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FMJ Extras

The online version of FMJ features extra resources like videos, podcasts, white papers and more to enhance your reading experience. Click on the FMJ Extra icons that appear in the digital magazine to link to additional sources of information to learn more about topics covered by articles in this issue.

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Raising the Bar 3: From Operational Excellence to Strategic Impact in FM

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FMJ Extended

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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Contributed by IFMA's Facility Management Consultants Council

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FROM LAST ISSUE

The November/December 2018 issue of FMJ had a theme of Sustainability. Our most-read article was "Becoming Cybersecure" by Eric Teicholz. Learn how to protect smart building technologies from tech vulnerabilities at http://bit.ly/o618_cybersecure.



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Editor's Note Jocelyn Kerr

The beginning of the year is traditionally a time to count the accomplishments of the previous year while looking ahead to define upcoming trends.

As 2019 rolls in, I'm reminded of the excellent time we had meeting readers at the FMJ panel discussion at World Workplace Charlotte. You helped us celebrate 30 years of being your association magazine. I'm also reminded of the feedback you provided during our reader survey last summer. I want to take a moment to thank you for reaching out and providing useful feedback, article ideas and chapter news and events that we were able to highlight in the pages of FMJ in 2018. I hope you'll continue to reach out with member news and consider authoring an article to share your knowledge in 2019.

And, of course, it's time to look ahead at what's coming down the pipeline in the industry.

Global technology research company, Technavio, released their Global Facilities Management Market 2019-2023 report last November, and it was filled with some interesting trend data. Year-over-year growth in FM in 2019 is estimated at 10 percent, with an incremental growth of US\$678.16 billion from 2018 through 2023. That is huge growth for an industry where many practitioners will be retiring in the coming decade.

In this issue, we offer two viewpoints on how to engage students to get more young professionals interested in facility management. *The Five C's of Student Experience* (page 30) serves as a case study in how student engagement efforts have succeeded, while *The Accidental Profession* (page 26) introduces ideas geared toward helping FMs become mentors in their chapters and communities.

The industry is changing, and so are the technologies and best practices FMs use in their facilities. To that end, the International Facility Management Association FM Research and Benchmarking Institute, or RBI, just wrapped up its second Operations and Maintenance research study. It also released a Return on Investment in Attaining IFMA Credentials/Certifications study in October. Both are available at research.ifma.org/fm-research/. The RBI has three more benchmarking research studies scheduled for release in 2019: a best practices/good practices perspective as well as two additional O&M reports.

Going beyond industry research, you'll find "how-to" advice in this issue aimed at helping you be more productive in your facility. The recycling ban continues to create headaches for facility managers, and our article on page 56 can help you better understand the ban and how to manage recyclables in your facility. You'll also find tips on creating value through healthy design (page 52) and discover how LED retrofits improve sustainability efforts and reduce energy consumption (page 63).

I hope your year is off to a wonderful start, and I look forward to hearing your component news and article ideas in 2019.

Interested in writing for FMJ?

Email jocelyn.kerr@ifma.org article ideas to be considered for future issues of FMJ.

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From the Chair

**GRAHAM
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*Chair, Board of
Directors*

As we kick start the new year, this edition of FMJ focuses on providing insights into best practices around the globe as a “how-to guide” to assist FM professionals in driving and implementing positive change in their workplaces.

One of those best practices is centered on industry training and development. This topic has been a passionate objective of mine for many years, and the IFMA team – together with the IFMA Foundation – has been working hard to create new materials and programs to support this initiative.

New FM training and development framework

2019 is already shaping up to be an exciting year in this area with the launch of the FM Training and Development Framework earlier this month (reference the full announcement and the framework in the digital edition Extended section of this issue).

The framework addresses training paths for several of the technical disciplines that feed into the FM function. This will help provide you and your team with a clear understanding of their current skills and future opportunities should they choose to work toward a career in facility management. It also allows organizations to better understand FM team needs by formulating comprehensive training plans for staff advancement.

Clearly articulating FM industry career paths is another step toward removing fragmentation around the world. This means organizations that are either receiving or delivering property

and facility management services can now apply a standard global approach for staff skills development and recognition. By applying a common global framework, businesses will be able to set minimum service delivery skills standards for the FM workforce which are internationally portable.

We have several additional developments on the horizon for FM training and professional development which will be rolled out over the next few months as IFMA and the foundation continue to promote FM as a career of choice.

What’s ahead in 2019

I have a hectic travel program over the next few months as I head to the Americas. I plan to visit with many of our chapters, check in with staff and the management team in Houston to review progress on strategic planning, hold a series of strategic partner meetings with other associations and join IFMA events to continue to develop and spread the word on FM.

I’m particularly pleased with how the World Workplace Europe meets Facility for Future conference is shaping up for March. The innovative event format, location and exceptional speaker lineup are attracting significant attention – you can see what the buzz is about by visiting worldworkplaceeurope.ifma.org.

The mid-year results and achievements have been very impressive, which is a great credit to the team. Thank you for your continued support of IFMA.



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In celebration of the FMP's anniversary, IFMA is offering US\$150 off* the FMP Learning System Full Kit, with or without printed materials. Use offer code FMP15 when placing your order at fm.training, and pass the savings on to colleagues who can benefit from improved job performance through education and recognition.

In addition to facility management



practitioners, the FMP is ideal for those transitioning into the FM profession; related industry practitioners such as architects, designers and safety engineers; product and service providers; students entering the profession; LEED professionals seeking continuing education hours; and federal employees and contractors looking to comply with the Federal Buildings Personnel Training Act.

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IFMA has earned reaccreditation status from the International Association for Continuing Education and Training (IACET) as an approved provider of IACET continuing education units. IACET is the only standard-setting organization approved by the American National Standards Institute (ANSI) for continuing education and training.

IFMA completed a rigorous application process, including a review by an IACET site visitor, and successfully demonstrated adherence to the ANSI/IACET 1-2018 Standard addressing the design, development, administration and evaluation of its programs. This prestigious accreditation demonstrates IFMA's commitment to high-quality lifelong learning.

UPCOMING EVENTS



SAME-IFMA 2019 FM Workshop

February 6-8
San Antonio, Texas, USA
fmworkshop.org



World Workplace Europe 2019 Conference & Expo

March 20-22
Amsterdam, Netherlands
worldworkplaceeurope.ifma.org



World Workplace Asia 2019 Conference & Expo

April 3-5
Singapore
worldworkplace.ifma.org/asia



Facility Fusion U.S. 2019 Conference & Expo

April 8-10
Atlanta, Georgia, USA
facilityfusion.ifma.org

IFMA Europe Director interviewed about new trends in facility management



A featured speaker at the Property Technology Forum Europe in Warsaw, Poland, held last November, IFMA Europe Director Lara Paemen was interviewed by event organizer Property Forum about current trends driving facility management.

Paemen identified well-being, digitalization and facility management on a strategic level as the industry's biggest trends, specifically in Europe. "Considering FM as an equal partner is absolutely crucial," said Paemen. "FM is creating a work environment that supports its users to be able to work productively in a comfortable environment but also helps in achieving the strategic goals of the organization. It is an evolution we see happening in the Nordics and Western Europe and slowly finds its way to other parts of Europe."

On the topic of applying new technologies in older buildings, Paemen pointed out that it's not a race to keep up. "An organization needs to identify what technology is useful for them and what they will do with it. That applies for new buildings as well as for older buildings. It all depends on what advantages – financially, in terms of management, well-being, etc. – the technology can offer to the organization."

Read the full interview at bit.ly/pf_paemen.



ABOVE In November 2018, Elizabeth II, Queen of the United Kingdom, visited the RICS London headquarters as part of the organization's 150-year anniversary. Patron of RICS, the Queen toured the building and met with members of the profession, RICS staff, trainees and students.

NEW RICS PRESIDENT TAKES OFFICE, FOCUSES ON THE FUTURE



In September 2018, Chris Brooke, FRICS, former chair of IFMA's Asia-Pacific Regional Advisory Board, was inaugurated as president of the Royal Institution of Chartered Surveyors (RICS), beginning his term for

the 2018-2019 year. Brooke succeeds John Hughes, who led RICS throughout the celebration of its 150th anniversary year.

As president, Brooke will lead the ongoing efforts of RICS to adapt both the organization and the chartered surveyor profession to reflect the continuously changing business environment.

"Professionals operating within the natural and built environments are at the heart of some of the great challenges of our time, including urbanization, climate change and technological development," said Brooke.

Have relevant FM industry news to share?

Submit your news to be considered for inclusion in the Industry News section of the next issue of FMJ. Send us an email at:

communications@ifma.org

Industry News

Exotic employee perks may entice candidates and reduce turnover

Today's job-hopping culture costs the U.S. economy US\$30.5 billion per year. With companies spending an average of US\$4,100 per new hire in training, business owners are turning to extravagant employee perks as a better long-term financial strategy, believing that spending extra on up-front perks will save money by keeping staff happy and reducing turnover.

Assessing data from a variety of key sources such as Glassdoor and Angel.co to identify popular perks, FitSmallBusiness.com compiled the following list of the "Coolest Emerging Company Perks for 2019":

- » "Pawternity" (time off for new pet owners)
- » Egg freezing and fertility treatments
- » Life coaching and counseling services
- » International retreats
- » Free on-site beer
- » Spa and wellness services
- » Nap rooms
- » Assistance with aging parents
- » Required time off
- » Service sabbatical (helping others on the company dime)
- » Pet bereavement policies
- » In-office farmers' markets
- » Weather-based flextime
- » Wedding leave
- » Pet health insurance

CHINA'S UNMANNED CLINIC USES AI TECHNOLOGY FOR SELF-SERVE HEALTH CARE



One-minute Clinics connect an in-house team of more than a thousand medical personnel with an AI Doctor, providing a one-stop solution for pre-diagnosis, online consultation and medicine purchases.

Developed by China's one-stop health care ecosystem platform Ping An Good Doctor, the country's first commercially operational unmanned clinic was formally revealed in Wuzhen, which lies within the triangle of Hangzhou, Suzhou and Shanghai.

The World Health Organization estimates 1.8 doctors for every 1,000 people in China (compared to 2.5 per 1,000 in the U.S. and 3.4 per every 1,000 in Australia). On average, Chinese patients spend 3 hours per physician visit, with only 8 minutes of that time dedicated to diagnosis. The new "One-minute Clinics" attempt to solve China's medical-visit dilemma by eliminating the need to register or wait in line and treating chronic and often-seen diseases with drugs within a few minutes.

The one-minute clinic includes an independent advisory room and a smart medicine cabinet. Sitting in the advisory room, the patient speaks with a cloud-computing doctor, which can lead the patient to accurately describe symptoms. After the consultation, the patient may immediately pay for and obtain recommended medicine from the cabinet.

The AI doctor was developed by a team of more than 200 artificial intelligence experts and has been trained using data from more than 300 million consultations. AI doctor can address more than 2,000 commonly seen diseases and can answer thousands of medical questions.

One-minute Clinics are expected to expand to 1,000 units across China and will be placed in public areas such as pharmacies, schools, scenic areas, markets and highway service stations. During the week-long trial in Wuzhen, the daily average approached 100 patients.

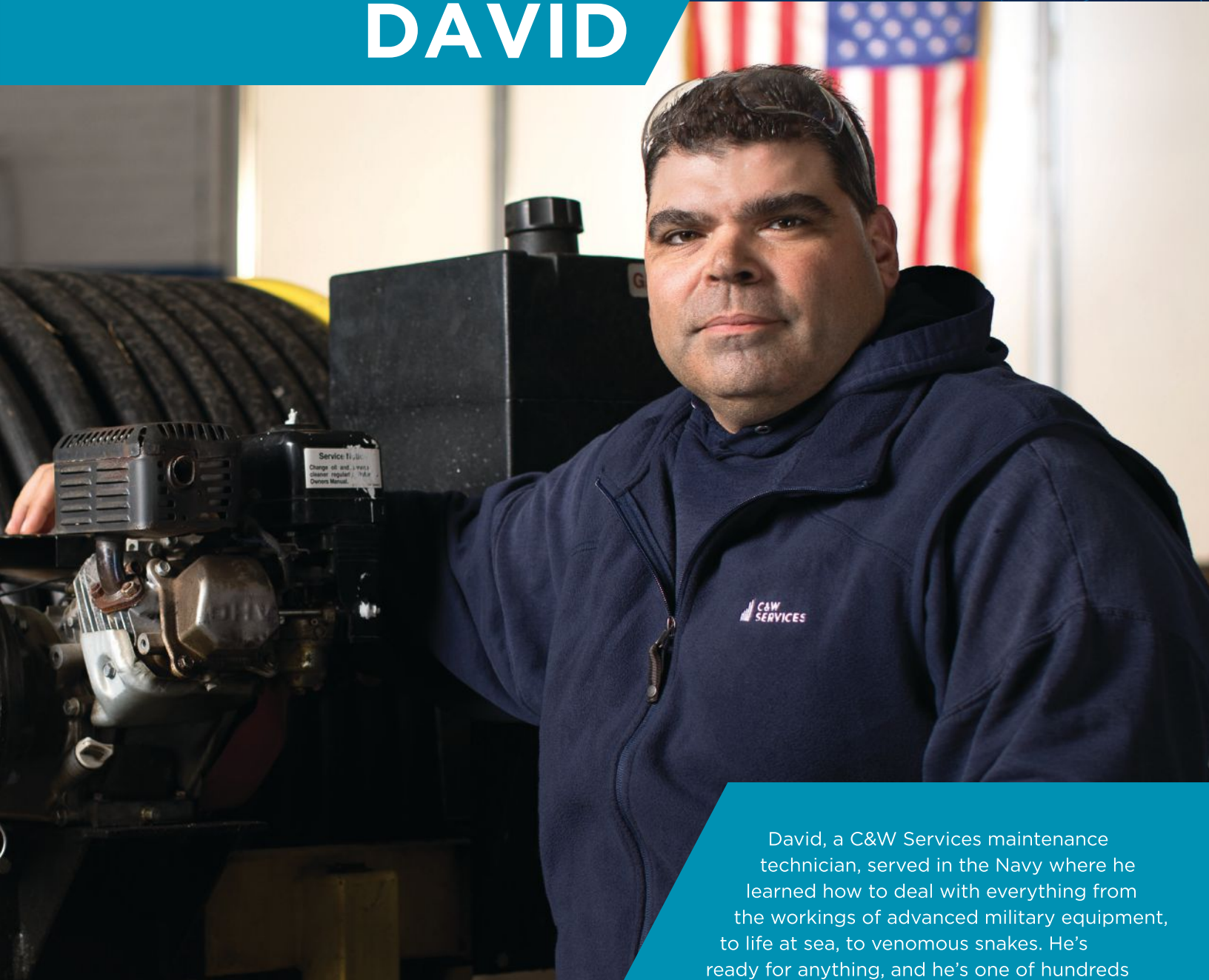
Chronic exposure to excess noise may increase risk for heart disease, stroke

According to preliminary research presented recently at the American Heart Association's Scientific Sessions in Chicago, Illinois, USA, exposure to environmental noise appears to increase the risk of heart attacks and strokes by fueling the activity of a brain region involved in stress response.

Analyzing the association between noise exposure and major cardiovascular events among 499 people at an average age of 56 years, researchers found that those with the highest levels of noise exposure – such as highway and airport noise – had higher levels of activity of the amygdala, an area of the brain involved in stress regulation and emotional responses.

High levels of amygdalar activity appear to unleash a pathway that fuels cardiac risk by driving blood vessel inflammation, a well-known risk factor for cardiovascular disease. The researchers caution that more research is needed to determine whether reduction in noise exposure could meaningfully lower cardiovascular risk and reduce the number of cardiovascular events on a population-wide scale.

Raising the Value: DAVID



Finding skilled talent is an increasing challenge for the facilities industry, however military veterans bring a wealth of technical skills, leadership, and initiative to our teams.

David, a C&W Services maintenance technician, served in the Navy where he learned how to deal with everything from the workings of advanced military equipment, to life at sea, to venomous snakes. He's ready for anything, and he's one of hundreds of veterans throughout our organization who are raising the value of service to our clients, and shaping our culture of leadership and collaboration.

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FMJ EXTRA *Research*

Raising the Bar 3: From Operational
Excellence to Strategic Impact in FM

“It’s not the money, it’s the principle of the thing.” Does this sound familiar? This phrase is usually used to justify actions taken regarding small dollar amounts that normally would be chalked up as negligible. It’s an excuse for much ado about nothing. And, spoiler alert, when people say that, it’s almost always about the money!

That is not meant to demean principles. It’s just that the deep-rooted integrity of a principle is based on a feeling of what is correct, and principles generally have no bearing in casual conversation. Principles define actions. They are fundamental truths or propositions that serve as the foundation for a belief system, a behavior or for a chain of reasoning. They are a fundamental source or basis for something. Building a permanent culture of continuous improvement requires that it be grounded in universal and timeless principles that drive business excellence and incite a relentless quest to make things better.

In fact, in facility management, having and holding to the right principles can lead to money — through cost avoidance, savings on utilities and productivity gains. It all depends on what principles are determined to be important and how they are represented in the workplace. In order to succeed in the current business environment, FMs need to strive for operational excellence that is built on principles or be at risk of losing efficiency in the workplace.

Operational excellence is an element of leadership that is dependent on adhering to basic tenets — ones aimed at supporting the business through consistency and continuous improvement. It stresses the application of a variety of those principles, as well as systems and tools that foster the sustainable improvement of key performance metrics. When FMs understand and take personal responsibility for developing and implementing a commitment to continuous improvement, this operational excellence facilitates successful organizational transformation. The principles supporting excellence manifest themselves through an integrated performance that includes revenue, cost and risk. The focus is on meeting stakeholder expectations through the continuous improvement of operations and the culture of the facility department.

This is not a new approach to management, nor is it a new set of tools or a new fad in the business world. It is the result of the facility-wide practice of ideal behaviors based on correct principles. Improvement requires great leaders, smart managers and empowered and engaged people. With proper mentoring and guidance, the principles of operational excellence can enable employees to have their personal values reflect the same principles. This can help foster thinking and behaviors that will create ingrained habits of operational excellence.

FM Applications

One of a facility manager's primary challenges is to creatively find solutions to challenges in the workplace, specifically by analyzing past experience and recruiting others to get things done. The principles of management define the activities designed to achieve goals. In other words, the means by which an FM actually manages, resolves issues and satisfies needs. Principles of management can be learned using a framework called P-O-O-L, which stands for Planning, Organizing, Overseeing, and Leading.

PLAN THE PLAN, THEN WORK THE PLAN. Facility managers have to set objectives for an organization and decide how to achieve them. They need to define their objectives and weigh possible outcomes. Starting with a strategic approach, and developing tactics to support it, FMs have to determine and attain the resources necessary to accomplish the task.

ORGANIZE ACTIVITIES. An FM may have all the right tools but applying them correctly could be a challenge. This entails an outline of the job and the correct application of resources.

OVERSEE THE WORK. Many professionals feel they don't manage people, but they do manage processes and situations. Through communication and milestone checks, FMs can measure performance and job status and act if deviations or unforeseen challenges arise.

LEAD CORRECTLY. Even if the premise holds true that FMs don't manage people, they still need to lead and motivate them. FMs lead culture change, get their hands dirty and lead by example, and they should be there for guidance, advice and support. They need to provide direction and coordination and give leadership to human efforts in order to achieve their objectives. Further, facility managers need to develop themselves and their subordinates both for process improvement and professional success.

The principles of management, then, are the activities that POOL the resources necessary to achieve operational excellence. A set of principles is systemic by nature; it reflects the interdependent attributes of reality itself. The proper utilization of people, materials, machines, methods, money and markets, in a seamless integration designed for the task at hand, will breed success.

Sustainability

Operational excellence not only applies to running a business, it should pertain to operating sustainably as well. Sustainability is defined as the endurance of systems and processes, both in business and the environment. In business, sustainability is maintaining the constancy of systems and processes that have been designed for ongoing success. In the environment it is maintaining the resources that support life in all its aspects: in business, socially and culturally. Sustainable Operational Excellence creates a dynamic equilibrium throughout the interaction between businesses and the environment upon which they depend,

such that the business optimizes its processes without undue negative impacts. Basically, it means doing the right thing, at the right time, for the right reasons, every time.

The basic objectives of sustainability are to reduce consumption of non-renewable resources, minimize waste and create healthy, productive environments. The principles of sustainable operations include making best use of a building by understanding and exploiting the potential of the land and optimizing operational and maintenance practices.

Together these actions lead to a decreased reliance on non-renewable energy sources. They protect and conserve water, implement environmentally safe products and enhance indoor environmental quality.

Using a sustainable management philosophy encourages decisions that reduce negative impacts on the environment and the health of the occupants, without compromising the bottom line. Such an integrated, holistic approach has positive impacts on all phases of a building's life-cycle, including design, construction, operation and decommissioning.

If the plan is for continuous improvement, innovation, cost savings and sustaining a company for the long term, sustainable operations need to be embraced. These steps are meant to aid our society in achieving a more stable way of living and working while creating efficiencies and cost savings. In order for programs to create a sustainable future, they should contain a balance of activities and policies that cover five core principles.

The principles pertain to specific operational sectors: strategic planning, developmental issues or initiatives taken by individuals. Each of the five fundamental domains has its own derived policy and operational implications. The combination of these domains is systemic in nature; each one affects all the others and is affected by each in return.

The Material Domain defines the basis for monitoring and controlling the flow of materials and energy that are necessary for facility operations. It entails striving for the highest resource productivity while improving performance with each cycle of use. Efforts are focused on the adoption of renewable sources of energy, with most sustainability programs targeting a shift away from the use of fossil fuels for energy because they are limited and non-sustainable. Energy management, combined with waste and water management, forms the basic triumvirate of sustainable operations.

The Economic Domain provides guidance for creating and managing resources. It focuses on the destructive nature of economic activities that view money as the sole *raison d'être*. Short-term greed sometimes supersedes common sense, and this domain creates a change in the way economic activity is measured to minimize the negative impact of economic activities on the environment. There are five key forms of capital: natural, human, social, material and financial. Each has its own idiosyncrasies that require a specific approach to foster sustainability.

The Domain of Life provides the basis for appropriate behavior in the biosphere and is linked to the stewardship principle of facility management. This domain can be satisfied through a life cycle assessment, whereby a product is tracked from design through disposal and addresses the impact of business operations on the environment. This domain advocates the protection of natural resources.

The Social Domain provides the basis for social interactions

and human factors in the workplace. Through wayfinding, proximity planning and adjacencies, FMs achieve stakeholder satisfaction by enhancing the social aspects of their facility.

The Spiritual Domain identifies the importance of universal code of ethics. It delves into the need to empower employees and generate their engagement with processes. It is designed to link an inner transformation of individuals to a broader, more societal scope.

Both the social and spiritual aspects of sustainability lend themselves well to the overall principle of creating stakeholder satisfaction.

Here are three ways FMs can drive operational excellence while setting trends for sustainable actions:

COST-EFFECTIVE OPERATIONS. Accomplished through cost reductions, cost avoidance and risk management initiatives. Sustainable operations, encompassing energy and water conservation and reduction of waste ties into this activity.

STAKEHOLDER SATISFACTION. Providing safe and functional facilities while providing a healthy, clean and comfortable workspace.

ENVIRONMENTAL STEWARDSHIP. Implementing disciplined approaches to corrective maintenance, preventative maintenance and customer requests. Always being cognizant of the long-term effects of actions taken and ensuring that negative impacts are avoided or, at least, minimized, will help mitigate damage to the environment.

A culture of discipline is a critical component of operational excellence. This includes a strict adherence to integrity, a questioning attitude and a high level of knowledge. These values are used to identify the behaviors expected of each employee and how they support the organization's mission and outcome.

Building bricks

Brick and mortar are the building blocks of business. No matter what the business, there is a building somewhere that supports it and an FM to manage it. And, as long as there is a need for facilities to maintain a company's dealings, there will be an impact on the environment. Even e-commerce companies still need a building out there somewhere for administration, warehousing and other functions that take people or inventory. (Cloud-based businesses are fine, but there are some things that even the cloud can't contain!) Operational excellence, like buildings, are constructed one piece at a time. Creating a plan follows the same precepts as putting up a facility — it takes principles, systems and tools. Operational excellence doesn't suddenly sprout out of the ground and flourish. It takes dedication and consistency. As they say, Rome wasn't built in a day. However, they were laying bricks every hour. It can be very easy to underestimate the importance of laying another brick. There's nothing necessarily impressive about laying a brick. It's not a great amount of work. It's not a major feat of strength or stamina

or intelligence. Nobody is going get awards for it. But laying a brick every day, year after year? That amounts to results.

Improvement requires the transformation of a culture to one where every single person is engaged, every day, in often incremental changes. Operational excellence achieved one thought at a time. It, along with the principles that drive it, needs to be joined with sustainable business management to meld enterprise and environment. Cemented by the principles that become embedded in an organization, a strong edifice of sustained excellence can be created that will stand against the slings and arrows of daily happenstance.

These timeless principles become the basis for building a lasting culture of excellence. The relationship between business results and principle-based behavior is how operational excellence is achieved. The trick, then, is to make it sustainable. It's the principle of the thing. FMI



Bill Conley, CFM, SFP, FMP, LEED AP, IFMA

Fellow, is facility manager at Yamaha Motor Corp. in Cypress, California, USA. He has more than 40

years of experience in FM 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.

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The **VALUE** of **BELONGING**



Belonging to IFMA is very rewarding to me because it allows me to network with other facility managers, who share many of the same issues I face. It also allows me to mentor young facility managers and students interested in becoming facility managers or enhancing their FM skills and experiences.

- Dave Riker, IFMA Member since 2005

IFMA is comprised of 24,000 facility management professionals across the globe, but some of the most significant connections members make often take place within IFMA's membership subgroups.

Chapters, Councils and Communities are groups that make it easier for you to connect with fellow members with whom you share common ground – whether that's location, industry you work in or the building type in which you practice.

In addition to our components, some of IFMA's membership benefits include:

- Knowledge Library, offering all FM content in one place
- Educational opportunities to help you meet your career goals
- Global FM conferences and tradeshows
- Job Net, an online FM Job Board only available through IFMA
- And more...

For more details regarding membership benefits, please visit www.ifma.org/your-ifma

ISO 41000: Improving Overall Facility Performance

The beginning of the new year is often a time of reflection, a time to celebrate accomplishments and set new goals. For many organizations, it's also a time to focus on optimizing resources, streamlining processes and improving overall performance. Although we may start the new year with lofty aspirations, facility managers live in a world with time constraints, conflicting demands and limited resources. While continuous improvement may be the goal, just maintaining the status quo is often the reality.

The technical committee for facility management (FM) for the International Organization for Standardization (ISO/TC 267) has been working over the past seven years to provide guidance to the profession that will enable facility managers to achieve these goals, and we have a reason to celebrate. In April 2018, the first management system standard for FM, *ISO 41001, Facility management – Management system – Requirement with guidance for use* was published. This standard provides a framework to achieve FM objectives in terms of service quality, efficiency and performance. Work is also underway on two new work items (listed at right) that will further advance and standardize the FM industry globally.

In the overall scheme of things, the priority of ISO/TC 267 is “to develop relevant international standards that will ... enhance and develop the value that facility management, as a strategic professional discipline, can deliver in consistent and effective manner.” Even as the profession matures, facility managers continue to struggle to articulate and demonstrate the value of FM to their demand organizations. Many job descriptions for facility managers focus on the tactical and operational responsibilities and functions to ensure the day-to-day operations of organization, such as developing and implementing business processes that assure cost-efficient facility operations; developing and managing local facility; and managing contactors and outsourced services. However, for the value of these tasks and functions to be realized, they must be a part of a strategic framework. The ISO 41000 series now offers a framework that will enable FM organizations to demonstrate their strategic importance and deliver value to the demand organization.

The key to achieving this, and the common thread throughout each FM standard, is aligning FM delivery and services to the demand organization's business strategy and objectives.

ISO/TC 267 is currently working on two additional work items:

ISO/AWI 41014, Facility management – Development of a facility management strategy

The standard begins with understanding the demand organization, translating needs into FM requirements and then formulating an FM strategy. It is critical that the FM strategy aligns with the core business objectives and strategy of the demand organization.

ISO/AWI 41015, Facility management – Influencing behaviors for improved facility outcomes and user experience

The intended outcomes of the design of a facility can be diminished when facility users and other stakeholders adopt their own interpretation of functionality and effectiveness. This standard will outline the ways in which the activities of management and facility users can significantly influence an organization's operational performance for better facility outcomes or outputs.

On Standards

Published ISO/TC 267 work items:

ISO 41011 Facility management – Vocabulary

ISO 41012 Facility management – Guidance on strategic sourcing and the development of agreements

ISO 41013/TR Facility management – Scope, key concepts and benefits

ISO 41001 Facility management – Management System – Requirements with guidance for use

ISO 41012, CLAUSE 5.1

“Aligning the structures and delivery of FM and support services provision with the demand organization’s business strategy is critical to successfully achieving core business objectives.”

ISO/TR 41013, CLAUSE 6.1

“FM aligns with the goals and long-term strategies of the whole organization.”

ISO 41001, CLAUSE 5.1

“The [FM] organization’s top management shall demonstrate leadership and commitment with respect to the FM system by: Ensuring that the FM policy and FM objectives are established and are compatible with the strategic direction of the demand organization...”

KEY DEFINITIONS: ISO 41011

DEMAND ORGANIZATION. Entity which has a need and the authority to incur costs to have requirements met.

CORE BUSINESS. Entity from which needs are derived.

PRIMARY ACTIVITIES. Activities that constitute the distinctive and indispensable competencies of an organization in its value.

STAKEHOLDER/INTERESTED PARTY. Person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity.

MANAGEMENT SYSTEM. Set of interrelated or interacting elements of an organization to establish policies and objectives and processes to achieve those objectives.

Creating a strategic framework as the foundation for the FM organization’s service delivery model requires understanding the context of an FM organization within the demand organization. Demand organizations may have multiple embedded FM perspectives for different facility types that represent different aspects of the core business, but all contribute to the demand organization’s mission. For example, a rail transport organization would have different perspectives for public stations, administration sites, ports, infrastructure and fleet management. The FM organization would need to analyze the full spectrum of FM activities and ensure they are aligned with the organizational mission of “transporting passengers and goods in the safest and most efficient manner.”

Understanding what the demand organization is trying to achieve will help clarify the priorities of the FM organization. Good questions to ask include the following:

What are my demand organization’s mission critical activities? How does the FM organization’s activities align these?

For example, a healthcare organization may have the focused mission of improving patient care. Therefore, the FM organization would analyze their activities, and the consequences of not providing an activity, to ensure every activity is prioritized based on the impact of improving patient care. Implementing processes and policies to eliminate or minimize the risks associated with hospital acquired infections would have a high priority and should be communicated to everyone on the FM team.

A higher education organization with a mission to improve or enhance student learning may prioritize FM activities associated with learning spaces or areas where students congregate informally to socialize, depending on the specific demand organization’s mission.

For an airport with a focused mission on improving the passenger experience, the FM organization may want to analyze how their activities directly contribute to improving the passenger experience. Mundane activities such as restroom cleaning become more important when viewed from this perspective.

Who are the demand organization’s interested parties?

Identifying the primary stakeholders can help determine and prioritize the activities of the FM organization as well as the most important key metrics for determining success.

For example, a hospital might have several interested parties such as patients, nursing staff, doctors, researchers, suppliers, visitors and retail vendors. The organizational mission may be to provide high-quality patient care, but the metric to measure the efficiency of the FM organization translates to cost per day per patient bed. The FM organization would need to ensure that the activities they are providing align with the demand organization’s mission to deliver quality patient care while also balancing the need maintain a competitive cost per patient bed to accommodate the financial and other internal stakeholder goals.

What are the key performance indicators (KPI) for the FM organization that align with the demand organization?


It is important that the FM organization measures and tracks KPIs that align with metrics that demonstrate support of the organizational mission. In a hospital, the FM organization may want to track service response time for patient-initiated work orders to align with the mission of providing quality patient care. An airport may want to measure passenger satisfaction of restrooms and airport baggage wait times to determine if the FM organization adequately supporting the mission of improving the passenger experience. An educational organization may want to track classroom metrics that directly affect student learning.

What are the drivers for determining the best sourcing options?

Sourcing, whether outsourced or in-house provided, should consider the demand organization’s mission and operating strategy as well. If the demand organization has decided to focus only on the core business activities, then outsourcing many FM activities may align with this decision. If the demand organization has strategically decided to

control all activities for better process control and improved efficiency and visibility, then outsourcing may be a limited option to maintain that alignment.

With answers to these questions, a facility manager can begin to develop a business case to add value to the demand organization and justify the budget required to support the demand organization in a manner that makes the FM organization a value adder, not a cost driver.

If there is one goal we would encourage FMs to aspire to this year, it is to identify the demand organization's single most important mission-critical activity or strategic objective and ensure that the FM organization can demonstrate how FM activities support this. And remember, we now have the ISO 41000 standard series as a guide. 



Casey Martin is Co-Chair of the U.S. Technical Advisory Group to ISO/TC 267 developing the new standards family for Facility Management. She specializes in asset management services within the Buildings & Infrastructure Consultancy at Jacobs Engineering. In this role, she consults with private and U.S. federal institutions, providing full life cycle perspectives throughout project development stages. Her approach considers important long-term views such as total cost of ownership, reliability-centered maintenance practices, operations strategies, and processes and policies to align asset management with business mission and objectives.



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.

The ISO 41000 standard series empowers FM organizations to:

Better utilize and manage resources

Focus and optimize activities

Derive prioritized activities to support the demand organization

Provide a framework for FM organizations to ensure facilities, assets and services are operationally effective

Organize stakeholder group requirements and the interrelationships between the demand organization and support services to meet mission objectives

Measure and improve operational performance



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Monday, April 8

	International Salon 1-2	International 3	International 4	International 5	International Salon 7-8	International Salon 9-10	International 6	M301
	IFMA Components Leadership	Leadership Development	Operations & Maintenance	Sustainability	Technology	Workplace Evolutionaries	FM Solutions	REAL Community
9:00 am - 10:00 am	1.01	1.02	1.03	1.04	1.05	1.06	1.07	1.08
	Opening Power Speaker 1.0 - "It's Showtime! Leading High-Performance Teams in a High-Pressure World" Presented by Bill Stainton							
10:15 am - 11:45 am	2.01 Networking Evolution: Building Stronger Relationships and Connections Presented by Lowell Aplebaum, CAE, CEO & Strategy Catalyst, Vista Cova	2.02 Leveraging Your Company's Collective Intelligence to Accelerate Innovation Presented by Rod Collins	2.03 Complexities of Large Property Losses Panel Discussion Presented by Sherrie Boylan	2.04 Recycling: The Right Thing To Do - Developing and Implementing a Workplace Plan Presented by Joe Pearson	2.05 Leveraging Technology to Communicate Effectively within the Changing Dynamics of a Multi-Generational Workforce Presented by Geoff Williams; Ted Ritter	2.06 A) 10:15 am - 10:45 am Space Matters - Space as a Tool to Better Performance in Organizations (Data, Evidence & Future Trends) , Presented by: Gitte Anderson B) 10:45 am - 11:15 am "Agile" Working - Embracing the Evolution of a Changing Workplace , Presented by Andrea Sarate C) 11:15 am - 11:45 am FM Role in Building Community at Work , Presented by Lisa Whitehead	TBA	2.08 FM in the Post-Carbon Economy Presented by James Ware
12:00 pm - 1:30 pm	3.01	3.02	3.03	3.04	3.05	3.06	3.07	3.08
	Power Speaker Lunch 3.0 - "Where Next, Technology?" Presented by Bob Schukai							
2:00 pm - 3:00 pm	4.01 Member Retention: Creating the Member Experience Presented by Lowell Aplebaum, CAE, CEO & Strategy Catalyst, Vista Cova	4.02 The Leadership Dilemma: How to Unlock the Potential of the 4-Generation Workplace Presented by Kelly and Robby Riggs	4.03 The Future of the Built Environment: Office Acoustics Presented by Ioana Pieleanu	4.04 MISSION POSSIBLE: FM "Flight Deck" for Energy Usage Presented by Peter Stroup	4.05 Reengineering FM/RE in the Age of the Smart Machine Presented by Nancy Sanquist; Alexander Redlein; Pat Turnbull	4.06 A) 2:00 pm - 2:30 pm Another Study Decrying the Open Office: So Many Studies, So Little Understanding , Presented by Arnold Levin and Alexis Kim B) TBA	TBA	4.08



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International Salon 1-2	International 3	International 4	International 5	International Salon 7-8	International Salon 9-10	International 6	M301
IFMA Components Leadership	Leadership Development	Operations & Maintenance	Sustainability	Technology	Workplace Evolutionaries	FM Solutions	REAL Community

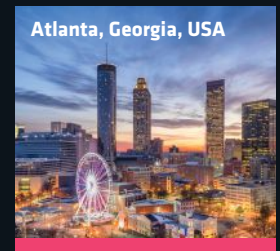
Tuesday, April 9

	5.01	5.02	5.03	5.04	5.05	5.06	5.07	5.08
8:00 am - 9:00 am		Survival Triggers: The Hidden Reason Why Leaders Say and Do Stupid Things Presented by Carlann Ferguson	Oregon Convention Center's OCx Program: Integrating Functional Testing with Preventive Maintenance Presented by Ted Spear; Mark Effinger; Josh Lipscomb	Who's Afraid of Zero Waste? Presented by Anna Dengler	How to Build a Bridge with Technology and Facilities Presented by Erika Voss	Workplace Evolution: Beyond Open Plan, Presented by Betsy Nurse and Danielle Schmitt	TBA	Creating the High-Performance Workplace: A Conversation with Sue Bingham Presented by James Ware and Susan Bingham
12:00 pm - 1:30 pm	Power Speaker Lunch 6.0 - "Leading From Any Seat: Stories from the Cockpit & Lessons from the Grit Project" Presented by Shannon Huffman Polson							
	7.01	7.02	7.03	7.04	7.05	7.06	7.07	7.08
1:45 pm - 2:45 pm	Part 1: IFMA Volunteer Leader Roundtables	It takes more than talking to be a leader. Communications strategies to help us all. Presented by Alana Dunoff and Leslie Groff	Building Quality Assessment Presented by Stephen Ballesty	WELL Building Standard: Harnessing Buildings as Vehicles to Support Human Health and Well-Being Presented by Bonnie Hagen	Best Practices on Cyber Security & Data Privacy from the Facility Manager's Guide for Information Technology Presented by Ted Ritter; Geoff Williams; Simon Davis	WE Ideation Workshop	TBA	Real Estate - What's Hot and What's Not: Adding Value through Markets and Trends Presented by Janice Cimbalo
	8.01	8.02	8.03	8.04	8.05	8.06	8.07	8.08
3:00 pm - 4:00 pm	Part 2: IFMA Volunteer Leader Roundtables	It takes more than talking to be a leader. Communications strategies to help us all. Presented by Alana Dunoff and Leslie Groff	How a Fortune 25 Company is Reinventing Space for Agile Work: An Express Scripts Case Study Presented by Julie Keil	It's Not Rocket Science - How to Achieve an Immediate ROI for Efficiency Improvement Projects with the PACE Program Presented by Scott Ringlein	Is your service program keeping up with the times? Presented by David Auton	WE Ideation Workshop, continued	TBA	Real Estate: What Keeps You Up at Night? Presented by Janice Cimbalo and James Ware

Wednesday, April 10

	9.01	9.02	9.03	9.04	9.05	9.06
8:00 am - 9:30 am	Power Speaker Breakfast 9.0 - "Building Your Cyber Toolbox" Presented by Michael Daniel					
	10.01	10.02	10.03	10.04	10.05	10.06
9:45 am - 10:45 am	Millennials in the FM Workplace: The Benefits, Challenges and HR Pitfalls, Panel Discussion Moderated by Geoff Williams and Nick Heibein	Who Will Take the Lead? How FMs Are Uniquely Qualified to Drive ROI through Workplace Innovation Presented by Mike Petrusky	How I survived (and thrived) with phased moves of 5000 staff in an occupied building - Really Presented by Donald Eischens	Overcoming the Tenant Landlord Barriers to Improving Facility Efficiency Presented by Maureen Kiely	The Future of Technology in Facilities Management: Today's Differentiators are Tomorrow's Best Practices Presented by Deb Noller	Mini Case Study Sessions
	11.01	11.02	11.03	11.04	11.05	11.06
11:00 am - 12:00 pm		The Value of Strategic Decision Making Presented by Allan Donnelly	Employing Supplier Diversity Strategies to Attract the Right Attention Presented by Bill Miller; Irene Thomas-Johnson	Sustaining Facilities for the Next Century: Smarter solutions for Safer Water and Energy Transmission and Distribution Presented by Cameron Manners	Purchasing Technology is not like Purchasing an HVAC System Presented by Jake Young	Panel Discussion by Case Study presenters

Atlanta, Georgia, USA





THE ACC IDENTAL PROFEE SSION

HOW TO SECURE THE FUTURE OF FM

Facility Management (FM) has long been considered the “accidental” profession. When asked, most working FMs today will tell you that they “fell into FM” at some point within their career. Such diversity is what makes the industry so unique; with backgrounds in engineering, HVAC, plumbing, and even psychology and business, many professionals have worked their way up from front line jobs to director level and beyond. Many applicants skimmed past the ambiguity of “other duties as assigned” not realizing it was a path into a typical facility management role.

The process of working up the ranks, however, comes with a small, yet significant, side effect. In the next few years, nearly half of the FM workforce will reach retirement. This leaves remaining professionals with the challenge of either taking on new work or finding a faster, more effective (and most importantly) sustainable way to replenish numbers with new talent. The question becomes how can the growing retirement gap be filled? How can our member base be engaged, retained, mentored and grown while finding future leaders? How do we change this “accidental” profession into an “intentional” one?

The solution may be easier than it seems. With dedication and commitment from like-minded professionals, local groups like IFMA chapters can be empowered to act as outreach centers. Encourage members close to retirement age to share their years of experience with young minds. Embrace the passion of professionals who seek to volunteer their time and creativity while engaging members with unique facilities who are willing to provide tours or be a guest speaker. By wholly supporting the diversity in our backgrounds and in our fundamental recruitment process, FMs have the tools to implement successfully tested methods to engage students and mid-career workers, both before career decisions are made and later as an opportunity for changing their career path.

It is easy to think the scope of the problem is bigger than our ability to reach it. However, here are a few options for engagement on a manageable scale that can have lasting local impact.

BY
**CAROLYN
MCGARY**

Volunteer with SkillsUSA and the FM Pipeline^{1,2}

SkillsUSA is a career technical student organization of more than 300,000 members dedicated to solving the growing U.S. skills gap. These students are already in numerous FM-related fields including architecture and construction, business management and administration, communications, IT, logistics, human services, finance, engineering, sustainability, and trades such as carpentry, electrical, plumbing, and welding.

The FM Pipeline team is a group of facility management volunteers who help local chapters become participants in their state’s annual SkillsUSA competitions, exposing these students to the world of FM through a competition called the Facilitathon: a 50-question test, five-minute role play and a three-minute emergency response scenario geared to engage the student’s ability to think on one’s feet and give them a taste of what it’s like to be a facility manager.

In 2018, IFMA chapters in four states hosted the Facilitathon at their State SkillsUSA Championships: Colorado (Denver and Pikes Peak), Florida (Orlando and Jacksonville), Virginia (Capital and Hampton Roads) and Wisconsin (Madison, SE Wisconsin, and Green Bay). Combined, these chapters have shared the story of FM with more than 8,000 students, with 200 students competing for 24 scholarships being awarded to respective winners over the past four years.

Association for Facility Engineering (AFE) and Day with a Facility Professional (DWFP)^{2,3}

Founded by the Association for Facility Engineering (AFE) in California 55 years ago, this half-day event includes lunch, an orientation to careers in facilities, tours of interesting spaces to show the excitement and variety of being a facility professional, then dinner and a panel discussion with professionals to wrap up what the students experienced throughout the day. The IFMA Silicon Valley Chapter in California now co-hosts the event with their local AFE to add knowledge of facility management in addition to facility engineering when engaging local students. Other states may already have a similar program that local chapters can participate in.

Professionals who have attended reported benefits such as the ability to share experiences with students considering the facilities profession, the ability to meet potential interns or future employee candidates, a fresh perspective and revitalized energy toward their positions in FM, and an opportunity to provide a positive experience to students looking for exposure to the “working world.”

This program has been incredibly well-received, garnering the interest of local engineering and facility management students.

For more information
about FM Pipeline and
Facilitathon, visit
www.fmpipeline.org¹
and link up with the
volunteer team by
emailing
facilitathon@gmail.com

Other states may have similar programs. For more information and manuals on how DWFP works visit the IFMA Foundation website³ or contact the Silicon Valley Chapter of IFMA.

Cultivate Local Internships

A tried and true way of bringing entry-level talent and interest to the field is by encouraging local businesses to provide internships in FM. While there are both paid and unpaid options, all can agree that there is no method of learning quite like “doing.” The IFMA Foundation has an intern website⁴, but with only a few posted internships, this method is an underutilized resource and has much room for contributions.

As the framework exists, it is not necessary to start the intern process from scratch. It is easy and effective to utilize the FM Internship Development Guideline Manual,⁵ established by the Greater Phoenix Chapter of IFMA and by IFMA’s Global Workforce Initiative (GWI),⁶ to create internships within local companies. Connect with local colleges and universities’ internship or workforce engagement teams about how to post internship opportunities to their students in addition to the INTERNet.⁴

When seeking internships, schools generally focus on the experiential learning element and a student’s opportunity to integrate and internalize what they have learned in the classroom by performing that same concept in the real world. Be sure to highlight how an FM provides those skills in an evolving workforce.

Do not worry if there is not a local facility management program already in existence. Be mindful that our industry’s talent comes from all backgrounds. We regularly pull students from psychology, construction, real estate, architecture, engineering and business majors. Perhaps the experience of learning about facility management will impact them to make a “right” turn into FM.

At this point, one may think “This is great, but what does it have to do with me? A chapter must get all this going, right?” While chapters are the outreach centers, it is the member base who needs to act with intention. Every member has a responsibility to act, but we will not all respond the same way. Be thoughtful and deliberate in what resonates with local chapter members. Perhaps there is a strong military presence, or several retired military members who are passionate about helping to get more of their personnel engaged in FM. Maybe there is a strong chapter base in health industries or manufacturing. Analyze the core of interest which has the most likelihood to be successful in your area and focus on energizing the current membership base so that your chapter becomes more attractive to new talent. Don’t be afraid to utilize resources and ask questions. The pathways to help make facility management a career of choice are as varied as the ways people find their way in to FM. It is also okay if the plan takes some time to mature.

THERE ARE MANY WAYS TO NURTURE FM TALENT.

A. ENGAGE IN THE CREATION OF AN ACCREDITED DEGREE PROGRAM IN FACILITY MANAGEMENT AT A LOCAL HIGHER EDUCATION INSTITUTION.

B. VOLUNTEER TIME WITH EMERGING PROFESSIONALS OR IN MENTORING GROUPS.

C. SPONSOR LOCAL STUDENT MEMBERS WITH PAID MEMBERSHIP IN A PROFESSIONAL CHAPTER.

D. CONNECT WITH MILITARY PERSONNEL AS THEY TRANSITION BACK INTO CIVILIAN CAREERS.

E. TALK WITH LOCAL WORKFORCE AND ECONOMIC DEVELOPMENT OFFICES AS TO HOW A LOCAL IFMA CHAPTER CAN PARTNER WITH THEM.

F. DON’T BE AFRAID TO PIONEER A NEW PATH!

All the above pathways are supported by the IFMA Foundation's Global Workforce Initiative (GWI).⁶ Since its inception in 2014, the Global Workforce Initiative has acted as a facilitator between business, government, high schools, colleges, universities, economic development and IFMA chapters/councils to grow the future FM workforce. Great strides have been made in many markets to grow the conversation, including development of the ISO 41001⁷ standard for facility management, assignment of the Standard Occupational Classification (SOC) Code 11-3013⁸ for Facility Managers by the Bureau of Labor Statistics (BLS), a "Why FM" presentation⁹ for students and parents and the website¹⁰ www.whatisfm.com, which provides career-oriented resources and short videos for students and parents.

For more information on how to integrate these resources into a comprehensive program, visit the GWI Chapter Partner website¹¹ and download the GWI Chapter Partner Program Guide. Here you will find ways to evaluate your resources and develop a strategic plan around them.

Engagement efforts and commitment will help ensure the future of careers in facility management. Join the conversation on IFMA's Engage¹² site under the Global Workforce Initiative group and share successes (and challenges) to keep the momentum moving ever forward. Everyone has the opportunity to both achieve excellence and secure the future of FM. **FMJ**

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Carolyn McGary strongly believes that it is important to raise awareness of FM as a career of choice. She has more than 13 years of facility and project management experience in both the public and private sectors. She is a CFM, SFP, an IFMA Qualified Instructor for the FMP credential and the 2016 IFMA Distinguished Member of the Year.

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BY DIANE LEVINE AND NANCY JOHNSON SANQUIST

THE FIVE CS TO ENGAGE STUDENT FMS

A photograph of two men in business attire. The man on the left is a Black man with short hair, wearing a white button-down shirt, looking down at a laptop. The man on the right is a white man with short hair, wearing a light blue button-down shirt, leaning over the first man and looking at the laptop screen. They are in an office environment with a window in the background.

FMJ EXTRA
Resource

What is FM?



Trina Lujano and Elizabeth Moinet are two of the students who received scholarships from the International Facility Management Association Foundation and attended IFMA's World Workplace 2018 conference in Charlotte. They attended along with 20 other FM scholars who competed for coveted IFMA Foundation awards that year. Many IFMA chapters and contributors made their trips and scholarships possible because of their generous contributions and time spent on judging the competition.

Lujano and Moinet were part of the first group of students from the IFMA Foundation Global Workforce Initiative (GWI). This partnership with the California Community College Foundation brings a facility management education program to community colleges in that state. They both were part of the first GWI program at Chaffey College in San Bernardino.

After spending a week with 22 Student Scholarship winners at IFMA's World Workplace in Charlotte, a lot of insights and "aha" moments about the future of facility management were gained.

Students, incumbent workers, veterans, the underemployed and unemployed appear to be drawn to the field of FM. Why? The IFMA Foundation's GWI has gained insights and learned how to better market and communicate the benefits of joining the profession.

In the past, most FMs accidentally fell into this profession, but that is not always the case now. For Kevin Squadroni, IFMA Philadelphia Chapter 2018 Scholarship Recipient, the choice came down to career path options. "A B.S. in Facilities Management was the obvious best choice. It is a professional degree that offers the ability to explore a huge variety of career paths. It also allows, in my opinion, a more intimate understanding and ability to affect ... the integration of people and place, the optimization of systems and the development of space."

It's important to note that facility management accredited degree programs have been around for more than 25 years. There are thousands of FMs practicing today with university degrees in facility management and 27 programs worldwide providing education through the IFMA Foundation FM accredited degree programs as seen in the FM Academic Registry at fmacademicregistry.org.

CONNECT STUDENTS WITH SEASONED FM PROFESSIONALS

Students are eager and enthusiastic about connecting with experienced FMs. When Lujano began exploring a career change, she looked no further than the FM program at Chaffey College. Captivated by the pathway and industry opportunities, Lujano quickly immersed herself in coursework and campus engagement, connecting with IFMA members and becoming the first president of the Chaffey College IFMA Student chapter. She received the Dallas/Fort Worth Chapter scholarship in 2018. "Bringing the insight from industry into the colleges is a difference-maker and is sparking interest in careers students never thought were possible," said Lujano.

Ferris State student Tyler Lukomski received the 2018 IFMA Suncoast Chapter Scholarship and said connecting with real-world FMs and facilities has been vital. "Since joining IFMA last year, the experience has been amazing. We have toured several facilities local to us. This has helped me learn more than just what a classroom can teach you," he said.

It's not about whether people are attracted to FM, it's about how existing facility managers connect and engage with future FMs to make them feel welcome and encourage their involvement.

COMMUNICATE WITH STUDENTS

By enhancing the student experience with direct communication, we are teaching students more about FM than they receive in their classrooms. At the same time, communication and mentoring helps spread the optimism of these young leaders.

If we want to grow our profession, it's all about how we engage new members and provide an impactful experience.

"We asked the students, if you could take the cash scholarship or the World Workplace trip and attendance, which would you prefer?"

All the students said they prefer to have the World Workplace experience. It is invaluable to them,” said Samson Lee, IFMA Foundation Trustee and Past Chair IFMA Hong Kong Chapter.

The World Workplace experience was so impressive to the students that several volunteered to help enhance the student experience in Phoenix in 2019. Scholarship recipient Elizabeth Moinet said, “I’ve had an amazing experience at World Workplace, and I want to be available to help next year. I want to share my knowledge and experience with new scholarship recipients and help guide them.” As a result, the IFMA Foundation is forming a team of students and FM professionals to make students feel welcome, provide mentorship and help navigate through the many educational sessions and events at the conference.

COMPETITION BUILDS BONDS

One event that catapulted the student experience was the launch of an IFMA Foundation student competition called “Ignite FM! The Student Challenge.”

The student scholarship recipients were given three hours to solve a complex FM challenge. Teams presented their solutions at World Workplace with the goal of winning a US\$2,000 prize. The audience was standing room only as seasoned FMs cheered on the students. The support of existing FMs helps ignite the future of the field.

“The IgniteFM! competition was a tremendous experience for the students who participated, letting them interact with FM professionals and with each other. Just as important, the recognition of the winning team at the awards lunch served as an inspiration to all of the attendees at World Workplace, reminding us of our responsibility to nurture the next generation of facility management professionals,” said Michael Schley, organizer of the event and IFMA Foundation Past Chair.

Engaging students in a team competition fueled what will probably be lifetime friendships and the beginning of their IFMA global network. Students were thankful for the experience and the chance to work with other future FMs from different schools around the U.S.,

Facility managers have wondered for years what the future of the profession would look like. To that end, many have asked the following questions:

Would younger generations and incumbent workers be attracted to the field and professional associations?

As the number of students receiving facility management accredited degrees grows, how will this impact the profession?

How do we bring the world of FM to grade schools, high schools and community colleges to widen outreach?

Will new university graduates be interested in joining IFMA to broaden their networks as baby boomers retire?

Asia and Europe. They learned how to compromise with globally diverse colleagues and make collective decisions.

“As an industry veteran, it’s always exciting to help young people and career changers break into our profession,” said Tony Piucci, ABM Senior Vice President of Enterprise Solutions and competition judge.

Since 2011, The Hong Kong Chapter has visited 10 to 12 college campuses every September to encourage participation in FM student competitions. Students are asked to prepare a presentation within one or more of IFMA’s eleven core competencies and submit by March. In April, the students present in front of judges for the opportunity to win cash prizes. The student or team showing the highest level of presentation skills also receives a certificate of merit.

“We invite all students to our annual “Integrate” conference and the prize is given on stage,” said Jenny Leung, IFMA Hong Kong Chapter Past President. “Every student receives a one-year membership and we invite them to participate in the IFMA Foundation student scholarship program. If a student from Hong Kong receives an IFMA scholarship, we provide coaching and mentorship before and during World Workplace to ensure they are fully involved in the experience.”

COLLABORATE WITH OTHER NON-PROFITS

Dr. Roscoe Hightower at Florida A&M University (FAMU) began attracting grade school students to FM through the game of tennis and a video sports game.

“The FM students’ company at FAMU, collaborating with a local non-profit organization, teaches FM practices to a grade school tennis and nutrition program for under-privileged children and obtain credit for this,” said Hightower.

The students also use Madden Football to explain FM. There is a component to this popular e-sports game that requires users to build a football stadium and create a facility budget. “FAMU has its own K-12 school district within the campus. The primary, middle and high school district is part of the university making it advantageous to introduce grade school students to facility management,” he said.

Tony Soriano, IFMA Orange County Chapter Past President and Surfrider Foundation Past Chairman, uses beach cleanups to teach grade school and high school students about FM. The marketing slogan is “Save the Planet, Become an FM.”

The Surfrider Foundation is an international organization and students are transported to Orange County beaches to help clean the environment and learn about sustainability.

“Landfill, recycling, composting and carbon emissions have a huge impact on our oceans and explaining FM’s impact gives students a more holistic picture of how buildings and human behavior affects our environment,” Soriano said.

In another collaboration, the IFMA San Fernando Valley, Orange County and San Diego chapters participated in Manufacturing Day, an annual event where high school students are transported to universities to learn about careers.

“In one day, over 1,000 students interacted with FMs from various industries, including health care, utilities, manufacturing, universities and the public sector. They were genuinely interested in learning about our field. We used a Google Jam Board along with a Kahoots game with prizes to draw them to FM. The annual salary potential, along with sustainability, were two key incentives to a career in FM,” said Irene Thomas Johnson, IFMA Foundation Trustee, GWI Chair and IFMA San Fernando Valley Chapter Past Chair.

CONTRIBUTE TO ORGANIZATIONS LIKE THE IFMA FOUNDATION

Sodexo, an IFMA Foundation GWI Advisor, conducted a women in FM session at World Workplace where a panel of women leaders talked about the challenges and opportunities in their careers. It was an interactive session and an opportunity for students and the IFMA community to engage first-hand with industry leaders and colleagues.


Sodexo Senior Director of Talent Acquisitions Scott Sherman said, “The FM industry has substantial growth projected over the next few years which creates a need for new talent already. When you add to that the FM labor supply and demand data from IFMA research, the industry will add 500,000 new jobs globally over the next 5 years, yet we are only graduating 800 professionals a year from IFMA accredited universities, we see a critical need to accelerate FM talent pool development.”

An FM does not have to be a GWI Advisor to contribute to the IFMA Foundation. There are committees and events to help with, including spreading GWI concepts to all the chapters, councils and communities within IFMA. Pick one or more of the 5 C’s and join in the communication and connection efforts. Remember, the more scholarship donations, the better. That means more student experiences we can support.

WHAT’S NEXT?

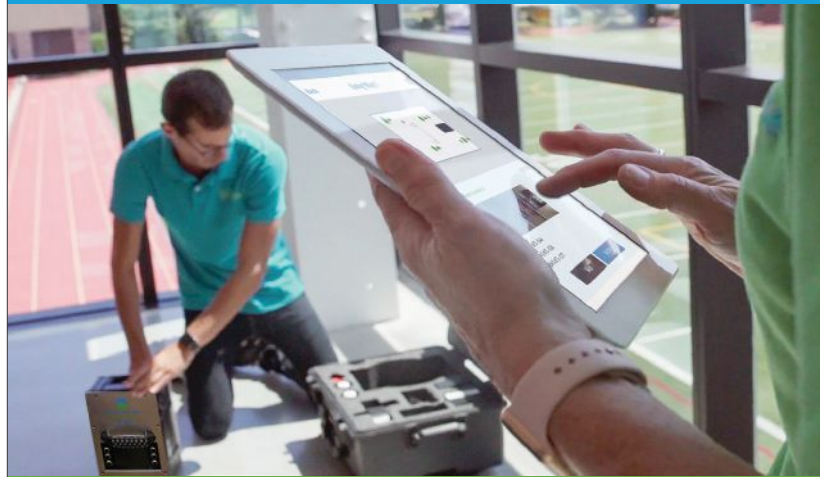
At the World Workplace Charlotte “after party” following the last day of sessions, a group of students was so excited about their week at the conference they thanked IFMA Chair Graham Tier and Past Chair Bill O’Neill for the experience. Several students asked if IFMA would allow their classmates to attend World Workplace next year for free providing they volunteer.

“This was such a wonderful experience, I only wish my friends at Temple University studying FM could also participate,” said student attendee Xiu Hong Ng.

Reaching out to students as a mentor, or helping to provide scholarships through the IFMA Foundation, is one of the best ways to ensure students and new FMs entering the field have the resources and support needed to succeed in facility management. 

Nancy Johnson Sanquist is an IFMA Fellow and AIA Associate. She is VP of Global Strategic Marketing at Planon in Boston.

Diane Levine, MCR, is the Executive Director of the IFMA Foundation. She is a former IFMA Board member, and also an award-winning co-editor and author of the “Work on the Move” book series. Diane is one of the pioneers of the foundation’s Global Workforce Initiative.



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FMJ What new tech is ABM working on?

ABM Innovation is one of our core values—our culture encourages fresh ideas along with data-driven insight. The smart application of new technologies is a high priority. Currently, the team’s focus is on facilitating a demand/need-based service delivery model through client-facing data analytics, location-based communication technology, mobile enablement, and equipment innovations (e.g., robotics and IoT).

Combined with many years of predictive work order data, we’re confident that technology will continue to move our industry forward to drive efficiency and continuously improve the customer experience. Meanwhile, attracting the best people, developing them and keeping them continues to be an industry-wide challenge, and we are proud to partner with the IFMA Foundation on the Global Workforce Initiative to find innovative ways to attract people to the field of facilities management.

FMJ What has been the most positive feedback you’ve received from clients?

ABM The very best feedback involves what we pride ourselves most on: our people and their professionalism. A technology client praised that our people “...take pride in the work they perform at my facility.” A K-12 client was appreciative that, “The management and leadership care about our district.” And added, “We really feel like the team is part of our district’s family.” One higher ed client loved that the site manager for his institution, “responds to any issue within minutes.”

Following that is praise for how ABM has relieved operational worries and woes by addressing specific pain points. That’s what we’re here for. We especially appreciate hearing that clients feel informed and appreciated, that they’ve received consistently great service, and that we’re a trusted partner.

FMJ Tell us about your community projects.

ABM We encourage our staff and management to give back through paid time off for volunteer work, donation matching, and bonus donations for volunteer hours logged. In fiscal 2018, we’ve given more than \$3.5M through ABMCares and associated programs.

We’re thrilled to say the program has encouraged team members to volunteer as a group, taking the initiative to organize office volunteer activities and make a difference in their communities together. In 2018 alone, 452 ABM volunteers contributed 8,527 hours of their time. That’s almost a year of donated time!

ABM’s Mission is to make a difference, every person, every day. This means we strive to embody our core values: respect, integrity, collaboration, innovation, excellence, and trust.

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FMJ How does Energi Pros help facility managers?

EP Energi Pros senior leadership has decades of specialty engineering and energy expertise, and our technical team is led by Bill Probst with 22 years' experience in commercial energy demand management and co-generation. We are constantly refining the combinations of available building envelope management, load center management, renewable energy generation and co-gen technology to ensure minimum consumption from grid resources, lowest possible energy utility expenditures and more profitability for commercial facilities.

Energi Pros is the only currently active distributor in the USA of the Novacab Thermal Energy Storage System, TESS. In most large office buildings or malls across the US, TESS alone can slash electricity consumption by more than 20 percent.

FMJ What's on the horizon, and how is Energi Pro meeting those challenges?

EP Five to 10 years out, developments in energy technology will afford almost any facility the opportunity to be "off-grid." We see solar becoming two to three times more efficient while taking up less space to deploy. Add to that the capacity to capture not only the photons to create electricity, but also capturing and storing wasted heat radiated by the sun or generated by chillers or other systems, then re-deploying the thermal energy as heat or converting the wasted heat into electricity, further minimizing what must be purchased from utility companies.

Energi Pros is engaged with inventors, engineers and technologists to stay ahead of the curve on how we can work with facility managers to most effectively select and integrate these proven technologies to obtain the most cost-effective facility performance. We will keep you ahead of that energy tech/energy profit curve, too.

FMJ Tell us about one of Energi Pros' major accomplishments.

EP While Energi Pros redesigns and retrofits a variety of commercial industrial facilities, one of our longest standing clients is the largest Lexus dealer in the world, JM Lexus. Among auto dealers, this facility is the nation's ROI leader for energy demand/co-gen retrofits.

Our clients love our energy audits! Most have no idea how many places they are wasting thousands, or millions, of dollars in energy. Because of that lack of data, most managers' default mode is "do nothing." We help break that pattern in a way that cuts costs, increases property value and generates the capital for the required improvements from the savings we generate.

EP clients experience the most advanced and thoroughly proven available technologies, the best engineering, facility integration and most professional installation/project fulfillment with minimal to zero interruption of daily facility activities.

Energi Pros also provides a variety of financing, including the popular off-balance sheet PACE funding. We also make available project performance insurance if desired.

FMJ Tell us about your CSR efforts or projects.

EP Energi Pros is engaged in the critical work of how energy, commerce and industry integrate with the environment and the communities where they are located. With climate science pointing to the urgent need to curtail carbon footprint, reduce emissions, and find a way to eliminate/minimize fossil fuels, we see that everyone has a role.

EP's COO recently worked with the *George and Cynthia Mitchell Foundation* to find the right way to mitigate the environmental impact of oil and gas exploration in rural West Texas. This effort involves everyone so that the needs of all are represented — not by "community leaders" or elected officials, but by the residents and business owners/managers themselves.

FMJ What's a question people ask frequently?

EP Almost every client will eventually ask, "how soon will it be possible for a building like this to be off the energy grid?"

We live in an era where flying cars will be a US\$3 trillion market before another decade passes, SpaceX and Blue Horizon are talking about regular trips to and from the moon and mars. And right now, there are entire classes of buildings which can be off-grid. We believe that by 2025 *any* non-industrial commercial building can generate all its own power on site.

We believe that by 2025 any non-industrial commercial building can generate all its own power on site.



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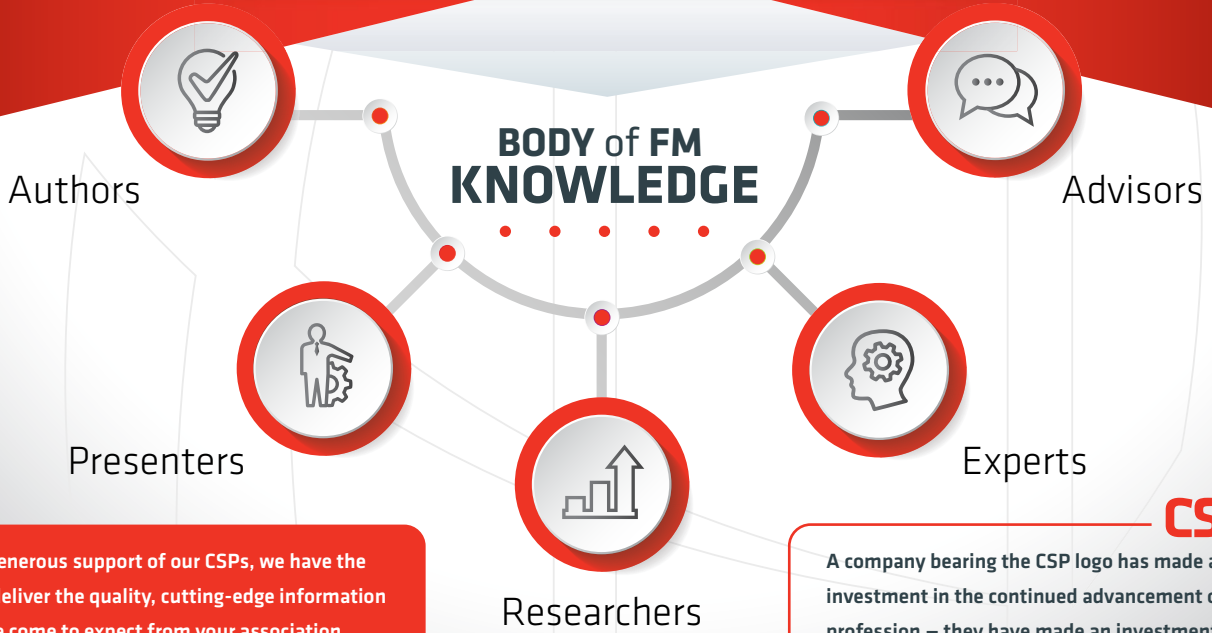
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Imagine this: It's day one of your new job as head of facility management for WooHoo, Inc., a fast-growing technology company. Half of your compensation is based on the impact you make on the company's bottom line. To meet the demands of this new role, you can either:

- A. *Cut real estate costs, or*
- B. *Increase productivity*

Based on the details in Figure 1, which approach would have the most impact?

FIGURE 1 About WooHoo, Inc.

Number of employees	500
Cost per office	US\$12,000 per year
Avg. space per person	200 square feet
Dollar per square foot	US\$60 per square foot
Annual office costs	US\$6.5 million
Average salary	US\$85,000
Annual payroll	US\$43 million

The correct answer is B, and not just for WooHoo. Any time an FM has to make a choice between increasing productivity or reducing real estate costs, the former will almost always be the easier, safer and more remunerative solution.

Why is this the case? Fundamentally, it's because people are much more expensive than the spaces they occupy. At WooHoo, for example, payroll costs are nearly seven times higher than facilities costs (see Figure 2 – *People vs. Office Costs*). That ratio is actually low by industry standards.

Another reason to focus on productivity is the potential impact when increasing something is much greater than the potential for reducing something. Cutting can only go so low.

At WooHoo, for example, an increase in productivity of just 3.8 percent (just 18 minutes a day) would have the same impact as slashing real estate costs by 25 percent (see Figure 2).

FIGURE 2 People vs. Office costs

Office cost	People cost	Office vs. People cost
US\$6.5M per year	US\$43M per year	\$43M
x 25%	x 3.8%	÷ \$6.5M
\$1.6M	\$1.6M	6.6x

Conversion to minutes per day:

Increase productivity per person per day by **18 minutes**

x Salary/person/minute*	= \$0.71
x Number of employees	= 500
x Working days a year (50 weeks x 5 days per week)	= 250
Annual impact	US\$1.6M

Of course, the opposite is true, too. Lopping a whole floor out of the budget might delight the CFO in the short term, but if the new environment reduces employee performance, the net impact could, well, let's say to coin a word, increase the tenuosity of employment?

This is a perfect example of why traditional measures of workplace success such as person-to-desk-ratios, space-per-employee and other place-centric metrics are woefully inadequate and often misleading. They are easy to calculate, but they don't reveal anything about the impact of workplace change on an organization's most expensive and valuable asset: its people.

Productivity

What is productivity and how do you measure it? Some argue the term itself is outdated — a vestige of the days of typing pools, factory work and farm jobs. Performance, they say, is what matters in the information age. In reality, they are both important and always have been.

Let's say Emma and Jorge are both programmers at WooHoo. Emma codes really fast. Jorge is slow, but meticulous and known for the efficiency of his code. Which one is more productive? In terms of quantity, most would argue it's Emma, but if her code is buggy and bloated it will take its toll

on customer satisfaction and ultimately the bottom line. In terms of quality, Jorge may look like the better performer, but his slow pace could hamper time-to-market which is critical in today's fast-changing world. Leading organizations can't afford to choose between fast and good, they need to strike a balance between the two and to do that, they need to measure both.

Improve + enhance

So, what can FM and CRE do to improve productivity and enhance performance? Here's the simple answer: Ensure that

According to a wide body of research, the right physical environment should include the following:

Customizable thermal controls

Visual and sound privacy options

Good lighting

Good air quality

Effective ergonomics

Efficient wayfinding

Appropriate adjacencies

Easy ways of finding team members

Access to decision makers

Appropriate noise levels and sound options

Easy access to a variety of spaces and places

The right technology

Assess to healthy food and beverages

The right amenities

The right level of stimulation

Visual reinforcement of the organization's mission and values

Stress-reducing elements such as biophilia, sounds of nature, outdoor areas

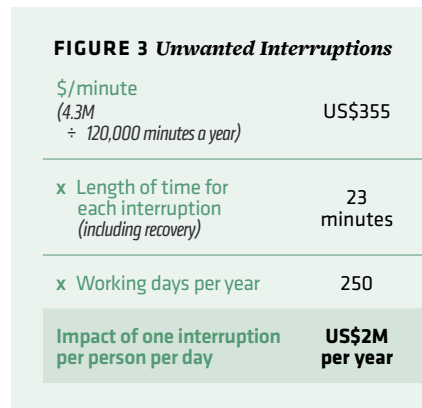
Attention to aesthetics (colors, shapes, textures)

workplaces and work practices enable and encourage people to do their best work. In terms of the workplace, that means removing the friction that keeps people from performing their best. It starts with creating the right physical environment. If a person is cold, or in pain, or hungry, or frustrated by technology, they simply can't do their best work. Importantly, unless these workplace elements are right, people simply can't even think about the kinds of things that allow them to do their best work.

We could estimate the cost of dissatisfaction with many of the elements from the list above by simply multiplying the minutes lost by the employee's cost per minute. Let's use sound and visual privacy as an example. Either can result in an increase in unwanted interruptions.

Estimating unwanted interruptions

Research by the University of California suggests that employees are significantly interrupted every twelve minutes.¹ Every time they are interrupted, it takes an average of 23 minutes for them to recover. If the new sound-proofing, or office layout, or quiet spaces, or work-from-home policy allowed WooHoo's 500 employees to avoid just one interruption a day, it would add US\$2 million in annual productivity (see Figure 3 – *Unwanted Interruptions*). It would take a 30 percent reduction in real estate costs to generate the same savings!



On the flip side, of course, if a change in workplace strategy actually increased unwanted interruptions, that US\$2 million would hit the cost side of the ledger.

In addition to the hit to productivity and performance, unwanted distractions also increase errors, stress, frustration and more. Recent research shows they also impede creativity and innovation.

The physical elements of workplace design clearly can affect, for better or for

worse, employee productivity and performance, but work practices can have an even bigger impact.

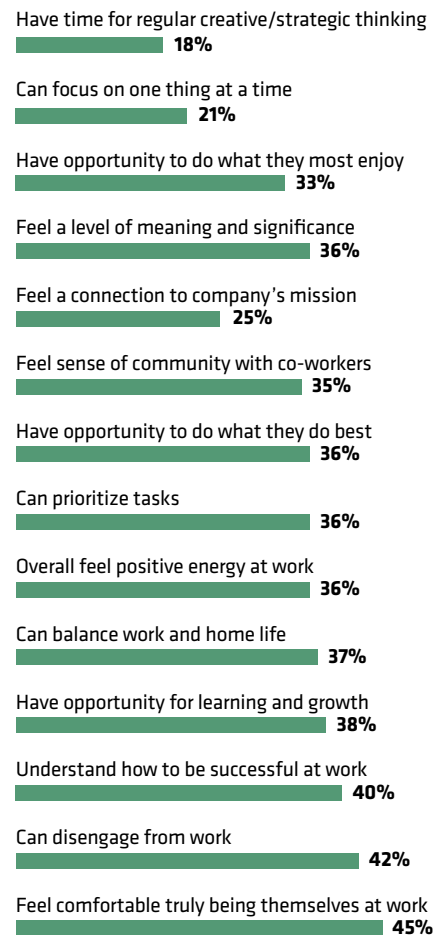
Work practices and productivity

A group called The Energy Project was curious to understand what most influences employee engagement and productivity, so they partnered with the *Harvard Business Review* to survey more than 12,000 mostly white-collar employees across a broad range of companies and industries. The results were reported in a New York Times opinion piece called *Why You Hate Work*. In a graphic labeled "White Collar Salt Mines" it revealed that less than two in ten employees felt they had time to think (see Figure 5 – *Why You Hate Work*). The rest of the findings were equally startling to anyone familiar with employee engagement principles.

"Demand for our time is increasingly exceeding our capacity — draining us

FIGURE 5 Why you hate work

Percent of respondents who ...



SOURCE

Survey of 12,000 mostly white-collar respondents conducted by The Energy Project and Harvard Business Review. Above results appeared in a New York Times Opinion written by Tony Schwartz and Christine Porath, May 30, 2014.

of the energy we need to bring our skill and talent fully to life,” according to the authors of the study.³ “Increased competitiveness and a leaner, post-recession workforce add to the pressures. The rise of digital technology is perhaps the biggest influence, exposing us to an unprecedented flood of information and requests that we feel compelled to read and respond to at all hours of the day and night.”

Voluntary Turnover

A meta-study by the Center for American Progress suggest a broad range of estimates on the cost of turnover, from as low

as 16 percent of salary for the lowest paid workers to over 200 percent of salary on the highly paid and skilled end of the spectrum. So, if high-performing Jorge gets fed up that his manager constantly rewards Emma for her speed and continually chastises him for his slowpokeyness, the cost of losing him could be as high as US\$170,000 (US\$85,000 * 200 percent).

There’s not much CRE can do about bad bosses outside their own preview, but they can help attract and retain talent and increase productivity by encouraging work practices that increase employee engagement.

Based on Gallup’s numbers we can

estimate the value of engaging a quarter of WooHoo’s disengaged employees (typically 13 percent of employees according to Gallup) would be US\$320,000 a year. Increased productivity would contribute US\$240,000 of that (see Figure 5 – *Calculate impact of engagement on productivity*) and the balance would come from reduced turnover (see Figure 6 – *Calculate impact of engagement on turnover*).

And, of course, the real value of the initiative is a multiple of that US\$320,000 if the changes continue to have an impact in future years.

A meta-analysis of more than 250 research studies covering nearly 200 global organizations conducted by Gallup, Inc. found that business units with employee engagement scores in the highest quartile (compared to those in the lowest):





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Strategies to Improve Employee Engagement

Encourage Autonomy

Give people choices about where, when and how they work

Establish employee goals and measure by results

Reduce hierarchy and entitlement

Connect work with personal interests

Connect Employees with the Organization's Mission and Purpose

Create visual reminders of the organization's mission

Recognize employee achievements

Support volunteerism and community work

Design for trust and transparency

Offer Opportunities for Growth

Offer training to enhance skills and expand talents

Provide tuition reimbursement

Design jobs around employee strengths

Encourage experimentation and play

Make it safe to fail

Encourage Well-Being

Provide healthy food and nourishment

Provide places and spaces for quiet contemplation

Encourage regular breaks and time off

Discourage multi-tasking and overworking

Support collaborative, social and quiet time

Provide resources to support physical and mental health

FIGURE 5 Calculate the impact of engagement on productivity

Organization-wide annual compensation	US\$43M
x % of employees in the lowest engagement quartile (Gallup)	13%
x % of employees who moved from disengaged to engaged	25%
x Rate of productivity increase (Gallup)	17%
Increased productivity due to workplace change	\$240,000 per year

FIGURE 6 Calculate the impact of engagement on turnover

Organization-wide annual compensation	US\$43M
x % of disengaged employees	13%
x Average voluntary turnover rate	32%
x Cost of turnover (% of salary)	75%
x % of employees that moved from disengaged to engaged	25%
x Reduction in voluntary turnover (Gallup)	24%
Cost savings due to workplace change	US\$80,000 per year

Naturally, this could all work in reverse too. If the changes you make to workplace design or work practices have a negative impact on engagement, the hit to the bottom line could be substantial.

A Whole Lot More

We've only scratched the surface on the bottom line impacts a change in workplace strategy can produce. In addition to productivity, engagement, and turnover, changes can affect, for good or for bad:

- Employee health and well-being
- Creativity and innovation
- Absenteeism and presenteeism
- Effectiveness and efficiency
- Employee safety
- Diversity
- Continuity of operations
- The environment
- Relationships with customers, vendors, shareholders and communities

And more

Every one of those can and should be measured, both pre- and post-change, so the impact can be quantified.

And as staggering as the numbers we've offered here may be, they are hugely understated because of one critical reality: People are not hired to simply offset their salaries. Unless the brains or brawn they bring to what they do translates into a multiple of their compensation, there will be nothing left to pay all the other business expenses, let alone produce a profit — a survival imperative.

The revenue-to-salary ratio, as it's called, varies by industry. In the finance industry, for example, it averages six to one. In other words, someone making \$85,000 a year produces, on average, over \$500,000 in annual revenue. So, in reality, all the impacts we've calculated for WooHoo are actually 600 percent higher than we've shown here!

Facility managers and CRE professionals are increasingly being asked to quantify the impact of workplace change on organizational priorities. That was easy in the days when the (short-sighted) top priority was reducing real estate costs. But employers are finally beginning to understand that workplace design and work practices that are good for people are good for the bottom line. It's time we start measuring what matters. **FMJ**

RESOURCES

1. A significant interruption was defined by the study as one lasting two or more minutes
2. Assumes 50 weeks/year and 8 hours per working day
3. Schwartz is the chief executive of The Energy Project. Porath is an associate professor at Georgetown University's McDonough School of Business and a consultant to The Energy Project.
4. As reported by Gallup, Inc., August 26, 2018
5. Bureau of Labor Statistics data (32 percent based on April 2018 numbers)
6. Estimate based on research by The Center for American Progress



Kate Lister is a highly regarded speaker, writer, and thought leader on the future of work. She is president of Global Workplace Analytics, a research-based consulting organization that helps employers and communities create and communicate the people, planet, and profit business case for a wide range of workplace strategies. She has co-authored three business books and written scores of articles for major media outlets. Kate is a member of IFMA's Workplace Evolutionaries (WE) Leadership team where she heads up research initiatives.

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How to plan a bond program

As one of the fastest growing school districts in the state of Texas, the New Caney Independent School District (ISD) knew that a decision had to be made — they could begin planning for the rising student population or be forced into a reactive mode in the operations, management and planning for their facility portfolio.

In 2016, New Caney ISD commissioned a demographic study that analyzed student locations, potential growth based on new housing, trends occurring in student relocation patterns and other economic factors relevant to the district. The demographics study, conducted by Population and Survey Analysts, projected an annual growth of more than five percent on average over the next 10 years. Moderate enrollment projections anticipated growth by more than 50 percent by the year 2025.

To address this growth and ensure students will have quality facilities in the future, forward-thinking officials at New Caney ISD embarked on a methodical approach. This approach, which ultimately led to the passing of a US\$200 million bond program, included the following three steps: strategy development, design standardization with assessments and well-coordinated stakeholder engagement.

STEP 1

Strategy Development

To determine the need for capital expenditures, planning typically progresses by first understanding the current position, defining the long-term goal, and developing a strategy to meet the long-term goal. These three parts are apparent in every facility planning exercise from small to large plans. First, the organization must understand its current position from many angles. These can be internally driven needs such as aging buildings that need to be replaced or external factors such as population increases or decreases that require the organization to react. Based on these internal and external factors, the long-term goal should be developed. This long-term goal will determine the strategy and the subsequent plan of action.

These three parts showed up in New Caney ISD's planning process. The demographics report showed officials that they would continue to see growth in the student population. They were also aware that several facilities in the inventory were reaching the end of their lifecycle. It became apparent that many of these facilities not only needed to be replaced, but additional space was also necessary.

However, zeroing in on the specific plan required more thought. Knowing that additional study would be required, New Caney ISD sought the help of professionals through a Request for Qualifications (RFQ) procurement process. The RFQ laid out the need to develop facility design standards, conduct a comprehensive facility condition assessment, and finally, to collaborate with a community of stakeholders to develop a long-range facility plan for New Caney ISD. Once this strategic plan was in place, the district selected a national planning, engineering and program management firm to achieve its objectives.

The final design standards document will look different for every enterprise, but it should have the following components:

List and define all space types

Define planned use for the spaces

This includes the types of user groups, objectives of the space and activities that will take place within each space

Design considerations for lighting, power, data, mechanical, plumbing, etc.

The type of furniture, fixtures and equipment for the planned space

Estimate expected size for each of the space types and/or number of individuals served

Create adjacency diagrams, or where spaces should be relative to others

STEP 2

Facility Design Standardization and Data Collection

While planning a facility portfolio, an organization must understand how its buildings look now and how they envision their look and feel in the future. This can be done in two phases: developing facility design standards and performing a comprehensive facility condition assessment (FCA).

STEP 2A Develop facility design standards

One way to dictate the overall look and feel of facilities is to develop design standards.

For facility design standards, the overall intent is the same: to govern the way a facility is to be designed. The documentation should provide a design professional with the parts and pieces necessary to develop a set of design documents that meet the organization's requirements.

In the case of New Caney ISD, the facility design standards defined space types at different school levels — elementary, middle and high school. Furthermore, at each grade level, spaces were defined as site spaces, academic core spaces, special education, fine arts, media center, physical education, administration/guidance, child nutrition, building support and several other nuanced specialties. Adjacency diagrams were also developed to show the expected relation of space types to one another within the facility.

To develop these design standards, multiple meetings were held with the school district's educational staff and leadership of various departments. Following these discussions, the needs of each space were defined based on their educational requirements.

STEP 2B Comprehensive facility condition assessment

The comprehensive facility condition assessment identifies, quantifies and develops a qualitative rating for all parts of the existing facility. This type of study can be used to develop cost estimates, facility condi-

Stakeholder engagement can be summarized into four elements: mobilization, communication, consensus, and recommendations.

tion index (FCI) ratings and to provide forecasting for facility needs.

Through the comprehensive facility condition assessment, New Caney ISD gained an overall understanding of the conditions of their facilities for comparative purposes. Through the data obtained from the FCI, the facilities in the worst conditions were easily identified. Furthermore, the district created a forecasting system based on their facility portfolio. Supporting evidence and data helped shed light on the conditions of several aging facilities and their overall effect on the facility portfolio and how facilities compared to one another.

STEP 3

Stakeholder Engagement

The final piece of the process in planning a bond program, or any request for improvement funding, involves stakeholders. As defined in the Project Management Body of Knowledge Guide, a stakeholder is anyone whose interest in the project must be considered during project work.

Depending on the industry, organization, end user and funding mechanisms, stakeholders can range from one specific individual with a lot of authority and decision-making power to larger public-focused groups with collective decision-making power. Often, the mechanism for funding projects — whether private or publicly funded — is a leading indicator of the mix of stakeholders.

Stakeholder engagement can be summarized into four elements: mobilization, communication, consensus, and recommendations.

Mobilization

Mobilizing a stakeholder group first involves identifying the individuals that are necessary in the decision-making process and then reaching out to them to gauge their interest in participation. For New Caney ISD, stakeholders identified by district officials included parents, staff, board members, citizens and business owners. New Caney ISD convened each of these stakeholders for a total of eight meetings over four months with the intent to develop a long-range facility plan for the district.

Communication

Communication is at the heart of the stakeholder engagement process. Communication should flow between all parties and can be categorized as outbound or inbound communication. Outbound communication is the information that is shared from the organization to the stakeholder and will include things such as the reason for involvement, study results and reasons for the requests that are made. Inbound communication can be described as the feedback received from stakeholders.

For each of the first six meetings, stakeholders at New Caney ISD were provided with a structured approach to the communication process. Each meeting centered around a specific theme and laid out the goal, purpose, charge and function of the long-range facility planning committee. Outbound communication involved sharing demographic projections, development of the facility design standards and results from the facility condition assessment. Inbound communication included opinions and clarification centered around the information that was discussed. Through the inbound communication, a list of discussion topics around issues and needs within the district was developed. This communication process helped form the basis for further discussions.

Consensus

Consensus in decision making is defined as a process in which individuals decide to support a decision that is in the best interest of the group. Developing a consensus among a group of stakeholders with individual concerns, perspectives and motives requires a process, forethought and clear communication. A point person in the group leadership will facilitate discussion and the process governing the group. Individuals must agree to set aside personal interests to make decisions that satisfy the best interest of the group.

While the first six meetings at New Caney ISD centered around communication, the last two focused on consensus. The district's planning and engineering firm facilitated consensus meetings and stakeholders discussed the topics and issues that surfaced during the communication phase. Stakeholders defined the top priorities that were most important for the district to pursue. These top priorities included the construction of a new high school and the replacement of an aging middle school and elementary school. Based on this consensus-oriented approach, the long-range facility planning committee developed a set of project options with a priority ranking and timeline for each option.

Recommendations

Finally, the group of stakeholders must deliver recommendations to the authoritative body for action to be taken. Depending on the authority structure, the recommendations can be given to an individual company president, chief executive officer, shareholders, board of directors or a board of trustees.

For New Caney ISD, recommendations based on the planning committee's work were brought to the district's board of trustees. These recommendations consisted of a series of priority projects that the planning committee wanted the board to consider as part of a bond referendum. The board, subsequently, approved these recommendations and called for the bond referendum.

Outcome

On May 5, 2018, New Caney ISD voters passed a US\$200 million bond program. The bond includes four projects that address priority needs in the school district: a US\$110 million high school, a US\$52 million middle school, a US\$26 million elementary school, as well as other additions and security upgrades. The new facilities will serve an additional 2,340 students across the elementary, middle and high school levels. New Caney ISD's well-planned approach helped set the course for providing students the environment and infrastructure needed to succeed in the 21st century. **FMJ**

Four approved new facilities will serve an additional 2,340 students across the elementary, middle and high school levels in the school district.



Kyle LeBlanc is a project manager at Lockwood, Andrews & Newnam, Inc. (LAN), a national planning, engineering and program management firm. He leads many of LAN's facility condition assessment efforts. Kyle also has experience in construction management within the educational program management sector. In addition to facility condition assessment work, Kyle helps lead clients in long-range facility and capital planning processes. Kyle is a professional engineer with a degree in civil engineering. He also maintains certifications as a certified facility manager through IFMA and is a LEED green associate. He can be reached at KJLeBlanc@lan-inc.com.

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WORK PLACE WELL NESS



BY
REENA AGARWAL
AND
SARA KARERAT

The rise of the wellness market has spurred a new level of innovation across a range of industries as companies strive to differentiate themselves in pursuit of impacting the triple bottom line of people, planet and profits. The real estate industry is no exception, with buildings that promote health and wellness becoming an ever-increasing priority for REITs, developers and building owners. The Global Wellness Institute estimates that the wellness real estate sector grew 6.4 percent between 2015 and 2017, and it reached a value of US\$134.3 billion in 2017. The organization went on to predict the sector will grow eight percent between 2017 and 2022, achieving an expected valuation of US\$197.4 billion over that five-year period.¹

A decade ago, the idea of a “healthy building” was not widely understood or prioritized. Today, however, this concept has become unavoidable within the design and development industries as it is increasingly interwoven with the ever-growing focus on sustainability. As facility managers are increasingly well aware, the health-promoting aspects of buildings depend on a range of factors, including structural elements, design decisions and operational policies. The operational choices made by a facility manager directly impacts not only the building itself, but

also the health and wellbeing of its occupants. Facility managers play a critical role in operationalizing strategic efforts and ensuring building priorities are successfully implemented. As the real estate industry has become increasingly focused on designing for human health, facility managers are leading the way in transforming these priorities into realities.

Driving Investment

Unsurprisingly, the expansion of the wellness market has been largely supported by investors and the notable growth of Environmental, Social and Governance (ESG) and impact investing. Investors are looking to put their funds toward companies positively impacting the world, whether through decreased energy use, community investment, healthy design, or another meaningful commitment. In addition, 78 percent of millennials see workplace quality as important when choosing an employer. And 69 percent will trade other benefits for better workplaces.² In an effort to attract both investors and employees, employers are beginning to place a stronger emphasis on workplace design and employee wellbeing. The state of the workplace is now viewed as vital to employee health, wellbeing and productivity. This directly impacts the role of facility managers, who are increasingly called on to operationalize health-promoting environments.

The Fitwel Certification System, developed by the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. General Services Administration (GSA), and operated by the Center for Active Design (CfAD), provides evidence-based strategies to guide facility managers with their implementation efforts. It also provides the technology necessary to track project progress and report impact.

Increasing Accessibility

Fitwel is accessed and administered through a web portal, which provides comprehensive information on the strategies, sample evidence and verification documentation required for certification. The Fitwel Portal was designed based on a vision of facility managers being able to walk through a property, iPad in hand, while selecting the strat-

egies their building is already meeting and which ones would require additional enhancements. The Fitwel Portal also features a benchmarking option, which allows buildings to receive a numerical score that can be improved over time by enacting incremental changes.

By benchmarking a building, facility managers can view areas of opportunity and identify which strategies to prioritize in order to have the largest impact on occupants and achieve Fitwel Certification. With access to the Fitwel Portal, users are able to evaluate the current status of how their building is performing across evidence-based health metrics in a matter of hours.

The Fitwel strategies and metrics provide facility managers and property management companies with a tool to begin the conversation with building occupants and tenants around health-promoting design and operational strategies. Menkes Developments Ltd., an integrated real estate company with a property management arm, was able to employ the core concepts of Fitwel to launch its Healthy Spaces program. The certification system was used as a way to discuss the process and benefits with

DATA-DRIVEN ENHANCEMENTS

Through its digital platform, Fitwel also enables users to track a range of data points and evaluate the impact their projects are having on occupants' health. Fitwel identifies impact based on seven Health Impact Categories:

Increases Physical Activity

Promotes Occupant Safety

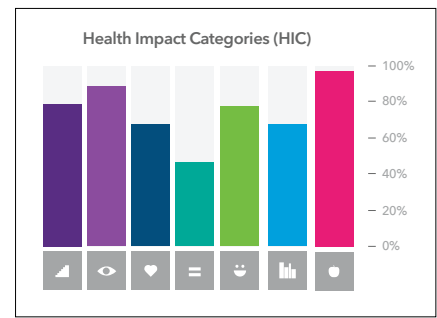
Reduces Morbidity and Absenteeism

Supports Social Equity for Vulnerable Populations

Instills Feelings of Well-Being

Impacts Community Health

Provides Healthy Food Options



SCREENSHOT FROM FITWEL PORTAL. COURTESY OF THE CENTER FOR ACTIVE DESIGN.

their building tenants.

Based on his experience applying Fitwel across the Menkes portfolio, Menkes Director of Sustainability Jon Douglas says, “We view Fitwel as a great initiative to allow us to engage with our tenants in new ways, and as a way to measure our performance in promoting health and wellbeing at our properties. We want to create opportunities for our occupants to live their healthiest lives by making this goal convenient and actionable to them, and Fitwel is a practical program to support Menkes in delivering on this objective.”

Menkes has already successfully applied Fitwel in four of its buildings. They were able to use the certification system and the Fitwel Portal as tools to support the properties’ increased focus on health and wellness. Menkes Senior Property Manager Taryn Kelly says, “Fitwel has enabled us to gain valuable insight into the way we operate our buildings.”

Fitwel was designed with facility managers in mind. Before launching publicly, the Fitwel Portal and strategies were pilot tested by facility managers in 89 existing buildings across the United States in 2015. The buildings spanned rural, suburban and urban environments to ensure the system would be practical, rigorous and widely applicable. In a follow-up evaluation of the pilot study, 97 percent of participants reported that Fitwel’s portal is user-friendly, and 84 percent reported that they have a better understanding of how their buildings support healthy behaviors.

Since this study, the portal has been updated to provide additional functionality, increased automation and a smoother process for the user. Companies can now organize projects into portfolios, which they can break down by size, project type, region, or any oth-

IN A WORLD WHERE PHYSICAL ACTIVITY CONTINUES TO DECLINE, STRESS AND ANXIETY ARE RISING, AND CHRONIC DISEASES ARE RESPONSIBLE FOR NEARLY 70 PERCENT OF DEATHS WORLDWIDE, A COMMITMENT TO HEALTH AND WELLNESS IS MORE IMPORTANT NOW THAN EVER BEFORE.

6.3 / 4.66 points

Adopt and implement an Indoor Air Quality (IAQ) Policy

Rationale & Sample Evidence ^ Upload Required Documentation v

Yes No

2 Documents Uploaded v

Rationale A comprehensive Indoor Air Quality policy can identify areas for improvement in air quality and provide benchmarks to ensure that quality remains high over time.

Evidence Carrer, P., et al. (2015). "What does the scientific literature tell us about the ventilation-health relationship in public and residential buildings?" *Building and Environment* 94: 273-286.
Sundell, J., et al. (2011). "Ventilation rates and health: multidisciplinary review of the scientific literature." *Indoor Air* 21(3): 191-204.
US General Services Administration. (2018). "Facilities standards for the public buildings service." Washington, D.C.: US GSA.

SCREENSHOT FROM FITWEL PORTAL. COURTESY OF THE CENTER FOR ACTIVE DESIGN.


er defining attribute. In addition, companies can add project collaborators as needed. This enables a full project team to engage with the Fitwel Portal. The portal currently has more than 1,000 users representing over 25 countries. In total, they are working on the more than 600 projects.

During the certification process, all communication between the project team and the Fitwel Certification Team takes place within the portal. While the Fitwel team is always available for questions, all formal submissions, reviews and certifications take place within the Fitwel Portal, ensuring that all documentation is hosted in one place.

Facility managers can see the impact that improved indoor air quality has on morbidity and absenteeism and the importance of lighting when it comes to instilling feelings of wellbeing among occupants. Through the benchmarking and certification process, facility managers can use the Fitwel Portal as a guide to demonstrate to other vested parties, including occupants, building owners and investors, how they

are working to address some of today's most pressing health concerns.

Moving Forward

In a world where physical activity continues to decline, stress and anxiety are rising, and chronic diseases are responsible for nearly 70 percent of deaths worldwide, a commitment to health and wellness is more important now than ever before.² Design can have a powerful impact on our health. Through the strategic use of technology to provide easy access to impact data and an intuitive certification system, facility managers can continue to integrate the evidence-based strategies popularized by Fitwel in pursuit of a healthier world. They can also use this technology to communicate their impact and successes to their targeted occupants. The structures in support of this movement are in place and the momentum is evident. The time to build on that momentum is now, and facility managers will continue to be a critical player, leading the way toward a healthier and more sustainable future. 

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Reena Agarwal is the Founding Chief Operating Officer at the Center for Active Design (CfAD), where she conceptualizes and directs initiatives that foster healthy and engaged communities. Prior to launching CfAD, Reena was a Director of Sustainability at the New York City Department of Design and Construction where she focused on regulatory and legislative efforts that promoted environmental sustainability and health in building design. Ms. Agarwal also has over a decade of experience working as both an architect and planner, where she specialized in zoning and building code compliance.



Sara Karerat is a Senior Analyst at the Center for Active Design (CfAD), where she supports the organization's initiatives that pair public health research with design strategies to improve the health of communities both domestically and internationally. Previously, Ms. Karerat worked as a communications associate with the Partnership for a Healthier America, where she developed strategic campaigns to motivate healthy behavior change among target populations. Ms. Karerat holds a Master of Public Health from Columbia University and a Bachelor of Arts from Hamilton College, where she majored in Public Policy.



Navigating the China Recycling Ban

Costs associated with global recycling programs were on the rise in 2018, and rumblings about changes in how recyclables are processed have been hard to miss. To understand these recent changes, it is important to review the history of waste importing and exporting leading up to the Chinese ban on certain recycling materials.

FMJ EXTRA
Article

How Recycling is
Changing in all 50 States

BY MATTHEW HOLLIS

Many wealthier countries¹ have been shipping recyclable commodities to China for the past two and a half decades. In 2016 alone, China processed 73 million tons² of the world's recyclable commodities, including used plastic, metals and paper. However, in 2018, China decided to stop buying these materials from Japan, the United States, the United Kingdom and various other countries due to the large amount of contamination in these material streams. Contamination is when unwanted trash ends up in a recyclable material stream. For example, styrofoam mixed together with cardboard.

The Ban

From their point of view, China has an understandable reason to impose the latest restrictions. As a country with the largest population and the second largest economy in the world, the sheer amount of people and businesses already located within the country that produce domestic waste result in near toxic levels of pollution in some of the more heavily populated areas. Thus, the import ban is one policy enacted by President Xi Jinping

aimed at reducing the amount of allowable contamination in imported recyclable commodities. The ban is an effort to help fix the country's current environmental issues. In addition to the import ban on scrap materials, many heavily polluting Chinese factories have been closed, and Chinese researchers have been looking for more reliable sources of renewable energy.

While the import ban is helpful for China's growing problem with waste and soil pollution, it leaves other countries to either substantially reduce the amount of contamination in their recyclable commodities or to deal with recycling on their own. Countries that were previously shipping their recyclable commodities to China were not expecting this sudden influx of material in their own countries, so many do not have the necessary contingency plans to utilize it or process it. This caused a substantial supply and low demand problem. As a result, the income that was used to offset the costs of processing recyclable materials has dried up.

Rising costs

In the U.S., as just one example, costs are rising as the companies inside the country collect and process recyclable material, and they are facing challenges.³ The shortage of buyers in the U.S. has created a surplus in scrap materials that has caused global prices for these materials to plummet to all-time lows, so selling it is no longer a viable option. Overall, this is posing an issue for U.S. waste management companies in numerous cities who are now upside down on their operational costs. This forces waste haulers and collectors to either raise their rates, discontinue routes or send all of the material to the landfill.

Since none of the above options are ideal, there are thankfully a few steps that can be taken to reduce the impact the ban is having on everyone involved. More than ever, everyone must take recycling contamination seriously, as failure to deal with the problem could result in higher levels of pollution in domestic soil, water and air.

Recycling Contamination

Currently, most businesses and homes practice "single-stream" recycling where all materials are thrown in the same recycling bin. This easy process is beneficial because it drives more people to recycle, but at the same time it causes more issues for recycling centers since not everyone

recycles correctly. Recycling contamination is anytime an incorrect item makes its way into a recycling bin, whether that be when a non-recyclable item is in a single-stream container, or when outside substances like food residue contaminate a recyclable material, or even when a recyclable material like paper makes its way into a plastics-only bin.

Many people who are used to single-stream recycling bins do not realize that, unfortunately, an entire batch of recyclables can be labeled contaminated if something is disposed of in the wrong recycling bin. The hauler cannot take a mixed bag like the scenario with paper and plastic mentioned above. It is hard to imagine that something as simple as junk mail or cardboard can be labeled a contaminate, but if it is placed in a plastics-only bin it becomes one. If materials are too hard to separate, like food-soaked paper, the entire batch may be sent to the landfill. This kind of mistake not only poses a threat to the environment, but a threat to operating costs as well.

By reducing contamination and recycling correctly, businesses can help recycling centers cut down on the overall contamination while creating a viable material stream that can be sold internationally again. Not only will this help the rising prices of recycling, but it can also help curb the material being sent to the landfill.

Getting started

To prevent recycling contamination, conduct a waste audit to take a look at the waste stream currently in place. A waste audit looks at all items being disposed of by a company and keeps track of the types of waste and the amount of each type of waste.

An audit can be done manually by internal team members or with a partner that specializes in waste auditing. There is specific software used to audit and give recommendations for improvement on all facets of a company's waste streams, from solid food to oil and grease and even recyclables. The results from an audit allow organizations to see where they can best implement improvements. This helps cut down on the amount of waste that is produced and reduces the amount of contamination in a recyclables stream.

For example, an organization might believe they have a stellar recycling system in place. But an audit might reveal that most of the "recycling" is being sent to the trash due to improper procedures that result in

contamination. On the other hand, a facility might be able to identify new opportunities for recycling. A facility might not realize how much cardboard waste is sent to the landfill, for example, when they could actually be engaging with a hauler who can recycle it instead.

Plan of action

After completing a waste audit, the next step is to plan for improvement. Make sure to check legislation or regulation in the area to see what can and cannot be recycled. One of the easiest ways to see if plastic can be recycled is to check the number on the bottom of plastic materials. Which numbers can be recycled are usually specific to certain areas, making this self-education even more important. Checking local legislation is also important when seeing which districts provide curbside recycling versus having to take recycled materials to drop off points.

Next, survey facilities that recycle specialized materials. For example, plastic bags in some locations can be recycled whereas other sorting facilities refuse to take plastic bags due to their negative effect on certain machinery.

Choose a facility

In the effort to become more consumer-friendly, many recycling systems do allow different materials to be combined when recycling for further sorting at their facilities. This practice can cause carelessness and a lack of understanding on what is and is not acceptable. Throwing the wrong materials into a single stream recycling container can cause damage to machinery, diminish the quality and financial value of recycled materials and could lead to unsafe conditions for workers. While it is easier to throw all recyclable materials in the same bin, it's imperative to be educated enough on the topic to know which type of items are and are not recyclable in that process.

Install bins and signage

Only 30 percent of the country's waste stream is sent to recycling facilities, and the ban might cause this number to decrease.⁴ As leaders of change, new procedures should be implemented to help waste haulers and recyclers minimize the impact of the materials ban. After auditing the waste stream and deciding what can and cannot be recycled, an easy

next step is to install recycling bins around the facility with clear signage on proper procedure. When given the option, most people will choose to recycle their waste instead of putting it in trash — as long as it is convenient and clear. Put a list of items that cannot be recycled or are considered a contaminate near the new recycling bins to make sure that users are aware.

Curb recycling costs

An additional way to curb increased recycling costs is to create less waste in the first place. For example, consider alternatives like composting organic materials. Composting materials that otherwise would end up in a trash can, or a recycling bin where they cause contamination, cuts down on the overall waste being generated.

Another way to cut down on overall waste generation is the use of reusable products. Using products that don't need to be recycled would completely diminish the issue of resources used for recycling education and it prevents potential contamination. With sustainable products now widely available, it is easy to purchase glass water bottles that are BPA free, reusable plastic or metal straws and reusable food storage containers. Eliminating single-use plastics is better for both budgets and the environment.

In conclusion

Private companies, cities and households can actually benefit from China's ban if they take the opportunity to strengthen domestic demand for recycled materials and plan a sustainable route to reduce contamination moving forward. Now is the time to make sure organizations are doing their part to recycle in the correct way by making sure proper protocols and instructions are in place.

Although China's import ban is creating a shift in how companies and households dispose of their waste, the bright side is that these solutions can end up having a positive global impact in recycling and waste reduction. The increased costs to process recyclables is temporary, and it will help many industries find new ways to decrease their waste streams. By taking a few short steps of auditing waste usage, installing proper recycling bins and signage, avoiding contamination and educating others about different disposal methods, we can all make a difference in the industry and the bottom line. **FMI**

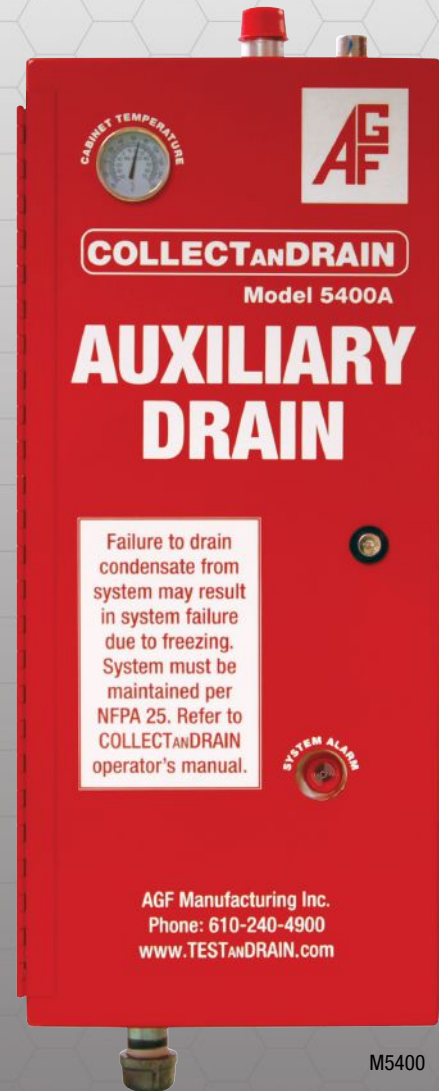
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Matthew S. Hollis and the team at Elytus are proud to help their clients become more sustainable and environmentally friendly. In 10 successful years of business, Elytus has aided its clients in saving 175,000 admin hours, 20 million trees, and over US\$11 million dollars — all through its innovative technology and passion for the environment. Today, Elytus has over 50 nationwide clients — including many popular chain restaurants and grocery stores — servicing over 10,000 locations. These clients use Elytus to track their waste, reduce their hauling costs and to implement waste minimization strategies. For more information on Elytus, please visit them online at www.elytus.com.

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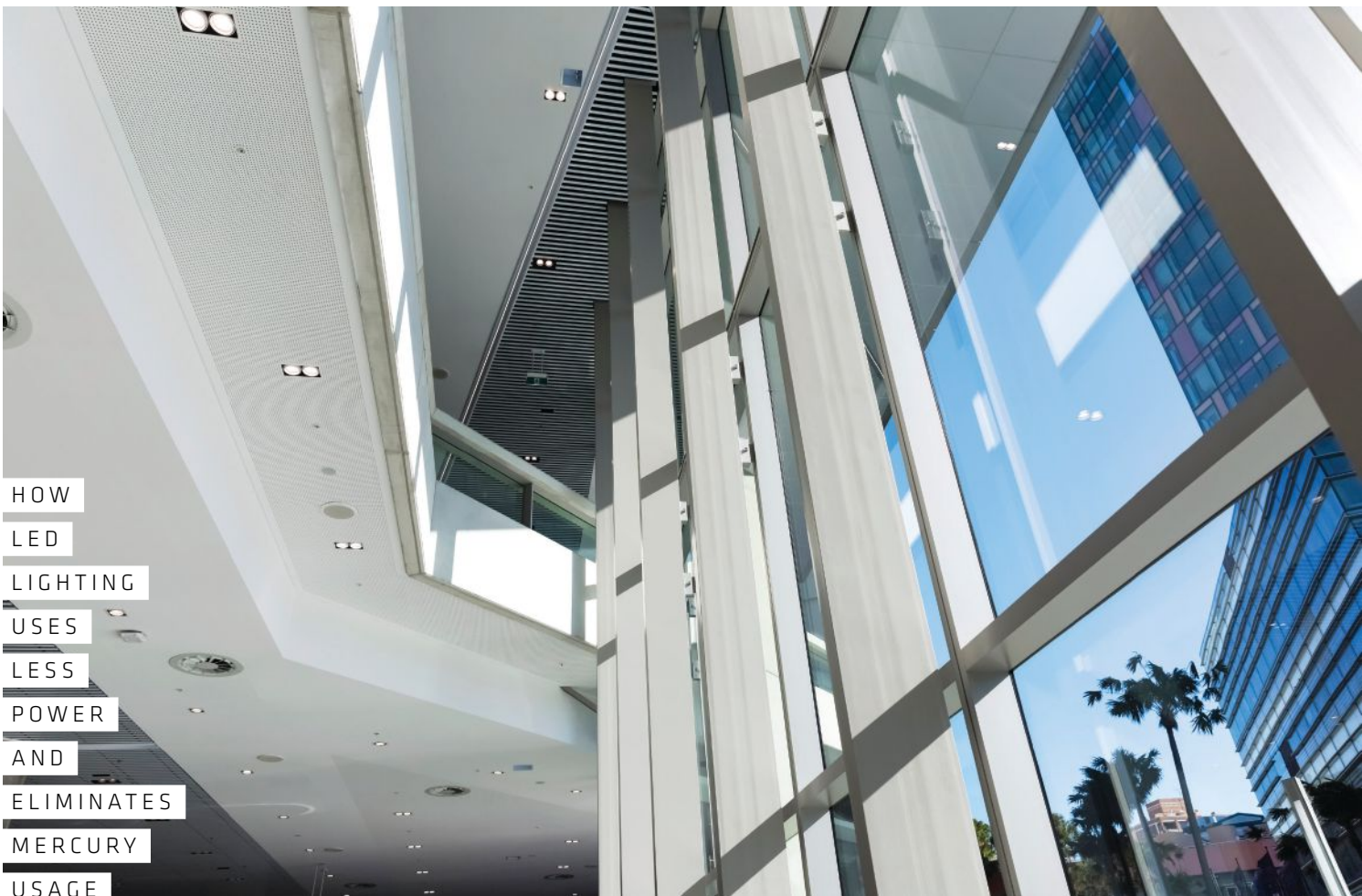
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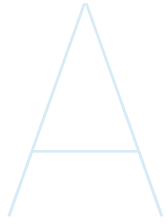


BY BOBBY FARRIS

Sustainable Retrofits



HOW
LED
LIGHTING
USES
LESS
POWER
AND
ELIMINATES
MERCURY
USAGE



According to the United States Energy Information Administration, a staggering 92 percent of all lit buildings in the U.S. have standard fluorescent lighting. There's a good reason for the disproportionate use of fluorescent lighting throughout the non-

residential sector – it works. Fluorescent lights provide a variety of visible light spectrum options and are inexpensive. Additionally, fluorescent lamps were the most energy-efficient choice in the past. For businesses and facilities that had to consider the budgetary impact of utility costs, fluorescent lamps had long been the best choice for keeping electrical cost under control.

A study in schools

To see the impact of fluorescent versus LED lamps, let's look at a school district outside of San Antonio, Texas, USA. The district has a total population of about 68,000 students and 13,500 faculty and staff spread over seven high schools, 14 middle schools and 46 elementary schools. To power the lighting in a large school district is an expensive proposition. If the district used incandescent lighting, the costs could be estimated at a staggering US\$90 million or more. But by using fluorescent lighting, the approximate costs are a much more manageable US\$30 million per year.

But what if they could save even more money? Technology has finally brought a viable, money-saving option for large-scale lighting customers. The light emitting diode (LED) has existed for decades, but only recently it became financially viable for widespread use. LED technology has substantially fallen in price over the last decade and design options have increased — paving the way for facilities to switch out fluorescent lamps.

The first and most attractive benefit to LED lighting is energy efficiency. Looking at the standard 32-watt fluorescent bulbs the school district uses, it is possible to swap out these lamps for an LED replacement that gives off the same amount of light (measured in lumens) while operating at 13 watts. Immediately, the district can slash their lighting costs by more than half.

Next, consider that a fluorescent bulb may last 8,000 hours. An LED equivalent is rated to last 25,000 hours, or three times as long. Although the fluorescent lamp would only cost roughly US\$1.83 retail compared to the LED equivalent, costing around US\$5, the operational lifetime of the LED is more than three times as long. Longer operating life means lower cost of maintenance.

If custodial and maintenance staff need to change lamps a third as often as they currently do, there is a direct operational savings. Plus there is the added benefit of freeing up manpower to focus on other responsibilities.

In the most rudimentary retrofit program — simply switching out fluorescent

lamps for more efficient LED lamps — substantial savings can be obtained. To take this even further, companies that specialize in lighting and energy efficiency can perform large-scale energy audits and design a complete overhaul of the lighting systems in a complex environment like a school district. An efficiency specialist can analyze the technical capabilities of a facility and determine if the retrofit program should focus on lamps, fixtures, controls or a mixture of all the lighting components to achieve the desired outcome.

A clear example of energy savings through an LED retrofit is a medical center near Wichita, Kansas, USA. By switching out fluorescent lamps for high-performance LEDs, the hospital took the annual electrical usage of 1,712,550 kilowatt-hours down to 495,278 kilowatt-hours. Obviously, the electricity cost savings will pay for the initial investment in the LED lamps, but it is also important to note that changing over to LED lighting will have a noticeable impact on the hospital's ability to remain compliant with the U.S. Environmental Protection Agency.



Advantages of EPA compliance

Fluorescent lamps are considered universal waste by the EPA because they contain mercury. As a universal waste, spent fluorescent lamps must be properly and safely stored until disposal can be facilitated. The EPA has strict rules regarding the handling of fluorescent lamp waste, and storage can be a hassle. A hospital, college or any other non-residential facility is obligated to maintain spent lamp storage, prevent accidental breakage of spent lamps and coordinate disposal with a certified hazardous waste handler. Eliminating fluorescent lighting from a facility or campus can free up storage space and lessen the amount of manpower spent on waste compliance.

Furthermore, when a lighting and efficiency specialist performs a retrofit, they can use drum-top bulb crushers to compact the fluorescent bulbs in an environmentally sound way. Bulb crushers attach to a steel drum for collection of compacted bulbs. Using a four-stage activated carbon filtration system to lock in the mercury, the system has HEPA fil-

tration to protect the air.

By compacting, a contractor can lock and neutralize the mercury from as many as 1,350 fluorescent lamps in a single, steel drum. This helps prevent accidental contamination of a facility from lamp breakage and can be beneficial in OSHA-compliance, as well. Of course, this also cuts transportation cost for the waste and protects the environment, not to mention drastically reduces the project footprint.

Combining technologies

There are several energy-saving technologies that can help facilities dramatically cut their utility costs. Replacing older fluorescent lighting with LED systems means facilities can take advantage of the higher flexibility of LED lamps. An energy efficiency specialist can integrate the retrofit fixtures and lamps with occupancy sensors, allowing lights in unused areas to power-down when not needed.

Lighting engineers can also utilize the relatively new science of daylight harvesting, which is the science of managing the natural light available indoors. Bring-

ing the sun's broad spectrum of light into an interior space not only saves electricity, but has been scientifically proven to improve mental focus and productivity.

On a recent retrofit project at a Fortune 500 company in Fort Collins, Colorado, USA, energy efficiency specialist ASG Energy removed 16,500 fluorescent lamps. The lamps varied in age, but there was an average of about six milligrams of mercury in each lamp. A quarter-pound of mercury captured may not seem like very much, but according to the provincial government of Prince Edward Island, 500 milligrams of mercury (the amount in of mercury in a household thermometer) will contaminate enough water to fill 200 Olympic swimming pools.

By using a drum-top bulb crusher on the project, a quarter-pound of mercury was safely reclaimed. If accidentally released, that would be enough mercury to poison all the water used by the entire state of Utah on any given day.

The environmental impact doesn't end there. In the case of the Fort Collins retrofit project, reducing the energy consumption by 2.4 million kilowatt-hours a

year reduces the mercury emissions related to burning coal by about 56 grams. According to the Union of Concerned Scientists, burning coal for electric generation releases sulfur dioxide (SO₂), nitrogen oxides and particulates (soot) that include lead and heavy metals into the air.

The LED conversion prevented 1,787 metric tons of CO₂ greenhouse gases from being released into the atmosphere. By converting to LED lighting and high-efficiency lighting controls, the customer in Fort Collins is making a measurable difference in their community's air quality and overall environmental health.

Up-front investments

Change can be expensive; there is no denying this fact. To perform a major retrofit, there will have to be an up-front investment. Fortunately, there is great support for facilities that are in-

terested in making such a change. Utility companies and several other entities are offering incentives for facilities that are making the switch to high-performance LED lighting.

In the case of the Texas school district, grants and incentives of more than US\$300,000 helped fund the project. An experienced retrofit partner or energy provider will be able to help facility management find all appropriate grants, incentives and discount programs to make the initial investment more affordable. It is also important to note the price of the project is often recouped within three-to-five years. The energy savings alone is usually enough to justify the cost of the retrofit.

Whether a facility is looking to gain accreditation for energy efficiency or environmental impact reduction, or the organization is simply looking for a way to make a long-term cost reduction, a lighting retrofit program may be the answer. **FMJ**

RESOURCES

1. U.S. Energy Information Administration: Trends in Lighting in Commercial Buildings – www.eia.gov/consumption/commercial/reports/2012/lighting
2. ASG Energy, LLC – <http://asgenergyllc.com>
3. TerraCycle Bulb Eater – <https://www.aircycle.com/bulb-eater-3l>
4. Prince Edward Island Communities Land and Environment – www.princeedwardisland.ca/en/topic/communities-land-and-environment



Bobby Farris, General Manager of TerraCycle Regulated Waste, a subsidiary of international recycler TerraCycle, heads the corporate division focusing on regulated waste materials, including fluorescent light bulbs, batteries and electronics. Formed from the acquisition of Air Cycle Corporation in 2017, TerraCycle Regulated Waste is the manufacturer of the Bulb Eater® drum-top fluorescent lamp machine which crushes spent fluorescent lamps into 100 percent recyclable material while capturing released mercury vapors. Farris received a bachelor's degree from the University of Oklahoma, a master's degree from Florida State University and performed two years of doctoral studies at Claremont Graduate University.

An experienced retrofit partner or energy provider will be able to help facility management find all appropriate grants, incentives and discount programs to make the initial investment more affordable.



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Kronos and IBM Watson collaborate to leverage AI for the hourly workforce

The U.S. Department of Labor estimates 58 percent of the American workforce – more than 80 million people – are paid by the hour. In companies with a large hourly workforce, it's difficult for managers to provide one-on-one career guidance.

Workforce and human capital management firm Kronos recently partnered with IBM to create an AI-powered Watson Career Coach for hourly workers. The collaboration will help improve the engagement, performance, career development and retention of hourly workers and simplify the complex task of managing this important segment of the global workforce.

When integrated with Kronos Workforce Dimensions, IBM's Watson Career Coach will streamline and simplify daily workforce management such as shift scheduling, personalized training recommendations and career coaching, all accessible over mobile devices.

Employees will be able to interact with Watson Career Coach technology via chat for guidance on career pathing and opportunities for advancement, as well as training courses and milestones required to receive a raise or promotion.

VISIT
ibm.com/talent-management/career-coach

Terminix Commercial releases in-depth pest report

If you're struggling with a beetle infestation in your satellite clinic, you're not alone. Forty-six percent of facility managers in smaller health care facilities encounter ants, beetles and spiders more than any other pests – that's according to Terminix Commercial's "Pest Perceptions Report," an in-depth study of pests in commercial settings.

Released in conjunction with Terminix Commercial's new brand launch centered on a commitment to putting business first, the report includes the most commonly reported pests by industry and region, outlines the impacts of an infestation and lists business leaders' top reasons for seeking pest management services. Among the facts revealed in the report:

- » Roughly 1 in 5 businesses do not work with a pest management expert.
- » For more than 50 percent of businesses, the biggest impact of a pest infestation is reputational damage.
- » Seventy-eight percent of businesses are confident their facilities are pest-free; however, 65 percent feel their buildings could be vulnerable to a future infestation.
- » The greatest driver in partnering with a pest management service is sanitation, followed closely by employee and guest safety.

Whether you need to pinpoint pest issues in different regions of the country or you're interested in industry-specific pest-control protocols or you want to boost a business case for partnering with a pest management professional, this information can help. A leading pest control provider for more than 90 years, Terminix Commercial backs up their work with a 110 percent guarantee.

DOWNLOAD THE REPORT
bit.ly/tmx_blog

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Can a chair be terrifying?

Upright, the Magis Spun Chair has the appearance of a sculptural vessel; but when leaned on its side, it becomes a fun and functional chair that lets you rock side to side or spin around. Architect and designer Thomas Heatherwick created the Spun Chair using a rotational molding technique to shape plastic. Described as simultaneously terrifying, exhilarating and playful, Spun Chairs are appropriate for indoor and outdoor public spaces, office projects and more. Available through Herman Miller.

VISIT
bit.ly/hm_spun

IN ACTION
bit.ly/spun_video



"It's a confusing object. It only becomes a chair when you incline it. Normally somebody gets terrified of going all the way around and then realizing they can — there's a sort of art to doing it."

– Designer Thomas Heatherwick

New adaptive structure brings the indoors out



Upfit's louvered roof system provides shelter from the elements. Posts and beams route electricity to power lights, display monitors and overhead fans.

With so much attention on the wellness benefits of incorporating nature into the workplace, we've perhaps overlooked a simple and equally (if not more so) beneficial alternative: bringing the workplace into nature.

A new outdoor structural system can create useful outdoor environments for work, education, play and travel. Upfit™ transforms underutilized spaces within public areas and on corporate, academic and health care campuses into sought-out destinations, such as classrooms, meeting spaces, retreats and transit stations.

Spaces that are often overlooked and undervalued hold a great deal of potential. The Upfit "kit-of-parts" includes a simple post-and-beam structure, a louvered roof with weather management capabilities, and open roof, power and embedded lighting. Attaching peninsula and inline tables support individual and group activities. A range of panel options divide space, create boundary and provide functionality:

- » Louvered panels angle to shade interiors;
- » Slatted panels provide semi-private outer and interior division;
- » Glass panels in several colors act as marker boards;
- » Green panels with wire screens create plant walls.

VISIT
bit.ly/lm_upfit

POWR2 launches hybrid energy system

POWR2's Hybrid Energy System (HES) is a rental-ready, portable power supply that integrates with diesel generator systems to optimize efficiency of power generation and reduce unnecessary noise, emissions and fuel waste.

The power supply features leading lithium ion battery technology and automatic load level sensing, allowing it to switch power flow as needed between the generator and the HES. This includes using the generator for higher loads and stored energy for lower loads. The HES also enables the storage and use of alternative energy sources when paired with electricity-producing systems such as solar, wind and hydroelectricity. Compared to diesel generators, it's silent, making it ideal for noise-sensitive job sites and events.

In addition to construction sites and temporary buildings, Hybrid Energy Systems are ideal for:

- » **Sporting events, concerts, music festivals:** Cuts ambient generator noise for a better attendee experience.
- » **Movie sets:** Provides extended periods of silent and emission-free power to eliminate the distraction of generator noise.
- » **Oil & gas:** Particularly in remote locations, HES offers the ability to mitigate low load dangers and reduce refueling costs.
- » **Cyclical loads:** For freezers, HVAC and motors that demand sporadic power, HES can manage the demands and draw recharge from the generator only when needed.

VISIT
<http://powr2.com>



POWR2 launches Hybrid Energy Systems to cut costs, improve efficiency, extend asset life and better care for the environment.

UniQuad wall system illuminates the University of Washington's sustainability mission

Central utility plants are usually out of sight, out of mind on most college campuses; but the University of Washington's West Campus Utility Plant (UWCUP) is an exception, drawing visitors from around the area to see the 19,000 sq. ft. UniQuad translucent wall system by Kingspan Light + Air | CPI Daylighting.

Providing water and emergency power to the University of Washington's Seattle campus, the 100-year-old West Campus Utility Plant needed an upgrade that not only improved the facility's aesthetics, but also showcased the school's commitment to sustainability. With the ability to daylight interiors and reflect heat and glare simultaneously, the UniQuad wall system reduces equipment load by shielding it from direct sunlight.

Campus architects did extensive research on discoloration over time to find the most durable product on the market, comparing multiple polycarbonate products and existing product applications. The UniQuad wall system ranked highest in its ability to withstand elements over time without yellowing.

"We went with the UniQuad because it's an engineered system. Other polycarbonate products just give you the panels and an engineer has to put it together. With the UniQuad, we were able to develop our own system," said Architect Anton Dekom, AIA, ENV-SP, The Miller Hull Partnership, LLC, Seattle.

Kingspan Light + Air, formerly known as CPI Daylighting, is headquartered north of Chicago, Illinois, USA, and is an award-winning innovator of translucent daylighting solutions for high-performance building envelopes.

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cpidaylighting.com

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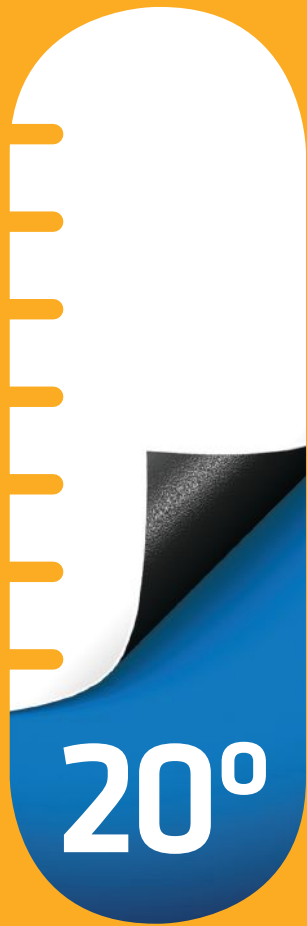


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Joe Harris

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Ask the Experts

In each issue of FMJ, IFMA's Facility Management Consultants Council shares some commonly asked FM-related questions accompanied by advice from top FM consultants. The questions and answers presented in this section align with IFMA's core competencies following the themes outlined for the given edition of the magazine. 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. The theme of this edition of FMJ is **"The How-To Issue."**

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."

Q I manage my company's 500,000 square foot (46,451 square meter) corporate headquarters. I have had an integrated workplace management system in place for five years. We use it for space planning, space management, move management and maintenance management. Our system has additional capabilities such as asset management, lease management (we lease seven other buildings throughout the country) real estate management, capital program management and environmental sustainability. How can I leverage this technology to provide the maximum amount of value to my company?

Questions regarding the Ask the Experts section?

Mark Sekula

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President of Facility Futures, Inc.

msekula1@wi.rr.com



This is a great opportunity, but one needing careful consideration. I would seek answers to some of these questions:

- Do the packages in place now provide a maximum value commensurate with your resources to support? Did you rewrite them to meet your company's needs? Some users say 70 percent might be required.
- Will you evaluate each of the other packages separately or bring in the whole capability? These are very different processes. How will you evaluate their value and cost? Can these be benchmarked in your industry?
- How much might they have to be rewritten to fit your company? Do they fit your current workflows, or do you have to alter those to reduce the systems rewrite? What will the supplier do for you?
- Do you feel comfortable putting all these eggs in one basket? What are your backups should the company go belly up? Have you ever considered eliminating or outsourcing a package?
- Do you have an emergency plan in place now, and can it be expanded in the future with other packages? Who backs up all your data, and how is this done? Is there a proprietary concern with this information?
- Are there internal resources (systems support, data input/review people, online tools, etc.) that give you a high probability of successfully continuing? Does the supplier provide necessary support at a reasonable cost?

Having success to date is comforting but check for stability and then evaluate future adds accordingly. A good consultant gives advice — and a great one asks (sometimes unpopular) questions.

Dr. Doug Aldrich, CFM, IFMA Fellow

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The system mentioned certainly covers many facets of the FM mandate. Here are a few additional important considerations:

Resources to manage and maintain the system. Even with the best systems that are user friendly and streamlined with various portal options and modules to reflect the organizational requirements, it is imperative that you have enough dedicated and trained staff to manage and maintain all components of the system.

Meaningful information that is readily accessible. Dashboards and summary information enable you to drill down upon request for further details. This information should only contain the key data elements that correlate to measurable goals and metrics.

Automated tasks and exception report generation. Have the system periodically generate reports and send to targeted user groups based on triggers or defined criteria for key performance. No lengthy reports. Just a snapshot of progress and comparative data from the last interval. Highlight the exceptions where the focus needs to be for follow up.

Flexible interface for ad-hoc queries. Have an option to mine data for specific queries that are not part of canned tabular reports.

Shared data repository. If the above system is from one vendor, there should be a standard integrated approach for maintaining user data and lookup information. If some of these needs are being met from different vendors, then information will be duplicated and not shared unless integration strategies are employed with some form of middleware, which is another challenge to keeping everything consistent and functional.

Ability to export information. This sounds fundamental and it is a feature most systems should have. That said, how much work must be done to extract this data for use in another tool or platform?

AI and analytics. You hear a lot these days about artificial intelligence (AI) and how this can be implemented for capabilities that increase responsiveness to workflows that would normally require several manual processes and human intervention to facilitate a similar result. At a minimum, you want to leverage the analytical capabilities of business intelligence tools and platforms that can be configured for specific needs and objectives.

Wayne T. Collins, CFM, RPA, FMA

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Visit FMCC online or join the conversation on the council's LinkedIn group

—
fmcc.ifma.org
 or <http://linkd.in/1gAa8ae>

Lightspeed Technologies Interior Renovation

Kingston, Pennsylvania

General Contractor & Cost Estimator

A. Pickett Construction

The Lightspeed Technologies project was the interior renovation of an existing 12,100-square-foot space. The needs of the tenant for this project included large open areas for receiving and warehousing space, labs, and staging areas for computer equipment.

Most of the building is to be used as office space for employees; this includes standard grade finish in offices, planning rooms, open collaboration areas, game room, and whiteboard rooms. At the heart of this project is a modernized and improved entry / "core" area of the building that has an upgraded reception area, large conference room with interior storefront system, employees' café area, waiting room, and some open collaboration space that is visible to incoming visitors.

The original building was constructed in the late 1990s. When A. Pickett arrived on the project, they needed to gut the interior of the building, preserving only about 10 percent of the existing partitions. Additionally, they needed to provide structural steel support at one column line where a load bearing wall was removed. This work consisted of four columns, two beam pockets in the existing masonry walls, and five beams totaling about 60 linear feet in total length. The columns sat on shallow concrete spread footings. Existing slab-on-grade demolition and removal was required for these new foundations.

After all existing ceilings, floor finishes, window treatments, and other finishes were removed, construction started basically from a blank slate. The slab-on-grade foundation was removed at the restroom areas to accommodate new plumbing layouts and sanitary tie-ins to existing mains. New framing for partitions was non-load bearing metal stud construction with sound batt insulation and drywall finished ready for paint.

The staging areas, testing lab, and inventory area are finished with standard 2x4 suspended ceilings with painted drywall walls and ground and sealed floors.

In the core area of the building are solid surface countertops set on millwork with locally sourced reclaimed wood. In the café area, walls are painted drywall, and ceilings are a combination of suspended drywall ceiling clouds and open painted structure above.

The core area features built-in benches and planters that are clad in locally sourced reclaimed lumber and allow for an open collaboration space.

One of the other main features upon entry is the large conference room that is partitioned off partly with the slim line PK-30 engineered aluminum glazing framework.



Built-in benches clad in locally-sourced reclaimed lumber promote collaboration.



Lighting strips offer the appearance of data flowing through a cable network.

This allows full views into the conference room through the glass wall.

Both the walls and the ceiling clouds in the core area are fitted with black accent strips of medium-density fiberboard (MDF), along with linear lighting by PMC Lighting to offer the appearance of data flowing through a network cable.

The building was fitted with all-new plumbing fixtures in all four of the restrooms. New water supply lines were run throughout. Underground sanitary piping was modified and tied into existing waste lines wherever possible. The main lavatories include upgraded fixtures, while the two smaller employee restrooms have standard fixtures.

The HVAC system for the building used existing units, one of which was relocated. The ductwork was completely removed from the building during the demolition stages and was all rerun as part of the reconstruction. There is a combination of exposed and concealed ductwork, 25 percent of which is exposed, painted spiral duct.

The electrical service to the building was adequate for the building's new use. New electrical distribution throughout the building was roughed in as construction was ongoing. The existing troffer lights were removed, retrofitted for direct wire LED lighting, and replaced. All specialty lighting (i.e., hanging lights and linear) were purchased new for the project.

The building received a completely new fire alarm system that was purchased by the owner.



In the café area, ceilings are open painted structure.

Product Information

Windows: Trulite Glazing
Entrances: & Storefronts: Haas Door, Steelcraft Door with Mohawk Veneer Surface
Flooring: Bentley, American Olean, Mohawk, Roppe
Interior: Sherwin Williams, Custom Millwork, National, Armstrong
Lighting: Amerlux, Trac-Master

RICH JANIS HONORED BY ST. LOUIS CHAPTER



The St. Louis Chapter of the International Facility Management Association gave its Lifetime Service Award to Rich Janis. The honor was presented during the chapter's annual holiday celebration.

Janis played an active role in IFMA St. Louis for 28 years. His dedication included tenure on the program and education committee for nearly two decades. During that time, he presented more than 25 educational programs to IFMA St. Louis members. Additionally, he served on its board of directors for six years.

"Rich's constant focus was to share his knowledge and expertise while presenting quality educational programs to the professional facility managers," said Jennifer Johnston, president of IFMA St. Louis, when presenting the award.

A registered professional engineer and architect, Janis spent more than 40 years in consulting. A LEED-accredited professional (Building Design + Construction), he has been involved in research, evaluation and design of building environmental systems and sustainable energy technology.

Janis has served on the board of the United States Green Building Council's regional chapter. He was the engineer-of-record and LEED AP for numerous LEED-certified buildings, including the first LEED Gold data center in the St. Louis area. He also taught building technology and sustainable design courses in the Schools of Engineering and of Architecture at Washington University.

Janis earned master's degrees in mechanical engineering and architecture from Washington University and a bachelor's degree in mechanical engineering from the University of Missouri-Rolla, now called the Missouri University of Science & Technology.

Denver Chapter Participates in Mayor's Sustainability Summit

On Nov. 29, the IFMA Denver Chapter exhibited at the Denver Mayor's Sustainability Summit. Chapter members were able to meet and network with community members and had the opportunity to share information and connect with local facility managers. The event had a videographer who recorded a spotlight for each exhibitor. Denver Chapter Past-President Carolyn McGary gave her spotlight speech about IFMA in the video. Also in the video, Denver Chief Sustainability Officer Jerry Tinianow gave a good overview of this 4th annual event with approximately 900 attendees. View the video at <https://youtu.be/8mtejFlna9A?t=1495>.

JOSHUA HOBGOOD



Facilities program manager Joshua Hobgood has worked in FM for 18 years. In his current role in Fredericksburg, Virginia, USA, he manages programs in a government facility. He chose FM because he enjoys the challenge and creativity in solving problems throughout the organization.

"I enjoy giving back to my community. I do this through coaching youth football and running a nonprofit for veterans called Black Dog Hunting. More information on www.blackdoghunting.com."

MATTHEW S. BARNGROVER



Based in Columbus, Indiana, USA, Matthew S. Barngrover is a facilities leader for Cummins, Inc. He spent 23 years in the manufacturing industry, with five years in facility management. Born and raised in Lafayette, Indiana, he graduated from Purdue University and joined the profession because the build environment touches everyone's life.

"It's something that touches everyone every day, and hopefully we can make everyone's day a little better."

MEL MULDROW



After 22 years in the Air Force in a clinical medical position as an operating room scrub, Mel Muldrow became a hospital administrator and vice president for support services. He became responsible for everything from facility management to environmental services and nutritional services. After managing hospital renovations and remodels, he became administrator of the construction management division for the state of Wyoming.

"I would not change the journey I have been on nor would I change where I am today. It's been quite a fun and remarkable ride."

RAFAEL BERUMEN



New member Rafael Berumen is REMS Regional Managing Director for Mexico at Colliers International. Based in Mexico City, he has been in facility management for 30 years. He got his start when FM was one of his responsibilities as asset manager and head of operations for many years. His company provides facility management services in commercial, industrial, retail and educational buildings in Mexico.

"I enjoy making horse sculptures."

INSIDE IFMA

IFMA Foundation Introduces Training Framework

The IFMA Foundation, with support from IFMA, has released a new Facility Management Training and Development Framework to address the challenge of insufficient holistic guidelines for training, particularly in the technical fields. While IFMA's world-class suite of professional credentials remains focused on core competencies for practicing facility managers, the Facility Management Training and Development Framework provides needed guidance on acquiring or demonstrating mastery of specialized skillsets necessary in the built environment industry.

"FM professionals are increasingly likely to oversee a team of employees, contractors and outsourced labor to fill a matrix of skills necessary to manage a facility portfolio," said the chair of IFMA's global board of directors, Graham Tier, CFM, FMP, MRICS. "You need specialists for any number of building systems, and one of the greatest challenges for FM professionals in management is ensuring that the people on their teams have the training and skills needed to fulfill their roles. This exciting new framework is the solution the industry has been wait-

ing for — an easy-to-use catalogue of the training pathways available for an array of mission-critical roles."

The framework will feature training and professional development options from a syndicate of associations, working together for the first time to provide seamless support of the entire built environment landscape. As the established leader in the global FM community, IFMA has been driving industry unification for years, supporting global standards and related educational material.

"This is a tremendous opportunity for organizations across the built environment community to share and cross-promote their training resources," said Tier. "Practicing FM professionals can use the framework to bolster their own skills, train their teams or hire qualified team members. Aspiring FM professionals can identify a career path that gets them the training they need to take the next step. Working together, we're all going to be better off."

The IFMA Foundation, through its Global Workforce Initiative and Accredited Degree Programs, has a long history advocating to make FM a career of

choice. The new framework makes it easier than ever by charting specific career paths into FM and providing progressive training solutions in the field. As individual professionals progress through the framework, new training achievements will unlock new opportunities.

"This is the future of inter-organizational cooperation," said IFMA Foundation Chair Nancy Johnson-Sanquist, IFMA Fellow. "The old way of cordoning off your intellectual territory to serve a fixed audience simply doesn't work anymore. Career paths are too fluid. The Training and Development Framework gives the industry guidance while allowing the flexibility to navigate between training options to suit career and organizational goals."

Last year, IFMA and the Royal Institution of Chartered Surveyors (RICS) released a document to help companies develop a more strategic approach to FM and this new Facility Management Training and Development Framework finishes the picture, cataloguing specific roles that fall under the umbrella of FM responsibility and mapping the skills necessary to effectively perform those roles.



Facility Management Training & Development Framework

Facility Management Credentials



Facility Manager 11 Core Competencies

Defined by IFMA's Global Job Task Analysis

1. Communication
2. Facility Information Management and Technology Management
3. Finance and Business
4. Leadership and Strategy
5. Occupancy and
6. Operations and

Facility Management Workshop Series



Workshop 1: Introduction to Facility Management | Module 1: Introduction to Facility Management
 Workshop 2: Operations and Maintenance | Module 1: The Basics of Operations and Maintenance | Module 2: The Basics of Building Systems
 Workshop 3: Work Management in Facilities | Module 1: Supervisory Roles in Facility Work Management | Module 2: Applying Work Management

	Environmental & Hygiene	Security	Customer Services	
	Cleaning Operations	Security Operations	Call Center Supervisor / Operator	Building Repairs & Maintenance
4	Management of Customer Services (Level 4) SIX years property management industry (including FOUR years related job experience plus relevant training programs)	Management of Security Operational Works (Level 4) SIX years property management industry (including FOUR years related job experience plus relevant training programs)	Management of Customer Services (Level 4) SIX years property management industry (including FOUR years related job experience plus relevant training programs)	Management of Building Repair and Maintenance Works (Level 4) SIX years technical service industry (including FOUR years related job experience plus relevant training programs)
3	Management of Cleaning Works (Level 3) FIVE years property management industry (including THREE years related job experience plus relevant training programs)	Management of Security Operational Works (Level 3) FIVE years property management industry (including THREE years related job experience plus relevant training programs)	Management of Customer Services (Level 3) FIVE years property management industry (including THREE years related job experience plus relevant training programs)	Management of Building Repair and Maintenance Works (Level 3) FIVE years property management industry (including THREE years related job experience plus relevant training programs)
2	Cleaning Works (Level 2) THREE years property management industry (including TWO years related job experience plus relevant training programs)	Gardening Works (Level 2) THREE years property management industry (including TWO years related job experience plus relevant training programs)	Security Operational Works (Level 2) THREE years property management industry (including TWO years related job experience plus relevant training programs)	Customer Services (Level 2) THREE years property management industry (including TWO years related job experience plus relevant training programs)
1	Cleaning Works (Level 1) ONE year property management industry and related job experience plus relevant training programs	Gardening Works (Level 1) ONE year property management industry and related job experience plus relevant training programs	Security Operational Works (Level 1) ONE year property management industry and related job experience plus relevant training programs	Customer Services (Level 1) ONE year property management industry and related job experience plus relevant training programs
				Administrative Works (Level 2) THREE years property management industry (including TWO years related job experience plus relevant training programs)
				Building Repair and Maintenance Works - General Concrete (Level 2)
				Building Repair and Maintenance Works - General Carpentry & Ironmongery (Level 2)
				Building Repair and Maintenance Works - General Facility (Level 2)
				Building Repair and Maintenance Works - General Facility (Level 2) ONE year property management industry and related job experience plus relevant training programs

- ### Core Skills | Common skills for all staff
- Introduction to FM
 - Code of Conduct
 - Introduction to Environmental Policies
 - Introduction to Prevention of Pandemic Viruses
 - Operations
 - Facilities & Staff Appearance
 - Facilitate Effective Team Work
 - Facilitate Effective Customer Services
 - Safety Induction

- ### Auxiliary Skills | Basic work dependent
- Introduction to FM software
 - Introduction to Microsoft Office Suite
 - Crowd Management
 - Pandemic Preparedness

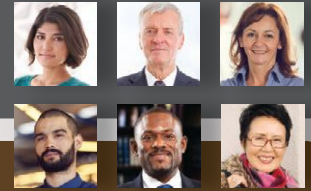


Human Factors
Maintenance

7. Performance and Quality
8. Project Management

9. Real Estate
10. Risk Management

11. Sustainability



Module 1: The Application of Technology in Operations and Maintenance | Module 2: The Implications of Health and Safety in Managing Buildings
Module 3: Work Management Tools in Facility Management | Module 4: Managing Contractors in Facility Management | Module 5: Managing and Tracking Customer Relations in FM

Technical Services

	Electrical	Fire	HVAC	Plumbing & Drainage	Energy & Building Controls	Lift
Maintenance including FOUR years related job experience plus relevant training programs	Management of Electrical Works (Level 4) SIX years technical service industry (including FOUR years related job experience plus relevant training programs)	Management of Fire Works (Level 4) SIX years technical service industry (including FOUR years related job experience plus relevant training programs)	Management of HVAC Works (Level 4) SIX years technical service industry (including FOUR years related job experience plus relevant training programs)	Management of Plumbing & Drainage Works (Level 4) SIX years technical service industry (including FOUR years related job experience plus relevant training programs)	Management of Energy & Building Controls Works (Level 4) SIX years technical service industry (including FOUR years related job experience plus relevant training programs)	Management of Lift Works (Level 4) SIX years technical service industry (including FOUR years related job experience plus relevant training programs)
Maintenance industry experience plus	Management of Electrical Works (Level 3) FIVE years technical service industry (including THREE years related job experience plus relevant training programs)	Management of Fire Works (Level 3) Five years technical service industry (including FOUR years related job experience plus relevant training programs)	Management of HVAC Works (Level 3) Five years technical service industry (including FOUR years related job experience plus relevant training programs)	Management of Plumbing & Drainage Works (Level 3) FIVE years technical service industry (including THREE years related job experience plus relevant training programs)	Management of Lift Works (Level 3) FIVE years technical service industry (including THREE years related job experience plus relevant training programs)	
Works (Level 2) THREE years property management industry (including TWO years related job experience plus relevant training programs)	General Electrical Works (Level 2) THREE years technical service industry (including TWO years related job experience plus relevant training programs)	General Fire Works (Level 2) THREE years technical service industry (including FOUR years related job experience plus relevant training programs)	General HVAC Works (Level 2) THREE years technical service industry (including TWO years related job experience plus relevant training programs)	General Plumbing & Drainage Services (Level 2) THREE years technical service industry (including TWO years related job experience plus relevant training programs)	General Lift Works (Level 2) THREE years technical service industry (including TWO years related job experience plus relevant training programs)	
Works (Level 1) One year technical service industry and related job experience plus relevant training programs	General Electrical Works (Level 1) ONE year technical service industry and related job experience plus relevant training programs	General Fire Works (Level 1) ONE year technical service industry and related job experience plus relevant training programs	General HVAC Works (Level 1) ONE year technical service industry and related job experience plus relevant training programs	General Plumbing & Drainage Works (Level 1) ONE year technical service industry and related job experience plus relevant training programs	General Lift Works (Level 1) ONE year technical service industry and related job experience plus relevant training programs	

Independent skills for FM staff

Construction Industry Safety Card Course
General Safety Guidelines for Confined Spaces
Accident & Complaint Handling

Optional Skills

- Continuing Education Certificate in Safety Auditing
- Energy Efficient Design & Installation
- Excellence Through Continuous Improvement
- Environmental Officer Course
- Gas Welding Training
- People Management at Work Place
- First Aid Course

Networking

IFMA Membership
www.ifma.org/membership

Cultivating the Modern-Day Workplace

Work has become a thing that we do, not a place where we go. The shift toward an increasingly mobile and flexible workforce is transforming the way people interact with and experience the workplace. It's also forcing us to rethink how we optimize space, paving the way for enhancing facility management with technology from integrated workplace management systems (IWMS) to 3D modeling and augmented reality.

This transformation in the way people work requires us to find new ways to utilize and optimize space in a way that drives productivity, encourages collaboration and reduces the cost of occupancy. At the same time, the workplace has become an important part of a company's brand, playing a role in attracting and retaining the best talent in an increasingly competitive job market.

The Transformation

The design of space used to be fairly standard. In most offices, standard conference rooms were scattered among row after row of identical cubicles. Organizations would drive more value from this space by increasing the density and reducing the amount of square footage per employee, which was challenging because computers and screens were large and instead of storing documents in the cloud, copious amounts of paper files required storage. Each employee had a dedicated desk, and each desk looked identical. On average, 85 percent of the building was occupied by departments and 15 percent was vacant, unassigned and used as swing space for moves and stacking projects. It was fairly predict-



able but not efficient.

As the workforce moved to flex schedules and working from home, utilization of that space decreased. Today, we no longer need one desk per person. It's simple math to see how allowing 120 people to share 100 desks increases capacity by 20 percent. This can easily be accommodated when considering the number of people working for home, on vacation or visiting clients. When this form of thinking is applied across the building or the wider portfolio, we can look to reduce the total amount of square footage we need. Do we still need six buildings in London or could we consolidate alongside a lease break? These decisions can lead to big savings, which can be applied to other investments to optimize that space such as collaboration technology, better furniture style settings, a com-

plete redesign of the building or a new building entirely.

Most organizations still struggle with getting this right. Through continuing to allocate one desk per person, these organizations mark themselves as costly, less dynamic and less competitive than their peers who are embracing new ways of working and reaping the resulting dividends. And, the ratio of desks to employees is just the beginning. Even still, utilization of the workplace today is very low. If you walk through a typical office, utilization rates are usually around 45 percent. Compare that to the cost of space and how much an empty desk costs and the result is a lot of waste.

So, how do we transition from the workplace of yesterday to the dynamic and more engaging and productive workplace of tomorrow without moving to a new building? How do we create a space

that engages employees and attracts new talent? It requires a combination of technology, the right mindset and planning.

Rethinking Space

The dramatic transformation in the way people work means finding new ways to optimize productivity so that employees can communicate and collaborate more effectively with each other. At the same time, attracting and retaining talent requires a more stimulating experience than those provided in the conservative and restrictive workspaces of the past.

Where to begin? Some organizations are moving toward activity-based workspaces. For example, creating quiet zones for those who need silence to concentrate on a specific task such as writing. The converse would be a collaborative zone in a colorful environment that would accommodate multiple employees and encourage creativity.

Strategic Space Planning

Agile workspaces can build a strong and happy culture but with a larger number of employees now expected to share desks, rooms and various activity-based-working areas, there's a greater need for smarter room and more flexible workspace management. Strategic IWMS tools can help manage occupancy, space allocation, floor plans and optimize the sharing ratios between assigned

and shared spaces or desks.

For example, touch screens located outside meeting rooms allow users to schedule meetings, check in or out and view room availability at a glance. Corresponding mobile apps can help employees quickly find colleagues or an available space that meets their requirements — from last-minute meeting bookings to booking a desk as a touchdown space.

Capturing Workspace Utilization

It can be difficult to create a space that is flexible enough for 70 people one day and 300 people the next day. Yet, this kind of flexibility is no longer an option—it's the expectation of the talent you want to attract, and it is critical for a modern-day workplace.

Organizations are increasingly turning to data to help understand and make decisions around space utilization, design and operations. Technologies such as sensors and heat maps can help us understand when a space is being used. Sensors under desks or in the ceiling can detect available space and allow teams to quickly find free space for a meeting.

The best part? These technologies capture data for up-to-date information about occupancy and utilization. This data can be used to measure design effectiveness, quickly budget project costs, model move scenarios, optimize utilization and align

the workplace to the actual needs of the workers who are using that space.

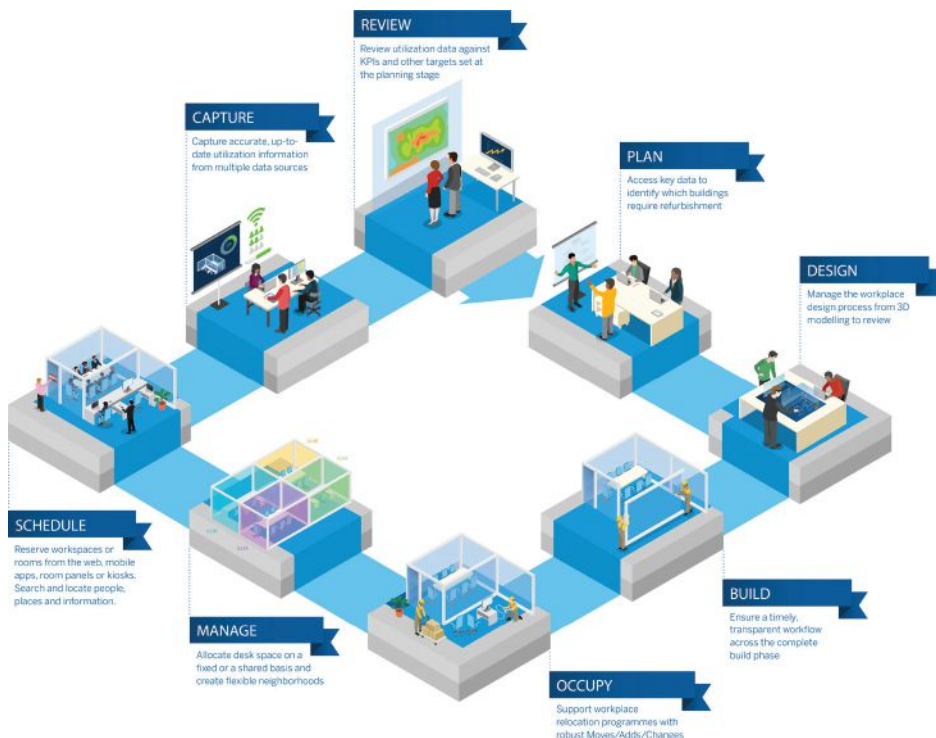
3D Modeling & Augmented Reality

3D workplace designs can help everyone involved in a renovation or new construction project visualize every aspect of the space — even down to furniture, flow and lighting. With 3D modeling programs, users can download digital replicas of the latest workplace furniture concepts from top brands, allowing them to redesign their workplaces with furniture selections from an online catalogue.

Augmented reality can take this concept a step further. With the latest viewers, users can bring a 3D model to life, allowing a workplace design team to actually walk the space in its current state, visualize the design in mixed reality and provide live feedback. This experience can be shared with the occupants, allowing the design team an opportunity for direct feedback on the concepts and options being considered from those who will work in the space. Allowing talent to visualize the future concept of their office and influence the outcome will be a powerful tool in winning over hearts and minds in the transition toward flexible working.

Completing the Loop

For facility managers responsible for planning and managing space, advances in workplace and design technology can help create a modern workplace. Moving toward a shared model of desk allocation will allow the organization to reap the flexible working dividend and use the savings to invest in a more collaborative and dynamic workplace. Using IWMS and space management applications as the foundation and combining them with cutting-edge technologies such as 3D modeling, augmented reality for workplace design, space utilization sensors and mobile working platforms, a facility can move closer toward achieving the agile workplace of the future. **FMJ**



Joe Harris is a workplace scheduling expert and business development manager for Trimble's Real Estate and Workplace Solutions. Harris has played an instrumental role in helping leading financial, legal and blue-chip firms maximize the use of technology for smarter, more efficient workspaces.

Vendor Profiles

The following product and service providers offer solutions for your everyday and specialized facility management needs.

ACOUSTICAL/SOUND MASKING

LogiSon Acoustic Network

Sound masking is a reliable and cost-effective method of providing speech privacy and noise control. The LogiSon Acoustic Network is a recognized industry leader with numerous awards for innovation, performance and ease of use. Small zones allow the masking sound to be customized for each facility. Networked control facilitates setup and takes the headaches out of making changes after moving furniture or personnel. Adjustments can be made in minutes, without opening the ceiling or altering cabling. Such a high degree of flexibility maximizes the masking's effectiveness and occupant comfort, helping to safeguard your most valuable investment: employees.

www.logison.com/target

+1-866-LOGISON

BUSINESS SERVICES

Polar Leasing

Polar Leasing has expanded the walk-in rental fleet to cover most of the United States, offering both short and long term rentals to industries of all types. Polar Leasing delivers portable refrigeration to places never before possible. With the largest all-electric fleet of temporary refrigeration, Polar Leasing offers more than 80 distribution depots and adding more every quarter. When you choose Polar Leasing, you're choosing a company that cares about the best interest of your needs.

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Connectrac® wireways are the best floor-based solution for bringing power, data and communications from the wall to all interior commercial applications without core drilling, trenching or unsightly power poles. Available in In-Carpet or On-Floor options, Connectrac provides its customers with cable management that is easy to install and gives a subtle and elegant look to a workspace. Connectrac is quickly becoming the go-to solution for top corporations, government agencies, and universities.

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FIRE PROTECTION SYSTEMS

AGF Manufacturing, Inc.

AGF is the designer and manufacturer of the most reliable and versatile line of inspector's test and drain valves, auxiliary drains, corrosion monitors, air venting valves, and accessories for the Fire Sprinkler industry. AGF provides the best products, backed by a strong commitment to customer service, to help manage fire safety systems more efficiently, resulting in more reliable systems that save resources. Our product line includes: TESTANDRAIN®, COLLECTANDRAIN®, CORRINSITE™, PURGENVENT™, REMOTETEST®, INSPECTOR'STEST™, RISERPACK™, and TESTANSAVE™.

www.agfmanufacturing.com

+1-610-240-4900

FURNITURE

Proline

FM:Systems helps facilities and real estate professionals reduce costs and increase productivity. FM:Systems software improves management of space, occupancy, moves, maintenance, leases and property.

www.1proline.com

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FM CONSULTANTS/SERVICES/PROVIDERS

C&W Services

C&W Services is one of the largest facility services companies in the USA & Canada with a 65 year history of helping clients drive down operating expenses, increase facility efficiency, and enable strategic business decisions. Services are janitorial, maintenance, critical environments, landscaping, and office services. Formed by the merger of Cushman & Wakefield and DTZ, C&W Services is the only firm in commercial real estate to self-deliver facility services.

www.cwsservices.com

+1-888-751-9100

Kellermeyer Bergensons Services

FM:Systems helps facilities and real estate professionals reduce costs and increase productivity. FM:Systems software improves management of space, occupancy, moves, maintenance, leases and property.

www.kbs-services.com

+1-800-537-1375

Vendor Profiles

HEALTH/SAFETY

Regan Scientific

The BOT-3000E Tribometer, from Regan Scientific Instruments, is a highly precise, digital instrument capable of measuring the dynamic and static coefficient of friction (COF) of walkway surfaces in the lab and in the field. It is the only device qualified for use with ANSI A326.3 “American National Standard Test Method for Measuring Dynamic Coefficient of Friction of Hard Surface Flooring Materials” released in April 2017.

www.reganscientific.com

+1-817-552-4022

RESTORATION/MAINTENANCE

Miracle Method Surface Refinishing

Miracle Method’s restores and update existing tile, porcelain, laminate, cultured marble and fiberglass surfaces, saving its customers millions of dollars in renovation costs. By hiring Miracle Method, facility managers eliminate costly replacement of leaking shower pans, ugly tile, laminate countertops and bathtubs from their capital budget. With 135 offices, Miracle Method is a time and money saving solution for facility managers of office buildings, government facilities, schools and hotels.

www.miraclemethod.com

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ROOFING

Sika Sarnafil, Inc.

Sika Sarnafil I supplies high-quality thermoplastic roofing and waterproofing systems for commercial buildings. Includes energy-saving reflective roofs, vegetated green roofs and solar-ready roofing.

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ARCHIBUS, Inc. is the #1 global provider of real estate, infrastructure & facilities management solutions and services. Marked by nearly 40 years of continuous innovation, our industry-leading enterprise software provides unique intelligence on your real estate, infrastructure & facilities through Enterprise Information Modeling (EIM), providing:

- High efficiency collaboration
- Insight & actionable intelligence
- Common operating picture of results for both operational & strategic stakeholders

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