining aging worship facilities under limited budget and resources with the declining number of church members is not just the College Park First UMC's story. Many worship facilities face the same challenges, nationally and globally. According to a recent Gallup Poll, the past 20 years have seen an acceleration in the drop-off, with a 20-percentage-point decline since 1999 and more than half of that change occurring since the start of the current decade (2010's).² This reality further adds to the challenges facing church leadership.

The condition of many churches and their struggles with FM are further amplified as building and control systems, communication, and energy expenses become more complicated, combined with church FM is often volunteer based rather than established formal FM departments. Churches

in low-income communities are especially compromised as building systems fail and/or require maintenance where funding is limited or not available at all. Unfortunately, these communities are often financially distressed with high rates of poverty, unemployment, and high school dropouts; hence a strong, faith-based community foundation is essential to help build strong social connections.³

Strategic FM planning and the quality of FM functions ultimately affect a building's energy performance, the indoor environmental quality of spaces, and users' satisfaction, health, performance, and environmental impacts. Small- and medium-sized enterprises and non-profit organizations such as worship facilities, face the challenges of establishing and following standardized FM functions because of a lack of resources, staff, and a standard way of operating and maintaining facilities. They also tend to rely on a reactive approach rather than having a preventive approach for seamless O&M.

Facilities at churches can be not only a physical place for worship but also a safe social place for community building and healthy social connection. Programs such as preschools and special education, seniors activities, group fitness, and community markets are just a few of many examples.

Georgia Tech's FM program: Master of Science in Facility Management at Georgia Tech is a professional, multidisciplinary program that merges real estate development, construction, and operational management with business, communication, and financial studies. The FM program emphasizes holistic and strategic thinking about the built environment throughout a building's life cycle. The program focuses on successfully integrating all elements of a facility to provide productive and sustainable environments for users and make properties profitable investments for their owners. The FM program is accredited by the IFMA Foundation and numerous students have received scholarships from the IFMA Foundation. 

1. Astin, A. W., Vogelgesang, L. J., Ikeda, E. K., & Yee, J. A. (2000). How service learning affects students. Los Angeles, CA: Higher Education Research Institute, UCLA.
2. Jones, J. M. (2019). U.S. church membership down sharply in past two decades. Retrieved February 10, 2020, from <https://news.gallup.com/poll/248837/church-membership-down-sharply-past-two-decades.aspx>
3. Dodd, P. (2018). Low-income communities are struggling to support churches. Retrieved February 10, 2020, from <https://www.theatlantic.com/politics/archive/2018/01/low-income-communities-churches/549677/>



Jeff Ross-Bain, PE, LEED

Fellow is a mechanical engineer and president of Ross-Bain Green Building, LLC. Since 2001, He has worked exclusively in the field of high-performance green buildings and has been involved with more than 85 LEED projects, numerous energy audits, energy models, and provides commissioning services. He recently earned his master's degree from the Georgia Institute of Technology in FM and is using these skills to provide professional FM oversight to small- and medium- sized enterprises. He has delivered presentations around the world and is often a guest lecturer at university classes and has taught an entire semester course on high performance green buildings at Georgia Tech.



Dr. Eunhwa Yang is an assistant professor in the School of Building Construction and earned her

Ph.D. in Human Behavior and Design from Cornell University. Her scholarly passion lies in the area of sustainable building practices and the relationship between people and the built environment. Her research focuses on stakeholder engagement and energy efficiency in tenanted properties, smart operation and maintenance using data analytics and healthy workplaces. Yang's masters and doctoral students have been recognized in the field by winning the IFMA Foundation scholarships and CoreNet Global Academic Challenges.



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knowledge sharing are enlightening!"**
- Ravi Valecha



Case Study
Case Study
Asset Lifecycle
Model

**"The Knowledge Library is full of
knowledge and reliable information."**
- Steve Urena

ifma.org/knowledgelibrary



New upholstery converts body heat to infrared energy

DesignTex recently announced the launch of Celliant upholstery. Celliant is a blend of naturally occurring, thermo-reactive minerals that are applied as a non-woven backing to four fabrics across 50 colors. The minerals convert body heat into infrared energy, which has been clinically shown to increase local circulation and improve cellular oxygenation, as well as help regulate body temperature, all of which means more energy, endurance, comfort and well-being.

The technology provides health and wellness benefits for sedentary moments, like an office worker in their chair or a person sitting in a waiting room.

VISIT designtexcelliant.com

Sterilization system fights virus transmission

GROK Energy Services provides active airborne virus control with Air Sterilization Systems, designed to continuously sterilize indoor air and exposed surfaces to remove viruses, other pathogens, and mold.

Some virus strains can remain airborne for up to 3 hours with transmission that can exceed the commonly recognized safe distance. These systems also effectively eliminate mold, dust, and odor-causing VOCs, while improving HVAC filtration efficiency. GROK Air Sterilization systems are not a replacement for recommended hand washing, surface cleaning, or social distancing practices – rather, the technology provides an effective, additional defense shield. Businesses, such as restaurants, dentist and doctor offices, can provide cleaner, safer air in their facilities for the benefit of clients and customers year-round. The technology also consumes very little energy, so can be active 24-hours a day, with minimal impact on energy bills.

VISIT www.grok.ca

Window sprinkler to help prevent shattering during a fire

Johnson Controls has launched TYCO® Model CWS Concealed Window Sprinkler, designed to provide an alternative to a two-hour fire-resistance-rated glazing assembly. The 5.6 K-factor CWS is UL and C-UL Listed as a specific application automatic window sprinkler and can be used in accordance with the International Building Code as an alternative to interior fire partitions or exterior wall assemblies, as evaluated in ICC ESR-2397. The CWS is the first and currently only concealed pendent vertical sidewall window sprinkler to be specifically listed to provide complete wetting and coverage for heat strengthened, tempered or ceramic glass windows using closed sprinklers.

The sprinkler discharges an even coat of water when activated, which cools the window to help prevent shattering during a fire event. The flat-plate concealed design houses the sprinkler above the ceiling. The cover plate is available in a variety of colors and finishes as well as in custom, factory-painted colors.

VISIT www.johnsoncontrols.com



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IFMA is a true asset for FMs worldwide. I find value in the networking and plethora of resources that help me find solutions to the FM challenges I face. It's comforting to know that the FM professionals I meet through IFMA are international peers and help me find solutions, improve processes, decrease operational expenses, improve health and safety and overall maximize your facilities' potentials. I find IFMA to be a "must" for any FM out there.

Carlos Rodríguez
Santo Domingo, Dominican Republic
IFMA Member since 2016

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FM's WEIGH IN

FMs Weigh In: COVID-19

In each issue of the FMJ, IFMA's Facility Management Consultants Council shares some commonly asked FM-related questions accompanied by advice from top FM consultants. While the following answers are intended to be helpful, these responses should not be deemed complete and are limited in context by the space allocated. Please contact the individual consultants directly for further explanation of the opinions expressed. In this issue FMs weigh in on how they responded at the onset of the COVID-19 outbreak and what they are learning in the process.

CONTRIBUTED BY



The Facility Management Consultants Council (FMCC) represents more than 300 FM consultants from various countries around the globe. Its mission states, "The FMCC is the resource and voice for facility management consultants worldwide to leverage our collective expertise to benefit IFMA members, and the facility management profession."

**FMCC members welcome challenges.
Send your question to Ask The Experts.**

James Delgado, CFM
ask-the-expert@fmcc-ifma.org

Please cc
FMCC Admin Terry Cocherl
admin-fmcc@fmcc-ifma.org

A Our people have adapted quickly, and we are proud of their performance.

With hindsight on the start of the COVID-19 pandemic precautions (and it's only a start), I wish we had prepared our staff more for remote working life. We had done a fair amount of preparation for disasters, but most of it revolved around the hurricane or civil unrest scenarios. Therefore, we were fairly well prepared technically but had never prepared people from a psychological point of view — how to set up your home office, developing a routine, how to manage with kids around, and all the other related issues. We had focused primarily on technical requirements.

We were also caught off-guard in terms of response to sanitization and disinfection of actual or suspected infected spaces. We had to gear up and train employees quickly in the use of equipment, chemicals, and hazmat PPE.

Edward Kacal, CEO, Servus Limited,
Port-of-Spain, Trinidad, West Indies

A Please do not underestimate how dangerous this virus is. It is many times more infectious than normal flu and is a real killer. I was disappointed to read that some politicians thought that it will be over in 15 days. It will not. One of our business partners locked down in Rome said it is like a war, but you cannot see the enemy.

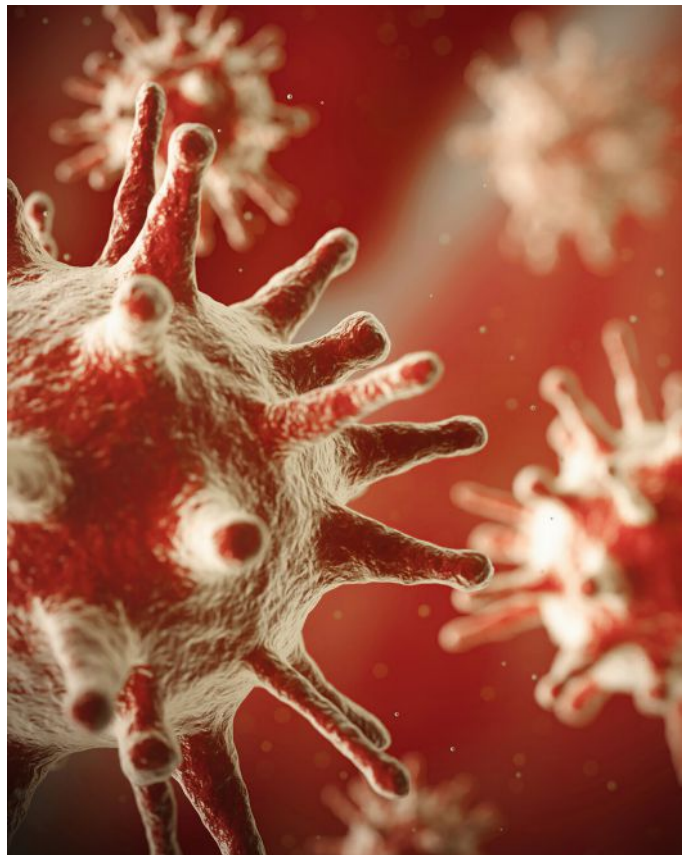
Please be safe, listen to what we are going through as it is coming your way.

There are restrictions on movement in everyday working and personal life and the result, imposing sharply changed and varied demands on facilities and staff to produce more, less, or different.

Mike Liddle, CFM Business and Facilities, an independent real estate and facility management consultancy operating in EMEA London, England

A So much is happening, which challenges us to identify unique outcomes.

Karla Reid, MSC MIFMA Facilities Management Consultant
Abu Dhabi U.A.E



A Hearing from other FMCC members and colleagues focuses my attention on FM employees and contract staff in complicated ways. On the one hand, facilities of your clients or that you directly manage may suddenly be pressed into larger or different uses and/or impose large workloads and personal dangers.

Staff of medical facilities may experience heavy demand and disease hazard. For many facilities, there will be a period of low use and shortened cash flow. I would be ready to take advantage of a near or partial shutdown to perform previously budgeted and approved work that did not impose risk of disease on the people engaged, but possibly benefit from reduced complications, costs, and risks.

I would also remain aware and in touch year-round with networked charitable and voluntary groups in the community and with FM staff in order to perform volunteer work and continue the payroll as long as possible. Expenses would be fairly charged, and activities promoted in the media as community and social initiatives. At the same time, staff would have gratifying, reinforcing, and safe experiences within their communities.

David Reynolds, CFM, FMP

*FM Consultant
Jackson, MS, USA*

A We had a business continuity plan ready to ramp up for working from home. Deployment went smoothly, but we did experience problems in internal communications. Some items did not reach people who needed them in time. Others went mistakenly to two recipients, who both began the work only to find another doing the same. Our usual cues and adjustments, present when we were all together, were missed. This was more of a problem for relatively new staff, who capably followed procedures, but didn't necessarily know the points to check.

You don't know until you get into it. With a small office like ours, we should work from home for a few days a year to discover where we need to close gaps. There is a layer of action and information that does not find its way into the plan, a layer that would show up and solutions found if put into practical use. For a large client, practice this way would be a challenge to budget and carry out. Perhaps in small groups? For a business like ours a tryout of a few days each year would be worthwhile.

Dale Schuss, RPA SFP

*President, RandallNorth Real Estate Services Inc.
Vancouver, British Columbia, Canada*



DAVE MALLOY



Newton Square, Pennsylvania, USA
Director of Facilities
Years in FM: 5

What kind of facility do you manage?

I manage 140 sites in eight countries, comprising 17 million square feet of office, lab, and manufacturing space for a division in our company.

How did you get into FM?

I enjoy the challenge of managing a global team to improve performance and reduce costs through benchmarking, condition-based maintenance and application of IIOT technologies.

What has been your biggest FM challenge and what have you learned?

Site consolidations are difficult, but necessary, aspects of footprint optimization.

What advice would you give to someone starting in FM and what is the best advice you have received?

Focus on the customers, the employees, and the data.

Where do you want to take your FM career in the next few years?

I would like to enable my organization to provide higher levels of service more affordably, by a professional, data-driven approach.

What do you hope to gain from your IFMA membership?

I would like to develop a further understanding of applicable benchmarks, tools and technologies.

Tell us a fun fact about yourself.

I enjoy skiing, music, running, and being a new grandparent, and look forward to not paying college tuitions in a few years!

[linkedin.com/in/david-malloy-9a87549/](https://www.linkedin.com/in/david-malloy-9a87549/)

VALERIE DOSCH



Michigan, USA
Facilities Coordinator
Years in FM: 4 months

What kind of facility do you manage?

I manage a financial institution.

How did you get into FM?

I enjoy fixing things.

What has been your biggest FM challenge and what have you learned?

Not having a wealth of information/knowledge.

What advice would you give to someone starting in FM and what is the best advice you have received?

Have a network that you can reach out to.

Where do you want to take your FM career in the next few years?

I would like to gain more knowledge so that I can grow in my role.

LIKESH KUMAR APPATHAM MAVULLATHIL



Coimbatore, India
Facility Manager
Years in FM: Less than 1 year

What kind of facility do you manage?

I manage an IT campus.

How did you get into FM?

Because the construction industry is down and facility management industry is booming, I choose to be a FM.

What has been your biggest FM challenge and what have you learned?

Challenges are to become familiarized with FM competencies. Now I have a wider knowledge of FM, which helps me to have a valuable insight to do more to the need of our occupants.

What advice would you give to someone starting in FM and what is the best advice you have received?

Mastering every competency will give you a wide perspective about FM.

Where do you want to take your FM career in the next few years?

I would like to earn the SFP, FMP and to become an expert in FM.

What do you hope to gain from your IFMA membership?

I am expecting more and more seminars/interactive sessions to be updated with latest trends in FM.

Tell us a fun fact about yourself.

I am a highly enthusiastic kind of person.

[linkedin.com/in/likes-kumar-appatham-mavullathil-cfm-tech-iosh-97a02834/](https://www.linkedin.com/in/likes-kumar-appatham-mavullathil-cfm-tech-iosh-97a02834/)

What do you hope to gain from your IFMA membership?

A network to learn from and be able to ask for help from.

Tell us a fun fact about yourself.

I can process a deer by myself in less than an hour.

WANT TO SHARE YOUR MEMBER OR COMPONENT NEWS?

Reach out and share your chapter news with other members and FMJ readers. Send details and photos (if available) to bobby.vasquez@ifma.org with the subject line: Components in Focus.

We look forward to featuring your chapter in an upcoming issue!

Member Spotlight

AMAHER H. ALSAYED



Jeddah, Saudi Arabia
Engineer
Years in FM: 21

What kind of facility do you manage?

I have been working in a health care facility with three hospitals, 1,000 beds, a power plant, housing area and chiller plant.

How did you get into FM?

FM combines my experience of working in maintenance and operations for several years.

What has been your biggest FM challenge and what have you learned?

My challenge is dealing with several contractors, because their goals are saving money and our goals as a client are high-level services and quality of work. We are always looking to ensure we are receiving those high-quality level of services.

What advice would you give to someone starting in FM and what is the best advice you have received?

I believe you should start from the bottom of FM, in either hard or soft services, and experience all of the FM industry. If you were to drop in with a parachute into top management, then your success in the sector will be in doubt.

Where do you want to take your FM career in the next few years?

I would like to my own business and company.

What do you hope to gain from your IFMA membership?

I would like to learn more about FM, industry news and more training courses in the Middle East.

[linkedin.com/in/eng-maher-a-11640ba7/](https://www.linkedin.com/in/eng-maher-a-11640ba7/)

JOHN NICOLO



Bensalem, Pennsylvania, USA
Facility Manager
Years in FM: 3.5

What kind of facility do you manage?

Cold storage.

How did you get into FM?

I was warehouse supervisor and helped facilities in times of need. My company moved me to facility supervisor then manager. I was an operations manager in the past; this has helped me with my approach to facilities.

What has been your biggest FM challenge and what have you learned?

Dealing with an aging facility and equipment. The learning hasn't stopped but I would say the importance of a trustworthy vendor and maintaining a good relationship with all vendors.

What advice would you give to someone starting in FM and what is the best advice you have received?

Learn everything you can and never stop! Be prepared for anything to happen because in facilities, you never know!

Where do you want to take your FM career in the next few years?

Hopefully stay at the job I'm at and see us through upgrading the ammonia system and freon cooling systems. Our company continues to grow and so do the challenges!

What do you hope to gain from your IFMA membership?

Networking with other FMs as we look for new ideas and approaches to facility issues.

Tell us a fun fact about yourself.

I forced myself to get over my fear of heights in this job as I need to be in a scissor lift, 45-60 feet in the air. Also, I love doing yoga four times a week not bad for a 6-foot, 1-inch, 290-pound guy!

ANDREW PANSEGRAU



Stratford, Ontario, Canada
Manager
Years in FM: 15

What kind of facility do you manage?

A transit network operations center and data center

How did you get into FM?

I kind of fell into my FM career. I applied to a role that was more of an administrative/financial area of an FM company, then steadily progressed into larger operational FM roles. It's a career that I find immensely satisfying and plan on continuing.

What has been your biggest FM challenge and what have you learned?

The biggest challenge I've had has been the balance between conflicting requirements of critical infrastructure facilities that happen to have high people occupancy. They don't always mesh for priorities. I've had to learn to balance priorities and walk a fine line to make sure competing interests and stakeholders are satisfied.

What advice would you give to someone starting in FM and what is the best advice you have received?

Try not to get stuck in a comfort box. Stretch yourself, whether that is taking stretch assignments, being more proactive with your team, and continuing to educate yourself through courses, school or industry events.

Where do you want to take your FM career in the next few years?

I'd like to expand my experience and responsibilities through leading different types of facilities, potentially moving into a director role if I find the right fit.

What do you hope to gain from your IFMA membership? I look forward to learning how others handle complex challenges and how a solution was found and what their takeaways were. I also plan on gaining an FMP designation over the next couple of years.

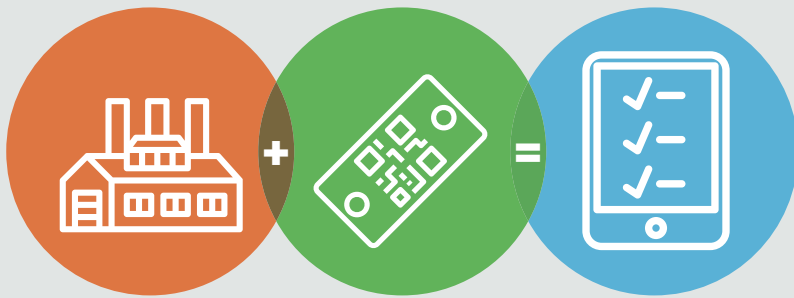
Tell us a fun fact about yourself.

I love going to the Canadian Maritime Provinces whenever I get the opportunity to visit. It's a beautiful place with friendly people and lots

[linkedin.com/in/andrew-pansegrau](https://www.linkedin.com/in/andrew-pansegrau)



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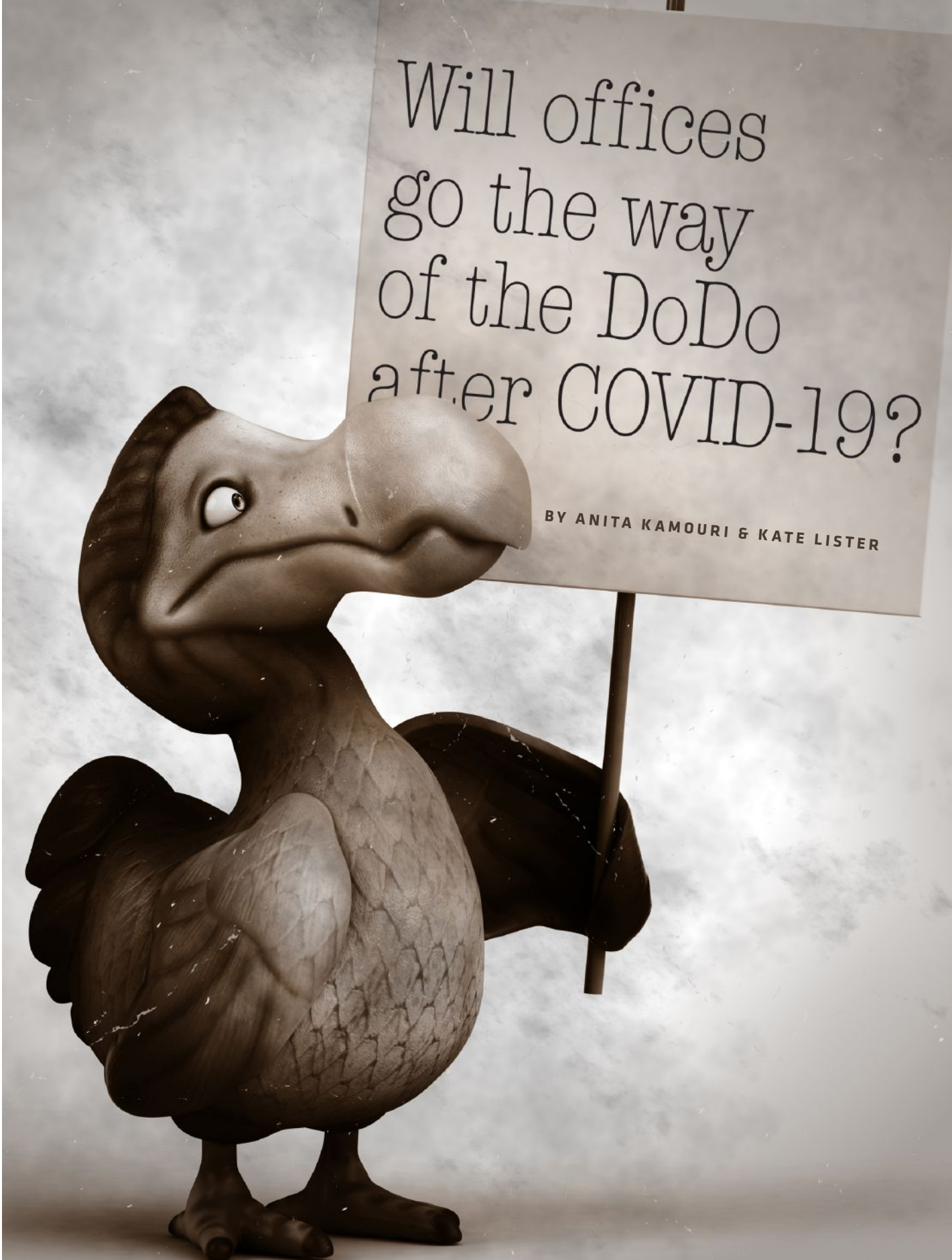


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A brown, stylized dodo bird is the central figure, holding a sign. The bird has a large, prominent beak and a somewhat sad or questioning expression. The sign it holds is white with black text. The background is a plain, light-colored wall.

Will offices
go the way
of the DoDo
after COVID-19?

BY ANITA KAMOURI & KATE LISTER

Will offices go the way of the dodo bird in the wake of the COVID-19 crisis? That's a question on the minds of workplace designers, CRE and FM executives, employers and employees everywhere.

In a word, “no.” Evolution in the workplace, as in nature, doesn’t happen overnight. But will the crisis change the way we work and accelerate the remote work trend? Almost certainly. Here’s why.

Middle managers will be more likely to support remote work

Resistance from middle management has been one of the biggest obstacles to remote work for decades. Though an abundance of research shows otherwise, many managers fear productivity will decline if people are allowed to work-from-home. Having done it themselves, many will realize their fears were unfounded. “When you go through something like this, it forces you to ask questions and think about things differently,” said the CEO of Goldman Sachs in a CNBC interview. He went on to say he felt the experience would make his company more comfortable with workplace flexibility.

Many of the employees who couldn’t work from home before the crisis, will want to keep doing it

Less than 4 percent of employees worked from home half-time or more before the pandemic, but 80 percent say they’d like to, not all the time, but at least some of the time. The work-from-home experience during COVID-19 was not ideal for many workers. Many struggled with bored children, barking dogs, noisy spouses, internet overloads, IT complications, general stress, and more. At the same time, many will have enjoyed not commuting, being around their children and pets, greater flexibility and autonomy, and the many other benefits of working from home.

Business leaders and investors will demand greater agility

COVID-19 publicly exposed just how unprepared organizations were for a pandemic. A survey conducted by PWC at the end of March found that 60 percent of U.S. CFOs felt their lack of preparedness for remote work would hurt organiza-

tional productivity. The bottom-line impact could total in the billions of dollars. It’s not a question of if another natural or man-made event will force people to work from home, it’s a matter of when. Organizational agility will be an important key performance indicator in the future and as a result, leadership will be more likely to endorse remote work programs as part of their overall business continuity planning.

The experience will shine a light on the impact of commuter travel on sustainability

Investors, both retail and institutional, are increasingly voting for sustainability with their wallets. The COVID-19 crisis offered a vivid demonstration of the impact of commuter travel on the environment. Only weeks after the forced work-from-home experiment began, cities were reporting cleaner air. The experience will demonstrate how work-from-home strategies represent an easy, quick, and inexpensive way to reduce an organization’s environmental footprint.


Economic woes will refocus attention on remote work as a cost reduction strategy

During the last recession, the major focus in corporate real estate was on cost savings programs. Since then, the focus has changed to creating workplace experiences that attract and retain talent. In the

economic downturn that will inevitably follow the COVID-19 crisis, the potential for work-from-home to reduce real estate costs, increase productivity, and enhance scalability will once again come into focus.

THE NEW NORMAL

Flexibility in where, when, and how people work is the new normal. We expect a significant increase in remote work after the crisis. That will inevitably change both the amount of office space we need in the future and the function of the space remaining. Just how big a change we’re in for is what everyone wants to know. Results of the Global Work-from-Home Experience Survey we launched in March, in collaboration IFMA/Workplace Evolutionaries (WE), will help us better plan for the future of where and how people will work in the months and years ahead.

For many, the COVID crisis has forced them to work from home without the tools, technologies, training, and resources they need to be successful. Entire companies have had to do, practically overnight, what early adopters of remote work spent months and even years preparing their people to do. As unfortunate as the circumstances may be, this is an unprecedented opportunity to learn from the sudden work-from-home experience, and emerge from it with new insights, intelligence, and approaches for the future. 



Dr. Anita Kamouri is vice-president and co-founder of Iometrics, a workplace services firm helping organizations succeed with remote work practices and next-generation workplace strategies. Iometrics has been focused on helping clients create great workplace experiences for over 20 years. Her firm has developed some of the largest survey databases in corporate real estate to inform data-based planning, workplace modeling and measuring the human capital impacts of workplace change. Kamouri is a member of Workplace Evolutionaries’ (WE) Leadership team and WE:Know contributor.



Kate Lister is a recognized thought leader on trends that are changing the who, what, when, where, and how of work. She is president of Global Workplace Analytics (GWA), a research-based consulting firm that has been helping public and private sector employers optimize the triple bottom line outcomes of remote and other workplace strategies for more than a decade. Lister is a member of Workplace Evolutionaries’ (WE) Leadership team and the curator of the WE:Brief, one of WE member’s favorite benefits.

A man in a grey t-shirt is clapping his hands in a group setting. The background is blurred, showing other people. The text is overlaid on a white rectangular box in the center of the image.

Exercising with MBCx

*Monitoring-Based Commissioning helps buildings
maintain optimal performance over time*

BY SAAGAR PATEL

When a person commits to a fitness routine, motivation is high and hopefully, they experience positive results. Sometimes, as time goes on they can become less motivated and more relaxed about trips to the gym. He or she might even start to gain weight.

A new building is no different. At first, everything is in perfect order; the building is comfortable, and fairly energy efficient, and owners and operators are motivated to keep it performing optimally.

Over time, however, things shift and systems age. Building performance starts to degrade. That's where Monitoring-Based Commissioning (MBCx) comes in. Like hiring a personal trainer, MBCx allows a building to get back into shape, and continue performing at a high level.

What is MBCx?

Monitoring-Based Commissioning, or MBCx, is a proactive process that continuously identifies opportunities to improve building operations over time. Leveraging automated fault detection and diagnostics (AFDD) software, MBCx alerts building operators of actionable information on building faults and opportunities for continued systems optimization in real-time.

Already Performing Annual Energy Audits or Periodic Retro-Cx?

Many buildings are conscious of their energy and operations spending and are already conducting periodic energy audits or even engaging in Retro-Commissioning (RCx). This approach is much like falling in and out of a workout routine. It may be easy to shave off a few pounds, but lasting change will only come when maintaining the same level of fitness over a prolonged period of time.

Consider Graph I. The red line shows an average building's energy use over time. Without any benchmarking, energy use will increase at a steady pace. In this case, the building engineer is likely adjusting as necessary to maintain building occupant thermal comfort, addressing one local issue at a time without knowledge of what "quick fixes" are doing to the overall MEP system, without real systematic change.

Engaging in Retro-Cx (grey line) annually will serve as a routine examination of building automation system (BAS) trends, with the ability to recalibrate accordingly at a single point in time. Similarly, adding continuous Cx without AFDD software (yellow line), will only maintain current energy savings initiatives, but will not introduce reductions in energy use based on current building faults.

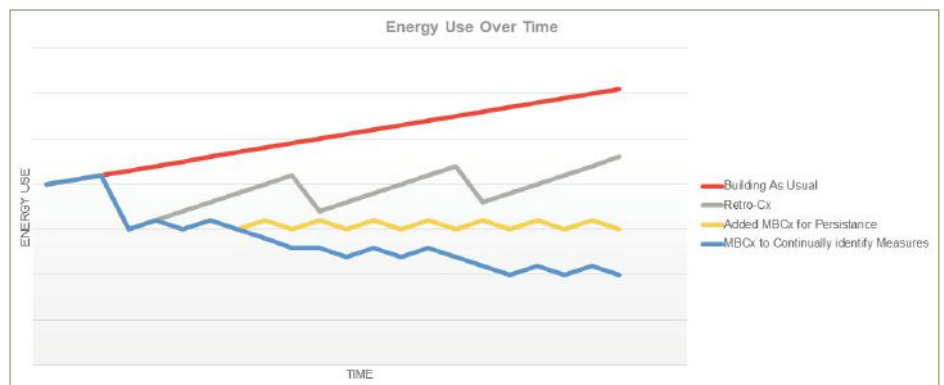
Employing MBCx together with AFDD software, which will continually identify energy and cost savings measures, is like training for a marathon or weightlifting. There is a drive to maintain and allow current results to persist while driving for continuous performance improvements.

Instead, fault data drives improvement and energy reduction without disrupting O&M. In this way, the building is not saving energy for the sake of saving energy, but striking a balance between energy efficiency opportunities and O&M improvements.

The Measurable Benefits of MBCx

There are four clear, measurable benefits to MBCx. Together the first three add up to make the fourth more meaningful.

- 1. Comfort** Every five to 15 minutes, AFDD software is looking at each data point in the building. It is ensuring MEP systems are maintaining the desired threshold of comfort. If a terminal box is not maintaining a required set point — if it is over- or under-shooting — the AFDD software will alert the operations team. MBCx is known to reduce HVAC-related occupancy complaints by as much as 40 percent.
- 2. O&M** MBCx takes a proactive — not reactive — approach to O&M. MBCx can lead to a reduction in hot and cold calls and O&M costs because the operations team is able to focus on more pressing issues.
- 3. Efficiency** MBCx ensures a building's MEP equipment is operating at an optimized state over time.
- 4. Energy** MBCx reduces building energy demand and consumption. Additionally, because AFDD analyzes the building's data continuously, the building's operations team is freed up to tackle more in-depth tasks.



The Energy Savings of MBCx

Conservatively, MBCx reduces operational costs in new and existing buildings by 3 to 5 percent annually. However, many facilities realize a savings of 10 to 20 percent between six months to five years.

When an operations team is understaffed, MBCx can be especially beneficial. Having data analytics at an FM's fingertips ensures a facility gets the most out of the personnel they have. MBCx will help prioritize which building features are not operating efficiently and need recalibrating first. This eliminates the need to send a building engineer to check out a system that may not need repair. Instead, MBCx acts like a personal trainer constantly checking on potential fault issues, helping to troubleshoot at the moment of a fault.

The difference between traditional operations and MBCx is equivalent to the difference between proactive and reactive FM. With sensors throughout the building, and more information about operations at each point, more can be done.



Saagar Patel, PE, CCP, LEED AP, BD+C is the Studio Leader for Energy + Eco at Environmental Systems Design, Inc. in Chicago. He has spent his career focused on helping customers save energy, improve operational efficiencies, and promote

Taking Efficiency to the Next Level

When analyzing a building's performance, the GM knows the facility better than anyone, and may have a gut feeling, a rule of thumb or a performance pattern steering them in one direction. With MBCx, real-time data is the guide.

An obvious example of this is equipment replacement. It is easiest to replace an outdated piece of equipment in kind, but building profiles change over time. The load may be lower than it used to be. With real data revealing the load profile over the last several years, it may be revealed that the facility needs an entirely different piece of equipment today.

Similarly, internal building loads have dropped over the last decade due to an increase in LED lights, more efficient computers, and companies adopting hoteling/work from home policies. It is possible a building could go from cooling-dominant to a heating-dominant space. MBCx effectively opens the world of efficient building operations to the next generation/level of possibility. **FMJ**

environmental initiatives. He has worked in all roles within design and construction and is excited for a future where data and analytics begin to drive our decision-making processes.

HOW TO GET STARTED


Initiating MBCx doesn't have to be complicated. Here's a 4-step road map to ensure success.

STEP I > Take stock. What type of BAS does the facility have? MBCx requires a BAC-Net enabled or equivalent open protocol system. Legacy pneumatic systems aren't compatible.

STEP II > Assessment/benchmarking. Track the building's issues. Does the operations staff get a lot of thermal hot/cold calls? Are systemic or persistent problems benchmarked to create a baseline? Consider having a third party do a building energy assessment. This should include baselining, utility bill analysis, and energy, thermal comfort, and O&M analysis. MBCx service providers will need three years of utility data in order to create a baseline before beginning work. Make sure that data is available.

STEP III > Engage the FM and IT teams. As the facilitators of MBCx long term, the FM team must be committed to the program for it to work optimally. The same goes for IT, as MBCx software will live on the BAS network, where it will require security clarification and more.

STEP IV > Search for local incentive programs. Many municipalities have funds designated for MBCx programs. For example, New York state will refund up to 30 percent of MBCx program costs. In Illinois, that number could be almost 100 percent. There is typically a cap for software integration, but the municipality will often pay based on building performance. In some cases, saving enough energy could potentially cover the cost of service. Check out: dsireusa.org.



Shirley Ryan AbilityLab
Chicago, Illinois, USA
1,200,000-sq.-ft.
Completion: Autumn 2019

Result: 6% annual energy savings

- 1,253,621kWh
- 101,830 therms of natural gas
- US\$116,573 energy costs

Payback timeline: 6 months

Shirley Ryan AbilityLab, a Chicago's rehabilitation research hospital, was one of the first in the country to demonstrate success with MBCx at a newly constructed building. Just six months after the facility was built, the hospital piloted an 18-month project to increase the efficiency of its MEP operations, enhance occupant comfort, and reduce operations, maintenance and energy costs.

MBCx AFDD software was customized to identify potential energy and operational improvements. Project partner ESD provided the data analysis, implementation oversight, and measurement and verification required. The result was a 6 percent annual energy and US\$116,573 energy savings. Financial incentives were provided by the local ComEd Energy Efficiency Program.

Kerry Ingredients, Inc.
Beloit, Wisconsin, USA
320,000-sq.-ft.
Completion: Spring 2019

Result: 7% annual energy savings

- 1,044,307 kWh
- 136,213 therms of natural gas
- US\$171,172 energy costs

Payback timeline: 5 months

Kerry Ingredients, Inc., a global public food company, engaged in MBCx at their North American HQ – a mixed-use facility featuring office, food processing, and distribution spaces. The unique space required custom MBCx, including AFDD software solutions designed to continually monitor operational anomalies, deviations from optimal conditions, and opportunities to improve energy or O&M efficiency in real-time. Project partner ESD oversaw the implementation, providing continued and increased visibility into measures, and ultimately delivering an annual savings of US\$171,172 in energy costs. Kerry Ingredients leveraged a local utility incentive program – a first MBCx project for the program – which offset nearly 40 percent of project costs.

Earth Friendly PRACTICES

BY BILL CONLEY



Sustainable operations and the focus on resource conservation is no longer a fad, or a new way of looking at facilities. It is becoming standard operating procedure. As FMs look to improve the efficiency of their buildings, all the low-hanging fruit has been picked, pickled, preserved, jarred and shelved for future reference. FMs and corporate executives need to look further to expand their sustainability efforts.

*O*ver time, many businesses have progressed from hearing about the onset of sustainability to adopting environmentally sound practices as SOP. Outside of financial savings and operational efficiency, there are multiple reasons to pursue sustainable excellence.

Managing the Business

Some companies strive to achieve recognition through a Corporate Social Responsibility (CSR) platform. They want to showcase their efforts to the marketplace, adding credibility and brand appeal for their products or services. CSR shows how a company manages their business in order to produce an overall positive impact on the environment, and as a result, society in general. CSR practices cover sustainability, social impacts and ethics. The policy should be viewed as a living document, changing with needs, demands and resources. It also should be an evolving business practice that integrates the concepts of sustainable development as it applies to the core business. Executed correctly and carried forward sustainably, a CSR program can have a positive impact on social, economic and environmental factors.

CSR Satisfies Triple Bottom Line (TBL) criteria. The primary focus of CSR should be the environment. Businesses, regardless of size, have large carbon footprints. Any steps they can take to reduce those footprints are considered good for both the company and society. Companies can also demonstrate their social responsibility by treating employees fairly and ethically. Financially, such efforts and recognition lead to positive gains to the bottom line. Consumers are looking to companies with sound environmental policies, and a strong CSR program will set those companies ahead of the pack.

Traditional practices of environmental stewardship, which include resource management and increased energy efficiency, complement bottom-line-driven economic policy. As future economic growth will demand both a higher degree of environmental awareness and a stronger utilization of available funding for investments, the key performance indicators of an efficiently organized and profitable organization can be better satisfied through the holistic approach that encompasses sustainability. This ties in to the concept of fiscal environmentalism, which is related to sustainable business practices, socially responsible business practices, and other concepts more specific to traditional fields. Compared to terms such as environmental management systems or ecological economics, fiscal environmentalism emphasizes fiscal discipline. It is best exercised by businesses responding to consumer demand for increased environmental awareness while focusing on bottom-line success.

Certification

Some companies certify their facilities to ensure they are operating at peak efficiency and to gain recognition in the marketplace for their sustainability efforts. Buildings have extensive direct and indirect impacts on the environment. During their life cycle, facilities consume energy, water and raw materials. This generates waste and the emission of Green House Gases (GHG). Green building standards, certifications and rating systems have been developed to mitigate the impact of buildings on the natural environment through sustainable design and operations.

The push toward sustainable design increased with the launch in 1990 of Building Research Establishment's Environmental Assessment Method (BREEAM), the first green building rating system in the world. In 2000, the U.S. Green Building Council (USGBC) followed suit developing and releasing criteria aimed at improving the environmental performance of buildings through its Leadership in Energy and Environmental Design (LEED) rating system for new construction. The Green Globes guidelines were made available for use in the United States in 2005. Additional rating systems have been developed and customized to individual national priorities and requirements. They go beyond the limits of current policy and building practices to address broader issues of sustainability or evolving concepts such as net-zero energy, and/or living and restorative building concepts that improve the natural environment or attempt to emulate processes found in nature.

It might not be possible for every FM to implement CSR strategies or go for green building certification, but there are always more practices that can be initiated. Replenishing and nurturing natural resources, or minimizing the impacts of industry should be a driving force in any FM plan. There are a number of simple ways in which FMs can positively influence the natural environment if they just spend the time and effort. Not only do sustainability efforts help the environment, they result in financial savings through resource management and lead to improved employee satisfaction.

Waste Not...

Waste diversion is one of the practices that any facility can implement. It takes putting a process together and educating employees to comply with best practices (unfortunately, easier said than done!).

However, the importance of keeping waste out of landfills cannot be over-emphasized. Land is as critical a resource as is air and water, and the best way to render it unusable is by dumping trash on and in it. The EPA reports that there are about 2,600 active landfills in the United States, with many more forgotten or ignored. Not only does this type of use occupy valuable acreage that can be utilized for more natural means, it is trash and it is not going anywhere. Not dumping trash on land is a nice option to exercise.

Water neutrality is a voluntary process where companies seek to balance water use accounts by both reducing water usage and investing in projects which increase supplies of clean freshwater. It entails defining, measuring and reporting their water footprint

and taking reasonable action to reduce existing operational water usage. Once they have done as much as possible to reduce water, they still will have a residual water footprint. This can be reconciled by investing in, establishing or supporting projects focusing on the sustainable and equitable use of water.

Carbon neutrality is a term used to describe the action of organizations that implement measures to remove as much carbon dioxide from the atmosphere as they put in to it. The overall goal of carbon neutrality is to achieve a balanced footprint. For example, a business may acquire carbon offsets by investing in renewable energy projects or by planting trees to equal the electricity a business uses.

A Case in Point

There comes a time when a company goes beyond the realm of sustainable actions for their facility and their company. They do the best they can with what they have, and it is their genuine concern for the environment that seems to be the major driver of their efforts. Such a company is ECOS, the maker of household and commercial cleaning products that are safer for the environment and produced in an earth-friendly manner. They are a three-time winner of the EPA's Safer Choice Partner of the Year award for their innovative green chemistry and safer ingredients. Their mission is to protect the health and wellness of people, pets, and the planet by creating the most authentic, sustainable, and affordable cleaning products for all. Their business practices reflect this philosophy, both for their customers and their employees.

The foundation of their sustainability program is waste prevention and diversion. They are the world's first company to be carbon neutral, water neutral and TRUE Platinum Zero Waste-certified at all four of their U.S. Facilities. They began their zero-waste journey in 2009, when they set a goal to reduce their waste by 80 percent by 2020. In 2018, they improved their waste diversion rate even further to 98 percent, and they now use one small trash container per facility per week.

After six years of reducing their water usage, the company became water neutral in 2016. Water neutrality is an essential part of their sustainability program and the company has 50-plus-year commitment to protecting water resources. They achieved water neutrality by significantly reducing water use and by supporting programs that restore water to critically depleted ecosystems. They are deeply committed to minimizing their impact on water resources in the U.S. and creating healthier ecosystems and a better quality of life for the people who live and work near these important habitats. They restore more than 10 million gallons of water to threatened habitats every year.

They became carbon neutral in 2013 by dramatically reducing their carbon dioxide emissions by utilizing 100 percent renewable energy sources and switching to energy efficient equipment and

lighting. They have solar panels at all four of their U.S. facilities. They source and ship locally from the four geographically diverse facilities that are located strategically across the country. They offset their residual emissions by supporting renewable energy projects. By achieving carbon neutrality, they save more than 56 million pounds of carbon dioxide emissions every year. Since 2013, they have saved more than 61,000 metric tons of carbon dioxide, which is the equivalent of planting 1.6 million trees or removing 13,000 passenger vehicles from the road.

As another measure, they have outfitted their offices to ensure a pleasant and sustainable work environment. They have installed bamboo flooring, a rapidly renewable resource. They have utilized low-VOC (Volatile Organic Compound) paints, as well as having no- or low-VOC content in adhesives and all office furniture. They have installed solar tubes for daylighting for employee comfort.

They also tout their own vegetable garden and an in-house chef to prepare healthy meals for their employees.

THERE COMES A TIME, ... ,
WHEN A COMPANY GOES
BEYOND THE REALM OF
SUSTAINABLE ACTIONS
FOR THEIR FACILITY
AND THEIR COMPANY.

Efforts pay off

How many ways can a company become sustainable? FMs can count the ways. Even with the low-hanging fruit picked over, FMs can reach for higher branches to pick more solutions. They are there; it will take time and effort to continuously improve on a company's sustainability efforts. Perfection in efficient operations may never be attainable, but is eminently approachable, if FMs keep reaching for it.

The bottom line is this: substantial sustainability efforts can be driven internally, with no other reason than to try and improve processes and protect the environment. It may take time and requires hard work, training and resolve, but if one company can do it, others can. CSR reports may be important to some and green building certification can be a marketing tool, but neither is really needed to incorporate environmentally friendly practices. All that is really needed is the will to change and do what is good for the planet. Everything else will follow, naturally.



Bill Conley, CFM, SFP, FMP, LEED AP, IFMA Fellow, is a facility manager at Yamaha Motor Corp. in Cypress, California, USA. Prior to that, he served as owner and chief sustainability officer of CFM2, a facility management company. Conley has more than 40 years of experience in the facility management profession and has been a proponent of sustainable operations for more than 20 years. Conley has served on the IFMA board of directors, is a recipient of IFMA's distinguished member of the year award and has received the association's distinguished author award three times. He has been a regular contributor to FMJ for more than 20 years and has authored more than 70 FMJ articles.

Technology to Mitigate Risk During a Commercial Move

BY MARK A. SCULLION



With the revolution in technology over the past decade or so, having more control of many aspects of life and business has become the norm — and a commercial move should be no different. More precision and control can directly reduce the amount of risk involved in a move, and the outdated approaches of the past do not provide appropriate protection in today's business climate.

Confidential documents and critical business property are major risk areas for a commercial move. There are so many examples of personal information in the wrong hands with staggering consequences. For instance, in February 2020, a county health system in Texas reported that more than 2,200 patients' private health records were put at risk when two envelopes containing 143 pages of protected health information were lost.

While technological growth and efficiency have risen exponentially over the past 100 years, the commercial moving industry has not really kept up. Thankfully, modern technology is starting to make its way into commercial moving.

Risk of Lost Documents and Equipment

With any relocation comes the risk of seeing critical business equipment, furnishings, and documents lost, damaged, or destroyed. Just one office relocation can include millions of dollars in furnishings and critical business equipment. Historically these moves have been done without documented inventory or a digital chain of custody — resulting in significant risk for the relocating business. Fast forward to 2020 and businesses are finally seeing modern approaches in an age-old industry.

For example, during the move of a Jacksonville, Florida USA credit union, it was critical that every aspect of operations be on-line and effective in the new space without disruption for their account holders. The credit union sought a provider to efficiently transition their entire operations, including more than 1,300 employees in multiple locations, into a 23-story high rise over a one-year period. Leadership was focused on finding a partner that could keep private information safe and secure and minimize disruptions for employees, allowing them to continue to focus on customer service. In the old days, this would have been done through a paper and pencil process subject to errors and limitations. However, with today's modern technology they were able to track all their physical assets while monitoring the progress. Like tracking a package through UPS or FedEx, new tracking systems ensure complete visibility to all business property and there are no questions whether any items are lost, misplaced, or missing.

Risk of Business Disruption “Planned vs. Unplanned”

Many companies plan for more business disruption than necessary because they simply do not know what a thorough and efficient move plan can accomplish in a specific period of time. In many cases, organizations make a guess and disrupt business operations more than needed. Many moving companies exacerbate this by working within the customer's established window versus advising the customer how much downtime will really be needed to move the business.

In addition, historically commercial moves were planned using manual calculations and the mover's intuition without precise calculations for labor hours, equipment needed and confident projections for the time needed to complete the move. This lack of precision around resources coupled with guesswork for business disruption leaves far too much to chance.

Fortunately, the limitations of yesterday's approaches are solved through modern technology. Thanks to recent develop-

ments in the commercial moving industry, instead of arbitrarily guessing they might need four weekends to do a large project, digital applications and machine learning give relocating businesses real data to support narrowing the move window to two weekends with confidence. Taking something from guesswork to data driven precision can have a powerful impact on relocating businesses and there are significant cost savings to be had. By reducing planned downtime, all the recovered time can be directed to core business operations and revenue-producing activities.

In addition to minimizing planned downtime, there is an even bigger risk of unexpected business disruption. This could include an entire floor of staff unable to work due to connectivity issues, damaged server equipment, or problems with the phone system. Other examples might include “death by a thousand cuts” situations, where 10 percent of those impacted by a 500-person move become unproductive because something is wrong with their new workspace. Think about that — 50 employees not being able to work is a big deal. This is a major hidden risk and cost that has historically been left unaddressed and the commercial move industry has struggled to make that first day in the new space fully productive, partially due to a lack of modern technology.

With today's technology, unplanned issues can be identified and resolved long before employees return to work. Digital applications can ensure all items are accounted for and activated properly in the new space. Photo controls can also ensure that spaces are set up consistent with the employee's wishes. Today's technology can also catalog shortages and deficiencies throughout the move process and provide communication to the responsible parties, ensuring timely resolution over the weekend rather than unnecessary fire drills Monday morning. Employees can even receive an email welcoming them to their new workspace with a link connecting them to assistance if they experience any challenges in the new space. Modern technology is changing the employee experience in commercial moving.

Risk of Untimely Space Turnover

Another risk often overlooked in the whirlwind of a commercial move is a failure to clear all furniture, fixtures, and equipment in time for space to be turned over to the landlord. There are steep penalties at risk, and many times companies do not plan proactively and end up carrying over space because they did not allow enough time to return it to the proper condition.

New technology is being applied to manage this risk in the modern age of moving. As spaces are cleared, digital applications allow businesses to monitor the systematic inventory and removal process. Customers can receive a constant flow of status updates giving them the confidence that deadlines will be met with advance warning of unexpected challenges. In addition, modern tracking features ensure that any unanticipated confidential documents or data devices are inventoried and protected following customer protocol. Risk of lost confidential documents or devices holding sensitive information can be significant during a space decommission, and today's modern controls are helping companies avoid unnecessary brand risk or financial exposure.

Whatever kind of move a business is making, risk is always part of the equation — but utilizing technology can reduce those risks substantially. The moving industry is catching up to modern trends.



Mark Scullion is responsible for the strategic direction, innovation, market development, relationship management and operational effectiveness of Suddath's workplace and commercial product lines. Scullion earned his bachelor's degree in accounting and business administration from Rutgers University where he worked his way through college doing office moves in Philadelphia. He is a contributor to industry and technology publications including CIO Applications.

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