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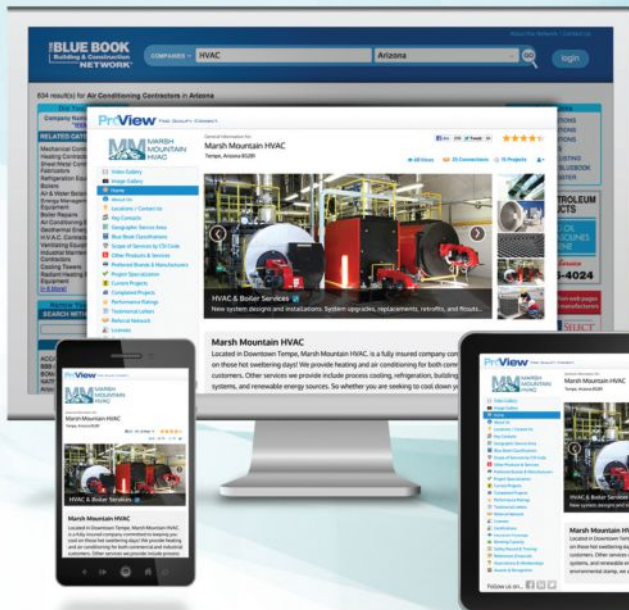
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BEYOND COLLABORATION: Workplaces that Innovate

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ON THE COVER

18 Beyond Collaboration: Workplaces that Innovate

// BRADY MICK



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BEHIND THE COVER: *Is it possible to be innovative while collaborating? This issue's cover isolates one person in a crowd to represent the struggles between working independently or with others to achieve a forward-thinking workplace.*



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ABOUT IFMA

IFMA is the world's largest and most widely recognized international association for facility management professionals, supporting more than 23,500 members in 94 countries. The association's members, represented in 130 chapters and 17 councils worldwide, manage more than 37 billion square feet of property and annually purchase more than US\$100 billion in products and services. Formed in 1980, IFMA certifies professionals in facility management, conducts research, provides educational programs and produces World Workplace, the world's largest facility management conference and exposition. To join and follow IFMA's social media outlets online, visit the association's LinkedIn, Facebook, YouTube and Twitter pages. For more information, visit the IFMA press room or www.ifma.org.

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*Check out the interactive version of FMJ, featuring **videos, online extras and more!** FMJ can also be viewed on mobile devices.*

THIS ISSUE

The online version of the publication includes interactive resources.



- **INFOGRAPHIC:** “Collaboration in the Post-PC Era” to accompany “Beyond Collaboration: Workplaces that Innovate” (p. 18)
- **ARTICLE:** “To Stay on Schedule, Take a Break” to accompany “Give Me a Break” (p. 24)
- **ARTICLE:** “Restroom Maintenance’s Total Package” to accompany “Coming Clean on the Condition of Restrooms” (p. 30)
- **E-BOOK:** “The Energy Manager’s Guide to Real-Time Submetering Data” to accompany “Manage the Energy or Pay the Bill” (p. 37)
- **VIDEO:** “IFMA’s World Workplace 2013 Conference & Expo Highlights” to accompany “World Workplace” (p. 44)
- **REPORT:** “2013 Trends in Global Employee Engagement” to accompany “Occupant Engagement” (p. 68)
- **VIDEO:** “Inspector Explains Thermal Imaging of Commercial Roof” to accompany “Roof Asset Management” (p. 74)
- **VIDEO:** “LED Lights for Commercial Office Use” to accompany “Caution: New Risks Arise from LED Technology” (p. 81)

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Facility Management Journal



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The screenshot shows the ProView website interface for Marsh Mountain HVAC. At the top left is the ProView logo with the tagline 'FIND. QUALIFY. CONNECT.'. Below it is the Marsh Mountain HVAC logo. The main content area features a 'General Information for: Marsh Mountain HVAC' section with the address 'Tempe, Arizona 85281'. To the right of this section are social media icons for Facebook (239 likes), Twitter (64 tweets), and a 5-star rating. Below the main information is a large image of industrial HVAC equipment with the caption 'HVAC & Boiler Services' and a sub-caption 'New system designs and installations. System upgrades, replacements, retrofits, and fitouts...'. To the right of the main image is a vertical strip of smaller images showing various HVAC components and installations. A left-hand navigation menu lists various categories such as 'Video Gallery', 'Image Gallery', 'Home', 'About Us', 'Locations / Contact Us', 'Key Contacts', 'Geographic Service Area', 'Blue Book Classifications', 'Scope of Services by CSI Code', 'Other Products & Services', 'Preferred Brands & Manufacturers', 'Project Specialization', 'Current Projects', 'Completed Projects', 'Performance Ratings', 'Testimonial Letters', 'Referral Network', 'Licenses', 'Certifications', 'Insurance Coverage', 'Bonding Capacity', 'Safety Record & Training', 'References (Financial)', 'Associations & Memberships', and 'Awards & Recognition'. At the bottom of the navigation menu are social media icons for Facebook, LinkedIn, and Twitter.

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EDITOR'S COLUMN

ANDREA SANCHEZ
Editor-in-Chief
Facility Management Journal

It's 2014 — time to stop wishing and start doing.

There comes a time when life makes you stop, for better or worse, to take a good look around you. No matter who you are, where you are and what you have, there is always an option to change. Don't settle for a road that inhibits you from growing both yourself and your profession. Rather than wait for the future to come to you, take the first step in creating your future.

Choose innovation

According to this issue's cover feature article on page 18, "Innovation is the pursuit of discovering questions that lead to different or unexpected results. It demands that people step outside of conformity and baseline expectations, with the understanding that not only is failure an option, but failure can be a precursor to future results."

To make a difference, you have to think differently.

To move ahead one needs to let go of ideal views of reality and not fear attempts at moving forward. I've been talking for years about sharing my passion for communications and relationship building through a personal blog and speaking opportunities; this is the year I stop trying to wait for perfection and start choosing progress.

New look for the New Year

If you haven't already noticed, IFMA's new look represents top-notch style. A new IFMA logo was unanimously approved by the board of directors in October 2013. For the details, go to page 66. The new logo paved the way to enhancing the look and structure of FMJ. Still bringing you a variety of FM hot topic articles fit for various levels of expertise, the FMJ team has given the January/February

issue a facelift — striving for an even more pleasurable reading experience.

We are also proud to unveil regularly recurring content from the Facility Management Consultants Council of IFMA and Facility Management Nederland in our exclusive FMJ Extended section beginning on page 93 (for those reading this in print, go to www.ifma.org/fmj to view the exclusive online content). Stay tuned for further growth in this section.

More value your way

As IFMA President and CEO Tony Keane states on page 12, "Awareness of FM is increasing. What can you do to increase the awareness of FM inside your organization and community? What are your goals for your IFMA experience?"

We aim to produce products, services, events and opportunities with our members' voices in mind. Tell us your FM story and how we can help position you to better achieve your professional goals. Through thought leadership in action (refer to World Workplace, FM Congress and FM in the City stories on pages 44-62) to an enhanced benchmarking experience through BEX (refer to page 42), our goal is to elevate you to be the best in facility management.

As IFMA members, we have the tools, resources, passion and people to make a difference in the profession. Stop wishing for what you want and let IFMA help you achieve your next professional milestone. Tell us what you need to pave the road you're aspiring for. Together we can shape the future of FM, rather than let it be created for us.

Until next issue,

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CHAIR'S COLUMN

JON SELLER
Chair, Board of Directors

The start of another year always takes some time to get used to — from remembering the new year when writing the date, to wondering where the previous year went.

I have recently been in Italy with the chance to spend some time with family and friends. One of the things that stood out to me is the number of buildings that are more than a thousand years old and still looking sturdy. How were these buildings managed, served or maintained? Did facility managers exist more than a thousand years ago? It's hard to think of any answer other than "They must have."

Maintaining the built environment

One of the areas of focus in this issue of FMJ is operations and maintenance. The critical element of maintenance is sometimes done exceptionally well, sometimes at an average level and sometimes not at all. Where budgets are tight there is a temptation to defer or cease maintaining building fabric, installed systems or interiors in order to minimize expenses in the short term. However, there is a point at which failing to carry out maintenance or repair failed systems results in higher overall costs than simply ensuring continued asset health.

This was evidenced to me recently. In a rarely used room the lighting switch had failed, and in order to keep the lighting functioning the switch had been bypassed so that the lights operated continuously. When the cost of the electricity was accounted for, the payback on the switch replacement was just two weeks. Later it was found that the switch had been in failure for three years. The moral of the story is to ensure that you look at the big picture before deciding what to do or not to do.

Embracing new challenges

2014 is looking like a busy year for IFMA. To begin with, we are in the midst of rolling out a new logo to our chapters, councils and affiliates.

Separately, at the board level we use a three-year planning cycle. The cycle includes strategic planning in year one, evolution into tactical initiatives in year two and deployment in year three. This year is the first year of the cycle, and the 2014-15 board of directors will be busy ensuring the optimal strategic direction for our organization.

Facility Fusion 2014: Two chances to attend

This year we will hold two Facility Fusion conferences — the first will be in Ottawa, Ontario, Canada in March and the second in Washington, D.C., USA in April. The intent of Facility Fusion is to provide a wide number of opportunities for growth and with an intimate setting that allows a focus on the individual. I hope that you can join us at one of these events.

A Spring Symposium will be held immediately before Facility Fusion Ottawa and will include the following courses:

- Project Management Course (FMP®)
- Finance and Business Course (FMP®)
- CFM® Exam Prep Workshop

A second Spring Symposium will be held immediately before Facility Fusion Washington, D.C. and will include the following:

- Operations and Maintenance Course
- Leadership and Strategy Course
- Facility Management: A Practical Introduction
- Essentials of Facility Management: Operations and Maintenance Workshops 1-4
- CFM® Exam Prep Workshop

An entry-level FM education offering has been developed and is currently being rolled out in a number of locations around the globe. The "FM Essentials" series is designed for people who wish to learn more about facility management. The series has three workshops and is designed to be delivered in a classroom environment. Stay tuned for more information on this over the coming months.

I hope that your year has commenced well and that your New Year's resolutions are not causing too many challenges. For our members, colleagues and friends in China, best wishes for the Year of the Horse.

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PRESIDENT'S COLUMN

TONY KEANE, CAE
President and Chief Executive Officer

Happy New Year!

It is hard to believe that this time last year we were moving into the new Service Center of Excellence in Houston, Texas, USA. 2013 flew by quickly as all years seem to these days. The new office space has proven to be a great change for the organization. It has provided IFMA with a model workspace that is leading edge and is a living example of how FM positively impacts the workplace by increasing productivity and employee satisfaction.

IFMA was founded in 1980 to increase the awareness of the facility management profession worldwide. To accomplish this mission, IFMA has consistently created opportunities for professionals and companies to participate in the FM movement. Through the efforts of many leaders and companies over the years I can tell you it is working. I am excited to let you know that we now have members in 94 different countries! This is amazing and tells us that FM is a growing profession and an industry that adds strategic value to organizations worldwide.

I was recently in China and found it very encouraging that Chinese companies and the government are starting to understand the value of FM as they move into a modern service economy. They are looking to learn how to implement FM initiatives, understand how to train their staff in the areas of FM and deploy a FM infrastructure — yet one more indication that awareness of FM is increasing.

Value from IFMA in 2014 and beyond

The IFMA board of directors and staff continually look at how we can improve the IFMA membership experience. 2013 saw the implementation of the member benefit of the month offerings. If you have not received these, please check your membership preferences to see if you have email notifications turned off. If you do, I encourage you to opt back in so that you can be aware of the many benefits you receive as part of your IFMA membership.

In 2014 you will see continued steps to identify and enhance the IFMA value proposition. IFMA has members in many different geographic regions, industries, professional levels and organizational roles. This means that the highlighted benefits cover a wide range of topics within the overall FM discipline — there's sure to be something for everyone.

THE BEGINNING OF ANY NEW YEAR IS A TIME TO REFLECT AND LEARN FROM THE PAST, MAKE CHANGES TO OUR LIVES AND SET NEW GOALS AND TARGETS.

Another initiative that was part of this year's plan was updating the BEX program. BEX is IFMA's online benchmarking portal which combines several of the surveys previously published. The new version of BEX is on schedule to be released in January 2014. We are very excited about the new version as it is much improved (to learn more about the system enhancements, see page 42). There are incentives to become an early adopter of the benchmarking system so make sure you take advantage of your membership privileges.

Looking forward

The beginning of any new year is a time to reflect and learn from the past, make changes to our lives and set new goals and targets. What are your new goals for your IFMA experience? What can you do to increase the awareness of FM inside your organization and community? Will you make the effort this year to increase the time you spend with your chapter, community of practice or council? All volunteer organizations need your involvement to make them successful. Even if you can only free up an hour per month, contact your local chapter or council to let them know you can help. This will not only help IFMA but you will also find yourself receiving an enhanced benefit from your membership experience.

One activity that won't even take you an hour per month is to invite your fellow colleagues that are working in FM and invite them to belong to the best FM organization in the world — IFMA! Have you recruited a member recently?

I wish you a prosperous 2014 in all of your endeavors.

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Commercial real estate vacancies fall; demand weakens in Asia Pacific

Office vacancy rates in the Asia Pacific region dipped in Q3 2013, as few office building completions offset low leasing volume driven by a subdued level of occupier demand, according to a recent report by commercial real estate firm CBRE. The third quarter saw occupiers, with a few exceptions, remain cautious, and this conservative attitude was reflected in the limited volume of leasing transactions. Of the deals that were signed, most involved renewals; expansions were limited.

The overall vacancy rate for the Asia Pacific region slightly declined from 9.82 percent to 9.43 percent in Q3 2013. Vacancy fell in 11 markets, was flat in eight and rose in another seven. At the same time, only 4.7 million sq. ft. of new office space was completed in Asia Pacific in Q3, well down on the 9.7 million sq. ft. of new supply added in Q2 2013. This was the

lowest quarterly volume of stock completed in Asia Pacific since Q4 2006, when the rate was 5.8 million sq. ft.

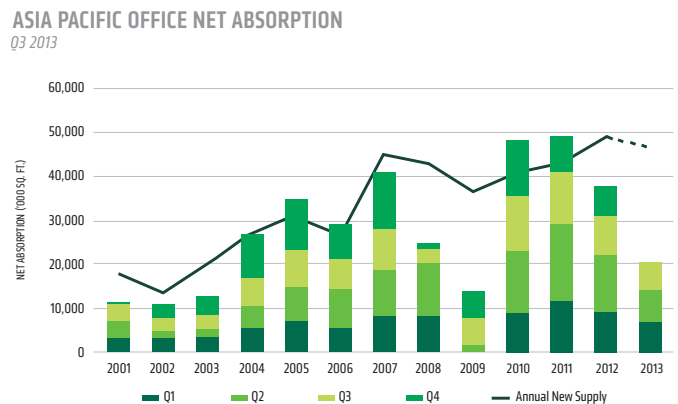
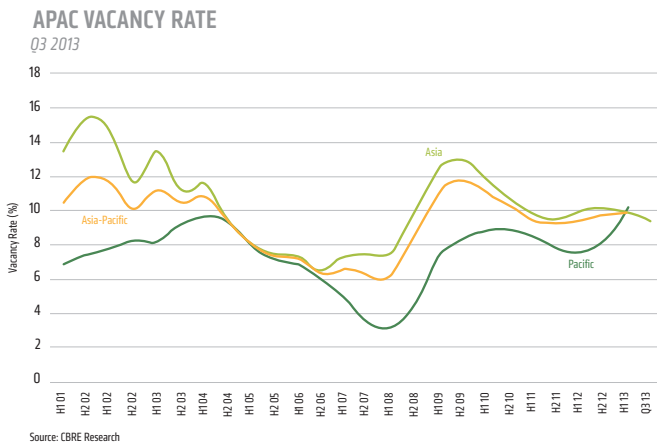
Against this background, demand for office space in Asia Pacific weakened — on the heels of cautious occupier sentiment — with net absorption for Q3 totaling 6.7 million sq. ft., the lowest figure recorded since the market began to recover from the global financial crisis in Q1 2010.

Office rents have been flat for the past two years and are likely to remain so in the short term; however, downward pressure is likely to increase as a large volume of new supply becomes available — with annual new supply expected to reach all-time highs in the next two years.

The CBRE Asia Pacific Office Rental Index stayed flat for an eighth consecutive

quarter. Rents were unchanged on a year-on-year basis, and Grade A rents in most markets continued to display little movement during the period, although there were a few exceptions, with Jakarta posting the strongest rental growth.

Annual new supply coming online will reach an all-time high in 2014 and 2015, with the majority of new supply set to be completed in emerging markets. India and China account for 74 percent of new supply scheduled for completion during that period, much of which will be in secondary locations. However several new schemes in India are likely to be delayed further which may help ease oversupply pressure. A number of first-tier cities in China — excluding Beijing — will also see the addition of a large volume of new stock over the next couple of years, as will Jakarta.



Leviton acquires JCC Advanced Lighting

In Q4 of 2013, Leviton announced the acquisition of JCC Advanced Lighting, a United Kingdom-based leader in LED lighting suitable for a wide variety of residential and commercial applications. The acquisition establishes Leviton in the

U.K. market and affords the company growth opportunities internationally.

Integrating JCC's energy-efficient LED lighting into Leviton's smart solutions provides a unique opportunity to develop

the next generation of intelligent design. Through the work of the combined companies, customers will be able to receive even more efficient lighting solutions, including the incorporation of occupancy sensors and dimmers to help achieve

Continued from previous page

nearly 50 percent energy savings when compared to typical installation.

JCC will operate as a wholly owned subsidiary of Leviton, maintaining operations in the U.K. The company will continue to be led by Richard Adey, currently the executive chairman of JCC, who will report directly to Daryoush Larizadeh, Leviton's chief operating officer.

The acquisition of JCC continues Leviton's commitment to strategic growth and innovation. Leviton has evolved into a global provider of electrical wiring devices, data connectivity solutions and lighting and energy management systems for a variety of end-use markets.

Four efficiency challenges facing financial services real estate teams

According to results from the 2013 Jones Lang LaSalle Global Corporate Real Estate Survey, commercial real estate teams at banking and financial services companies need to tackle four main risks that collectively impact real estate productivity.

These risks, summarized below, are detailed within a new report, entitled "The Productivity Imperative: 2013 Corporate Real Estate Trends for Banking and Financial Services."

- **Demonstrate CRE staffing efficiency.** Data gathered from 147 banks across the world reveals that banks possess an average CRE/total company staff employee ratio of 1:2,412. This varies significantly by the size of the bank, but is on average below the 1:4,000 ratio of other large organizations and is the lowest ratio in the private sector.
- **The workplace must work hard.** Despite this backdrop of potential staffing inefficiency, banks lead the way in wanting to extract maximum productivity from their workplace. Eighty-one percent of financial services corporate real estate teams are under increased expectations to

deliver workplace productivity gains. This compares to 72 percent across all other industries.

- **Balancing procurement power.** With 48 percent of financial services corporate real estate teams revealing that procurement teams are actively involved in real estate decisions, the procurement function has a greater influence on corporate real estate in banks than any other industry.
- **Emerging market transparency challenge.** According to McKinsey and Company, formal banking services reach only 37 percent of the population within emerging markets. This represents a significant revenue and international expansion opportunity for banks. However, many of the markets across or into which banks are looking to expand do not possess the optimum infrastructure or real estate market transparency metrics. This can make real-estate decision-making or implementation difficult, especially when success in a global banking environment required optimized cost structures.

IFMA named a top workplace by Houston Chronicle

The International Facility Management Association has been included for the first time on the Top Workplaces list compiled by the Houston Chronicle. The annual list, which was compiled in 2013 following a survey of more than 68,000 Houston-area employees, ranked IFMA 63rd in the small business category. The Houston Business Journal reports that there are more than 100,000 small businesses like IFMA in the Houston area.

IFMA's inaugural ranking comes just months after a landmark relocation within Houston from Greenway Plaza to a new facility, dubbed the Service Center of Excellence (SCOE) in the Memorial area. A scientific survey of IFMA employees suggests that the new SCOE has played a central role in improving the work environment. Overall satisfaction in the new workplace is 80 percent, a significant increase from the previous location. According to a 2011 IFMA Workplace Performance Study, the average level of satisfaction in workplaces is 59 percent.

The most apparent difference between the current and previous workplace is the dramatic reduction in size. Compared with the space at Greenway Plaza, the new facility has just half the rentable square footage (down from 22,000 to 11,000) and nearly half the usable square footage (down from 15,710 to 9,949). The per-person space reduction from 302 square feet to 191 square feet combined with increased internal and external staff mobility has had a positive impact across variety of important workplace metrics, including an increase among managers, employees and remote workers in the perceived ability to collaborate.

These results, combined with the Houston Chronicle Top Workplaces listing, challenge the conventional wisdom that bigger is better for the workplace. In fact, in some situations, the opposite appears to be true. This is just one of the many facets of effective facility management put into action by IFMA in the new space.

Allegion debuts as public company following spinoff from Ingersoll Rand

Allegion PLC (NYSE: ALLE), a leading global provider of security products and solutions, debuted in December 2013 as a standalone, publicly traded company following its spinoff from Ingersoll Rand. The company will be headquartered in Ireland, with regional corporate centers in Carmel, Ind., U.S.; Brussels, Belgium; and Shanghai, China.

Allegion provides mechanical and electronic security products and solutions for homes and businesses in more than 120 countries. It sells products under 23 brands and specializes in security

around the doorway and beyond — from residential and commercial locks, door closers and panic release bars to access control systems and workforce productivity systems. Allegion's portfolio includes strategic brands CISA®, Interflex®, LCN®, Schlage® and Von Duprin®.

With more than 7,600 global employees across sales, production and distribution facilities worldwide, Allegion plans to add 300 jobs in various locations. The company intends to selectively pursue strategic acquisitions that complement and enhance its existing business, while investing in research and develop-

ment and product development. Allegion also plans to build on its operational excellence program, pursue growth in emerging markets and recruit new talent and expertise.

Allegion will compete in the \$25 billion global security products and solutions industry by addressing global trends in the security industry, which include heightened awareness of security requirements, increased global urbanization, the shift toward electronic, intelligent security solutions and anticipated global rebound of commercial and residential construction markets.

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International Facility Management Association
Empowering Facility Professionals Worldwide

IFMA Health Care Institute selects president

The Health Care Institute (HCI), an IFMA Alliance Partner, has announced the selection of Leo Gehring, CHFM, CHC, FASHE, as president.

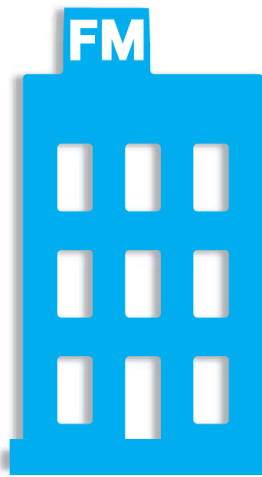
Gehring holds 30 years of experience in healthcare-related positions. He currently is president of Gehring Health Facility Resources. Prior to that he was vice chancellor for campus operations, University of Arkansas for Medical Sciences, Little Rock, Ark., USA. He was responsible for management of more than 4 million building square feet and approximately 450 employees with an annual budget in excess of \$27 million excluding construction funds.

Gehring is a lead faculty member in the ASHE (American Society for Healthcare Engineering) Healthcare Construction Certificate, Healthcare Project Management and Certified Healthcare Faculty Manager training programs. He served as president of ASHE in 2007.

HCI serves a constituency that interacts directly with the business office and/or C-suite, and supervises multiple aspects of health care facilities management including healthcare facility design, construction and operations. HCI along with ASHE are considered to be the two most prominent healthcare facilities-related organizations in the U.S.

Major activities of HCI include the landmark “Benchmarking 2.0 for Health Care Facility Management Report” which was produced jointly with ASHE and CHES (Canadian Healthcare Engineering Society).

HCI's predecessor, the IFMA Healthcare Council, was creator of the Green Patient Lab, which was viewed by more than 75,000 people in 14 different venues in North America. A nationwide educational seminar series has traveled to 25 different cities (some multiple times) resulting in a forum where facilities managers can problem solve with healthcare architects, designers, engineers, contractors and administrators.

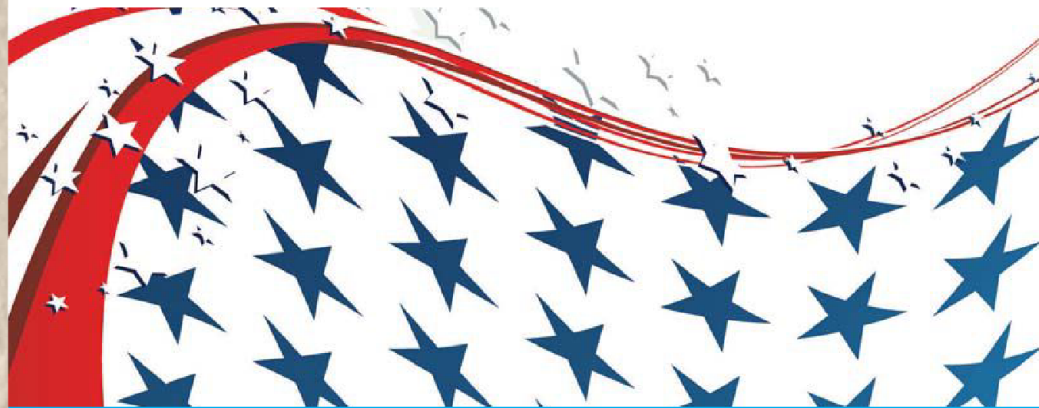


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BEYOND COLLABORATION: WORKPLACES THAT **INNOVATE**

FMJ EXTRA

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INFOGRAPHIC
Collaboration in the
Post-PC Era

BY BRADY MICK

The pendulum in the workplace is swinging. For the last two decades, the call for collaboration has been a front-and-center mandate. Across all landscapes, building types and business sectors, open, active and engaging workplaces have sprung up. Yet the very spaces that were once thought to be an answer to workplace design are now generating a new set of behavioral pains.

Due to complexity, speed of change and unanticipated business needs, people are suffering from lack of focus, inability to concentrate and minimal time to innovate. Since companies cannot thrive without innovation, the question is: Can collaboration and innovation exist in the same environment? The simple answer is: Probably not. Collaboration and innovation produce competing behaviors when it comes to work strategy and workplace design. They are exclusive in form and function and therefore cannot easily occupy the same space at the same time.

Defining innovation and collaboration

Collaboration — quite literally, “laboring together” — is a set of behaviors based on shared experiences. Like the classic hall of mirrors in a carnival funhouse, ideas are reflected to reveal many directions and solutions. Each person in the collaborative environment brings his or her own mirror into play to reflect and build additional solutions and outcomes. Collaboration, however, has a downside. Like a hall of mirrors, many of the pathways revealed are illusory. They may lead in circles or to dead ends, offering glass walls rather than a clear path ahead.

On the other hand, collaboration can be very useful in unsticking problems because it brings together multiple viewpoints focused on finding solutions. For that reason, having a diverse team increases the odds of finding a workable path forward. Collaboration can be invaluable in today’s complicated and time-sensitive working world. Collaboration, however, tends to yield the same solutions to the same old problems. Under the pressures of today’s business complexity, it is advantageous to first create the right questions before seeking the answers.

That’s where the differentiated behaviors of innovation come into play. Innovation is the pursuit of discovering questions that lead to different or unexpected results. Its root comes from the Latin *novus*, which means new. Innovation seeks to break the work patterns that don’t contribute to revolutionary new ideas, much less evolutionary ideas.

While collaboration asks how business can fill a need today, innovation asks how business will solve future desires to discover the next game-changing product, service or solution. Accordingly, using collaboration as a strategy to affect change is ultimately less valuable to business results. More often than not, collaboration can represent the definition of insanity: doing the same things over and over again and expecting different results.

Differences in form and function

Do collaboration and innovation



WHILE COLLABORATION ASKS HOW BUSINESS CAN FILL A NEED TODAY, INNOVATION ASKS HOW BUSINESS WILL SOLVE A FUTURE DESIRE.

compete when they find themselves in close proximity, or can they exist in the same workspace? By nature they compete, because innovation requires setting aside the norms that have created workspaces in order to adopt new behaviors and work expectations. In the collaborative business world, ROI, steady growth, increasing profits and “failure is NOT an option” are often the measures of success. Innovation demands that people step outside of conformity and baseline expectations, with the understanding that not only is failure an option, but failure can often be a precursor to future results. This is a language that business does not speak with ease. Yet creating future results from innovative forms of work behaviors is exactly the rallying cry that is coming from all corners of business leadership.

Impact on work behaviors

At its core, collaboration is best created from an extroverted set of behaviors. Employees share pieces of their ideas focused on a problem, build upon the common themes and combine them to achieve a predictable goal. Collaboration is more giving than taking. Collaboration is good at breaking down silos, creating cross-departmental teams and accepting input from anyone in the chain of command or the production process. Conversely, innovation is more

introspective and introverted. Innovation encourages the use of one’s own inquisitiveness, learning style and creative instinct to create new questions and perspective on a problem. Innovation is more taking than giving — taking divergent ideas, perhaps, and synthesizing them into a concept of new perspective and understanding.

We are now entering an age of “small innovation.” The work of the future will be dependent on the ability of people to create and deliver small daily innovations to people-focused problems. Instead of waiting for the next big innovation to arrive to solve business problems, people in business will be required to look inward to create their own innovations to small problems. A benefit of small innovation will be a reversal of today’s diminished worker engagement.

Case study: Nike

What images come to mind when considering the Nike swoosh? You might see a high-caliber athlete talking about achievement, or possibly the shirts hanging in your closets or the shoes on your feet. What about Nike’s FuelBand bracelets, which feed biometric data directly to personal digital devices to help people track their daily physical activity levels? Nike is banking on the FuelBand technology as it expands its business competency

across new venues. In 2013 it achieved the top ranking in Fast Company’s list of “The World’s Most Innovative Companies.” If Nike is truly aligned with this distinction, would collaboration be its strategic driver for the design of the workplace?

The answer: No way, according to Nike CEO Mark Parker. “Business models are not meant to be static. In the world we live in today, you have to adapt and change. One of my fears is being this big, slow, constipated, bureaucratic company that’s happy with its success. That will wind up being your death in the end.”

Different results

So innovation and collaboration don’t mesh well together, but neither do finance and marketing, where the ROI for a promotional campaign may be difficult to capture on a spreadsheet. Yet business overcomes these hurdles, so why can’t competing ways of working coexist?

Because innovation and collaboration involve different kinds of work behaviors, they are best supported by different kinds of workspaces. Collaboration, being extroverted, is discouraged by closed doors, working from home, remote workspaces and closed floor plans. Open collaboration and community amenities such as employee cafeterias encourage workers to stay on campus and constantly interact.

In contrast, innovation often benefits from quiet, private spaces that allow for individual thought or “ingenious settings” — places where “Eureka!” (“I have found it!” in Greek) replaces collaborative interaction time with self-exploration.

For example, collaboration has resisted the creation of personal, closed offices, because the behavioral expectation of the office assignments has traditionally been focused on individual status. (Status is not a supportive behavior of either collaboration or innovation.) Under the focus of innovative behaviors, a closed, introverted setting, whether assigned or unassigned, creates a new purpose in the workplace.

Additionally, the conference room has been seen as a location for collaborative work. Yet the traditional fixed tables and focus on a leader driving the team to collaborate are already being replaced with team rooms, mobile furniture and innovative equipment such as technology and display surfaces. The shift toward supporting innovative work is underway.

The next generation of workplace is focusing on “activity settings.” Activity settings develop contrasting environments of differing sizes and setups to encourage choice and self-determination from workers. Teams and individuals are choosing the setting that best supports the work behaviors required to deliver high levels of innovative business results. Some settings will be highly collaborative to deliver the daily ration of shared ideas and functional problem solving. Some areas will support the rote and response that all businesses require. And some areas will focus on the creation of what is next in business, which is independent of the past and focused on the future.

The future

The future belongs to innovation. If that’s true, what’s holding innovation back? The answer is fear of complexity. Business manages toward the expected (collaboration), not the unexpected (innovation). Collaboration delivers greater efficiency and predictability. Innovation demands a readiness to accept perceived failure as a likely outcome. It is much easier to sell the less complex, comfortable world of collaboration to corporate boards and shareholders than it is to convince them to support unproven ideas. In the future, as business becomes more adept at dealing with complexity, success will be tied less and less to the expectations of past results.

Business knows the work practices of collaboration well. These have been adopted, studied and refined in workplace strategy over many years. But with the rise of innovation as the key driver of work, business will have to invent, adopt, study and refine work behaviors and spaces. Practices from the realm of big innovation will be translated into the daily work of small innovation. Evolutionary improvement will

be nurtured in a workplace where revolutionary improvement is created by daily leaps of innovation. **FMJ**



Brady Mick is client leader with BHDP Architecture. He provides expertise in strategic design, culture, social dynamics,

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SILVER CSPs





To Stay on Schedule,
Take a Break

Give Me a B r e a k

Encouraging downtime is better for business

BY LISA HAMBLET

It's a common sight in offices around the world — it's lunchtime and workers are hunched over their desks trying to grab a few bites of food between emails. Working through lunch and skipping breaks throughout the day is a growing trend in today's workforce and one that has negative effects on employees and the companies for which they work.

Not taking breaks increases workers' stress levels and negatively impacts health, morale and happiness. Employee stress can cause higher rates of absenteeism; increased compensation and health insurance claims, direct medical expenses and employee turnover; and reduced productivity. This ultimately results in higher costs for employers.

Companies can combat the trend of employees skipping breaks, reduce stress and promote a healthy work environment by encouraging pauses with a well-stocked and comfortable breakroom. Providing more options, such as appealing break spaces and a wide variety of foods and beverages, gives employees

the freedom to take advantage of work breaks to recharge and refocus their energy.

Employee benefits to break time

Taking a short break from work to relax can improve employees' job effectiveness and satisfaction while significantly reducing stress, strain and fatigue. An inviting breakroom can help employees have fulfilling breaks and feel more energized and productive at work.

A well-stocked breakroom can also keep employees happy by giving them more options to choose how they spend their downtime. Stocking light food and beverage items makes it convenient for employees to grab a quick snack without having to leave the office. This can lead to higher levels of productivity, as employees won't need to interrupt their day to leave the office to get a cup of coffee, but instead have coffee-house quality beverage options on site.

It's also what employees want — approximately three-fourths of office workers polled in a recent



Staples Advantage survey whose office currently doesn't offer snacks want them to be available. Having snacks and beverages offered in office breakrooms can boost morale and make employees feel appreciated and valued.

Employer benefits to break time

Increasing break time options can lead to higher levels of productivity office-wide. The previously mentioned survey also revealed that one of the three leading factors in increasing workplace productivity, according to managers and office workers, is stepping away from work to nearby breakrooms. Employee break time helps foster greater productivity through healthy mental breaks, and provides an opportunity to refuel and engage in casual conversations.

Additionally, employees with bare breakroom pantries are forced to leave the office for satisfying snacks and coffee, which results in lost productivity and money for companies. In 2011, a Staples Advantage survey revealed that more than 85 million people leave the office routinely to get coffee. Respondents estimated each trip taking 20 to 40 minutes, equating to more than two billion minutes each day, or 10.6 billion hours per year, of lost productivity. Keeping the breakroom stocked makes it easier for employees to take a quick break within the office to re-energize, without spending time or money on outside snacks and drinks.

In addition, proper break spaces can be a critical tool in recruitment. Millennials new to the workforce are seeking more value-added perks when deciding where to work, and a well-stocked breakroom is a small but important feature to help attract new talent.

There are advantages for customers, too. Providing coffee and snacks to customers while they wait can lead to higher customer satisfaction. From accounting firms providing coffee during tax season, to auto dealers/service shops that provide coffee and snacks while people wait, a small investment in coffee and snacks can lead to higher customer satisfaction and retention.

Encouraging break time

Creating an inviting space that offers several options will encourage employees to take breaks and will help employees feel refreshed and satisfied. Coffee is one of the most popular breakroom offerings, and it is critical for employers to offer a variety of high-quality coffees so employees won't have to leave the office for a cup.

A well-stocked breakroom should include a variety of beverages and snacks that appeal to everyone. Drinks, both caffeinated and non-caffeinated, including coffee, tea, flavored water or hot chocolate should be offered along with a wide range of snacks, including sweets like chocolate and candy, as well as healthy options like cereal bars, granola bars and trail mix.

NOT TAKING BREAKS INCREASES WORKERS' STRESS LEVELS AND NEGATIVELY IMPACTS HEALTH, MORALE AND HAPPINESS.

Every individual has different tastes, so it's ideal to offer something for everyone.

To add to a breakroom's appeal, companies should include ergonomic furniture that promotes employee wellbeing. Shared spaces such as breakrooms and lounges can be perfect for team collaboration or impromptu casual meetings. Respondents from the 2013 Staples Advantage survey cited collaborative environments as the number two factor contributing to greater productivity in the workplace — just under advances in technology.

The 2013 Staples Advantage survey also found that 61 percent of employees said they would benefit from a 20-minute power nap during the day, as would 51 percent of business decision-makers. And although more offices are offering lounge spaces and comfortable furniture choices, only six percent of companies currently offer specific periodic downtime for employees.

Promoting physical well being

Companies that encourage onsite respites through inviting spaces help improve employees' mental health, but it's also important to keep in mind workers' physical health.

Illness in the workplace can significantly impact business, as well result in high costs due to employee absences, temporary labor hire and overtime compensation for those picking up the workload of absent employees. Those who come to work sick struggle to perform at high levels, which causes overall productivity to suffer. Even the common cold can impair an employee's psychomotor functioning and response time.

Healthy workers have the capacity to be more focused, productive and satisfied at work and in their daily lives. While encouraging breaks is only part of maintaining a healthier workforce, it is a very important piece of the equation that will help contribute to the greater cause.

Break time trends

Overall, there's been an increase in total breakroom orders including food, drink, cutlery and cleaning products. Coffee is one of the most popular breakroom offerings and currently one of the biggest trends in breakroom purchases. Single-cup coffee servings are on the rise and this is resulting in an increase in overall coffee usage throughout the day.



AMERICA'S BREAKROOM

Even with an increase toward healthy options, customers aren't replacing their current candy and snack orders with healthy goods. Instead, they're adding to their current orders and in many cases increasing their order sizes overall. The amount of snacks bought by Staples Advantage customers in 2012 is remarkable:

APPROXIMATELY

36 million 

SINGLE-SERVE PODS OF COFFEE WERE SOLD, ENOUGH TO PROVIDE ABOUT **11 PERCENT** OF THE U.S. POPULATION WITH A CUP OF COFFEE IN A GIVEN MORNING.

APPROXIMATELY

2 million 

GRANOLA/NUTRITION BARS WERE SOLD.

NEARLY

48 million 

WATER BOTTLES WERE SOLD.



Previously, people didn't want to make a full pot of coffee for one cup and risk wasting the rest. Now, people can make individually portioned coffee and choose from a variety of single-serve pod options that closely match the taste of popular coffee house beverages. Providing better in-house coffee discourages employees who don't want to leave the office from running out to coffee shops.

Requests for healthier breakroom snack options are on the rise as well. Sweets are still popular, but companies are adding healthier items, such as cereal bars, granola bars and trail mix, to their traditional orders of chocolate, chips and candy. Customers are also ordering healthier versions of popular full-fat snacks, such as reduced-fat cookies and chips along with baked crackers.

The need for easy ordering is still a high priority as companies continue to function with lower head counts. Fulfilling breakroom needs can be tricky and organizations often work with a variety of suppliers, which can lead to too much time tracking invoices and a loss of buying power. By consolidating vendors organizations often see:

- Decreased purchase costs;
- Better savings through spending visibility;
- Decreased drain on full-time resources; and
- Increased standardization on sustainability principles.

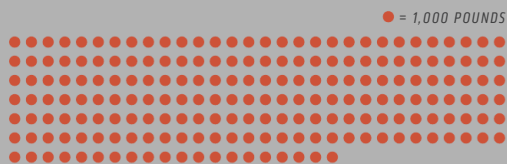
Work breaks benefit everyone

Both businesses and employees benefit from a breakroom. It's a fairly easy solution to implement and can be fully customizable based on staff needs and available space. Research from John Trougakos, Ph.D., a management researcher and expert on employee productivity and well-being, indicates that giving employees more control over what they do during work breaks can play an integral role in boosting energy on the job. When people can use their break time to do things they prefer, they end up feeling more energized and satisfied at work.

Companies can't force employees to take breaks, but providing a range of fulfilling options encourages break time to occur organically throughout the day. Stepping away from their desks and enjoying a well-stocked breakroom allows employees to recharge without traveling offsite, saving everyone time and money, while resulting in lower stress, greater job satisfaction and increased job effectiveness. **FMJ**




Lisa Hamblet is the vice president of Staples Facility Solutions and Services, directing the business' supplies strategy and leading the sales organization in the facility supplies market. In addition, Hamblet oversees Coastwide Laboratories, a division of Staples.



200,000 lbs.
OF MGMS SOLD, MORE THAN THE WEIGHT OF A BOEING 737 JET.

NEARLY **6 million** TWIZZLERS
SOLD, ENOUGH TO LINE THEM UP FROM PHILADELPHIA
TO CHICAGO (APPROXIMATELY 759 MILES).

MORE THAN 
330,000 lbs.
OF SWEDISH FISH SOLD, THE SAME WEIGHT AS A BLUE WHALE.

58 million 
LOLLIPOPS SOLD.

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FM in Action

A vibrant new movement is taking place within the facility management profession. In recent years, trends like change management, sustainability and workplace strategy have been game-changers for FMs. These ideas have transformed the way we do business and provided new opportunities for success—but it's up to the facility professional to determine how we get there. It's time to embrace change, become proactive instead of reactive, and define your own future.

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COMING *clean* ON THE CONDITION OF RESTROOMS

BY JON DOMMISSE

If your customers and employees rated the appearance and condition of your facility's restrooms at this very moment, how would they fare?

Before you answer, consider that an increasing number of people assign failing grades to the appearance of commercial restrooms. A recent U.S. survey about public hand washing behavior and perceptions reveals that 63 percent of Americans say they've had a particularly unpleasant experience in a public restroom due to the condition of the facilities. Unfortunately, this is an increasing trend, as the previous year only 51 percent reported such dissatisfaction with public restrooms.

For businesses, an offensive restroom experience creates damaging business effects, according to the national survey conducted in August 2013. Almost three-fourths (73 percent) of consumers believe a bad restroom indicates poor management of a business. Another two-thirds say an unsavory restroom lowers their opinion of the company, shows that management doesn't care about customers and

gives the impression the company is lazy or sloppy.

Perhaps the most harmful consequence is that unkempt restrooms drive away customers — and revenue — as 64 percent of Americans say they'll either think twice about patronizing the business or will sever ties with it completely. That's especially bad news for industries like restaurants, retail establishments, health care facilities and entertainment venues, in which the existence of repeat customers is vital to the livelihood of the organization.

Unsurprisingly, germ concerns tied to hand washing are highest in the food and health industries. Seventy-six percent of Americans are most concerned about a lack of hand washing in restaurants. Hospitals, clinics and doctor/dentist offices come in second with 65 percent of the vote, followed by grocery stores with 34 percent.

Unappealing restrooms discourage hand washing

The condition of restrooms can also

jeopardize the important act of restroom users following through with washing hands. A majority of survey respondents said they skipped hand washing because of various problems in the restroom. The most commonly mentioned restroom complaints include: a really bad smell (cited by 82 percent); toilets that were clogged or not flushed (79 percent) and an overall appearance that's dirty, unkempt or old (73 percent) (see Top 10 list of public restroom complaints chart). While many of these types of issues are created by restroom patrons in the first place, addressing the problems still falls on the shoulders of the maintenance and facility management teams.

As for the act of hand washing, the vast majority (95 percent) of Americans know they should wash their hands after using a public restroom but are taking shortcuts to get the job done. For example, 70 percent admit they have skipped the important step of using soap — a 15 point increase since last year — mainly because no soap was available, the sink or soap dispenser was broken or the restroom was too unclean.

Soap or no soap, a majority of Americans do not wash their hands long enough. According to the Centers for Disease Control and Prevention, it is recommended to wash hands with soap and water for at least 20 seconds in order to remove bacteria and other disease-causing microorganisms, but most Americans wash for only 10-15 seconds. Whether it's due to lack of time or restroom maintenance, it's problematic that people aren't washing their hands properly. After all, experts say good hand hygiene is one of the most important — and easiest — things we can do to cut down the risk of getting sick and transferring germs to others.

Reclaiming the state of restrooms

The critical challenge for facility managers is to create a well-maintained and enjoyable restroom experience, which helps to encourage more frequent and thorough hand washing, as well as a positive image of the business. To that end, high-quality restroom furnishings, such as lavatories, partitions and wash-room accessories, address key tenets of restroom design like hygiene, durability, sustainability, maintainability and operational efficiency. Intelligent fixtures also help in the crusade for keeping commercial restrooms looking and performing their best in the long term.

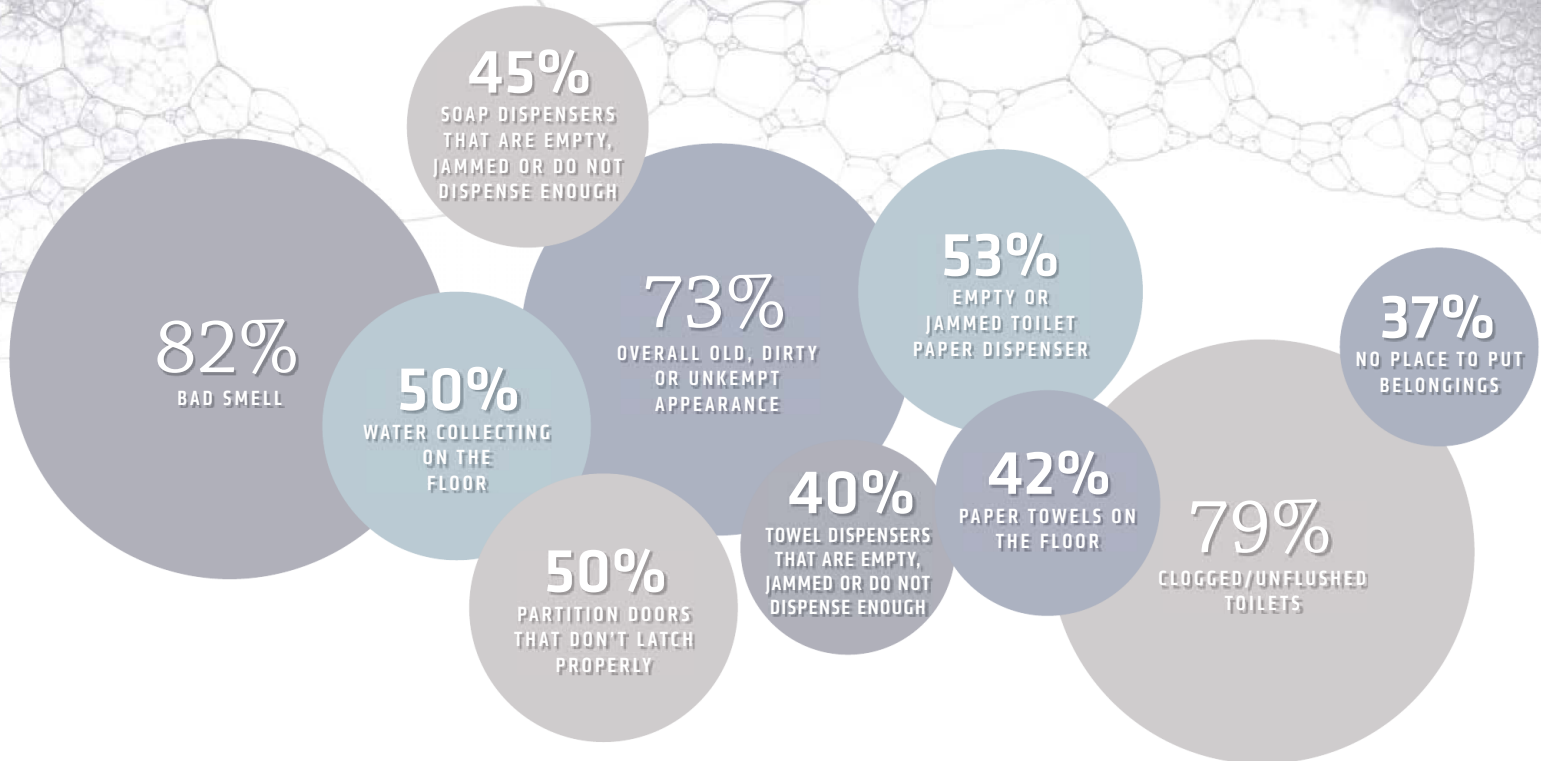
Touchless fixtures support cleanliness and safety

There is a continued preference among consumers and building owners for touchless fixtures in restrooms. One of the benefits of these fixtures is they reduce the touchpoints in germ-laden restrooms. As the hand washing survey illustrates, people are keenly aware of germs residing on surfaces in restrooms and go to great lengths to avoid coming into contact with these areas. Respondents admit to operating the toilet flusher with their foot (64 percent), using a paper towel when touching the restroom door (60 percent) and faucet handles (37 percent) and opening and closing doors with their hip (48 percent).

Restroom users are right to be avoiding direct contact with restroom surfaces. Scientists at the University of Colorado Boulder examined the microbial bioge-



TOP TEN LIST OF PUBLIC RESTROOM COMPLAINTS



The exteriors of soap dispensers tend to contain more bacteria than toilet seats.

ography of public restroom surfaces in 2011 and found 19 bacterial phyla invading these areas. Some bacteria were found on toilet seats and floors, but much bacterial exposure in public restrooms occurs during the hand-washing process. In fact, the exteriors of soap dispensers tend to contain more bacteria than toilet seats.

Touchless fixtures can help users in their quest to avoid touching restroom surfaces, reduce the transmission of germs and bacteria from users' hands and improve overall hygiene as restroom users enter other parts of the building.

Touchless fixtures are user-friendly, convenient and easy to keep in good working condition. The "hands-free" design reduces wear and tear from usage, and sensed faucets prevent overflows with an automatic shut off.

On the topic of overflowing water, wet floors are a menace to public restroom safety and require constant maintenance attention. According to the Center for Disease Control and Prevention, more than 234,000 people in the U.S. end up in emergency rooms yearly due to wash-room injuries, many of which are slip- and fall-related. Some newer lavatory fixtures are specifically designed to minimize water splashing on the floor. A completely touchless all-in-one hand washing unit provides a sink, soap, faucet and hand dryer all in one station, so that users can remain at the basin and needn't walk with dripping wet hands in search of a towel or hand dryer.

Today's high-efficiency touchless hand dryers are also a smart choice for eliminating paper towel waste, which according to survey responses often ends up on the floor, and the added expense of the towels and time for restocking and garbage pick-up.

Durable and sustainable products require less maintenance

Manufacturers of restroom products are now incorporating more sustainable materials than ever before. Sustainable materials often have excellent durability, maintainability and life span features in addition to environmental benefits. For fixtures such as lavatories and partitions, natural and recycled materials are commonly used. Many of these products are also GREENGUARD certified, which means the product contributes to indoor air quality by meeting strict chemical and particle emission standards. This feature has quickly become a standard in sustainable restroom design.

For example, a new durable and sustainable material available for lavatories is molded natural faux quartz, which can be sculpted into a range of modern and eye-catching design options. Composed of an eco-friendly resin made of soy and

corn, natural quartz is virtually maintenance-free, since it does not require sealing, buffing or reconditioning like granite. Its smooth, seamless finish has a non-porous surface, so it does not support microbial growth, and is very easy to clean.

Lavatory countertops made of recycled solid surface and rapidly renewable material also help ensure long-term durability, ease of cleaning and overall maintenance. Solid surfaces resist stains, chemicals, scratches and heat, which reduces the likelihood of repairs and the need for replacements. Surface marks and scratches are repaired easily with everyday cleaners or fine-grit abrasives. These lavatories also use an attractive integrated bowl design, which eliminates crevices for microbes to hide and further helps prevent the spread of germs.

Recycled materials are also used in durable solid plastic toilet partitions made from 100 percent post-consumer recycled high-density polyethylene (HDPE) solid plastic. Each locker made from 100 percent recycled HDPE is equivalent to 500 recycled milk jugs that otherwise may have ended up in a landfill. This solid plastic material stands up to heavy usage and is easy to clean and maintain.

Payback of smart restroom fixtures

New and innovative materials and technologies for restrooms help facilities operate more efficiently and cost effectively, while supporting a well-maintained and attractive restroom environment for consumers, employees and other stakeholders.

Since smart restroom fixtures minimize time and costs for installation, maintenance, repairs and replacement parts, building staff can focus on other duties and projects. In addition, these newer products are expected to last upwards of 20 years — twice as long as older products. That increased lifespan promotes operational savings over time.

Finally, using these emerging technologies builds a more inviting and comfortable environment that enhances the consumer experience, encourages hand washing and reflects well on the organization, giving facility managers peace of mind that their restrooms will get a glowing report card. **FMJ**

ABOUT THE SURVEY: Bradley's Fifth Annual Healthy Hand Washing survey queried 1,015 American adults Aug. 1-5, 2013 about their hand washing habits in workplace and public restrooms. Participants were from around the United States, ranged in age from 18 to 65 and older and were fairly evenly split between men and women (47 and 53 percent). More results are available at www.bradleycorp.com/handwashing.



Jon Domisse is director of global marketing and strategic development for Bradley Corporation of Menomonee Falls, Wis., USA, a U.S. Green Building Council member and manufacturer of locker room products, plumbing fixtures, washroom accessories, partitions and emergency fixtures. For more information, call +1-800-BRADLEY or visit www.bradleycorp.com.

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The Situation

William Broome and his colleagues strive to operate The Westminster Schools as responsibly as possible and set a good example for the students in terms of sustainability and reducing carbon footprint. In addition to some of the sustainability initiatives that were already in place to reduce water and energy use, Broome decided that earning the Sustainability Facility Professional® would be a worthwhile investment.

The Approach

After learning about the SFP through the IFMA newsletter and at local chapter meetings, Broome realized that—unlike the LEED Green Associate—the SFP was truly designed *for* facility managers. He felt that the content was specific to everyday FM operations, in contrast to the LEED program, which lent itself to architecture and engineering positions.

As a LEED Green Associate, Broome assumed that he could take the SFP pretest and come out with passing scores on the first try; but he was shocked to discover how different the two programs really were. It wasn't until he read all chapters thoroughly and utilized the study materials that he actually passed the tests.

*“The LEED Green Associate test required mainly memorization, whereas the SFP really engaged you to dive in and **learn**, using real-world situations. This isn't material that you're going to forget once you complete the test—the SFP program is designed to ensure that.”*

The Results

Having a Sustainability Facility Professional on staff has actually served as a marketing tool for The Westminster Schools—it's proof that the school engages in responsible and smart facility operations. On a personal level, Broome believes that earning the SFP was a huge step in the right direction for the future of his career.

“Given the way the sustainability movement has taken over in the industry, the SFP is going to make an employee that much more indispensable to their company. I would recommend this program to any facility manager.”

“As both an SFP and a LEED Green Associate, I can tell you that I've found the SFP Credential Program® to be far more beneficial. There are companies that want to reap sustainability savings, but don't necessarily want to deal with the paper work, points and records that come along with LEED—that's where the SFP comes in.”

William Broome, CFM, SFP, LEED Green Associate
Director of Facilities
The Westminster Schools
Atlanta, Ga.

The IFMA SFP Credential Program® provides you with practical instruction to enhance your sustainable FM skills and the tools to earn the SFP credential in one complete program. This convenient system combines learning modules available in print or electronic formats, interactive online study tools and final SFP assessments.



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Manage the Energy or Pay the Bill

BY JEFF ALLCROFT

Today's facility manager has to understand building performance, be tuned to energy costs and usage and know what data to look to when troubleshooting consumption anomalies. Whether it is to lower operating expenses, reduce carbon impact or increase overall efficiency, there are many options for energy conservation. Once a conservation project is rolled out, determining its impact on the environment and calculating the benefit to the organization's bottom line is crucial. Part of this process is measuring performance. Knowing how to prove value is paramount and the foundation of this is measuring a baseline to which future results can be and compared.

Should a facility manager use utility bill data to manage energy, or should funds be procured to install sub-meters to potentially do what the utility is already doing? The answer to this is it depends, as the utility configuration in one building may be different in another. Further, certain questions may apply to one building with a different set of issues from its neighbor. Answers to these questions are supported by the data collected. Knowing when to apply which solution for analysis, or a combination of solutions, is key to successfully collecting data that not only accurately reveals the resources being consumed by the operation, but also provides reliable information for reporting and decision making.

The primary sources of building consumption data are utility bill data and sub-metered data. A hybrid defines a third approach, which is a combination of the first two. Data from the utility bill is a great place to start as it is potentially available to all facility managers. Sub-metered data may or may not be available depending upon the existing infrastructure and building automation systems in place. Various configurations will support various needs. If an

organization cannot afford permanent metering, one approach would be to purchase portable equipment to use when the utility bill data indicates an anomaly in the building. In this way, the equipment is diagnostic in effect, yet remains cost-effective as it is portable and can be used elsewhere should problems arise in another facility.

Utility bills – monitoring consumption

The utility bill has a great deal of information, as it lists consumption levels and the various charges for a given period. It provides a snapshot of recent past performance. Bills are convenient as they are readily available to facility managers for analysis and serve as a great start to monitoring consumption. Further to this, utility bills serve as a source of information when analyzing historical performance and comparing consumption across various buildings in a portfolio.

There is a downside to using utility bills exclusively as they are not a timely representation of performance. The utility bill is a look at past performance and does not provide insight as to when problems occur, other than within the monthly period covered by the invoice. Further to this, if there was an anomaly which caused consumption to rise on the first day of the billing cycle, it is not realized until 30 days later, when the invoice arrives with consumption levels and costs higher than normal. Using utility bills to monitor consumption is a good start as it is simple, inexpensive and a solution that is widely available. However, a 30-day-old utility bill is not the best way to find water leaks, yet accountants find consumption anomalies inherent in utility bill data all the time. A more proactive approach is to use sub-meters and collected trend data for analysis.

Sub-metering – managing consumption

Sub-metering is a way of improving upon utility bill

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*"Collectively, we can make a difference
—a difference that will impact our careers,
our companies and our country."*

— Tom Meyers, Dyson Commercial

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Table 1 – Benefits and shortfalls of data streams

UTILITY BILLS	SUB-METERING
 BENEFITS	<ul style="list-style-type: none"> - Potential for real-time data collection and troubleshooting. - Check and balance against utility stated consumption. - Data used to drive real-time dashboard applications. - Potential answers to tough questions such as “What is the carbon footprint of this building?”
 SHORTFALLS	<ul style="list-style-type: none"> - Expensive infrastructure to support.

monitoring and moving toward a solution of managing consumption. With real-time consumption patterns, facility managers are armed with the information they need to take quick, decisive action. If used in conjunction with a building automation system, sub-meters can collect consumption data over time. This data can be monitored very closely. In some cases consumption levels can be monitored with alarms. Should a level of consumption go beyond a predetermined value, a technician can be notified of the problem and troubleshooting can begin. With sub-metering in place, consumption can not only be monitored, but controlled. This truly takes an energy management program to the next level beyond allocating chargebacks from billing cycles to proactively predicting a building’s performance. Table one details the benefits and shortfalls of both data streams.

Sub-metering and degree days

With daily sub-metered data, the building consumption can be more accurately understood. If an energy conservation measure is implemented, performance indicators should show consumption decreasing. Occasionally these projects will appear as having no reduction. This is specifically the case when the weather has an impact.

When testing the performance of an energy conservation measure, the weather needs to be accounted for. In the case of a project in the summer, if the weather gets very hot, chances are electrical consumption will go up, which can appear to wash away the calculated savings predicted for the project. With sub-metering in place, there is an accurate accounting of consumption on a daily basis. The consumption data can then be weather normalized using the degree day data resulting in an accurate assessment of consumption, independent of weather conditions. The weather-normalized dataset proves the actual value of the energy conservation measure.

When charged with reducing consumption, a facility manager must focus on what questions the C-suite will need answers to and then collect data needed to not only answer the questions, but to also prove value.

Sub-metering and commissioning

Another benefit to sub-metering is continuous commissioning. In its most basic sense commissioning is a process of proving quality; however, when focusing on energy there is much to be gained. Once a building is commissioned, there is a baseline of performance created. This baseline is statistically connected to environmental weather patterns. The building will react to the weather by, for example, consuming more electricity for cooling in the summer and increasing consumption of natural gas for heating in the winter. Armed with the daily sub-metered data, the building’s performance becomes predictable as weather changes impacting consumption can be statistically modeled.

From a commissioning standpoint this is good news. With baseline in hand and local weather data known, a model of continuous commissioning can be implemented. Since the building’s response is known and the prediction of performance is made based upon the weather, if the building does not perform within defined parameters, there is cause for concern. Using the same building automation system the sub-meters communicate with, alarms can be set to

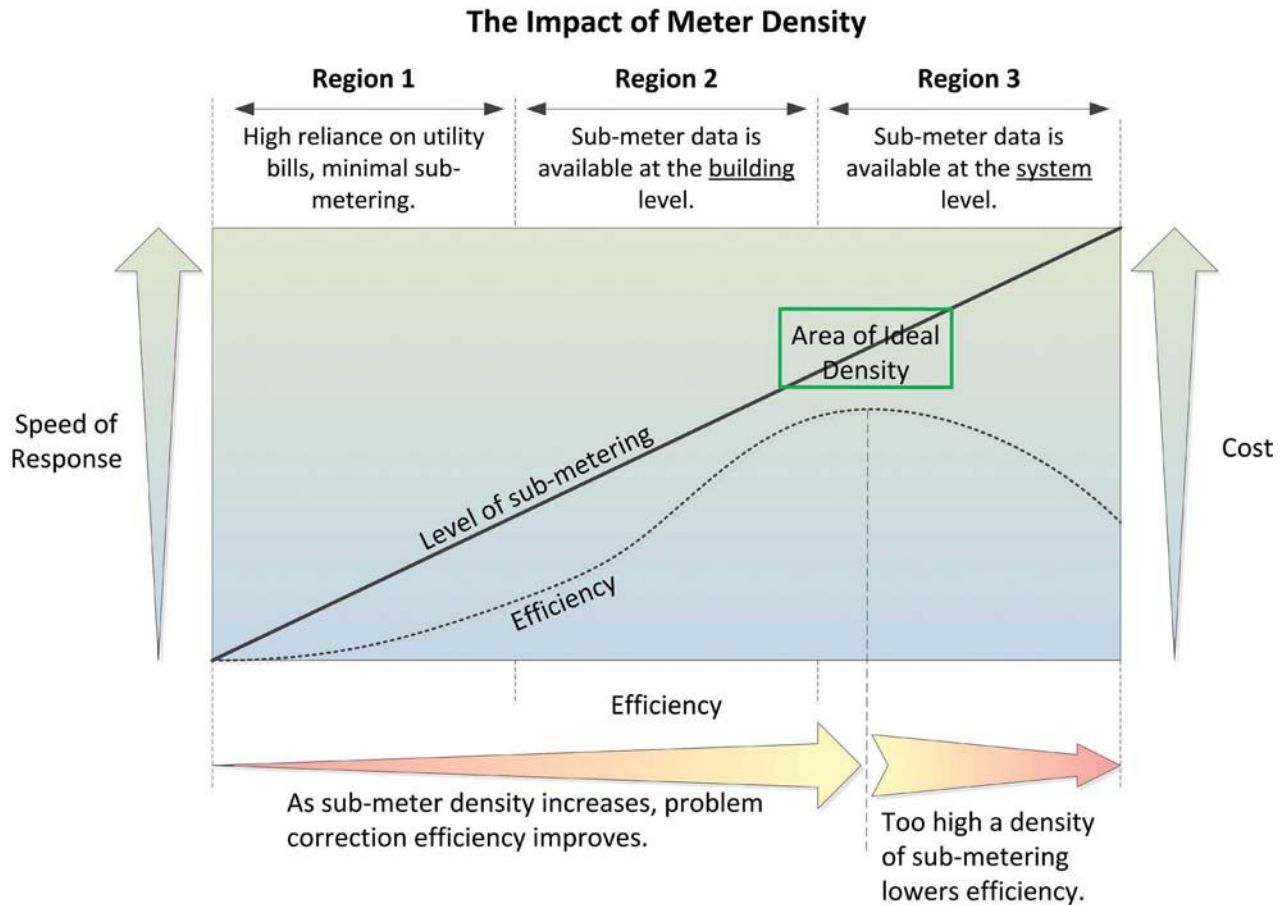


Figure 1. The impact of meter density

alert technicians when performance falls below the standard and follow-up action is required.

Sub-metering and dashboards

Sub-meters collect data in real time. Having this data available creates the potential for dashboard applications to capitalize on this resource. Most dashboards are Web-based applications which display data and graphics depicting a building's consumption in real time. With 15-minute interval data populating a database and dashboards drawing from it, current building performance may be displayed as fast as data is collected.

A hybrid approach

When analyzing energy data there needs to be a balance between consumption and cost data received from the utility and actual sub-meter data collected in the field. A hybrid model capitalizes on both data streams. This provides a solution that is not only scalable, but also minimizes risk. Both data streams are important to the process. The sub-metered data can be used as a check and balance against the utility bill data. The utility bills contain a historical picture of consumption while the real-time sub-metered data affords the proactive management of consumption.

This hybrid approach may be implemented in varying capacities throughout an organization. If funds are not available to install sub-meters on all buildings, then a handful of top consuming buildings could be fitted with meters to manage the larger consumers. Another approach is using a portable meter configuration whereby utility bills are the main stream of data with portable metering being installed to follow up on problems surfaced by the utility bills.

Sub-meter density

Figure 1 graphically represents the impact of increasing meter density. As sub-meters are added to a portfolio of buildings to complement existing utility-based billing, timely data is obtained to better inform business decision making.

The left Y-axis indicates the relationship between sub-meter density and speed of response. As the level of installed sub-metering increases, the building automation system captures a greater amount of real-time data for use in informing operational decisions. As meter density increases technicians are armed with the capability to obtain timely, accurate data for troubleshooting and problem correction. The Y-axis

on the right of the graph represents the relationship between sub-meter density and the costs associated with owning, operating and maintaining such a system. As more sub-meters are installed, the cost of ownership increases.

The X-axis represents efficiency as a function of sub-metering. As the level of sub metering increases, more data is available to answer tougher questions regarding resource consumption at the facility. Once there is enough data available to answer questions such as total building consumption, system-based consumption or something as complex as calculating the carbon footprint of the building, a balance is struck between utility bill data and the amount of installed sub-meters. Adding more meters increases the cost of infrastructure without adding value to the data and as such causes efficiency to drop off. This is represented by the green box on the graph and is defined as the area of ideal density. Combining utility bill data with sub-meter data using a hybrid approach capitalizes on the strengths of both data streams so as to better define building consumption and problem troubleshooting.

The graph is further divided into three regions. Region one on the graph details an area where the facility manager relies more on utility bills than sub-meter data for building performance. With utility bill data being readily available at little to no cost and having the historical performance of the building represented, this is the right place to start when the priority is low-cost historical analysis. Keep in mind, while there is some value to this area of the graph, solutions in this region offer little to no information regarding real-time resource consumption at the facility. As such, analysis is limited to historical performance with problems being detected 30 to 90 days after they occur.

Region two on the graph begins to strike a balance between past performance and current building consumption trends. Utility bills continue to provide a clear picture of performance in a given cycle while the added data stream of real-time information is collected from the sub-meters. At a minimum, facility managers operating in this region are able to conduct comparisons of consumption data between the two streams to test integrity. Beyond this, managers are now able to charge buildings back that share a common utility bill by splitting out consumption of buildings fed from the same utility meter. At this point, weather data and total building performance can be analyzed and compared to like buildings in the portfolio as well.

Region three is the same as region two in that managers operating in this region still have the potential for analyzing past performance through utility bill data.

The difference is metering in this region goes beyond the building level and determines the performance of specific systems within the building. System-level metering affords the opportunity to answer questions such as which chiller is the most efficient to run given a particular set of conditions. This examines the chilled water system in detail. Another example is determining building startup when yesterday's data shows today's attempt should be 15 minutes earlier than yesterday's start time. With the higher meter density, region three affords the capability of digging deeper beyond the building as a whole, for an analysis of performance of individual systems within the building.

Too much of a good thing

Region three also reveals that there can be too much of a good thing. As more meters are installed, there will come a point where the extra data will not add value. This is where efficiency drops off. An example is installing two electricity meters for three buildings all fed from a main utility meter. Should a facility manager incur the added costs of the third meter, or should the third building's consumption be calculated using the main utility meter and subtracting the consumption of the two other buildings? If the correct sub-meter data is available to routinely answer consumption questions, then adding more meters would not add value to the decisions being made.

When charged with reducing consumption, a facility manager must focus on what questions the C-suite will need answers to and then collect data needed to not only answer the questions, but to also prove value. The most complicated question to come from the C-suite involves determining carbon footprint. If the carbon footprint of a building can be accurately calculated, all the fundamental data required to manage energy is available to the facility manager. There is no resource in an energy management program more valuable than collected consumption data. If consumption is not measured, it is not controlled. If it is not controlled, then it is not being effectively managed. **FMJ**



Jeff Allcroft, CFM, SFP, CEM, CMVP, CBCPM, LEED O+M, has more than 10 years of experience in facility management and another 10 in information technology. He is a building commissioning technician at George Mason University in Fairfax, Va., USA.

Allcroft was recently elected to the board of directors for the National Capital Chapter of the Association of Energy Engineers.

Allcroft has served as a subject matter expert for IFMA responsible for reviewing standards of practice for the facility management learning system. Allcroft has also served as managing editor for the IFMA's Sustainability How-to Guides. He can be reached at jallcroft@hotmail.com.



PROFESSIONAL DEVELOPMENT COLUMN

CATHY PAVICK
Vice President
Professional Development

As we look ahead to another exciting year, I have been reflecting on the professional development team's preparations for 2014. The following key initiatives will be rolled out beginning in January.

Benchmarks Exchange (BEX)

The research team has been working on significant enhancements to IFMA's Benchmarks Exchange (BEX) portal. The online benchmarking portal allows FMs to compare building data anytime, anywhere. With the ability to filter information by industry, facility type and geographic region, you can access reports that target metrics unique to your facility. System improvements include:

- **Ability to create a portfolio so you only need to enter your facility description once.** The static elements of your facility description will be saved in your profile, eliminating the need to re-enter this information for each module.
- **Complete data entry at a time that is convenient for you.** Access the platform at your convenience to complete modules for cost management, O&M practices, staffing and more.
- **Save your facility data to compare with a range of facilities.** Your facility data will always be available for you to compare to other facilities in your portfolio or the full BEX database.
- **Save and export queries to aid in reporting efforts.** Build multiple queries applicable to your needs and return to saved queries.
- **Conduct benchmarking annually.** Online data collection allows you to quickly identify high- and low-performing practices.

Since the enhanced BEX will look and feel different, starting Jan. 20

all members will have access to the 2011 annual facility cost data so they can experience the versatility of the enhanced system.

In recognition of the fact that your participation is key to making IFMA's benchmarking program a true success, those who enter data into the system by March 31, 2014 will be able to access the results for free.

Leadership trends report

With the generous support of CBRE, a white paper entitled "Facility Management Trends Report: Emerging Opportunities for Industry Leaders" focusing on the areas of sustainability, leadership and technology will be released in January 2014 (project overview on page 53). An executive summary will be provided at no cost to IFMA members; the complete report will be available on the IFMA Bookstore at a discounted member rate. This white paper is the first in a series which will tackle trending issues and opportunities for FMs to showcase their value.

SFP® term of validity program

In the realm of education, one of the projects currently being finalized is the SFP's term of validity program, which SFPs must complete every three years in order to receive an updated certificate to keep their credential current. Those who have earned the SFP certificate do not "renew" the designation, nor do they participate in activities to earn maintenance points to earn a new SFP term of validity.

Currently, those who earn an SFP are issued a certificate with a three-year term of validity. The limited term is intended to ensure that SFPs stay current on emerging and trending sustainability issues by requiring that they periodically

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Credentials. "Umbrella" term which can be used to describe certifications as well as certificate programs (in addition to degrees and many other things). The CFM®, SFP® and FMP® are all credentials.

Certification. A process through which a nongovernmental entity grants a time-limited recognition to an individual after verifying that he or she has met established criteria for proficiency or competency, usually through an eligibility application and assessment. (Also known as a competency-based certification.) The CFM is a certification.

Certificate program. A non-degree-granting education or training program consisting of (1) a learning event or series of events designed to educate or train individuals to achieve specified learning outcomes within a defined scope, and (2) a system designed to ensure individuals receive a certificate only after verification of successful completion of all program requisites including but not limited to an assessment of learner attainment of intended learning outcomes. (Also known as an assessment-based certificate program or as a knowledge-based certificate program.) The FMP and SFP are both certificate programs.

Certificate. A piece of paper that can be issued for participation, attendance, completion – anything including the certificates IFMA provides to those who earn our credentials.

complete a specific educational offering. The term of validity program that will be available in 2014 will be offered online.

SFPs who have a term of validity expiring in 2014 will receive email reminders several months prior to their expiration dates, so it is important to ensure that current contact information is on file with IFMA. For more information, contact Rhonda Hager at rhonda.hager@ifma.org. **FMJ**



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A FAMILY REUNION



IFMA's 2013 World Workplace Conference & Expo brings FMs together

BY ERIN SEVITZ

A familiar face glimpsed from across a crowded room. Handshakes and hugs with old friends and new. Cultures from around the world united by the common goal of making the built environment a better place.

With more than 4,700 registrants, the 2013 World Workplace Conference and Expo in Philadelphia, Pa., USA was one of the best-attended IFMA events in recent history. Representatives from 49 countries traveled to the City of Brotherly Love, reinforcing the global impact of the conference.

The theme of the 2013 event was "Leading FM: Advance Business, Get Results." Business strategists, CEOs, best-selling authors, consultants, educators, researchers and the brightest minds in facility management gathered to share their insights on existing and emerging workplace hot topics.

FMJ EXTRA

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IFMA's World Workplace 2013 Conference & Expo Highlights



Welcome reception

The Franklin Institute, one of the oldest science museums in the U.S., provided the perfect backdrop for the kickoff gathering of FM leaders from around the globe. U.S. founding father Benjamin Franklin himself was in attendance to welcome IFMA members and friends to the interactive space.

Attendees mixed and mingled, enjoying cocktails and hors d'oeuvres while indulging their curiosity through a host of hands-on science exhibits. A larger-than-life walk-through model of a human heart brought out the natural inquisitiveness of the FMs in attendance, and live music in the foyer near a 20-foot statue of Benjamin Franklin brought out some serious dance moves. A few brave souls even accepted the challenge to try out the Blue Angels Adventure Flight Simulator and the Max Flight virtual aerobatic flight trainer, while others browsed the dessert selection in the planetarium.

The evening proved to be the perfect icebreaker, helping turn newfound acquaintances into valuable connections and lifelong friends.

The welcome reception was made possible by the sponsorship of Caterpillar.

Opening keynote

This year's opening keynote session was presented in a unique panel format entitled "Ask the CEO: The Current State and the Future of FM." CEOs from prominent organizations provided invaluable insight into trends in the global FM industry and offered a unique behind-the-scenes look at the opportunities cutting-edge facility management techniques present.

Panelists included Jeff Gravenhorst, group CEO, ISS World Services; George A. Keches, president, global facilities management, DTZ; Tracy Price, executive vice president, ABM Industries Inc.; Joseph J. Tinney, Jr., president, ARAMARK Business & Industry Facility Services North America; and Susan



Wojciechowski, vice president and general manager Global Technology Market, Global Workplace Solutions, Johnson Controls. The discussion was moderated by Straight Talk host/executive producer, ethics professor and established television personality Art Levine.

In addition, Philadelphia Mayor Michael A. Nutter made an appearance to welcome the FM community to his hometown, which is leading the way for green cities throughout the U.S.

Facility tours

World Workplace attendees were able to explore the facility landscape of Philadelphia through seven different facility tours. Facilities visited ranged from historical to high tech and included Philadelphia City Hall, Lincoln Financial Field, Masonic Temple, Temple University Architecture and Arts Facilities, Navy

Yard EEB HUB, University of Penn Nanotechnology Building and the Comcast Center.

IFMA Foundation celebrates success

Held on Tuesday, Oct. 1 at the beautiful Ramblewood Country Club championship course and presented by DTZ, this year's IFMA Golf Tournament helped make it possible for IFMA's Utilities Council to





award scholarships and cover World Workplace expenses for outstanding scholars of FM. On Tuesday evening, the annual foundation celebration, held at the Pennsylvania Academy of the Fine Arts, gave supporters of the FM community the chance to reconnect.

Throughout the remaining days of the conference, the foundation named its ePoster competition and International Student of the Year award winners and recognized the 30 current accredited degree programs, which account for more than 650 students. It also held a silent auction of sports memorabilia and more. In total, the foundation was able to award more than US\$140,000 in scholarships and fully subsidize World Workplace travel and participation for 35 deserving FM students.

Inaugural FM Expert Panel a success!

This year FMJ hosted a panel discussion on the unique value of facility management to transcend generational, cultural and occupational boundaries. The conversation was moderated by FMJ award-winning author and past IFMA board member Bill Conley, CFM, SFP, FMP, IFMA Fellow, LEED AP.

The panelists engaged in a rich dialogue on their unique FM stories, how FM has provided value to what they do and what it means to others, and lastly, how to communicate the importance of the profession to the uninitiated. Panelists included Curtis Bragg, vice president strategic integration, ARAMARK Business & Industry Facility Services North America; Sharon Jaye, D.Ed, SFP, director of sustainability, NYC Department of Education; Alita Jones, 2013 IFMA Foundation International Student of the Year; Robert Kleimenhagen, Jr., CFM, strategic planning coordinator, facilities and energy management operations, Pennsylvania Turnpike Commission; and Renuka Rajagopal, vice president, global real estate and facility management, South Asia, Thomson Reuters.

Thanks to Environetics for their sponsorship of the discussion.

Educational opportunities

This year's conference was filled with more educational sessions than ever before, giving attendees the chance to share in the strategies behind the latest innovative facility management practices from around the world. The varied educational sessions offered something for everyone, covering topics including retrofits and other case studies, communicating the value of the profession, the science behind human interactions with the built environment, automation and mobile technologies, project management, energy efficiency and many more.

Sessions followed 14 topic tracks reflecting the facility management competencies defined by IFMA's global job task analysis, including operations and maintenance, real estate and property management, human factors, environmental stewardship and sustainability, project management, leadership and strategy, finance and business, quality, communication, technology, emergency preparedness and business continuity, academic and research, FM solutions and workplace strategy. Conference attendees earned continuing education units for each session they attended, which were easily logged on conveniently located electronic CEU kiosks, and were able to give instant feedback by providing session ratings.

In addition, deeper dive sessions on disaster preparedness and recovery and leadership and strategy, as well as a three-part interactive presentation on FM in the City (refer to the article on page 54), offered in-depth workshop-style learning.

Product solutions on the expo floor

The hub of the conference, the exhibit floor, provided a perfect networking opportunity for FMs at all stages of their career. Attendees browsed more than 300 booths offering product and service solutions for the future of the workplace. Exhibiting companies represented a range of business sectors including alternative energy, architecture, building maintenance, disaster



recovery, education, food services, furniture, health care, real estate, security and technology.

IFMA Central on the expo floor offered a casual space for attendees to catch up and take a break from the excitement. In addition, this year's FMJ Social Networking Lounge, sponsored by iOffice, featured a highly popular photo booth.

IFMA Solutions Arenas, located around the perimeter of the show floor, offered exhibitor-led product demonstrations and information sessions. Sponsored by

Archibus and FMJ, the Solutions Arenas taught attendees how to apply problem-solving tools in their facilities. Sessions by Asure Software, FM:Systems, IFMA, IBM, Archibus and the Corporate Realty, Design & Management Institute offered strategies and solutions to help FMs maintain and improve the built landscape.

Sustainable Exhibitor Program

IFMA is committed to decreasing its environmental footprint and encourages all exhibitors to work toward making their practices more sustainable. As part of this pledge, exhibitors were invited to participate in a voluntary program to

raise awareness of and be recognized for outstanding sustainable exhibition practices.

The more than 30 exhibitors who elected to participate in the program submitted a sustainability scorecard, which was developed in partnership with and scored by the Leonardo Academy, a third-party nonprofit organization that specializes in sustainability solutions.

The winner of the 2013 Sustainable Exhibitor Program was Davies Office Refurbishing, Inc., an Albany, N.Y.-based independent multi-line remanufacturer. The remaining top 10 sustainable





IFMA's World Workplace

The Facility Conference & Expo

Sept 17-19, 2014 | **New Orleans**

exhibitors from World Workplace 2013 included Tyga-Box Systems, Inc., EthoSource, FM Generator, Inc., Innovative Hospitality Solutions, Inc., Smart Rain Systems, FM:Systems, CORT, APTech Group, Inc. and Johnsonite/Tarkett.

Awards of Excellence luncheon and evening gala

On Friday, Oct. 4 the Awards of Excellence celebrations offered a chance for those who have contributed most significantly to the FM profession over the past year and throughout their careers to be recognized by their peers. Among those recognized were the 2013 class of the prestigious IFMA Fellows group (see pages 14-15 of the November/December 2013 issue of FMJ for details), as well as outstanding chapters, leaders and four special Chairman's Citations awardees.

Following the lunch presentations, real estate mogul, contributor to NBC's "TODAY Show" and investor/shark on ABC's reality show "Shark Tank" Barbara Corcoran presented the closing keynote address. Starting the Corcoran Group with a US\$1,000 loan, she created a US\$5 billion real estate business. Corcoran shared her no-nonsense attitude and strategies for business success.

Both the luncheon and evening gala were hosted by the singing comedy act the Water Coolers. The Water Coolers entertained the audience with song parodies and sketch

comedy about the challenges of life, work and everything in between.

Once the formalities were over and the last of the dinner plates cleared, attendees had a chance to dance the night away.

The gala was generously sponsored by ISS.

Join us for World Workplace 2014

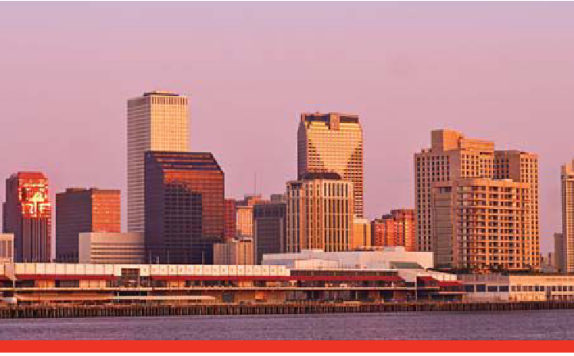
Planning is already well underway for World Workplace North America 2014, set for Sept. 17-19 in New Orleans, La., USA. Next year's event, which will be held at the Ernest N. Morial Convention Center, promises even more resources to help you enhance facility operations and, as always, the chance to learn, connect and advance.

Details about World Workplace 2014, including the call for presentations (which closes March 14, 2014), registration (early bird rate ends July 10, 2014) and exhibit and sponsorship opportunities, are available at worldworkplace.ifma.org. We look forward to seeing you in New Orleans! **FMJ**



Erin Sevitz is editorial manager for IFMA and responsible for internal communications. She leads the copy editing, art direction and production of FMJ. She is a University of

Florida graduate with bachelor's degrees in English and French and tweets actively @ESevitz.



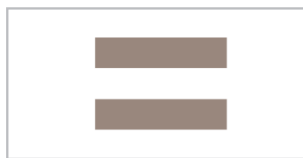
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As the IFMA Foundation looks forward to 2014, we first want to thank the IFMA chapters, councils, organizations, individuals and companies who stepped up to support us in 2013. For a full list of donors, please see our Annual Report which will be released in early 2014. You can download a copy from our new website at <http://foundation.ifma.org>. These donors made possible the IFMA Foundation's efforts in support of FM higher education, students studying Facility Management and related fields, research critical to the future of the profession, and increasing awareness of facility management with high school students.

While many of today's Facility Managers happened to find FM along their career path, the increasing complexity of built environments and increased responsibilities expected of today's FM professionals demand that more of those entering the profession be equipped with a college education in FM.

The IFMA Foundation has responded to this need by making our greatest investment of resources in the FM Accredited Degree Program. Financial investment in the FM ADP exceeds \$200,000 USD annually, and is where the vast majority of unrestricted donations and contributions are allocated. More than 50 volunteers from academia and practitioners are actively engaged in a number of FM ADP related initiatives including:

- Update of the FM ADP Standard and the FM Accreditation Commission
- Application for recognition by the Council for Higher Education Accreditation and
- Continued growth of the FM ADP that will result in the profession more frequently being entered as a career of choice.

As of early December, 2013, there are 30 accredited FM degree programs being offered around the world at 27 different colleges and universities. If you are looking to further your education with a degree in FM or know of someone looking for a degree in an exciting career with a 100% placement rate and excellent starting salaries from accredited programs – look to the list of institutions on the right.

We invite you to learn more about the FM ADP program - throughout 2014 we'll offer webinars, sessions at IFMA events, articles and have web resources available.

Contact us anytime and be a part of the IFMA Foundation's efforts to make FM a career of choice – your time and/or financial contributions will make a difference.

Sincerely,



Jennifer Corbett-Shramo, IFMA Fellow
 Chair, IFMA Foundation
jshramo@ics-oc.com

Jeffrey J. Tafel, CAE
 Executive Director, IFMA Foundation
jeff.tafel@ifma.org



Degree Level	Institution	Country
Graduate	FHS Kufstein Tirol Bildungs GmbH	Austria
Graduate	The University of Sydney	Australia
Undergraduate (4-year)	Conestoga College	Canada
Undergraduate (4-year)	Hanzehogeschool Groningen	The Netherlands
Undergraduate (4-year)	NHTV Breda University of Applied Science	The Netherlands
Undergraduate (4-year)	Saxion Universities of Applied Sciences	The Netherlands
Graduate	Hong Kong Polytechnic University	Hong Kong, PRC
Associate (2-year)	Temasek Polytechnic	Singapore
Undergraduate (4-year)	UniSIM Singapore	Singapore
Undergraduate (4-year)	ZHAW (Zurich University of Applied Sciences)	Switzerland
Graduate (MAS)	ZHAW (Zurich University of Applied Sciences)	Switzerland
Graduate (MSc)	ZHAW (Zurich University of Applied Sciences)	Switzerland
Undergraduate (4-year)	Leeds Metropolitan University	United Kingdom
Graduate	Leeds Metropolitan University	United Kingdom
Graduate	University College London	United Kingdom
Graduate	Arizona State University	USA
Undergraduate (4-year)	Brigham Young University	USA
Associate (2-year)	Community College of Philadelphia	USA
Undergraduate (4-year)	Cornell University	USA
Undergraduate (4-year)	Ferris State University	USA
Undergraduate (4-year)	Florida A&M University	USA
Graduate	Georgia Institute of Technology	USA
Undergraduate (4-year)	Missouri State University	USA
Graduate	Pratt Institute	USA
Graduate	Rochester Institute of Technology	USA
Undergraduate (4-year)	Southern Polytechnic State University	USA
Associate (2-year)	TCl - College of Technology	USA
Undergraduate (4-year)	Temple University	USA
Undergraduate (4-year)	University of Minnesota	USA
Undergraduate (4-year)	Wentworth Institute of Technology	USA



A Whole **New** World

TRENDS FORUM AT WORLD WORKPLACE 2013

BY LAVERNE DECKERT & KATHY O. ROPER

The IFMA research committee held an invited panel Trends Forum, sponsored by CBRE, during the World Workplace 2013 Conference & Expo in Philadelphia, Pa., USA on Oct. 2-3. Emerging from the two sessions, participants confirmed that the themes of leadership, sustainability and technology were important and synergistic areas of change deserving attention from the FM community.

In facilitated sessions, panelists presented state-of-the-art updates and participants expanded on and explored the many facets and interrelationships of these three topics. Agreement was found in the importance of the contribution FM makes to the productive, sustainable and livable built environment worldwide. This opens up many opportunities for IFMA to continue to provide leadership in “quality of life” issues and provides members with advance knowledge of changes that impact their positions.

Top trends

The forum identified several leading trends in the facility management industry as follows:

- FM leaders need to take shared ownership in defining and promoting their profession in a more meaningful, strategic and positive light, taking a seat at the strategic planning table versus waiting for it to be handed to them.
- FMs need to embrace a higher level change management role in or-

der to be recognized as leaders and influencers, especially with business unit relationships, who need business solutions, not FM ones.

- FMs need to elevate and promote the results of optimal workplace models, including separation of “work” from “place” and how this evolution drives revenue or cost avoidance (i.e. reduce turnover, attract and retain best talent, improve productivity).
- Board rooms need to be educated on the right analytics for outcomes directly relevant to earnings and profitability – language which the FM needs to speak.
- FMs need to work with other shared service organizations (HR, IT, etc.) to develop objective, credible and creative metrics driven at the value of people.

More connected generations are becoming better equipped to evolve and create more strategic FM leadership roles, and they often look to the younger companies and technology-driven firms for which the collection and analysis of big data, new ways of working and expecting immediate results is more natural.

The results of the trends sessions will soon be available on the IFMA website as an executive summary, and a detailed white paper on the findings is planned for availability to members in January 2014.

The research committee of IFMA has been working with trends for many

years and this session noted the dramatic shift from more tactical operational changes to the very strategic understanding that the workplace is no longer necessarily a place nor the office of the past. Technological advances, sustainability initiatives and increasingly mature and leadership throughout FM all are combining in ways that make management of the built environment a more important role than ever before. Recognition by senior executives that the tool of the built environment can create and contribute to a more productive, sustainable and livable world has dramatic implications for the FM industry, as well as society. If FMs are to live up to this potential, new education, skills and focus are all required. **FMJ**



Laverne Deckert is product manager, professional development for IFMA. Since coming on board in June 2012, she has led the research and standards initiatives and has been a key member of the knowledge management strategy team. Through her work, Deckert strives to continue to position IFMA as the industry thought leader and contribute to IFMA’s mission of advancing the FM profession.



Kathy O. Roper, CFM, MCR, LEED AP, IFMA Fellow is associate professor and chair, Integrated Facility Management at the Georgia Institute of Technology School of Building Construction.



FM IN THE CITY

BY ADAM TEICHOLZ & ERIC TEICHOLZ, IFMA FELLOW

Cities are changing in ways that are going to have a significant impact on the field of facility management, and vice-versa: because cities consist largely of buildings, the knowledge base and core competencies of FM can make an essential contribution to the urban transformation now underway.

To operate efficiently and sustainably, cities increasingly need data about buildings, including energy and water usage, waste disposal, resiliency and carbon emissions. City managers also want to know about urban-dwellers' movements and habits in order to facilitate them efficiently and safely and to provide the best transportation infrastructure for the resulting traffic patterns and flow.

With these expanding intersections of cities and the built environment in mind, IFMA held its second cities symposium at this year's World Workplace Conference & Expo in Philadelphia, Pa., USA. Titled FM in the City, this second gathering of experts on cities and facility management followed an inaugural cities conference at IFMA's Facility Fusion meetings in April 2013.

Background

The United Nations estimates that by the year 2050, 70 percent of the worldwide population will be living in cities, bringing the world-wide number to 6.3 billion. We are beginning to understand some of the forces — environmental, financial, infrastructure and physical — that can

result in the kinds of successful, vital environments in which we all want to live and work. But there remain many unknowns about what the city of 2050 will look like and we have yet to understand all the physical and cultural forces that will contribute to successful cities in the future. To that end, cities are currently spending nine billion dollars annually for the collection and analysis of “open data.” Decisions based on these analytics directly affect buildings and the people who inhabit them as residents or employees. What will be that impact on the built environment, on how people work and on the livability of their cities? How can FM integrate the developments pertaining to cities into our field, and what contribution can we make — must we make — to the kinds of data that cities are increasingly gathering and using? As the people in charge of the day-to-day operations of the buildings that, taken together, provide these crucial data, FMs are essential participants in the expanding interface between city and facility.

A new IFMA focus group planned IFMA's first cities conference which was held at Facility Fusion in April, 2013 (see FMJ, July/August 2013, p. 51-56). The second cities conference, held at World Workplace 2013, was comprised of three sessions intended to build on knowledge gained in the previous Fusion cities symposium. At World Workplace, the first cities session looked at cities exclusively from an FM perspective. Three IFMA council leaders discussed their particular industry

segments, focusing on how urban trends and big data are affecting their industries — and how that impact is likely to increase. In the second cities session, the paradigm was flipped, and the presentations were made primarily by private-sector organizations that provide urban services and analytics. These presenters described the types of data being collected, for what purposes, and how both service providers and cities might benefit from working with facility managers. During the third cities session, a panel comprised of presenters from each of the prior sessions and conference planners explored the roles that FM and IFMA might play in the emerging world of cities.

Session 1: “How new urban conditions are already influencing FM”

Bill Gregory of the Health Care Institute (an IFMA alliance partner) talked about the challenge of getting patients to health care and conversely, the challenge of getting health care to patients. Other parts of his presentation addressed: the security and capital challenges of FM (hospitals normally operate on a 3-5 percent margin); emergency management challenges (natural disaster and epidemics); HR challenges (growing diversity of staff and patients as well as language issues); energy challenges (health care buildings use more energy than commercial buildings); and data challenges (diagnostic imaging and EMR generate massive amounts of data). In the context of the city and urban analytics today, this means that the typical



FMS ARE ESSENTIAL PARTICIPANTS IN THE EXPANDING INTERFACE BETWEEN CITY AND FACILITY.

health care system will have multiple sites in a region. It means that health care must embrace technology for its data, energy and operational benefits and that the health care industry must rely on the city to provide security and a functioning infrastructure. Gregory speculated that big data will also most likely play a role in fraud detection, healthcare information exchange, emergency care, diagnostics, treatment recommendations and patient monitoring.

Jim Ware of the Corporate Real Estate Council stated that the real estate industry, especially when managing large portfolios, needs data — data about the age and skill-sets of the potential workforce; about local transportation systems; about climate, energy and resiliency; about the policies of municipal governments and tax credits; and about higher education and safety. Ware indicated that employees move to cities to meet both work and leisure needs. Facility managers need to think outside the box, especially “when you are not in one.” More specifically, he continued, we need to think about the interstitial activities of people. The smart city can provide answers to the questions Ware raised, but we still need structures and mechanisms for communicating open information bi-directionally.

Another panelist, Tom Vecchione from global design firm Gensler, likewise emphasized the importance of urban quality of life by pointing out that in the past it was work that drove corporate real estate but increasingly it is lifestyle quality. He projected that the role of the facility manager will change radically

and FMs must think about urbanization and buildings as providing bundles of services for employees. To meet the needs of the community, buildings are becoming multi-purpose. Vecchione therefore suggested that IFMA must re-think the skills needed to look after workers in these multiple contexts of work, living and community activities, all of which might increasingly take place under one roof.

Session 2: “Connecting FM to the smart city of the future”

The existing urban data-collection and analytics industry rarely directly brings in facility managers. Rather, cities employ private-sector companies to perform specific applications — usually related to infrastructure, resiliency/climate change, security, energy and carbon emissions.

John Clark of IBM differentiated between two types of data that can be collected and analyzed: structured data (data typically found in rows and columns) and unstructured data (created by social media, text, video, VoIP, sensors). Data is analyzed using the metrics of volume, velocity, variety and veracity. Clark

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talked about the “Internet of things” where data is generated from intelligent objects — everything from parking meters to street lights. Clark presented case studies in which real-time sensor data was generated for the purpose of water leak detection and infrastructure maintenance. Clark observed that there is much technology overlap between cities and buildings, and that facility managers need to partner with other stakeholders in order to engage effectively with open data urban analytics.

As the second speaker in Session 2, Laurie Actman, the interim director of a DoE-funded eebHUB (Energy Efficient Buildings Hub) project in Philadelphia, described a project already involving the integration of various stakeholders including facility managers and owners who work in both the public and private sectors. The goal of the two-and-a-half-year-old hub project is to transform the economic incentives for energy efficiency for existing small- and medium-sized commercial buildings by addressing financial, educational, training and technology issues. The hub’s goal is to reduce energy use in existing buildings by 50 percent.

To realize this ambitious goal, Actman maintains that benchmarking and transparency (disclosure) of data is essential. The hub project is supported by the municipal government, and the city recently enacted a Building Energy Benchmarking Law (an energy-use disclosure act) requiring the disclosure of the environmental performance of buildings. As of Oct. 31, 2013, building owners are required to report property statistics including energy and water use using the EPA’s Portfolio Manager.

To summarize, Actman emphasized four factors necessary when considering deep energy cuts:

- Cities are taking the lead on sustainability and energy efficiency and facility managers need to join in urban and regional energy initiatives already underway or create new ones;

- Benchmarking and data disclosure are driving the increasing interest in energy efficiency and need to be mandated at the national, state or local level;
- Tenants and owners are becoming more sophisticated, and formal means of communication need to be established between all stakeholders;
- Facility managers need to leverage their building energy data to realize additional operational savings in the larger context of urban and regional communities.

Session 3: “Connecting FM to the smart city of the future”

The FM in the City sessions were designed to be wide-ranging and the goal was not to reach general consensus as to the role FM plays in future cities: we are just beginning to understand the dynamics of successful cities and the role that FM might play in the context of open data, urban analytics and greater worker satisfaction. Still, everyone who participated in the World Workplace event agreed that we are moving in a direction that will enable us to rethink the roles FMs can play in making cities more livable and sustainable.

Below are some of the conclusions reached at this event:

- FMs need to better understand the many opportunities available through FM/city integration and quantify the business case for engaging in such activities;
- Technology and data (both structured and unstructured) will be increasingly important to the FM in future cities;
- We need to think outside the building. Buildings will increasingly be multi-functioned and thought of as providing multiple services related to the building as well as the occupant.
- There are no standards associated with open data. Until such standards are developed and implemented collaboration between the stakeholders will be

- difficult and proprietary;
- The development of formal structures of communication between city stakeholders and service providers will be essential. Since cities are taking the lead in planning and implementing energy, carbon, infrastructure and resiliency/climate change programs, FMs must quickly be trained to participate in these decisions;
- Urban data collection, analytics and maintenance must be better understood by FMs. Global case study examples need to be generated to better understand how urban analytics are impacted by locational and other factors;
- We need to know what data we can trust, what we need to collect and how to integrate the data with our existing building systems. We need to better understand the FM implications of developments in cities that are in the forefront of the big data/smart city movement (e.g., Barcelona, Stockholm, Chicago and Boston);
- FMs need to better understand the cultural influences present in cities and how to best to institute cultural change that make cities more livable;
- Measurement, reporting and transparency of information between FMs and other stakeholders are essential;
- How people work is increasingly an important component of FM. Work spaces are currently inefficiently used. We have been trained to analyze our buildings but not how people function most effectively. Buildings are not just about space and operations but about the public, private and civic experiences of the people who inhabit them;
- City governments have not even begun to address the privacy issue — especially as it relates to unstructured data.

In the final analysis, FMs are still custodians of the built environment. If we are to implement any of the findings



listed above, we need to understand and quantify the economic implications of our recommendations. At this point in time, we can confidently say that open data and urban analytics will be part of our future and we must prepare to use these tools effectively and communicate/collaborate with other city stakeholders. When this happens, we can better define the emerging impact of future cities on facility management. **FMJ**

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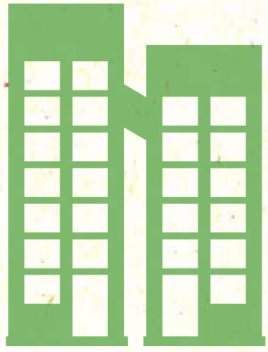
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Adam Teicholz, Eric's son, is a television news producer and journalist on legal issues, and served, by special but anonymous invitation, on the board of advisors for

the FM in the City sessions. He can be reached at ateicholz@post.harvard.edu.

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The Situation

John Marhong is a Certified Engineering Technician with a background in computer engineering. He is now the Director of Infrastructure & Energy Efficiency at The Woodbine Entertainment Group. Several years ago—like many in the facility industry—he and his company decided that the time had come for Woodbine to begin implementing more energy-efficient FM practices.

He was encouraged by a colleague to attend IFMA's World Workplace 2010 in Atlanta, Ga., and made the decision to join IFMA after a very positive conference experience. After receiving materials from IFMA announcing the launch of the new Sustainability Facility Professional® credential, his interest was piqued. Marhong signed up for the SFP with high hopes—but never could have anticipated the true value this credential program would bring him.

"A lot of people kick around the term sustainability without fully understanding. After going through the SFP program, I feel confident that I can speak about sustainability from a position of knowledge."

The Approach

Given his position at Woodbine and his familiarity with the movement to energy efficiency in new and existing buildings, John was shocked to learn how *little* he actually knew about sustainability once he received the SFP course materials! Although challenging, Marhong admits he wouldn't change a thing about the content or the exam.

"I was totally blown away by the course content. It flows beautifully in such a logical way. The course materials draw you into sustainability almost like a good book. However, if you didn't truly understand the concept and the philosophy behind sustainability, you couldn't pass the final exam—and that's a good thing."

"The SFP program provides very practical solutions that you can apply to your facilities immediately; but in my opinion, it's just as valuable in your everyday life. Sustainability is where the world is headed, and the SFP is truly a life skill."

The Results

After earning his SFP credential, John is pleased to report that both colleagues and supervisors have taken notice in a big way. John works for a company that supports sustainability as a key business strategy. He has an integral role on the Steering Committee which develops, implements and monitors all sustainable initiatives.

Marhong was asked to give a recap presentation to coworkers discussing the knowledge he gained from the SFP program. After doing so, colleagues who were once interested in pursuing other sustainability programs are now seeking his advice about pursuing the SFP credential.

John Marhong, C.E.T., SFP
Director of Infrastructure and Energy Efficiency
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FM Congress 2013: International Knowledge Sharing

Discussing regional perspectives of facility management

BY ANDREA SANCHEZ

On Oct. 2, 2013, as part of IFMA's World Workplace Conference & Expo in Philadelphia, Pa., USA, key representatives from the major facility management associations worldwide reconvened to discuss FM trends, challenges and opportunities. Now in its second year, Jon Seller, chair of the IFMA board of directors, facilitated the event — thought leadership at its best.

The gathering began with presentations from eight facility management associations/networks from around the globe. It was evident to see that despite geographic and cultural differences, each

organization embodies the spirit of FM. Commonalities were re-emphasized, and at the same time, potential opportunities that differences can offer were brought to the forefront and embraced.

Upon the conclusion of the presentations, the audience participated in a thought-provoking and inspiring discussion (refer to group discussion topics section). A list of shared areas of focus and action items was generated (refer to the action items list). In the coming year each association will work on the proposed items and share their results at the next gathering. A summary of each presentation follows.

British Institute of Facilities Management (BIFM)

GARETH TANCRED

The facility management market in the United Kingdom is quite mature. In recent years there has been a shift from hard to soft FM. Although the focus has been on mechanical and electrical engineering, softer services are growing. Service providers have developed from a variety of backgrounds and are categorized into six groups: construction to support services, property plus, technical plus, multi-services, public focus and “pure” FM.

The trend toward diversification and integrated facility management — providers extending offerings by adding new services — is typically through acquisition of smaller specialists. From US\$80-200 billion, estimates of the UK FM market size vary. The market is fragmented with the largest providers having 5 percent of market share. Competition is intense and the skills, backgrounds and roles of facility managers are evolving. Besides understanding the business organization, they must be technically competent, keep abreast of compliance issues, be customer focused, have the ability to predict and lead change and most importantly have flexibility of approach.

Trends and challenges:

- Acceptance and understanding of risk.
- An increase in contracts.
- Focus on life cycle sustainability.
- An increase in home working.
- An increase in bundling of services.
- Difficulty attracting young people to the industry (would like to position FM as a career of choice rather than a career of chance).
- Increased interest in building information management.
- Rise in energy management.

Colombian Facility Management Association (Asociación de Gestores de Edificios Modernos)

MAX JARAMILLO FERTIG

The largest office markets in Latin America are Mexico City, Mexico; São Paulo, Brazil; and Santiago, Chile. The fastest-growing markets over the past two years have been Bogotá, Colombia and Panama City, Panama due to large pent-up demand and a favorable investment climate. The concept of facility management is for the most part unknown in Latin America. The discipline is generally subsumed around other areas of a business.

The primary focus of the association is educational — seeking the continuous professionalization and training of the sector. Any participant in the activities of AGEM will behave ethically and morally,

with maximum transparency for the good of the community.

Trends and challenges:

- Further magnify the importance of the profession.
- In need of credentials provider.
- Interest in building automation and building safety.

European Facility Management Network (EuroFM)

RON VAN DER WEERD

In his travels around the world, van der Weerd is constantly asked what facility management is and how its development is progressing in specific regions. There is a need to strive for a consistent definition of the profession, one that transcends borders. A common principle is that facility management revolves around the three Ps: people, planet and profit.

There is added value in looking at a 5 P model, one that approaches FM according to the history and market readiness of specific countries. The model involves people, planet, process, prosperity and people. Dynamic demand starts the process, while technology, mentality and globalization intertwine among each. Some countries may place process in the center, while others may revolve around place. Despite the different focuses, the end result is the same: added value.

Trends and challenges:

- Is facility management a job or a profession?
- Adopt a model that facilitates, in a flexible manner suitable to each cultural environment, the work activities in the areas of services and property management.
- Special attention to social sustainability and increasing client experience.

Facility Management Association of Australia (FMA Australia)

DUNCAN WADDELL

Recent studies conducted by FMA Australia have found that approximately 63 percent of FM professionals are aged 46 years or older; only 49 percent have

completed a degree or higher; less than 43 percent have qualifications relevant to FM; skill shortages and wage inflation were forecast as the top two risks for 2013 and top one risk by 2017; and 52 percent of individuals fund their own education. These figures, coupled with other factors, demonstrate the importance of education and training within the industry.

The organization is passionate about its continued goal to establish and build networks for knowledge sharing and providing one voice through industry engagement (social media, surveys, reference groups, committees, etc.). There is also much potential to improve awareness and influence through advocacy.

Trends and challenges:

- Involvement in developing networks (further need for industry engagement).
- The focus of the industry continues to be cost/value driven.
- Potential opportunities in the health care, resources and telecommunications sectors.
- Typically high volume, low margin transactions.
- A need to focus on relevant outcomes pertaining to what the profession needs.

Facilities Management Association of New Zealand

VALERIAN MORAES, CFM, MBA

In 1997 facility management in New Zealand was nonexistent; a profession whose totality was difficult to understand. It was not until the following year that FM began to be seen as a profession. In 2009, the first FM association in the country was formed, which in 2013 grew to 500 members.

2011 proved to be a year of success as the association unveiled its first conference. Interest outweighed the capacity of the reserved venue. Still developing, but having more exposure, facility management is currently showing promising interest and growth as a profession.



Trends and challenges:

- Greater focus on professional development.
- Demand for an FM credential in the next few years.

Facility Management Nederland (FMN)

RENÉ H.J. DE VOS, MBA, CFM

In the Netherlands, the current focus has been on cost savings, life cycle management, sustainability and work/life balance. There continues to be demand for facility management within the hospitality industry. The Dutch government introduced public private partnership (PPP) as a new way of working — investing in people and processes to continuously improve.

PPPs involve private parties (hard and soft services) working together in a consortium for a contract period for a specific project. The corporation contains the construction and full operations. The government will pay the project for a fixed fee guaranteed. The move is toward the softer side of business, making greater efforts toward transparency and understanding each other. PPP projects realize cost savings of up to 12 percent in comparison to the normal way of completing projects.

Trends and challenges:

- Increase customer satisfaction.
- One party gives scale and efficiency.
- The move from single suppliers to multi services suppliers.
- An increase in public private partnerships.

Japan Facility Management Association (JFMA)

YUSUKE YAMADA

In Japan there is government support for FM. JFMA has 6,500 certified FM members, 171 corporate members, 126 local government members and 908 individual members. Corporate members range from the areas of telecom, railway to information technology. There is great demand for research, knowledge sharing and professional development. The association has been involved with ISO (International Organization for Standardization). A ISO/TC267 meeting was held in Tokyo in September 2013.

Trends and challenges:

- Interest in sustainability, corporate real estate and universal design.
- High regard/sensitivity to health care and health issues.
- Focus on knowledge management.
- Demand for business continuity planning/asset management.

International Facility Management Association (IFMA)

TONY KEANE, CAE

IFMA continues to see steady growth and global demand for credentialed professionals in facility management. More employers are starting to recognize the expertise and experience that comes with having a facility management credential.

In line with helping magnify the profession, great focus has been placed on the rising generations and promoting FM as a career of choice. FM touches every facet of the workplace; its effect on

efficiencies, productivity, operations and business strategy is paramount. Further emphasis on education, professional development and knowledge sharing is key. IFMA takes pride in being a service center of excellence — this means listening to the voice of the client, being a hub for FM knowledge and emulating the practices of a modern, collaborative workplace.

The FM world is huge and working together one can create a world where FM is a business term understood by all. Increasing the awareness of the profession and industry is core to IFMA’s mission, one that brings together FM organizations worldwide around a common shared goal.

Trends and challenges:

- Higher demand for credentials.
- Growth in learning systems/professional development/events.
- Focus on standards.
- Increased demand for research and knowledge management.
- Interest in advocacy and global awareness of the profession.
- Customer service as a priority.

Group discussion topics

- Despite demographic/location differences, there are many commonalities between each group. We are all trying to achieve the same thing: How do we package that in a meaningful fashion?
- In order to get ahead to build the profession, need to explore common competencies and initiatives between all groups. Value must come first.
- Take market size into account when creating value.
- We all have a value system we adhere to. How can we add value across the board? FM is a multi-disciplinary profession. There must be awareness of the profession and how each group can help each other drive that forward.
- Job creation: How do we work together to elevate numbers?
- How do we create further awareness and increase connectivity?

- In 2057, 70 percent of the population will live in cities. How do we get people to invest in FM?
- Focus on advocacy. Speak up for what has the potential to drive the profession forward. Give FM a voice.
- Increased need/value in research and sustainability.
- Become advocates for the profession. What can we do as individuals to spread the passion of FM?
- Be resourceful, think simply. Simple tasks leave the biggest marks.
- Find solutions/ideas to make facility management stand out.
- Invest in knowledge sharing, enhance resource pages and share links among each other.
- Find additional ways to get members involved, the member's voice is powerful.

Action items

- Create a document that captures the feedback/ideas from the group discussions.
- Create a framework for communication/knowledge sharing between associations.
- What is the FM market size for each country represented? Share information at the next gathering.
- Volunteer to speak at local schools/colleges. If unable to do it yourself, find an ambassador. Speak with organizations we represent and local employment offices, then report on it. To peak interest of younger professionals, each organization is challenged to visit as many schools as possible, capture numbers and report on them at next year's gathering.

Proposed structure for 2014 FM Congress

- Increase presentation and discussion time to four hours and turn the event into a workshop.
- Send task items to participants ahead of time.
- Invite 2013 panelists to return, giving updates to their 2013 presentations. **FMJ**



Andrea Sanchez is editor-in-chief of Facility Management Journal as well as IFMA's director of communications. She can be reached at andrea.sanchez@ifma.org.





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New IFMA Brand Gains Traction

BY STEWART DALLAS

In the marketing world, the opportunity to be at the helm of a new logo project and full organizational rebrand seldom comes along. This has been such a time in my career and the privilege has been great. After a lot of hard work and valuable input from our many stakeholders I believe we are in a great position to move forward with confidence.

After 30 years there was overwhelming consensus for something new. Fundamentally, I believe that the brand refresh will prove to be a winner for IFMA, and by extension, for our members and the FM

community at large. In the previous issue of FMJ we covered the full rationale for the logo update. More details about the extensive research process behind the final product can be found online at www.ifma.org/newlogo.

Identifying with collective identity

For the IFMA brand to be consistent, we wanted and needed a look that provided a sense of cohesiveness to the many components that comprise the organization, an approach that professional associations and companies have adopted for years. While we

appreciate that this will mean some adjustment over time for all parts of the IFMA family — to websites, letterheads, trade show materials, brochures, etc. — it is an important step toward ensuring the long-term market position of IFMA.

While a strong brand identifier is an important link, we understand and support the need for regional groups to maintain a local connection. We are aiming to achieve the best of both worlds — a consistent brand image across all components that allows regions, cultures and specializations to shine with local pride and identity.

The Chicago Chapter samples on the preceding page are a great example of successful brand implementation at the local level. They present a compelling

and unique image of the chapter and of Chicago as a city but are still clearly identifiable as being part of the IFMA family. With that approach, a rising tide will lift all boats. Over time, we will all gain strength from one another with a more consistent application.

Supporting change

My sincere thanks to everyone in the IFMA family for truly supporting and rallying behind this initiative. Watch for more great examples of logo usage to come as chapters and councils increasingly incorporate the new look in their existing and future initiatives. If you have not yet done so, we invite you to get started by retrieving your logo package and guidelines at www.ifma.org/logo. This is a chance for us to work together to refresh the look of IFMA as we position the organization to contin-

ue as the leading resource for facility professionals everywhere. Most importantly, remember to have fun!

Please feel free to contact me directly with any questions at +1-281-974-5671 or stewart.dallas@ifma.org. I expect to hear from folks and will personally endeavor to help everyone in this transition as much as possible! **FMJ**



Stewart Dallas is the Director of Marketing at IFMA. He heads up all aspects of IFMA's online and offline marketing, branding, CRM, email, positioning and product promotion. He is a proud Scot and graduate of the University of Strathclyde Business School in Glasgow, Scotland, U.K.



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2013 Trends in Global
Employee
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Occupant Engagement

How facility managers act as change agents

1315 Peachtree Street
(Atlanta Office of Perkins+Will)
Atlanta, GA
Photo by Eduard Hueber | archphoto.com
Design by Perkins+Will

BY JANICE BARNES & RACHEL CASANOVA

Increasingly, today's organizations are faced with questions about change management, occupant engagement and transition planning. Before diving into who should be leading these initiatives and how to ensure success, it is important to understand the differences between these related but distinct concepts.

Key concepts

Change management is an overarching effort that stems from a decision to make an organizational change, be it physical or otherwise. In order to embrace the change, employees, students, patients and other users of the space must have a firm understanding of:

- What will be changing
- Why it will be changing
- How it will affect the experience or use of space

Once these elements are defined, an action plan should be developed to guide the change — this is referred to as a transition plan. It is tactical. It defines the communication strategy, engagement activities and training that should be provided to deliver successful change.

In many transitions, for example, this requires recognition of other tools and processes that will need to shift in order for the change to be fully implemented. A good first step is defining the future workplace, which includes identifying the myriad practices that will need to adapt in order to support this new workplace. This process includes establishing refined management training and facilitating cross-department/cross-discipline conversations in order to assure that each work process touched by the new workplace strategy aligns.

Employee engagement is a requisite part of the transition planning process. In particular, engaging employees in ways

that are meaningful, authentic and that demonstrate value is critical. This helps make it easier for them to adopt new behaviors and let go of old ones. It is well established that employee engagement can reduce costs, drive greater innovation and problem solving and have a dramatic impact on employee retention.

Overall, an engagement strategy should build trust and understanding in addition to allowing employees to be participants in the process, and more deeply understand how their work will change and why. Consider developing a guide to help employees understand a range of typical building functions, including sustainable design aspects such as refraining from overriding sustainable lighting controls and how to answer customer questions regarding the company's commitment to sustainability. Through this guide, employees will be able to become more deeply engaged with the facilities they use every day.

Occupant engagement goes beyond an organization's relationship with its employees; it may relate to the connection between landlord and tenant, a student within a university or a specialized practice joining a larger health network. The point is that a person who is an occupant isn't always an employee, but can instead be a customer.

As a result of the different relationship, the structure of the change process must adapt. For example, even the most sustainably designed building requires participation from its tenants to achieve its long-term goals. Consider individuals employed by different companies within the same building. Now imagine their habits in regard to turning electronics on and off, interacting with automatic shades, and using stairs and elevators.

MANY DIFFERENT PARTS OF AN ORGANIZATION MUST COLLABORATE FOR ANY TRANSITION TO BE A SUCCESS.

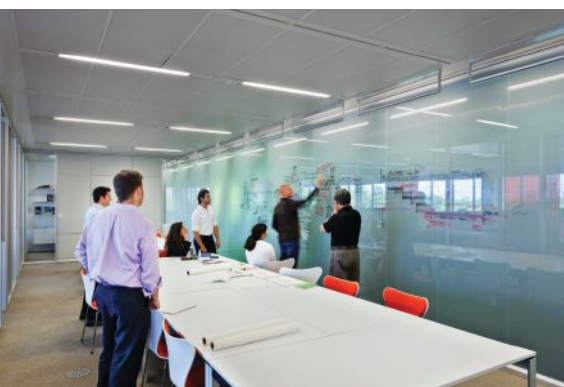
The landlord, driven to achieve building performance, must engage those occupants to encourage the desired behavior while managing the landlord/tenant relationship.

The role of facility managers

Occupant engagement is an integral component of an aligned, well-designed strategy for workplaces, academic buildings, outpatient facilities and critical care hospitals. When any of these spaces is redesigned, the process creates visibility into many other non-spatial parts of the organization. The space becomes an embodiment of the brand and the culture of the organization, and it serves as an enabler for other changes.

There are many case studies over the last 20 years where design was used as the primary catalyst for change in an organization — in the model of “if we build it, they will change.”

However, this model has not been especially successful. Instead, it often creates discord and disengagement if shifts in culture or processes necessitated by the new space do not receive the same attention. Things that are taken away (such as private offices or file cabinets



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or printers) force people to do things differently. Since facility managers are in the position to create physical changes, this becomes the time that behavioral changes are required. For example: if the file policy has been restated and is now to be completed electronically, people may continue to use the “old way” until the filing cabinets are removed. As a result, today’s facility managers have become change agents, but they’re not alone.

Many different parts of an organization must collaborate for any transition to be a success. Consider the following scenarios: Have your technology tools been replaced in the past year? Have you started scanning paperwork instead of keeping hard copies? Has employee mobility increased, resulting in changes in how everyone interfaces with technology, manages, is managed and relates to colleagues? It goes without saying that all of these changes require support from a range of subject matter experts, including real estate and facilities, operations, human resources, information technology, communications and business leaders. Some organizations also form continuous improvement groups to support complex changes. Notably, the involvement of business leaders cannot be overstated; they are the respected voice within a particular area of practice. Change is hard. Without leadership voice, success is much harder to attain.

Where to start

With any organizational change, initial assessment will help prioritize areas of focus. Consider the following factors as you assess the greatest needs:

- **Voice** – People want to hear from someone they respect and follow. Leaders need to have an active role in communicating and reinforcing the message. Remember that these leaders may be representatives of the management team, but they may also be found within the organization without a title that defines a leadership role; these individuals should be identified and engaged deliberately.
 - **Degree of change being experienced** – If an organization is making major changes in the way
- that it works, whether physical or not, the need for support (and the duration of that support) is significantly greater than if the organization is maintaining its existing business model. If there are multi-disciplinary changes happening, then a team must be formed to work together. IT experiences changes very differently than human resources or real estate. These differences must be seen holistically and approached with a comprehensive change management strategy.
 - **Stakeholder characteristics** – People are unique. Knowing your audience and their hot buttons, pain points and interests is key to creating positive change.
 - **Decision-making structure and authority** – This further addresses stakeholders and specifically how decisions are made. A more centralized organization structure may require less consensus building than one where authority is decentralized, for example at academic institutions or mission-based organizations.
 - **Revenue impact** – If there is a measurable business impact, change is easier to understand from all aspects of the organization. If brand realignment or qualitative issues are driving the change, it is often comparatively harder. Clear examples include retail environments, where every cubic foot might change a sale, or college dormitories, where square footage directly relates to quantity of rooms available for new students. When there are direct links to revenue generation or capacity to serve customers, the effect of the change can be more easily calculated and communicated.
 - **Risk factors** – Changes that pose high risk, whether to attention or business continuity, need to be treated differently. For example, in a health care setting where new equipment or procedures are to be implemented, it is absolutely necessary to understand how routines will be interrupted and what potential risk this will have on patient safety. Routines are part of

the healthcare delivery cycle, but interrupting them by designing new environments, installing new equipment or altering existing procedures creates new risks.

- **Investment calculations** – Often these calculations occur through different departments in the organization; the overall ROI can only become clear through holistic examination (real estate cost reductions against technology investments).
- **Success factors** – Success factors vary by group and by individual, which can make measurement of success difficult until shared values are identified and basic factors are aligned. Defining how those measures relate to the key influencers in the change process is also a critical step.
- **Technology evolution** – There is a wide range of capabilities to the technology backbone. If an organization intends to create new ways of working, for example, there will be significant changes to the technology backbone, the infrastructure investment and ultimately the human interface with the tools.

Based on these indicators, the tactics deployed in the transition plan and the processes of employee and occupant engagement will vary. While no single set of tactics works for all organizations, there are some basics to consider:

Messaging

- Consistent, branded messaging brings context to all forms of communication about the change, such as in presentations and newsletters.
- Messages and materials that come from leadership convey significance in communications.
- Online newsletters often offer a convenient channel for communicating a variety of update.

Input

- Online crowd-sourced feedback mechanisms, such as websites or

pulse surveys, provide a way to receive real-time insights as well as a continuous opportunity for engagement.

- Interviews, focus groups and facilitated workshops provide a chance to gather data as well as an opportunity for users to be heard one-on-one.

Experience

- “Day in the life” animations, story boards or other depictions help provide a user-centric perspective of the change ahead.
- Technology showcases create an opportunity to try the new technology that often accompanies a change to space before it is deployed.
- Training for specific skills alleviates the fears that often accompany the introduction of unfamiliar new tools.
- Site tours provide great benefit by giving users an experience of the space.
- It is worth noting that any tactics that are necessary for “how-to” often are paired with others that focus on “why we should.” This will improve the effectiveness of any engagement and help to ensure accurate representation of an organization’s unique characteristics.

Ongoing engagement

In many ways, the occupant engagement process is never done, but how the process is managed evolves as capabilities increase. Begin a change management approach with the development of a new workplace strategy, continue with prototyping and roll-out at multiple locations if applicable and then arrange for the measurement and ongoing monitoring of performance. In this most recent stage, employees inside the organization can be trained to carry the program forward as an integral part of their business as usual approach. Additional training may need to be developed and offered as time goes on, but getting the employees involved in a practical way throughout their day helps ease the transition.

It is critical to remember that occupant engagement is about getting users to have a positive connection to a new normal that

accompanies a change in space design. This positive connection is rarely formed by talking at people. It happens when users make the connection to the drivers for change, understand their individual role in the change and understand the intent. Think about a change you’ve experienced — did it feel like it was done to you or with you? We want to be asked. We want to influence our surroundings to make them work for us as individuals.

As facility managers, designers, architects, planners and managers, we have a significant responsibility and opportunity to embrace our role in the success of our organizations well beyond the management of space. Enjoy the journey and make it fun — after all, you can catch more flies with honey than vinegar. **FMJ**



Janice Barnes, Ph.D., LEED AP BD+C, is Perkins+Will’s global leader of planning and strategies. In this capacity, she focuses on the ways in which planning enables clients to meet their

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Internationally recognized for her expertise in workplace and organizational strategy, Barnes leads the firm’s annual workplace trends research. She also leads engagements with diverse clients such as the United Nations, Medtronic, TD Financial Group and KPMG.



Rachel Casanova, LEED AP ID+C, is a senior planning and strategies consultant with nearly 20 years of experience in helping companies transform their real estate assets in order to

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Inspector Explains
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ROOF ASSET MANAGEMENT

How technology eliminates the guesswork

BY ANTHONY VROSS

Roof maintenance tends to be reactive in nature. Yes, visual inspections may be done a few times a year, but concern for roof failure often ranks low on the list of facility management's priorities until it happens. Roof failure occurs when the costs of maintaining the roof worsen over the years to the point of being unmanageable. Such costs can be tangible or intangible: perhaps litigation results from a customer's fall due to water on the floor from an overhead leak, or perhaps there is a need to replace a roof deck because of structural deficiencies that may not have been detectable by a visual inspection. While roof failure in most cases is not sudden or without warning, those who have not closely monitored roof conditions will feel blindsided when it happens.

Why is little thought given to long-range roof asset management planning? One answer may be lack of awareness that current technology, which has been applied to nearly every business discipline imaginable, offers a proactive roof asset management platform that can provide companies

with a clearer picture of a roof's lifecycle and the ability to effectively manage this valuable asset.

The risk of subjectivity

Costs of roof maintenance tend to follow a pattern. In the early years of a roof's life, the costs are relatively low. By the sixth or seventh year, costs begin to rise, gradually at first and then with greater frequency in the later years. Facility managers may be uncertain about the right time to intervene — when to proactively commit to repairs, restoration or replacement.

Complicating the issue is the presence of region-specific weather that can cause roofs to degrade over time. Rate of deterioration frequently depends on geography. A primarily sunny and hot climate will bring an onslaught of UV rays that are damaging to a roof's lifecycle over the long haul. If the roof is located in a cold and snowy climate, frequent build-up and thaw of snow and ice, as well as improper snow removal techniques, often lead to undetected damage to the roof membrane that worsens until it fails.

Another frequent cause of roof failure is moisture penetration from HVAC units, satellite dishes or conduit lines, despite the most thorough and careful of installations and maintenance.

While there really is no shortage of challenges to successfully managing roof assets, the best method for overcoming them is to understand exactly what a roof asset management model should and should not include. The model should be an exhaustive analysis of the roofing portfolio designed to determine the roof's remaining useful life. Many asset management programs, however, are anything but "exhaustive." They rely primarily just on two common tools: visual inspections and infrared scans. Such methods are valuable in determining presence of wet insulation in the substrate or other issues that can be easily spotted by inspectors, but they don't reveal the entire story.

Although scans and inspections may be standard industry practice, they are unlikely to distinguish ongoing deterioration from UV rays because they are not designed to do so. They present a picture of the roof as it is the day of the inspection, uncovering only easily detectable problems. Scans and inspections fall short in detecting other potential deficiencies and accurately forecasting a roof's useful life.

Subjectivity can also be a potential pitfall for facility managers. Visual inspections are, for the most part, subjective because the deficiencies detected are likely to depend upon the experience of the inspector. One who has accumulated a wealth of knowledge from many years of conducting roof inspections is more likely to visually discern and perhaps identify potential deficiencies than an inspector with less background and training.

The risk of subjectivity in roof asset management is removed with the application of science and analytics. Newer technology in scientific testing and analysis of the roof membrane can accurately determine the rate of deterioration occurring on a roof portfolio on a yearly basis, which in turn projects useful lifespan. This helps facility management teams effectively plan for the costs of maintenance. It is, at its essence, a modeling tool designed to develop a long-term roof portfolio budget while placing management and ownership in the more suitable position of precisely projecting costs years ahead. Of particular importance is the ability for the platform to conclude the optimal time to take action on a roof before deterioration leaves no choice other than a costly replacement. Platform analytics give facility managers and building owners the clearest picture of the roofing

asset, the maintenance that can be expected through the years and the most cost-effective way to address it.

Inside the analytics

Analysis of each roof begins with preliminary data collections consisting of such vital information as age, size, drainage, CAD drawings and projections. Roof evaluation technicians use a tablet on-site to field verify all drawings, inspect

A DATABASE BUILT UPON BUSINESS INTELLIGENCE IS THE MOST VITAL COMPONENT OF ROOF ASSET MANAGEMENT ANALYTICS.

the roof's condition and check for anomalies that are photographed and labeled as soon as they are detected. When completed, information is fed from the tablet directly into the database of the platform.

For the technology to be most effective, the database should include results from extensive sampling and testing of the roof membrane, analysis of its waterproof capabilities and testing of adhesion. Tensile strength and elongation, always critical data, deserve the same scrutiny and should be entered into the database to enable an accurate calculation of the roof's remaining useful life.

These analytics can project both the roof depletion rate, calculated by taking the replacement value of the roof portfolio and dividing it by the asset's average life expectancy, as well as the annual costs associated with it. By entering statistics based on the roof's size, replacement cost, portfolio value and real life expectancy, the facility management team has a clearer picture of what it can expect to annually spend on the roof portfolio.

Applying business intelligence

A database built upon business intelligence, the most vital component of roof asset management analytics, is flexible and enhanced each time there are new inputs of information. It is an intuitive formulation of statistics based on years of roof analyses. Comprehensive data compares a roof, its condition, probable years of useful life and other



PLATFORM ANALYTICS GIVE FACILITY MANAGERS THE clearest picture of the roofing asset, the maintenance the building can expect through the years and the most cost-effective way to address it.

pertinent factors with data gathered from millions of square feet from other roofs before generating its calculations in a seamless process.

This type of database can also help facility managers examine and choose the optimum intervention time for repairs and/or restoration, which is determined through comparative results derived from what should be considered less favorable maintenance strategies. One of those strategies is “run to failure” in which there is no intervention or proactive roof maintenance performed. Costs are based on a series of normal, ongoing leak-repair events occurring until the roof is eventually in need of replacement. In this situation, a building owner or facility manager may not realize that even if leak repairs appear to be insufficient to maintain a

roof’s useful life, restoration can end up being a more viable and cost-efficient alternative to replacement.

Today’s technology utilizes the roof’s history of repairs to establish a performance benchmark, which provides valuable information on how best to extend the useful life of the roof in the most efficient and cost-effective manner when compared to a proactive/intervention approach of roof maintenance. In addition, this benchmark provides companies with access to roof management budget forecasts extending for a decade or longer — a benefit certain to be appreciated by every facility manager, financial officer and building owner.

Replace the crystal ball

Comparative data of “run to failure”

and “intervention” models used in new roof asset management technology provides facility managers with the baseline budgetary figures to determine the best course of long-range action and specific cost savings able to be derived by intervention. By utilizing today’s technology within a roof asset management program, facility managers and building owners are able to make objective roofing decisions backed by scientific testing and analysis and eliminate the risk of making reactive decisions based solely on speculation. **FMJ**



Anthony Vross is owner of Simon Roofing, a national provider of innovative commercial roofing solutions for more than 100 years. Tel: 800-523-7714 or visit www.simonroofing.com.



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MINIMIZING RISK THROUGH AIRPORT DESIGN

BY LEE COATES

Kenya has been much in the news recently, and not for the right reasons. The Westgate shopping mall massacre in which at least 67 people died is a shocking reminder that any building where large numbers of people gather can be a terrorist target.

That threat is most real at airports, which can have a pivotal role in regional or national economies and, for the terrorists, significant news value. Airports have therefore seen the greatest investment in security and

building research, although the recent Westgate attack is a reminder that the threat is much wider.

Nor is the threat confined to larger hub airports. The 2007 attack at Glasgow airport in Scotland underlines how terrorism can occur at both national and local levels and be meticulously planned for maximum effect or simply opportunistic.

But it would be simplistic to consider airport security purely in terms of terrorist threats. In August, Kenya

was again in the world's media spotlight following a major fire at Nairobi's Jomo Kenyatta airport, the busiest in East Africa, and of major economic importance for the country — both for interior tourism and exports consisting mainly of cut flowers.

The catastrophic fire, likely started by faulty wiring, demonstrates how a major infrastructure asset can quickly become a national liability. The airport, built in an age before modern fire regulations and protective systems, was extensively damaged, closing off a vital transport gateway. However, perhaps remarkably, there were no casualties.

Identifying risks

The Nairobi fire is a stark reminder of the importance of identifying every conceivable threat, robustly examining response strategies and routinely testing emergency procedures. Aged infrastructure, inadequate emergency equipment and poor response planning can create a recipe for disaster. This year, the Boston airport had to apologize for holding an emergency training exercise on 9/11. A week later there was a fuel pump fire at the airport.

Countering facility-related threats starts with a comprehensive assessment of the likely (or unlikely) risks an airport might face in terms of accidental or deliberate interruptions to its operations. Modern building safety is largely determined by taking a multi-disciplinary approach to assessing those hazards — from power failure to cyber attack, from civil disorder to fire and explosive detonation.

For an airport, other factors might have to be considered — from the kinds of threats specific to that country or region, to the airlines that make use of the facility. The fact is that, while terrorism is often a blunt instrument involving random damage, it can also be targeted more specifically.

Assessing mitigation tactics

There are a number of assessment methodologies available to help FMs understand potential, identify the assets to be protected and determine how best to mitigate risk. Once completed, those assessments then guide the design team

COUNTERING FACILITY-RELATED THREATS STARTS WITH A COMPREHENSIVE ASSESSMENT OF RISK.

in determining acceptable risks and the cost-effectiveness of the measures proposed, both airside and landside.

That was brought home in the U.K. when Irish terrorists fired mortar bombs onto the runway at London Heathrow in 1994. They failed to detonate but underlined how airport security is an issue that has to be considered outside, not just inside, the airport's perimeter.

That, in essence, is the airport designer's conundrum: how to build a facility able to safely handle large numbers of people while making the customer experience as hassle-free as possible. Official guidance now covers all of an airport's critical functions, from security checks on passengers to aircraft hold baggage, from the location of car parks to incorporating glazed structural elements in the building's design. The guidance also includes the design of areas immediately outside terminal buildings to create an exclusion zone for unauthorized vehicles.

In the U.S., the Office of Airport Safety and Standards has primary responsibility for all matters related to standards for airport design, construction, maintenance, operations and safety.

Stand-off distance is an important consideration. A bomb detonating at seven meters from the terminal façade will, depending on the size of the bomb and type of explosive, generate blast pressure of up to one ton per square foot. At 30 meters, blast pressure falls to one-tenth of a ton per square foot — within building regulation parameters on structural integrity.

Balancing aesthetics with safety

Modern building design, in airports as elsewhere, now makes extensive use of glass. It brings in ambient light and creates a more pleasant interior environ-

ment. (Interestingly, a Which? consumer magazine survey in 2013 found that London Luton airport — a facility that many consider gloomy, and which is one of the oldest terminals in the U.K. — has the lowest passenger satisfaction of any U.K. airport).

The extensive use of glass has come about as a result of investment in innovation, both in the development of new laminated glass types and framing systems able to withstand blast pressure, as well as in the accurate evaluation of those systems using a variety of assessment and computational tools.

As recent events around the world have shown, both fire and terrorist attacks are potent threats to be assessed and comprehensively guarded against. Well thought-out facility design, in addition to regular rehearsals to ensure that response teams can deal adequately with any emergency, are critical to helping ensure occupant safety.

That multi-dimensional approach extends across the built environment, underscoring the need for the continued development of next-generation products and systems to ensure new levels of fire and terrorist protection. The specialist glass and glazing industry remains at the forefront of that innovative research process. **FMJ**



Lee Coates leads research, development and testing for Wrightstyle Limited. Wrightstyle is an international specialist glazing company whose steel and

aluminum systems mitigate against fire, bombs/blasts and ballistic attacks. Wrightstyle has supplied to a number of airports internationally and supplies in the U.S. through Hope's Windows, Inc. (Jamestown, N.Y.), a leading manufacturer of steel and bronze glazing systems.



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LED Lights for
Commercial
Office Use

CAUTION

New Risks Arise from LED Technology

BY JEFF SPENCER

Over the past several years, deployment of light emitting diode (LED) lighting fixtures has increased in commercial settings, such as office and retail applications, due to improvements in LED light quality, high levels of efficiency, low maintenance requirements and rapid payback versus other lighting sources. However, while LEDs can provide upwards of 50,000 hours of maintenance-free operation, unlike incandescent or fluorescent fixtures, they do not burn out when they've reached the end of their optimal service life. Instead, they continue to dim and degrade over time, making it difficult for maintenance staff to know when an LED source needs to be replaced.

As adoption of LED lighting continues to gain popularity in commercial properties with facility managers and building stakeholders, challenges in maintaining proper light levels in commercial settings — sometimes a forgotten factor — will begin to surface. In particular, in applications where lighting is critical, ensuring proper illumination that captures the intention of the original lighting design will be an important consideration for facility managers now and in the future.

Increasing adoption of LED fixtures in commercial buildings

Navigant Research projects that LED lighting will capture 52 percent of the commercial building market by 2021¹ and that the market for commercial lighting is on the verge of a major transformation². This, according to the research firm, is attributed in large part to the overall improvement of quality

LED lighting and steady improvement in ROI, which is driving more widespread adoption of the technology².

Lighting also represents a huge chunk of energy use in commercial buildings. For example, the U.S. Energy Information Association estimates that the U.S. commercial sector consumed about 275 billion kilowatt hours of lighting in 2011³. In addition, 21 percent of commercial sector electricity consumption is attributed to lighting for the same year³.

With these types of figures being commonplace in many countries, governments around the world are starting to enact legislation that restricts or eliminates certain lighting fixtures from being used in commercial buildings, and most utility companies and municipalities are offering hefty energy rebates for implementing more efficient lighting sources and reducing energy. This comes on top of the desire of many businesses and organizations to reduce energy consumption to meet corporate social responsibility goals and participate in government green building programs while also minimizing operational spending as the global economy continues to recover.

In addition, LED fixtures, sometimes referred to as solid-state lighting, have evolved dramatically since their introduction to the market thanks to key developments in the technology used in today's fixtures. With these improvements, which include significant visual performance enhancements, LED fixtures now offer higher quality, lower cost illumination and a more rapid return on investment for a variety of applications.

Other more sophisticated advancements include new reflector shapes, such as hyperbolic trims, which provide superior control of light distribution to produce virtually glare-free "silent ceiling" downlighting environments and technology that allows lighting designers and building managers to have total control of the color temperature,



saturation and hue of already-installed LED fixtures — a recent development in the evolution of LED lighting technology.

LED fixtures also last much longer than other sources, with most providing a five-year or 50,000-hour service life before requiring maintenance. Ironically, the longer service life of LEDs, which has been touted by many in the lighting industry as a major benefit of LED lighting over other sources, has quickly presented problems for maintenance technicians and facility managers for the simple reason that it's difficult to know when they've reached the end of their service life.

With incandescent and other sources, there is usually a clear indication: the luminaire burns out, signaling to maintenance staff that it needs to be replaced. But because LEDs only get dimmer over time, it can be difficult to measure when the space is no longer being illuminated within an acceptable tolerance. This not only lends to improper illumination that impacts how spaces appear visually, it also creates a less ergonomic environment in areas where building occupants work, and ultimately can lead to the possibility of accidents in more critical areas, such as stairwells, corridors and entryways and violations of building codes in certain regions.

ENSURING PROPER ILLUMINATION THAT CAPTURES THE INTENTION OF THE ORIGINAL LIGHTING DESIGN WILL BE AN IMPORTANT CONSIDERATION FOR FACILITY MANAGERS NOW AND IN THE FUTURE.

Maintaining proper LED lighting levels for optimal illumination and safety

When considering different LED lighting solutions, facility managers may not always take into account the loss of illumination over time and the impact that will have on their maintenance plans and processes. As LED sources become more prevalent in commercial building environments, it is important for facility managers and maintenance professionals to have a clear system that indicates when LED sources need to be replaced.

Currently, there are several methods used to assist in helping identify when LED sources have reached the end of their service life, commonly defined as the lumen maintenance target. The appropriate lumen maintenance target is based on the application and the requirements set forth by customers. Since the human eye generally can't detect a change in light output until there has been 30 percent depreciation, 70 percent lumen maintenance, also known as L70, is often established as the target for an application.

One of the most credible sources used to determine the lumen maintenance of an LED source is the LM-80 test data. Published by the Illuminating Engineering Society of North America (IESNA) in 2008, LM-80 is a test method used to measure the lumen depreciation of solid state lighting sources and help lighting designers determine how long it will take for the LED source to degrade⁴. IESNA also published an LM-79 test method for the electrical and photometric test of solid state lighting devices. This test method

specifies procedures for measuring total luminous flux electrical power and luminous efficacy of the entire LED luminaire system.

Although this data is available and credible, it can be a challenge to determine the best way to use it. Some building managers are opting to integrate LED fixtures into their larger building control systems; however, this can take significant time and cost to implement. Another approach is to incorporate a photocell into the luminaire and measure the light output of the new LED source when it is first turned on, and continue to measure it until it's at 70 percent of its initial reading. However, this presents another challenge for luminaires that are dimmable.

New technology to ensure proper illumination: LDIs

While the above procedures can certainly assist with evaluating the useful service life of LED fixtures, they also present new challenges in terms of ROI and effectiveness.

Prompted by the widespread adoption of LED fixtures in today's building environments and significant demand from maintenance personnel, more practical and intuitive solutions have been developed for facility managers to ensure that their LED luminaires are maintaining a proper lighting environment, including the emergence of lumen depreciation indicators (LDI). These indicators are built directly into the reflector of the LED luminaire, and force the fixture to turn off when they have reached the end of their service life. With the LDI behaving

much like a traditional lighting source by "burning out," occupants of the space and maintenance professionals are able to easily identify that the luminaire needs to be replaced without requiring more complex monitoring methods.

When a maintenance engineer evaluates the fixture, the LDI signifies it's time to replace the LED light engine. In the meantime, maintenance staff can extend the life of the luminaire by 1,000 hours while a new LED light engine is ordered. Since LEDs only need to be replaced about once about every five to 10 years, this also enables facility managers to eliminate stockpiles of spare LED sources for replacement and only order light engines when they're needed. This also ensures that they're receiving the most up-to-date LED technology at a lower cost.

Best practices in maintaining proper commercial LED lighting

In addition to selecting the method or technology that best assists with maintaining proper LED light levels and ensuring that applications are kept within an acceptable tolerance, it is important to continue to evaluate the strategy put into place for LED luminaires. Facility managers should take the following steps when considering the installation of LED fixtures as well as maintaining those that are already in place:

- **Select wisely.** When choosing new LED luminaires, it is important to factor in technology and a process that will help determine when it is time to replace LED sources. The method used should be intuitive enough to be effective,



even in the event that the original documentation and instruction sheets are no longer available. Ideally, all necessary instructions will be located on a label within the luminaire in order to ensure they are available when needed. Since this will likely be years after the initial installation, it is also advisable to work with a manufacturer who has a long history in the industry and is likely to be able to support the project with replacement parts in the future.

- **Assess.** Evaluate LED fixtures that are already installed to assess the effectiveness and service life, replacing those that are no longer providing optical illumination. Prioritize more critical areas, such as stairwells, corridors and other applications where lighting is crucial for safety.
- **Build an ongoing strategy.** Enlist a partner/lighting expert that can assist in implementing technology that will ensure LED fixtures installed in the building are providing proper lighting. Once the technology is in place, set an ongoing procedure for maintenance staff to follow when replacing/reordering LED sources. Because the LEDs within the same fixture type will degrade at the same rate, be sure to “group relamp” and replace all of

the LED sources for the luminaires on the same electrical circuit.

- **Evaluate on a continual basis.** Work with a lighting designer to conduct a lighting study every few years to assist in maintaining and improving the overall environment of the space. Lighting accounts for a huge portion of energy use in commercial buildings, and facility managers who regularly evaluate the fixtures and management techniques in place will ultimately be able to make continual improvements in safety, appearance, occupant comfort, safety and overall efficiency.

As LED adoption continues to rise in commercial building environments, issues associated with service life and illumination will become more prevalent. Maintenance professionals and facility managers can ensure that their LED luminaires are maintaining proper lighting levels in accordance with original lighting design tolerances by incorporating new technologies that indicate when LEDs have reached the end of their useful service life. By integrating these techniques in commercial buildings, facility managers will be able to take full advantage of the properties and benefits of the LED while maintaining productivity and safety. **FMJ**

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engineering professionals to develop new technologies, products and innovations relevant to the needs of the commercial and residential lighting markets. With more than 20 years of experience in the lighting industry, Spencer has held numerous roles over his career including engineering, marketing and e-commerce, and holds multiple U.S. patents.

Spencer has a B.S. in mechanical engineering from the University of Illinois and an MBA in marketing and e-business from DePaul University.



SPECIAL EDITION: For the first time, the expo floor at IFMA's 2013 World Workplace Conference & Expo included an interactive showcase of sustainable solutions. The Showcased Office Solutions (SOS) section featured vendors who help support FM's in their efforts to keep workplaces running smoothly. Attendees were able to interact with products and services displayed in real-life applications within a walk-through mock facility.

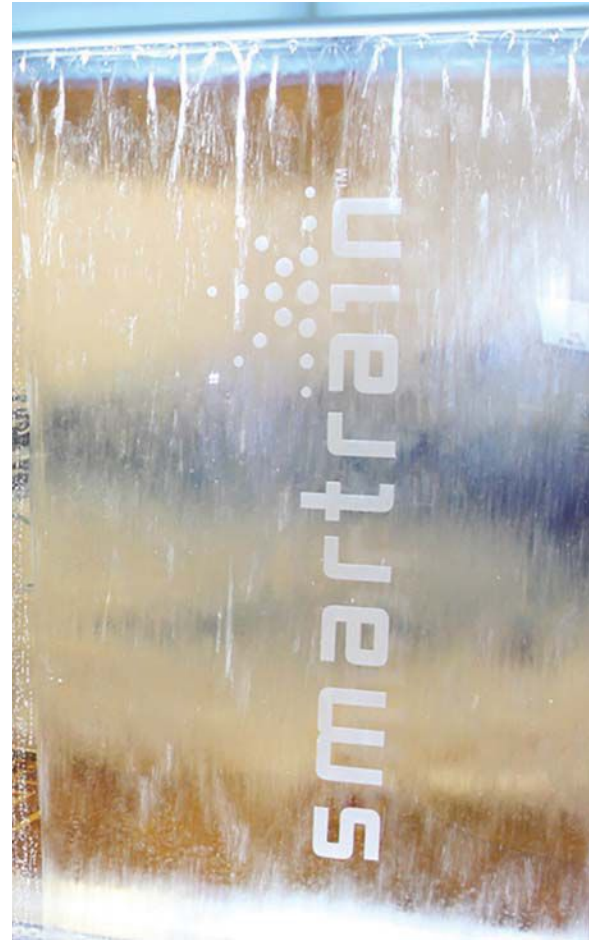
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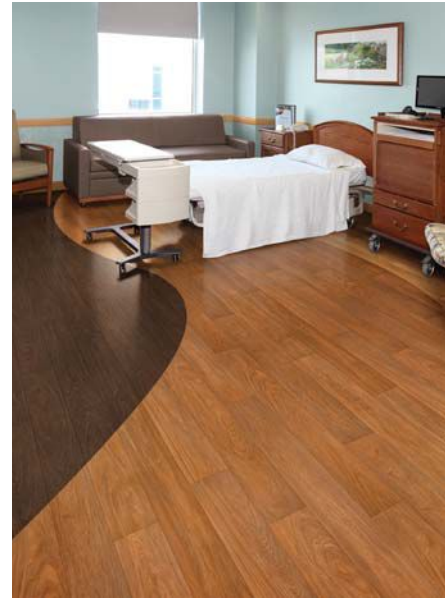
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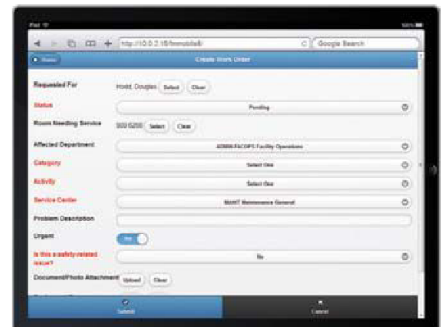
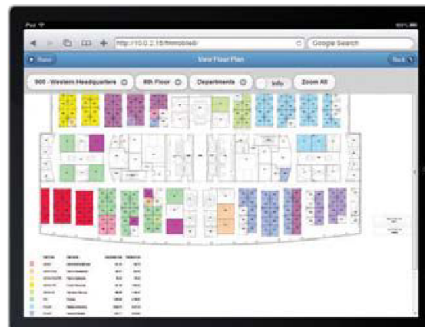
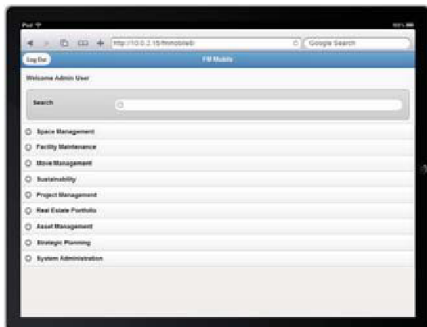
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ASK THE EXPERTS

BY FACILITY MANAGEMENT CONSULTANTS COUNCIL



Beginning in 2014, IFMA's Facility Management Consultants Council will share some commonly asked questions accompanied by advice from top FM consultants in each edition of FMJ. The questions and answers presented in this section will align with IFMA's core competencies following the themes outlined in each issue of the magazine.

Note: While the answers that follow 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.

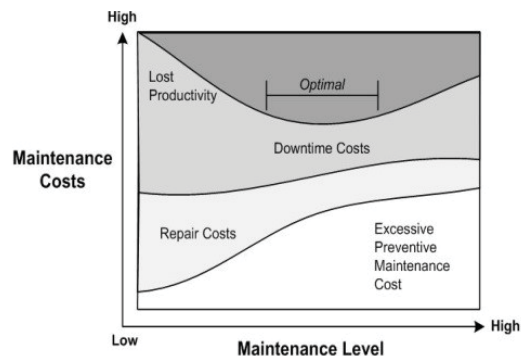
This edition of FMJ addresses **operations and maintenance and project management**.

QUESTION 1

HOW DOES ONE DETERMINE HOW MUCH PREVENTIVE MAINTENANCE TO PERFORM?

ANSWER: Maintenance should be a blend of preventive and predictive maintenance, proactive repairs and run-to-failure approaches. When performed in concert, these methods produce the greatest probability that a facility asset (from a doorknob to a cooling tower) will function as intended over its expected useful life. Using analysis tools, such as failure models and affects analysis, root cause analysis and age exploration, will maximize reliability and performance at the lowest possible cost. This is referred to as reliability-centered maintenance (RCM). It is situational and dependent upon things like the consequences of asset failure and the criticalness of the asset to the continued operation of the facility.

Following is a useful graphic that demonstrates the concept of RCM (source: International Facility Management Association, Operations and Maintenance Facility Management Professional Course Book, 2010).



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QUESTION 2

WHEN DOES CHEAPER NOT NECESSARILY MEAN BETTER, AND HOW DO WE PERSUADE OUR BOSSES OR CLIENTS TO INVEST IN NECESSARY EXPENDITURES?

ANSWER: By nature of the profession, facility managers are called upon to ensure operating and maintenance efficiency, and as such, when shopping around for products we quickly realize that typically the better the quality, the higher the price tag. But that's the easy part; the arduous task is justifying extra spending to our clients or bosses.

Always ensure that your budget is realistic. The most important and underestimated tool is the creation, management, monitoring and control of your building's expenditure profile. Understanding finance is a critical component to managing and maintaining your assets, but more important is avoiding waste (both economic and environmental). In doing so, get to know your equipment and assets, such as acquisition costs, maintenance costs, energy costs and life expectancy. Collecting these expenditures is usually referred to as lifecycle costing. This process will assist you in developing a more accurate budget and provide a better understanding of the price versus value concept.

You cannot sell your recommendations based on product specifications alone. In presenting and justifying your case to the purchasing decision maker, including operation and maintenance costs over the useful life of the asset is a must. This typically includes:

- Energy consumption (which can run between 50 to 60 percent of your total operation and maintenance costs over product life),
- Labor (include market rates for repairs),
- Materials (replacement costs for parts; in particular, the most commonly replaced parts) and
- External support/services (if after-sales service is not available through a local supplier).



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QUESTION 3

HOW DOES COMMISSIONING HELP MOBILIZE OPERATIONS AND MAINTENANCE AT MY NEW FACILITY?

ANSWER: The answer is, it depends.

Legacy close-outs (punch-lists, turn-over docs, etc.) confirm that finished buildings comply with contract documents. Commissioning validates that buildings achieve their design intent (refer to the Building Commissioning Association at www.bcxa.org). Sophisticated buildings may require corroboration that installed technologies and systems are fully integrated. Over the term of construction, tweaks in specifications, methods and technologies trigger disconnects, interferences and stresses. Commissioning arrests and resolves the downstream consequences of change orders, notwithstanding building information modeling.

The benefit to operations and maintenance? Typically, the O&M team is overwhelmed by building turnover and start-up, testing and de-bugging, leaving scant chance to prep for post-occupancy. Even commissioning agents shove aside downstream issues. We recommend a separate "transitioning" effort focused on O&M priorities: asset data scrub and migration into CMMS/IWMS; next-generation maintenance standards, plans and resources; streamlined job duties, staffing levels and training; operational risk assessments (both asset and condition based); etc.

Bottom line — commissioning, typically led by the project team, pushes the project to an optimal conclusion. Our take: Mandate that the FM team lead transitioning, pulling asset and operational inputs toward a methodical launch, an efficient operation, a lean expense structure and an extended asset life.

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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."

Questions regarding the Ask the Experts section of FMJ can be directed to John Ringness, SFP, MRICS, CBIFM, president and CEO of NEXT Facility Management Solutions and president of the FM Consultants Council, at john.ringness@nextfms.com.

Visit FMCC online at fmcc.ifma.org or <http://linkd.in/1gAa8ae>.

Proper Indoor Climate with Low Energy Use

BY FRANS JOOSSTENS

It appears from various studies that 70 percent of building users are dissatisfied with the indoor climate, and climate installations use up to 30 percent more energy than expected. Sustainable design and construction therefore do not always seem to lead to an optimal result. That is why efficient, sustainable operation is of great importance for facility managers.

According to NEN-EN15221 (Dutch FM standard), the facility manager has ultimate responsibility for the indoor climate. However, the task of managing and maintaining climate installations is usually delegated to technical services. It seems logical that each has its specific responsibilities, appropriate to its own specialty. But in this case, the task areas are so far removed from

one another's scope that the common interest of creating an optimal indoor climate, low energy use and low operating costs is insufficiently served. This added value can be measured in customer satisfaction, indoor climate and comfort, degree of absenteeism, work productivity and quality, maintenance costs of climate systems and energy use.

In the Netherlands, from a TNO (Netherlands Organization for Applied Scientific Research) study, it appears that 24 percent of employees find the indoor climate unpleasant, 32 percent find it difficult to regulate and 16 percent are bothered by an annoying draft. Research by Atze Boerstra of BBA Binnenmilieu (Indoor Environmental Consultancy) shows that this can mean a 10 to 15 percent decrease in the organization's output, depending on the type of work, location, building, position and condition of climate installations.

According to the Fanger thermal comfort theory (1970), there is a predictable balance of warmth between body and environment. With one number, this model makes it possible to indicate the average verdict of a large group of people about the thermal indoor climate. This is the PMV (predicted mean vote), a function of the climate and person-dependent parameters. The PMV value runs from -3 to +3; from cold to hot.

In addition, a connection was derived between the PMV value and the predicted percentage of dissatisfied people (PPD). From this connection, specialists can conclude that an indoor climate without complainers is impossible. Specifically, a PMV value of 0 is paired with a PPD value of 5 percent. The comfort is categorized in that manner. From a study by Boerstra (2010), it appears that if users can effectively influence the indoor climate themselves, an A+ quality indoor climate is possible and then there are no more dissatisfied users. Windows that open and the ability to influence temperature, the so-called "killer variables," make the difference in the experience.

Guiding experience and expectations

According to research by Leaman and Bordass (2007), green office buildings score better than traditional offices. Users of known energy-efficient offices are, in general, somewhat more positive about the indoor climate. The complexity, and sometimes unnecessary control options, make a green building more vulnerable, certainly the larger

SATISFACTION NUMBERS CONFIRM THE PICTURE OF A HIGH DEGREE OF DISSATISFACTION WITH INDOOR CLIMATE.

ones. Buildings with a mixed mode indoor climate (natural and mechanical ventilation) score much better on the quality of the indoor climate (Brager & Baker, 2009). The users are better able to influence the indoor climate to their own needs, and the building is less dependent on complex climate installations and regulation strategies. Therefore, it is desirable that the indoor climate of buildings has a certain robustness.

Leijten and Kurvers (2011) define robustness of buildings as the degree to which the indoor environment in the particular building satisfies its design objective in practice. From field studies, there appears to be a consistent pattern of increasing building-related symptoms (BRS), and therefore user dissatisfaction, about the indoor climate and the thermal comfort in office buildings with more active climate systems. The recommendation for low energy use, as well as for a proper indoor environment, is to manage buildings by passive means and to fine-tune by active means. In doing so, higher ventilation speeds and cooling needs, along with any associated problems, are prevented.

Users often have divergent heating and cooling needs. The difference between the neutral temperature of people can be five to six degrees Celsius. When users can effectively influence the indoor environment themselves, this increases robustness because they can adjust the environment to their own preferences over a period of time and have the possibility to compensate for a deficient climate system within certain limits. When they have no fixed

workspace, it is also handy to look for the building's warm or cool areas. Thus, it is important to understand and manage user expectations. Unfortunately, the requisite knowledge is often not present in those persons directly involved.

Results and analysis

It appears that there is little or no customer management within indoor climate service. Explanations, instructions, communication regarding disruptions, expectations, extreme weather conditions and feedback about complaints are infrequent. The back office provides the indoor climate product in the hope that it is a desired service. However, satisfaction numbers from student research agree with those from previously analyzed research and confirm the picture of a high degree of dissatisfaction with indoor climate.

Facility managers may know that there is a building management system, but may not know the full extent of its possibilities. By contrast, building managers tend to be very well informed about this subject, but are often insufficiently trained to take charge of the maintenance — and all the possibilities — of the building management system. Leased premises have less advanced building management systems than premises managed by building owners themselves.

In most cases, this is due to the fact that to a large extent the landlord determines what happens with the premises. The fact that building management systems on most premises are internally managed but the technical maintenance is often



outsourced is partially to blame. The most common reason? In many cases, technicians are not employed as regular building staff. Specifically, it appears that there is often too long a wait for technical problems to be resolved. As a consequence, disruptions persist too long, causing building users to unnecessarily reiterate requests.

More than half of the companies studied operate building management installations themselves but outsource maintenance and the resolution of large indoor climate complaints. The indication is that this setup is due to insufficient required technical knowledge and complicated regulations. Only 15 percent of the organizations studied also extracted management information, such as energy use figures, disruption data, outages and comfort data, in addition to control information, from the building management systems.

When the customer information system does not connect to the information from the building management system, no analysis of complaints can take place, nor can there be indicators of the need for improvement. Trial and error remains, and the customers who complain the loudest and the most will be served without measurement of the consequences for other users. In none of the companies studied did end users have access to or influence over the building management system. In 80 percent of the office buildings studied, building users had no opportunity to influence indoor climate.

Solutions

It is recommended that providers of building management systems make it possible to cooperate with other systems, and to offer people on the premises the

possibility to exercise some influence on the indoor climate. For organizations themselves, the recommendation is to utilize a management information and monitoring system (simplified dashboard). In doing so, it is possible to exercise better control and influence on the climate system — the disruptions, the energy use and the comfort levels — because more information is immediately available.

For this purpose, knowledge is required for all those involved, but in particular for the facility manager. The knowledge consists of the system and its possibilities, the specific information requirements and realistic expectations regarding performance. In addition, the facility manager must conduct more frequent investigation into the degree of satisfaction regarding the building. Post-occupancy evaluation is an excellent and proven method for getting a good image of bottlenecks and plus points in the building situation and an estimation of the indoor climate (Bordass & Leaman, 2005). FMs do not have to acquire in-depth technical knowledge themselves as long as they can interpret information from monitoring systems and link it to management information from the front office. They will then be in charge of customer demands on the one hand and supply on the other.

The cooperation between the facility and technical departments is of great importance in order to optimize the indoor climate to the building users' standards. At the same time, in addition to indoor climate monitoring, employee satisfaction, complaints, energy usage and management costs must be integrally measured, tested and analyzed and

management decisions must be based upon this information. Demands, desires and expectations must always be translated into specifications for the climate installations and regulation strategies in order to prevent complaints. By making performance agreements that all involved parties observe, the quality demands on the indoor climate can be better fulfilled.

For the facility management educational curriculum, this means that more attention must be paid to the manner in which customer management and technical management must be attuned to each other. For that purpose, the students will have to have more knowledge of building management systems, technical installations, energy management and comfort demands, and learn how sustainable results can be achieved and retained with that knowledge in practice. The Haagse Hogeschool (The Hague University of Applied Sciences) has already partially implemented this requirement, and there is a multi-disciplinary minor, Smart Energy Management and Design, where architecture, mechanical engineering/electrical engineering, facility management, industrial engineering and climate and management students work together and learn to speak the same language. **FMJ**

Note: This article originally appeared in Facility Management Nederland's FMI publication and has been translated from the original Dutch.

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NO ENTRY

PROTECTING VACANT COMMERCIAL PROPERTY

BY DAVID WARD

On Sept. 1, 2012, owners of vacant residential property across the U.K. were able to breathe a collective sigh of relief. Squatting in residential premises finally became a criminal offense, punishable by up to six months in prison or a hefty fine of £5,000 under section 144 of the U.K. Legal Aid, Sentencing and Punishment of Offenders Act.

In contrast, the door to squatting in non-residential buildings was left open. To evict trespassers, commercial

landlords must bring about a civil proceeding, which is often a costly, time-consuming process. According to British government figures, as many as 60 percent of an estimated 20,000 squatters in Britain used to live in residential properties. However, with the change in the law has come a change in squatter tactics. The result is hardly surprising, with landlords reporting rising instances of squatting in commercial premises and lawyers up and down the country seeing caseloads in this area increase.

Squatters are generally well informed regarding their rights, and a basic Web search reveals several sites that provide detailed advice and support. These websites clearly explain that squatting in commercial premises is not covered by the 2012 change in the law.

Given the high number of squatters looking for accommodation, the fact that some 15 percent of commercial property in the U.K. stands vacant and with nearly 50,000 empty shops on U.K. high streets, a shift toward the occupation

TAKING EXTRA STEPS TO SECURE PROPERTY AND AVOID SQUATTERS MOVING IN IS ESSENTIAL TO PREVENTING THE OCCURRENCE OF A COSTLY PROBLEM.

of these properties has been inevitable. Empty shops, restaurants and properties awaiting redevelopment are particularly being targeted with the problem likely to worsen during winter months.

Above all others it appears that pubs are prime targets for squatters. An increasing number of these establishments are closing down and, while pubs are commercial properties, many contain living accommodations, posing an attractive proposition for potential squatters.

Case studies

Squatters are far more than just a nuisance, as two recent high-profile cases in the Lambeth area of London demonstrate. In the first, squatters took over a substantial commercial office building at 111 Westminster Bridge Road. Various fringe groups joined them, the building's assets were stripped, and a number of serious crimes were alleged to have taken place in the premises over a period of two months. The developers were left with a bill of more than £100,000, with the Metropolitan Police's Territorial Support Group finally being part of the operation to remove the squatters.

The second case saw squatters taking over Patmos Lodge, a former sheltered housing centre on Elliott Road, for more than two years. Security and eviction costs soared to £150,000 before the squatters were removed. Another notable and long-running case in the capital was the Cross Keys pub in Chelsea — once a refuge for the artists Whistler, Sargent and Turner — which was eventually cleared of squatters who promptly moved to another commercial property in the city.

Clearly, squatters can cause serious damage to premises, and to add insult to injury many insurers don't cover the cost of repairing property damage caused by squatters. Landlords may also be liable for any injuries incurred by trespassers. In

addition, property owners have to inform their insurers once a property becomes occupied by squatters which can send insurance premiums soaring. Taking extra steps to secure property and avoid squatters moving in is essential to preventing the occurrence of a costly problem.

Securing a solution

There are a number of security measures site owners and managers can take to protect commercial sites. The ideal scenario is to conduct a risk assessment prior to vacating the premises. This will give adequate time in which to review the most effective ways of protecting the property and making any necessary changes before it becomes vulnerable to trespassing. Also, some insurers stipulate that if premises are vacant for as few as 30 days or more a year, adequate security measures must be in place for their policies to be valid.

If there is no time to conduct a review of this sort prior to the building being vacated, it is important to act quickly. The good news is that often an effective security solution can be implemented quickly regardless of site size; whether it entails on-site guards, frequent patrols, CCTV or wireless intruder detection systems. Preventative methods tend to be a more cost-effective solution than trying to get rid of squatters. Ultimately, if a site is clearly well secured and looks as though it is being monitored, squatters will likely be deterred from breaking in.

Efforts to give buildings the appearance of occupation, such as the use of timed lights, semi-open blinds and arranging for third parties to make regular visits to the property, are also important. If the property in question is to be left unoccupied for long period of time, it may be worth considering letting the property on a short-term temporary trading basis.

There are practical measures that site managers can take as well. Removing any

articles of value internally and externally can help prevent drawing attention to the building. It is also good practice to remove combustible materials on or nearby the site — clearing such items reduces the risk of fires, which can act as a beacon to its void status, and can help owners comply with the terms of insurance.

Governmental and individual action: A dual approach

The good news is that change is in the air. Pressure is growing on the coalition government to widen the scope of the anti-trespassing law. In July of 2013, Justice Secretary Chris Grayling acknowledged the growing issue saying he was "sympathetic to the problem" and promised to evaluate the situation by asking MPs to assess the scale of the problem in their constituencies and report back. Further calls have also recently made by senior politicians, including Chuka Umunna and Tessa Jowell, for the government to take action.

The truth is that any review of the law that criminalizes squatting in commercial property would be a lengthy procedure. Ensuring your commercial property's doors are firmly secured against any would-be trespasser will help you to avoid this problem. A well-secured building will save the time, money and stress that dealing with squatters inevitably entails. **FMJ**



David Ward founded Ward Security in 2000 with his brother Kevin Ward to provide a range of tailored, integrated and flexible security services to organizations across Britain.

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