

THE SCIENTIFIC METHOD

As an Orkin Man, I can tell you why the fifth floor has a German cockroach problem but your other floors don't. That's because my Orkin career started in a classroom, studying everything from bug behavior to building blueprints.

I know every office building is different, so I'll start with a comprehensive inspection. Then I'll put our scientific solutions to work for you with an Office Precision Protection™ plan built to suit your needs.

Call **800-ORKIN NOW** or visit us at orkincommercial.com for a free inspection and pest control plan, and let us help keep pests out and satisfied tenants in.



PEST CONTROL DOWN TO A SCIENCE.™





PEST CONTROL DOWN TO A SCIENCE.™



Every Orkin Man completes 160 hours of training, including hands-on experience in a variety of business environments – all in the first year on the job. That's what it takes to be the best. Armed with a Precision Protection™ plan made just for your property, we'll help take care of the pests so you can take care of, well, everything else.



OFFICE
PRECISION
PROTECTION™

FMJ



IFMATM
International Facility Management Association

WWW.IFMA.ORG/FMJ | NOVEMBER/DECEMBER 2014



the sustainability issue

FEATURING
MOVING
TOWARD
GREEN DATA
CENTERS **18**

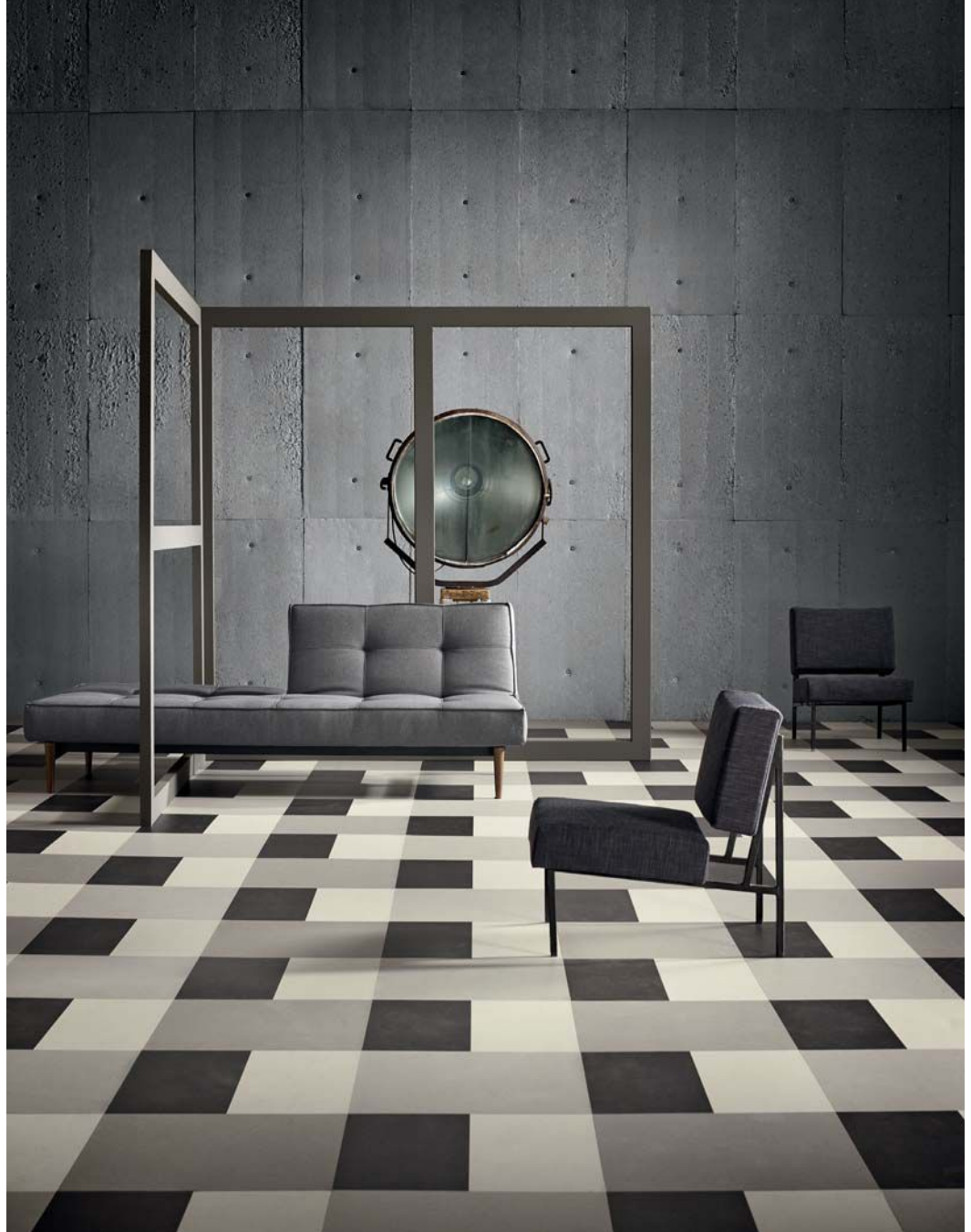
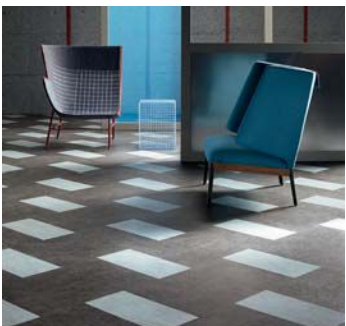


ALSO:
TURNING FOOD WASTE INTO ENERGY 24

THE SUSTAINABILITY STRUGGLE 78

creating better environments

Forbo
FLOORING SYSTEMS



44 colors. 3 coordinated sizes.
endless possibilities.
beautiful. durable. sustainable. hygienic.
www.forboflooringNA.com/marmoleum

marmoleum[®]

modular



Always Connected... to Your ARCHIBUS World of Information



In your hands. Detached from your desk, yet all the ARCHIBUS intelligence at your fingertips.

Link to your real-time information and maximize your productivity and responsiveness, wherever you are — anytime, anywhere. Ask a question ...it's all in hand.

ARCHIBUS delivers a new breed of mobile applications that plug in to your existing IT systems and security. Your data in ARCHIBUS is interactive, so you can quickly locate space, people, assets, and tasks.

ARCHIBUS users can go to the App StoreSM or Google PlayTM Store to download the ARCHIBUS Mobile Client, and discover how to accelerate service delivery, while revving up customer satisfaction.



For more information, visit:
www.archibus.com/mobile-ifma



Apple, the Apple logo and iPad are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc. Google Play is a trademark of Google Inc.

The #1 Solution for Real Estate, Infrastructure & Facilities Management in the World
Over 7 million users prove it daily—saving their organizations over \$100 billion annually

ARCHIBUS, Inc. • Boston, MA • USA • Tel: 1 617-227-2508 • www.archibus.com



ON THE COVER

18

MOVING TOWARD GREEN DATA CENTERS

// SCOTT HARRIS

SECTIONS

- 8** Editor's Column
- 10** Chair's Column
- 12** President's Column
- 15** Industry News
- 72** IFMA Foundation
- 74** Behind the Brand
Insight on IFMA's Corporate Sustaining Partners
- 76** Corporate Sustaining Partners
- 95** Credential Recipients
- 102** New Products & Services
- 105** Resources
- 106** Advertiser Index

BEHIND THE COVER: *There are many pieces to the sustainability pie, but integrating each aspect doesn't need to be overwhelming – overlapping characteristics build upon each other, helping you achieve a cleaner, more efficient business that lasts long term.*

FEATURES

- 24** Turning Food Waste into Energy
// JEFF MCMAHON
- 29** Energy-Saving Impacts of Window Film
// STEVE DEBUSK
- 60** Integrating Commissioning into the Building Process
// SCOTT E. LECLAIR AND MATTHEW WHEELER
- 66** Eliminating Parking Headaches
// PATRICK BROOKE
- 78** The Sustainability Struggle
// MICHAEL WILSON
- 84** Improving Water Efficiency: A Holistic Approach to Conservation
// SCOTT KALE AND JOHN LIE-NIELSEN
- 90** Case Study: Human Sustainability and Research-based Design in Higher Education
// STEVEN J. ORFIELD

97 Integrating Sustainability Metrics into Daily Operations

// LYNN BAEZ AND ALANA F. DUNOFF

FM SPOTLIGHT

35 SFP®: Inspiring Sustainability Innovation in Egypt

Insights with Sherif Maged, MBA, MSC, SFP, senior director facility housing and transportation at The American University in Cairo

// IFMA'S PROFESSIONAL DEVELOPMENT DEPARTMENT

39 Getting to Know John Perry, IFMA COO

40 IFMA's World Workplace 2014: Letting the Good Times Roll

// ERIN SEVITZ

48 Inside the Classroom

Meet IFMA instructor Chris Hodges, IFMA Fellow, P.E., CFM, LEED AP, FRICS

51 Trending Toward Full Disclosure

// BILL CONLEY



With the goal of minimizing our carbon footprint, FMJ is printed by an FSC-certified company.

PLEASE RECYCLE



IFMATM
International Facility Management Association
Empowering Facility Professionals Worldwide

ABOUT IFMA

IFMA is the world's largest and most widely recognized international association for facility management professionals, supporting more than 24,000 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.

Vol. 24, No. 6. FMJ (ISSN 1059-3667) is published on a semi-monthly basis (January/February, March/April, May/June, July/August, September/October, November/December) by the International Facility Management Association, 800 Gessner Road, Ste. 900; Houston, TX 77024-4257 USA. Periodicals postage paid at Houston, TX and at additional mailing offices. One electronic copy of each issue is supplied to IFMA members. Printed copies are available to members at an additional US\$42 per year. Nonmembers can purchase a subscription for US\$75 per year. To receive a subscription, mail a check to FMJ, attn: Subscriptions; 800 Gessner Road, Ste. 900; Houston, TX 77024-4257 USA or visit www.ifma.org/publications/facility-management-journal/subscriptions. For advertising rates call +1-281-974-5674 or email diana.maldonado@ifma.org. FMJ is printed in the United States. FMJ reserves the right to edit any articles received or solicited for publication. This right includes the discretion to select titles, artwork and layout. Opinions expressed in articles are those of the authors, not necessarily those of FMJ staff. © 2014 International Facility Management Association.

POSTMASTER: Send address changes to: FMJ, 800 Gessner Road, Ste. 900; Houston, TX 77024-4257 USA.

WE DREAM. WE DO.

What if we could remove more harmful chemicals from cleaning solutions? What if we could create healthier lives by creating healthier environments? What if we could use virtual modeling to generate energy savings? What if we told you we already do? From daily operational ingenuity to superior facility management, innovative customer service is at the heart of what we do.



Find out more at www.aramarkfacilities.com
© 2014 Aramark. All rights reserved.





*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.

- **ARTICLE:** “Five Essential DCIM Use Cases to Unite IT and Facilities” to accompany “Moving Toward Green Data Centers” (p. 18)
- **VIDEO:** “The Anaerobic Digester at Michigan State University” to accompany “Turning Food Waste into Energy” (p. 24)
- **ARTICLE:** “On Front Lines of Recycling, Turning Food Waste into Biogas” to accompany “Turning Food Waste into Energy” (p. 24)
- **ARTICLE:** “New Phase of Faculty Housing Complete, Embeds Green Concepts” to accompany “SFP Inspires Sustainability Innovation in Egypt” (p. 35)
- **VIDEO:** “Interview with John Perry” to accompany “Getting to Know John Perry, IFMA COO” (p. 39)
- **VIDEO:** “IFMA’s World Workplace 2014 New Orleans” to accompany “Letting the Good Times Roll” (p. 40)
- **VIDEO:** “Interview with Chris Hodges” to accompany “Inside the Classroom” (p. 48)
- **VIDEO:** “Energy 101: Energy Efficient Commercial Buildings” to accompany “Improving Water Efficiency” (p. 84)

FMJ EXTENDED

This exclusive online section focuses on expanded FM coverage.

- 110** Solar to Play Leading Role in Renewable Energy
// ERIK ERNST
Contribution by Facility Management Netherlands (translated from original Dutch)
- 112** Greening the Greens
Biological nitrogen fixation offers sustainable alternative for facility lawn care
// DOUG KREMER
- 115** IFMA and Sustainability: Whence, Thence and Hence
// ERIC TEICHOLZ AND CHRIS HODGES
- 118** Vendor Profiles

SOCIAL MEDIA



To join and follow IFMA’s social media outlets online, visit the association’s LinkedIn, Facebook, Twitter, Flickr and YouTube pages.



DON'T FORGET – stay connected to all things FMJ!


Follow us on Twitter and like us on Facebook.



Facility Management Journal



TheFMJ



With our lighting
controls, the
most productive
employees in
your office will
be the ones
installed in
the ceiling.



SmartCast™

Our new SmartCast™ Technology integrates smart controls and sensors right into our light fixtures. Lights are on when you need them and off when you don't. So your lights become one of your hardest working revenue generators.

Talk to an expert at **800-236-6800**. Or get more information at cree.com/lighting/smartcasttech

Making Success a Fixture in Your Business

CREE 

LED LIGHTING

EDITOR'S COLUMN

ANDREA SANCHEZ
Editor-in-Chief
Facility Management Journal



Many organizations' success is dependent on motivating and retaining good people.

In October I had the pleasure of attending the Richmond Chapter of IFMA's 30th anniversary celebration. Led by Chapter President Connie Hom, the group's enthusiasm and passion for the profession was evident through their growing membership, number of individuals who have obtained IFMA credentials, and the vast amount of regular networking opportunities and educational programming they offer on a local level. The night ended with the unveiling of the chapter's new website and special recognition of 18 of the chapter's past presidents.

However, what stood out the most for me was the continued engagement of the chapter's initial leadership and long-time members.

Meet Bud Vye, RCFM

Bud (pictured below) not only started the first chapter newsletter 30 years ago, he continues to write columns for it with more enthusiasm than ever. It was amazing to see samples of how the first publication evolved to what it is today. Despite the changes in technology and style over the years, one thing did remain constant: his dedication and love for the chapter and profession. Bud was also proud to share his IFMA memorabilia including historic World Workplace conference badges and his vast collection of conference pins.



Bud is just one example within thousands of members who sustain what IFMA is all about. People are what enable the association to grow, to endure change and to prosper. It is internal sustainability at its finest.

Meet Chris Hodges. He is another example of a long-time member, turned instructor, who defines who we are. (A full profile on Chris, titled "Inside the Classroom," appears on page 48 of this issue.)

To all of you who have been with us from the beginning, I thank you for helping make IFMA what it is today but, most importantly, for reminding us the true value of the IFMA family.

Speaking of people...

If you have yet to hear the news, we are offering an opportunity for each of you to be involved in recreating IFMA's knowledge library.

As part of the knowledge strategy initiative, we are looking for subject matter experts (on one or more IFMA's core competencies) to assist with vetting new and current content in an effort to deliver information that is consistent, relevant and of value to members.

As IFMA continues to make its footprint as the FM thought leader, this is another chance to leave your mark as we advance the FM profession. For more information and to sign up, go to www.ifma.org/sme.

Until next issue,

Andrea

STAFF

Editor-in-Chief
Andrea Sanchez
andrea.sanchez@ifma.org

Editorial Manager
Erin Sevitz
erin.sevitz@ifma.org

Advertising Account Specialist
Diana Maldonado
diana.maldonado@ifma.org

Designer
Michelle Doe

IFMA 2014-2015 BOARD OF DIRECTORS

Chair
James P. Whittaker, CFM, P.E., EFP, FRICS
President
Facility Engineering Associates, P.C.
Fairfax, Virginia, USA

First Vice Chair
Michael D. Feldman, FMP, CM
Seattle, Washington, USA

Second Vice Chair
Maureen Ehrenberg, FRICS, CRE
Global Director Facilities Management, Executive Managing Director, Global Corporate Services
CBRE, Inc.
Chicago, Illinois, USA

Past Chair
Jon Seller
General Manager
Optegy Group
Central, Hong Kong

President and Chief Executive Officer
Tony Keane, CAE
IFMA
Houston, Texas, USA

Lynn Baez, CFM, SFP, FMP
Regional Facility Manager,
South/Workplace Ambassador
T-Mobile
Frisco, Texas, USA

Stephen P. Ballesty, CFM
Director and Head of Advisory
Rider Levett Bucknall
Sydney, Australia

Jeffrey J. Budimulia, CFM, MBA
Director
Corporate Real Estate Advisers
Singapore, Republic of Singapore


Larry Allen Morgan, CFM, SFP, FMP
Regional Operations and Sustainability Expert
SAP Global Facilities Management
San Francisco, California, USA

Collins Osayamwen, CFM, FMP
Managing Partner
Sheltercare FM Consult
Abuja, Nigeria

Cathrine Pauli, Dipl. Arch. ETH, MBA HEC Paris
Managing Director
Sodexo (Suisse) SA
Zurich, Switzerland

Ian H. van der Pool, MFM
Director
VisionFM
Breda, Netherlands

Geoff Williams
Facilities Director
Centre for Health & Safety Innovation
Mississauga, Ontario, Canada



DO A FEW
MILS REALLY
MAKE A
DIFFERENCE?

CSP  **IFMA**
CORPORATE
SUSTAINING
PARTNER
SILVER



You bet they do. They can mean the difference between going home a Superbowl champ and never wearing the ring. Or the difference between a long lasting roof and one that is less durable. So if you're looking for superior, reliable performance, you want the new Sarnafil Thickness Guarantee.

The roofing industry standard allows membranes to be manufactured up to 10% below the advertised thickness, which means your 60 Mil membrane could really be 54 mils thick! But with our Thickness Guarantee, you get every mil you pay for, guaranteed.

So don't take a chance on your next roof. **Visit www.thicknessguarantee.com or call 800-576-2358** for Sarnafil Thickness Guarantee program details and to see the difference a Sarnafil membrane can make. Because a few mils can mean the difference between failure and a performance that people will talk about for decades to come.

CHAIR'S COLUMN

JIM WHITTAKER, CFM, P.E.
Chair, Board of Directors



All my life I have considered buildings to be special places. Whether it was visiting airports with my father, museums on vacations, enjoying the high-rise buildings of the New York City skyline or simply going to school, I loved the buildings. They truly are special places where people come together to work, learn, play and live. As I have aged, sometimes not so gracefully, I have grown to appreciate them even more not only for their necessity but their impact on society.

Today, it is clear that the evolution of the workplace environment has a significant impact on the productivity of the global workforce. Yet so too can the quality of the indoor environment positively impact the ability of children to learn and people to be healthier and more productive.

Buildings also affect the natural environment, accounting for about 40 percent of energy use and up to 40 percent of atmospheric emissions, including greenhouse gases. This recognition has led to an increasing emphasis on energy management and sustainability in building design, operation and management.

Efficiency and the FM

Although the efficient operation of buildings with respect to energy conservation has been on the facility manager's agenda for many years, the rest of the population is finally catching up. It is not simply the school-aged population that is interested in making sure that resources are available for them as they grow up. It is now of interest at the highest levels of government and international policy making. This past July the United Nations published the Prototype Global Sustainable Development Report which presents a high-level political forum on a global sustainable development policy.

So what does this mean? The visibility of sustainability has led to the emergence of new demands on the facility manager. If FMs were not already inundated with demands for improving customer service, doing more with less and enhancing environmental health and safety, resiliency and business continuity on top of normal day-to-day operations, there are now new demands on FMs to invest in new technologies, change operating practices to continue to shave energy and water consumption, and to be more visible regarding the reporting of sustainable outcomes. The new standard in FM vocabulary is corporate social responsibility and the triple bottom line focusing on the pillars of sustainability — economic, environmental and social.

With the newer sustainability responsibilities comes greater visibility and a unique opportunity to lead change.

So what do we do? How do we continue to integrate sustainable practices into the fabric of our daily operations?

Resources to support your sustainability journey

There is a full spectrum of IFMA resources that can aid everyone from the new FM to the seasoned veteran, including the articles in this edition of FMJ and the growing SFP. The Sustainability Facility Professional® (SFP®) course and credential provides comprehensive concepts and approaches to facility management and continues to meet growing demands. One can also find help in the IFMA Foundation's How-to Guide series which provides information on a wide range of subjects related to sustainability in facility management. And don't forget to check out the book by this year's IFMA Distinguished Author - Book/Instructional Materials award recipients, Mark Sekula and Chris Hodges, entitled Sustainable Facility Management.

If you are more into the digital revolution and social media, then you might want to visit the recently launched IFMA sustainability online community. I have found the dialog within the sustainability area of the virtual community platform to be engaging and informative. In the last month I have viewed lively online discussions related to: water and energy audits, roof-mounted wind turbines, net-zero buildings, energy rebates and incentive programs, ROI of energy conservation measures, new national government policies and regulations on energy, the Global Reporting Initiative, Design for One Earth and Happy Planet Day! Did you miss Happy Planet Day?

Yes — we may consider the focus on energy and sustainability to be new demands on our precious little time. However, the opportunity this renewed visibility presents is squarely in the domain of our FM thought leadership.

It is time we all get on the proverbial bus...or better yet, make that a fuel-efficient natural gas-powered mode of mass transit.

Regards,

FIND HISTORY IN YOUR TEXTBOOK, NOT ON YOUR FLOOR.

Forget about the damage students can do to floors. Carpets made of **Antron® fiber** can have 65% better soil resistance and can have two times better texture retention than carpets of the leading competitive nylon.* Our carpet fiber will help keep your space looking newer, longer.

Visit antron.net/carpetsearch to view styles of carpet made with Antron® fiber.



THE PRINTER INK INCIDENT

2002



PIZZA DELIVERY. TO THE FLOOR.

2011



THE SODA SHAKE SURPRISE

2006



antron® 

*Results based on testing of carpets of comparable construction, style and color.
© 2014 INVISTA. All Rights Reserved. Antron and the Antron family of marks and logos are trademarks of INVISTA.

PRESIDENT'S COLUMN

TONY KEANE, CAE
President and Chief Executive Officer



IFMA members are strategically positioned to help implement many sustainable initiatives within their organization. This is a powerful position to be in since this topic has become a buzzword in many corporate board rooms. Facility management practitioners need to leverage the business application of sustainable initiatives to increase the value and awareness of the FM profession.

Sustainability within IFMA

The IFMA Government Affairs Committee regularly explains to various government sectors both in the U.S. and Europe how FM can help achieve the energy and water conservation targets that are being set. Amazingly, many leaders in government do not understand that it takes active participation by the FM community to achieve government targets around sustainability.

Sustainability is a strategic theme on IFMA's balanced scorecard. This means that we see sustainability running throughout our organization and is an item that needs to be considered in all of our initiatives. Since this became a strategic theme IFMA has implemented several programs internally to reduce the environmental impact of our organization. These initiatives include the following:

- Development of the Sustainability Facility Professional® (SFP®) credential
- Holding World Workplace at convention centers that have sustainable operations
- Using ENERGY STAR® ratings as the major criteria for site selection of IFMA's Service Center of Excellence
- Requiring the general contractor for IFMA's new office build out to follow sustainable construction practices to LEED Silver standards
- Using furniture and building materials containing recycled materials in the new office
- Encouraging a paperless office environment
- Mobile work and flexible scheduling to reduce the staff's emissions created during daily commutes
- Working with the property management firm to establish the property's first complex-wide recycling program
- Participation in Global Reporting Initiative (GRI) for sustainability
- Implementation of an office-wide recycling program
- Recycling of all used furniture and equipment to resellers or local non-profit organizations (such as Technocycle)
- Recycling and sustainable sourcing of kitchen supplies
- Contracting with hotel chains that have sustainability programs in place

I could continue, but I think it's clear that IFMA has made major

efforts to take environmental stewardship seriously.

IFMA recently relaunched its online community platform with a discussion area dedicated exclusively to sustainability-related topics. All IFMA members can access this topical community free of charge. I encourage you to check out the community and become an engaged participant by sharing your best practices and innovative ideas.

Improving operations

At the board meeting held during World Workplace the IFMA Board of Directors voted to approve the expenditure for a new Customer Relationship Management (CRM) tool and a new Content Management System (CMS). These two items will be major expenditures for the organization; however, our current system has outlived its effectiveness. Today we all expect a robust interaction when we do business with a company. What allows that to happen is the engine that drives the main system. The focus for our new CRM will be on scalability to meet the changing business requirements when needed in the future. The CMS will provide the backbone for IFMA's ongoing knowledge management. Between these two systems we plan to create technology platforms that will continue to serve members effectively and efficiently.

During this time period we will have to delay making major fixes to the existing system and put our focus on making sure the new system meets the needs of our members today and in the future. If you experience delays during the next several months please understand that it is under repair to create a better future. The new CRM will provide us with the ability to better match the needs and interests of our IFMA members and stakeholders.

It will be an exciting and challenging 2015 while we undergo this major system conversion!

As always it was great seeing so many of you at World Workplace in New Orleans. Next we focus on Facility Fusion, which will be held in 2015 in Vancouver, British Columbia and Orlando, Florida. I would also like to welcome two new additions to our IFMA executive team: John Perry, COO (john.perry@ifma.org) and Aaron Clark, vice president of corporate services (aaron.clark@ifma.org).

Please recommend that your colleagues join IFMA. Together we can continue to grow the global FM community!

dyson airblade V

Small. Fastest. Most hygienic. Now \$799.

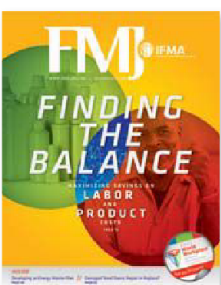
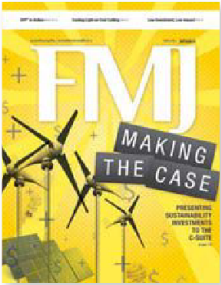
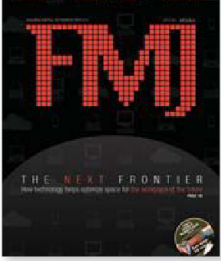
Dyson engineers have developed one of the world's smallest 1400W motors. They've used it to build an ADA compliant hand dryer that protrudes just four inches from the wall. There's even room for two HEPA filters, so it dries hands hygienically – in just 12 seconds.*



For more information or to set up a demo call 855-720-6378 or visit www.dysonairblade.com

*Dry time measured using Dyson test method 769 based on NSF P335 using a measurement of 0.1g residual moisture.





WELCOME TO FACILITY MANAGEMENT JOURNAL!

FMJ, official magazine of the **International Facility Management Association**, is written six times a year by and for professionals who develop and maintain productive workplaces. FMJ is a trusted resource for global facility management trends and thought leadership.

Unlimited access to the online magazine and full digital archives is a free benefit of IFMA membership. FMJ online has enhanced functionality, including extras such as:

- EXCLUSIVE CONTENT
- ZOOM VIEW AND HYPERLINKS TO ADDITIONAL RESOURCES
- VIDEOS/PODCASTS
- KEYWORD SEARCH
- ABILITY TO TRANSLATE ARTICLES INTO MORE THAN 40 LANGUAGES USING GOOGLE™ TRANSLATE
- ABILITY TO DOWNLOAD, PRINT AND VIEW ARCHIVES

READ ONLINE

Sign in with your IFMA member ID at www.ifma.org/fmj.

PREFER PRINT?

Print subscriptions are available to members and non-members at www.ifma.org/fmj/subscriptions.

HAVE EXPERTISE TO SHARE?

Write an article for FMJ! View planned themes and guidelines for submitting content at www.ifma.org/fmj/editorial-calendar.



ANDREA SANCHEZ
Editor-in-Chief
andrea.sanchez@ifma.org



ERIN SEVITZ
Editorial Manager
erin.sevitz@ifma.org



DIANA MALDONADO
Advertising Sales
diana.maldonado@ifma.org

Connecticut technical school to offer U.S.' first high school FM program

In August 2014, Gov. Dannel P. Malloy, joined by business, trade, education and community leaders as well as other state and local officials, celebrated the grand reopening of J.M. Wright Technical High School in Stamford, Connecticut, USA.

Planning for the revival of J.M. Wright Technical High School began shortly after the school suspended operations in 2009. Just four years later, the school reopened its doors as a model for technology-driven education and welcomed 145 incoming freshmen students.

Thanks to the support of southwestern Connecticut's business, trade, labor and educational communities, J.M. Wright Tech is now the first technical high school in the U.S. to offer a facility management program. Its classrooms have been designed to facilitate digital and mobile course instruction.

The new school building covers approximately 200,000 square feet on two floors. In addition to a new exterior

and entrances, the school interior features new technical shop areas and simulated work environments. The cost of the project totaled US\$90.2 million dollars, with US\$54.6 million representing construction costs.

Employers in southwestern Connecticut's travel/tourism/hospitality, information sciences and technology, food service, automotive and health care sectors actively support how J.M. Wright Tech educates students for careers that require communications, teamwork, critical thinking and digital prowess. Strong partnerships with area employers is a hallmark of the state's technical high school system and is key in ensuring that students graduate ready to succeed in college and careers.

"We have carefully designed J.M. Wright Tech and our program offerings to prepare students for the careers of the future and teach them the skills that employers today and tomorrow require," said Connecticut Technical High School System Superintendent of Schools

Dr. Nivea L. Torres. "The new Wright Tech reflects our collaboration with Connecticut policymakers, schools and employers to make technical and STEM (science, technology, engineering and math) education a priority. It will serve as a model school that the Connecticut Technical High School System hopes can be replicated across the state to address workforce needs."

In order to succeed in today's job market, students need a solid foundation of academic and technical skills. The new J.M. Wright Tech prepares students for the high-level problem-solving required by today's employees. The school's 10 rigorous programs — e-carpentry; e-electrical; e-plumbing and heating; culinary arts and science; automotive engineering; health technology; tourism/hotel/hospitality; digital media; information systems technology; and the nation's first high school facility management program — were designed to help students master these trades, the technologies they utilize and the skills employers desire.

AASHE announces release of 2014 STARS Annual Review

The Association for the Advancement of Sustainability in Higher Education (AASHE) recently released its 2014 STARS Annual Review, a publication that highlights sustainability innovations and best practices from colleges and universities worldwide.

The publication features 105 higher education institutions that earned a STARS rating this year, representing institutions in the United States, Canada, Ecuador, Japan, the Netherlands and Switzerland. To date, more than 325 colleges and universities have earned a STARS rating and more than 650 institutions are participating in STARS.

Some notable trends identified in this year's publication include more reports submitted from associate and baccalaureate colleges as compared to previous years, and an increase in average scores within subsequent STARS reports. A tableau infographic accompanies the publication, allowing individuals to view the innovations and best practices referenced in the review through a dynamic map display, with filtering options for institutional characteristics.

The full review is available for download at <http://stars.aashe.org/pages/about/stars-annual-review-2014.html>.

**HAVE
RELEVANT
FM
INDUSTRY
NEWS
TO
SHARE?**

Submit it to communications@ifma.org to be considered for inclusion in the Industry News section of FMJ.



IFMA LEADERSHIP AND 2014 CLASS OF FELLOWS (L TO R): Jim Whittaker, chair, 2014-2015 board of directors; Melissa Van Hagan, CFM, IFMA Fellow; Alana F. Dunoff, FMP, IFMA Fellow; John McGee, IFMA Fellow; Tony Keane, president and CEO.

IFMA congratulates 2014 class of fellows

The International Facility Management Association has named its 2014 class of fellows, a designation connoting the highest honor that can be bestowed upon an IFMA member. Three new IFMA Fellows were inducted on Friday, Sept. 19, 2014 at the Awards of Excellence banquet at IFMA’s World Workplace Conference and Expo in New Orleans, Louisiana, USA.

Since the fellowship program’s inception in 1992, exactly 100 industry professionals have been admitted to this elite group. IFMA Fellows are luminaries, not only within the association community but throughout the profession. They are respected leaders who have distinguished themselves through many years of service and notable accomplishments in education, research, writing, speaking and advocacy throughout their professional careers.

ALANA F. DUNOFF, FMP

An active IFMA member since 1990, Alana F. Dunoff has demonstrated a longstanding dedication to helping equip future generations of FMs to meet the increasing demands of the profession.

Dunoff was the first recipient of the IFMA DuPont Scholarship in 1991 and was recognized as IFMA’s Distinguished Member of the Year in 2013. She has served on IFMA’s board of directors, is a member of IFMA’s FM Consultants Council and helped found the FM Educators Special Interest Group. Dunoff has also contributed through numerous leadership roles at both her student and local IFMA chapters. An adjunct professor for more than 10 years, she is a huge contributor to the success of the FM program at Temple University and as an instructor for the Facility Management Professional credential at Villanova University.

JOHN MCGEE

John McGee is an inspirational thought leader who has consistently served the best interests of the FM profession. His visionary and forward-thinking contributions to IFMA’s strategic plan helped position IFMA for growth. As chair of IFMA’s board of directors in 2008, McGee co-signed the Partners in FM Excellence agreements with the British Institute of Facilities Management and the Facility Management Association of Australia. He introduced IFMA’s first 20-

20 Vision document, projecting where the profession and the association may be headed.

From operational initiatives to advancing international influence and visibility, McGee’s legacy of excellence is a tremendous asset to the FM community.

MELISSA VAN HAGAN, CFM

Melissa Van Hagan is a tireless advocate for professional women, FM education, the IFMA Foundation and IFMA. In 20 years of active membership, her service to the association, the East Bay Chapter, the Banking Institutions and Credit Unions Council and the IFMA Foundation have helped guide and elevate programs of benefit to students, practitioners and people in need within and outside of the profession.

She received an IFMA President’s Citation in 2000 and has worked diligently to promote the facility management profession as a public speaker at IFMA events. In 2007, Van Hagan helped repair fire stations damaged during Hurricane Katrina as part of the IFMA Foundation’s Rebuild New Orleans project.

Food waste in health care facilities

Sustainability and recycling consulting firm Resource Recycling Systems (RRS) Principal and Vice President Nicole Chardoul presented on food waste in health care facilities during the Michigan Green Health Conference at Grand Valley State University in Grand Rapids, Michigan, USA on Oct. 9, 2014.

The presentation provided background data on the generation of food waste, indicating that 10 percent of institutional food purchases become waste and that food waste represents a quarter of U.S. methane emissions.

It also highlighted a case study on Beaumont Hospital in Royal Oak, Michigan. In 2013, the hospital took a look at food waste and the possibility of

composting, finding that 10 percent of non-regulated waste was from food and the main sources were patient meals, onsite cafés and dining areas. To move toward zero waste, Beaumont launched a pilot program for food waste management and rolled out a full food waste and compostable management program.

In addition to environmental benefits, Chardoul's presentation covered the benefit of local engagement, indicating how managing food waste creates an incentive to encourage other sustainable practices such as recycling, waste reduction and social responsibility.

Chardoul has extensive knowledge of engineering, pollution prevention,

recycling and composting facility construction oversight, as well as equipment and system procurement for various types of green projects. She has trained compost site operators and managers on operational protocols and site design since 2000 and has served on local compost regulatory review committees to encourage composting and food diversion from the landfill. Chardoul is currently chair of the Washtenaw Food Policy Council.

The slide deck for the full presentation, From Collection to Best Use of Food Waste, is available online at <http://bit.ly/1vY40R5>.

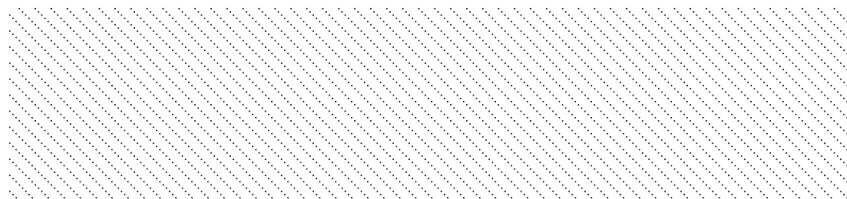
Reed Construction Data echoes roots with name change to CMD

Reed Construction Data, one of the leading providers of construction information in North America and an IFMA Corporate Sustaining Partner, has announced it is rebranding itself as CMD, a nod to the company's original name: Construction Market Data. The new brand, which includes an updated logo and website, emphasizes CMD's commitment to its core business and values as it pursues innovative avenues for growth.

Founded in 1982, Construction Market Data found success by combining new technology with in-person outreach and the expertise of experienced industry professionals to deliver accurate, contextualized information. In 2000, Reed Elsevier

purchased the original CMD Group, transitioning the company to Reed Construction Data, and earlier this year, private equity firm Warburg Pincus purchased a majority stake in the company. Today, CMD tracks data on hundreds of thousands of projects per year, providing the best coverage of construction projects in both the United States and Canada.

The new name, logo and website (www.cmdgroup.com) maintain a consistent look with previous branding, emphasizing CMD's continuing commitment to its core values of insight, ambition, sustainability, simplicity, integrity and collaboration.



THE IFMA BOOKSTORE



The online IFMA Bookstore has been updated and improved! With new e-commerce features, purchasing essential FM merchandise has never been easier. Now, customers can log in and view order history, re-download previously purchased e-files and use enhanced search options to access products more easily. Browse hundreds of books and guides, along with exclusive IFMA research and products.

As always, IFMA members receive discounted pricing.

Visit www.ifma.org/marketplace/store today!



MOVING TOWARD GREEN DATA CENTERS

CLICK TO VIEW



Five Essential DCIM Use
Cases to Unite IT and
Facilities

BY SCOTT HARRIS

Operating a data center is risky business. Interrupt service for just a moment, and it may cost tens, if not hundreds, of thousands of dollars. That's why data center owners have poured millions of dollars into redundant systems that protect uptime at all costs. However, these systems come at a price: sky-high energy use.

The price goes beyond utility bills. External pressure is rising on data centers to reduce their carbon footprint. Several high-profile news stories and watchdog reports have brought the issue into the public consciousness, and robust sustainability reporting is becoming the norm. Additionally, many local and state governments have either put into place or are considering regulations on energy use and carbon emissions, creating uncertainty around the long-term legislative landscape. These external pressures, combined with internal financial pressure, make unchecked energy use a major risk factor.

Growing pressure to go green

Public consciousness about the high demand for energy at data centers is growing. In 2010, The New York Times ran an investigative piece on major tech companies operating their high-energy data centers in rural areas with little oversight. In 2012, Greenpeace started handing out letter grades to data center owners for their overall sustainability performance. Major corporations had to suffer the ignominy of headlines that listed them as “failing” on data center sustainability

in comparison to their competitors. Reports addressing the current state of affairs and areas in which there is progress to be made have continued to emerge, often issued directly by these companies.

The pressure is rising from governments as well. In the U.S., places like California and the City of Seattle now mandate public reporting of energy use. This kind of transparency can potentially lead to unpleasant pressure from either government officials whose goal is to reduce energy use across their jurisdiction, or from third-party organizations looking to shed light on high energy users. Many city and state governments have also instituted carbon reduction plans, and may look to institute market-based plans to push emission reductions.

Pressure comes from within the organizations themselves, too. Activist shareholders as well as those focused solely on the bottom line may see excessive energy use in data centers as a symptom of poor management. Managers and executives looking to burnish their sustainability credentials or simply cut costs may see data center energy usage as

SUSTAINABILITY, CARBON REPORTING AND EFFECTIVE ENERGY MANAGEMENT ARE INESCAPABLY UPWARD TRENDS.

an opportunity to make significant changes in the organization. Public relations and marketing teams may want to see more action behind the words with sustainability teams providing a form of oversight. Where exactly the internal pressure comes from depends on the organization, but assuming it won't come at all turns a blind eye to a potential, and significant, risk on the horizon.

In the end, managing energy is about managing risk. Without insight into energy use, and the authority to affect change based on that information, companies are risking money, the ability to make effective long-range plans and their reputation. Sustainability, carbon reporting and effective energy management are, at the big-picture level, inescapably upward trends. Finding ways to be ahead of the curve is what good companies do when they plan for the future, and energy management can significantly offset this potential risk.

Total mindset shift

Many organizations have already embarked on top-to-bottom changes to address the growing push for cleaner, more efficient data environments. As both public and private stakeholders become increasingly savvy regarding the relationship between big data and the environment, relying solely on surface-level gestures toward sustainability (such as carbon offsets or renewable energy credits) is precarious and unproductive.

Moving toward green data centers requires a complete mindset shift in how organizations design, build, operate and maintain these assets. No matter whether this transition is driven by cost factors (capital and operating expenses), by environmental responsibility (reduction of operational carbon footprint) or by some combination of the two, the only way to achieve meaningful impact is to truly prioritize sustainable data centers through energy management, facility location, energy-efficient design and on-site power generation.

Tactics of going green

Energy management

Reducing energy consumption is a key element of operating more sustainably. There are a number of measures that can be implemented at existing facilities to reduce energy consumption, and the right package of facility improvements varies according to the specific systems and performance levels at each site.

The first step, however, is tracking and benchmarking energy consumption. Energy usage can be captured on a periodic basis by performing detailed energy audits, either as standalone consultative reports or as the precursor to identifying potential energy conservation measures. Data center managers can gain a better understanding of their costs and opportunities for improvement by monitoring and benchmarking energy usage on an ongoing basis.

Many facility owners elect to go a step further and employ a dedicated energy manager whose full-time job is to find ways to reduce power consumption, either for a single data center or a multi-facility portfolio. This role is charged with implementing a full energy management program that achieves the organization's sustainability goals.

Sustainability factors in site selection

For most organizations, energy is included in the complex process of determining the location of a new data center but is a lower priority compared to utility infrastructure, geographic reliability, ease of permitting and government incentives.

Clearly and publicly incorporating energy concerns (beyond cost) as a core evaluation dynamic in site selection demonstrates an organization's commitment to sustainability as a part of the evolution of the data center portfolio. Factors that should be considered include:

- **How clean is the power feed?** During site selection, each locale's utility feeds are primarily evaluated in terms of reliability

and capacity. But when making a commitment to cleaner data, it is equally important to weigh the fuel sources supplying a local utility. Some utilities are beginning to deliver substantial amounts of clean energy and efficiency, while others are far behind.

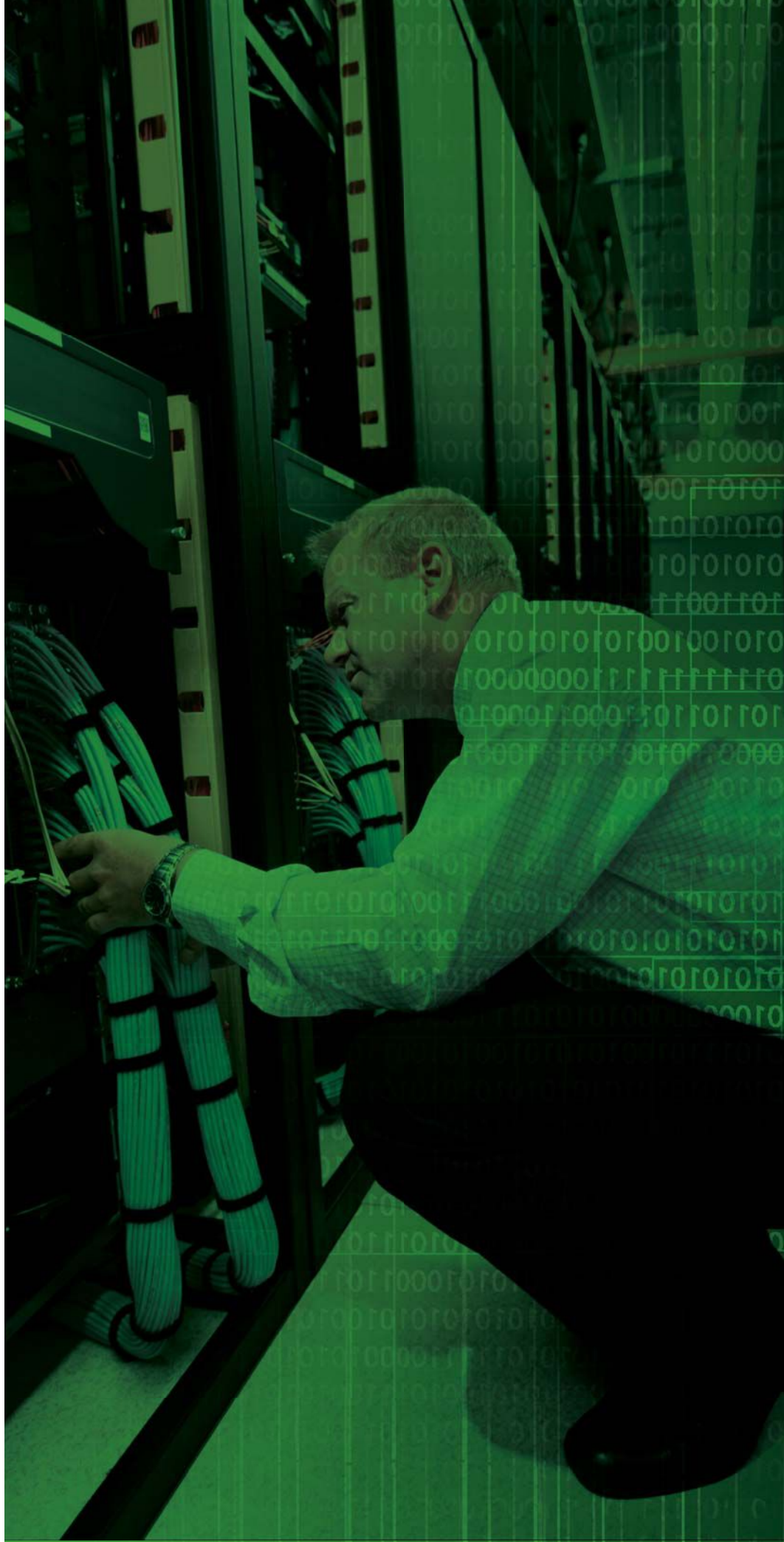
Committing to a site served by utilities with primarily “dirty” fuel sources makes it more difficult to drastically change the true carbon footprint of the facility overall. By contrast, selecting a site whose local utility commits to green or lower carbon fuel sources dramatically improves the facility’s sustainability.

- **Location dictates consumption.** Cooling a data center requires a substantial amount of power throughout the year. Cooler, drier climates help decrease the energy consumed. Such climates can also enable the use of a variety of free cooling systems and strategies that can reduce the need for cold air generation, particularly in winter months.

Energy-efficient design

Due to the increasing cost of energy and the focus on reducing carbon emissions, many data center owners are now re-evaluating how they design their critical facility redundancy schemes. The previous mindset was to always deploy the most hardened designs for the entire network to protect all applications within the facility from downtime equally. The “tier” system defined by the Uptime Institute is based on the notion of uniform hardware availability throughout the entire site. However, when reviewed, many of the applications are not as critical, or don’t require the same resiliency as others.

In many cases, owners realize too late they could save capital during construction by deploying varying levels of equipment redundancy, which also reduces operating expenses by lowering



the amount of unnecessary equipment. This allows for multi-tier facility site designs, or enables the owner to build lower-tier facilities that meet uptime requirements at a lower cost.

Recently published case studies have also shown that sites that deploy a blended UPS (uninterrupted power supply)/utility IT power scheme can achieve a similar level of reliability to the traditional models with multiple UPS/IT power schemes. This empowers site designers to remove additional failure points and maintenance requirements from the systems without significantly impacting uptime.

Incorporating energy-efficient designs is also becoming a best practice in the industry. This includes installing containment systems that segregate the hot and cold aisles, which increases HVAC efficiency and allows for higher operating temperatures. Another prevalent industry trend is the move to adiabatic or evaporative cooling. However, this option comes with a limitation: although it reduces the mechanical power demands of the facility, it increases water consumption. Choosing to use evaporative cooling should depend on the specific resource needs of the location.

Onsite power generation

The environmental impact and carbon footprint of data centers can also be reduced through investments in onsite renewable power generation options such as solar, wind and geothermal. In addition to lowering utility costs, drawing primary power from onsite generation protects data centers from power spikes and other events that can cause outages and equipment damage.

Onsite power generation requires significant capital outlay. As a result, this is often a more viable option for larger organizations with data centers whose scale requires amounts of power large enough to justify an expenditure for a large solar array or wind farm. Generating all of the power required for a data center may be cost prohibitive from a capital standpoint, but many data center owners are electing to go to the hybrid route and utilize onsite renewables to augment utility-based energy.

Another trend in onsite power generation is the deployment of lower carbon emission systems such as natural gas fuel cells. These systems can provide onsite primary power or as a method to augment the grid power supply with cleaner energy.

Strategic moves

The tactical approaches above can improve energy efficiency and sustainability across a data center or a portfolio of facilities. More dramatic changes

throughout a company can transform an entire organization from energy mega-consumer to sustainability advocate.

Accountability

The easiest way to demonstrate commitment to sustainability is to incorporate real sustainability goals into organization-wide and employee goal planning. This challenges the entire organization with high-level goals that are driven down to departments and from there to individual employees. Developing an accountability plan for each person in an organization eliminates the mindset that “someone else is responsible for sustainability.”

Transparency

Real improvement on sustainability demands that an organization move beyond the old notion that information on energy and carbon performance should be secret. Data center operators have traditionally been reluctant to publicize meaningful data about the usage and sources of energy at their facilities.

The companies and institutions that run some of the largest data centers in the world are beginning to understand that disclosing environmental performance through public reports and dashboards actually helps boost their green profile and helps drive ongoing, meaningful change.

Thought leadership

The companies and organizations that build and operate data centers have considerable sway with regional utilities, government on multiple levels, and the designers/manufacturers of core infrastructure systems within the data center. That level of collective influence can be leveraged to help drive substantial improvements to the energy mix utilities are providing, innovations in the energy efficiency of data center operations and financial incentives for using clean energy. At a minimum, data center operators should make a commitment to being a key part of energy policy conversation and decision making process. **FMJ**



Scott Harris holds the position of energy manager at McKinstry, a full-service design, build, operate and maintain firm. Harris is responsible for the implementation of energy management programs for McKinstry's facility management clients,

based upon their energy and sustainability goals. His experience in energy management, specifically in critical environments, allows him to make crucial decisions across disciplines.

Harris is also a regular participant with data center industry groups such as The Green Grid, 7x24 Exchange and Uptime Institute.

54%

of our time is spent at work. Employees expect to spend more time during their work day enjoying and benefiting from the experiences and interactions through our flexible service architecture.

That's Quality of Life.



INTEGRATED SOLUTIONS

CSP
SILVER

 **IFMA**
CORPORATE
SUSTAINING
PARTNER

sodexo
QUALITY OF LIFE SERVICES

http://bit.ly/sdxfm_more
solutions@sodexo.com | 888 SODEXO 7

FM|VIDEOEXTRA

CLICK TO VIEW



The Anaerobic Digester
at Michigan State
University

FM|ARTICLEEXTRA

CLICK TO VIEW



On Front Lines of
Recycling, Turning Food
Waste into Biogas

TURNING FOOD WASTE INTO ENERGY

BY JEFF MCMAHON

According to the U.S. Environmental Protection Agency, more than 36 million tons of food waste annually are sent to landfills, where the food scraps can emit methane — a potent greenhouse gas, 25 times more so than carbon dioxide.

The methane has the ability to trap heat in the atmosphere, contributing to global warming. To minimize this adverse impact on the environment, many states, local municipalities and companies are beginning to ban organic waste from landfills and require source separating and diversion of organic waste to either composting or anaerobic digestion.

As these statewide food waste bans come into effect, commercial food waste-generating facilities can benefit

from organics recycling systems. For facility managers, the challenge of stewardship for sustainability requires assessing all options for specific functions in their facilities, with cost often used as the crucial criterion in selecting the best solution. There are, however, ways in which facilities that generate high volumes of food waste can process it in both an ecologically sound and financially responsible way.

It is estimated that for establishments serving food there is an average of

one pound of waste per meal served when both pre-sale and post-sale waste is considered. For any facility that produces food waste, handling and disposal is a necessary and important function that represents a significant percentage of the cost of operation. When reviewing this aspect of an operation a number of factors come into play, including the following:

- Sanitation concerns, odor and pest problems
- Cost and labor-intensive hauling of heavy waste bins
- Cost of trash liners
- Frequency and cost of trash pickups and associated disposal fees

At present, approximately 97 percent of the food waste produced in the United States goes to the same non-sustainable destination. By making the switch to an organics recycling system, facilities can comply with new legislation while reducing costs, emissions, odors, pests



xpedx and
Unisource Worldwide
merged to form
Veritiv
a leading provider of Facility Solutions.

To learn more, visit veritivcorp.com





There are ways in which facilities can process high volumes of food waste in both an ecologically sound and financially responsible way.

and labor issues as well as be on the forefront of national waste management and sustainability efforts.

The technology

The U.S. Environmental Protection Agency estimates that currently less than 3 percent of food waste is recovered and recycled. There are, however, organics recycling systems designed to serve as an alternative to landfills that can convert food waste into a liquid “slurry” that is then stored in an on-site storage tank. The slurry is then vacuumed from the tank and transported to a nearby anaerobic digestion (AD) facility.

Food wastes are an excellent candidate for anaerobic digestion, due to their high moisture and organic content. Finally, the AD facility captures the methane released from the food waste and transforms it into renewable energy such as electricity, natural gas or even compressed natural gas, which can be used as vehicle fuel. The remaining nutrient-filled organic material can be used as a natural fertilizer for area farmers.

The impact

In addition to improving sanitation issues associated with pests and garbage odor, organics recycling systems can drive bottom-line benefits including reduced labor and hauling costs while providing an array of environmental and sustainable advantages, such as:

- **Reducing bottom-line costs.** Waste disposal costs can be a substantial expense for facilities that generate high volumes of food waste. Landfill tipping fees have increased 7 percent annually, on average, for the past 25 years.

Using an organics recycling system with anaerobic digestion can reduce labor costs and fees for trash pickup and disposal. Additional savings can also be generated by the significant reduction in need for food waste cart liners.

- **Improving local environment.** Landfills produce one third of the total greenhouse gas released into the atmosphere in the U.S. Sending 15 million tons of food waste to anaerobic digesters instead of landfills — about half of the food waste discarded each year — can remove the carbon emissions equivalent to about half a million automobiles. Furthermore, with the implementation of an organics recycling system, facilities can generate excitement by sharing their environmentally friendly practices within their company and their local communities.
- **Achieving sustainable advantages.** Facilities now have access to a measureable sustainability program to help guide them to achieve their waste goals. Organics recycling systems can help facilities track the amount of food waste diverted from landfills and the amounts of renewable electricity, heat, fuel and fertilizer created from each facility’s specific efforts.

For example, if a facility averaging 4.5 tons of food waste per week utilized an organic recycling system, it could yield the following impactful benefits, including:

- Creating enough electricity to power 84.5 single-family homes for a year
- Generating enough gas to heat

- 125.7 single family homes for a year
- Producing 32,760 pounds per year of nutrient-rich fertilizer to replace chemical fertilizers
- Removing 44 metric tons of CO₂ from the atmosphere per year or the equivalent of eliminating 9.2 cars from the road

The future

Within the past year, organics recycling systems have made momentous strides in helping facilities that generate high volumes of food waste in select communities reduce their environmental footprint by providing them with a turnkey solution that is both sustainable and cost-effective for the disposal of their food waste.

With organic food waste bans on the rise and the combination of economic and environmental benefits, commercial food waste-generating facilities focused on increasing profits and decreasing their impact on the environment should look to incorporate an organics recycling system into their operation. By transforming their food waste into renewable energy and providing fertilizer to area farmers, facilities can use their forward-thinking approach to also encourage sustainability in their local communities and remain on the forefront of food waste management. **FMJ**



Jeff McMahon is the director of InSinkErator’s Grind2Energy Organics Recycling System, which diverts food waste from landfills and converts it into renewable energy. Headquartered in Racine, Wisconsin, USA, InSinkErator is the world’s largest manufacturer of food waste disposers and instant hot water dispensers for home and commercial use.

THE SCIENTIFIC METHOD

As an Orkin Man, I can tell you why the fifth floor has a German cockroach problem but your other floors don't. That's because my Orkin career started in a classroom, studying everything from bug behavior to building blueprints.

I know every office building is different, so I'll start with a comprehensive inspection. Then I'll put our scientific solutions to work for you with an Office Precision Protection™ plan built to suit your needs.

Call **800-ORKIN NOW** for a free inspection and pest control plan, and let us help keep pests out and satisfied tenants in.



OFFICE
PRECISION
PROTECTION™



PEST CONTROL DOWN TO A SCIENCE.™

orkincommercial.com





IFMA's Facility Management Professional™ (FMP®) Credential



Assessment-based certificate program with no prerequisites.

For FM professionals and industry suppliers looking to increase their depth-of-knowledge in the foundational FM topics deemed critical by employers.

Updated and enhanced courses addressing the foundational elements of facility management:

- Operations and Maintenance
- Project Management
- Finance and Business
- Leadership and Strategy

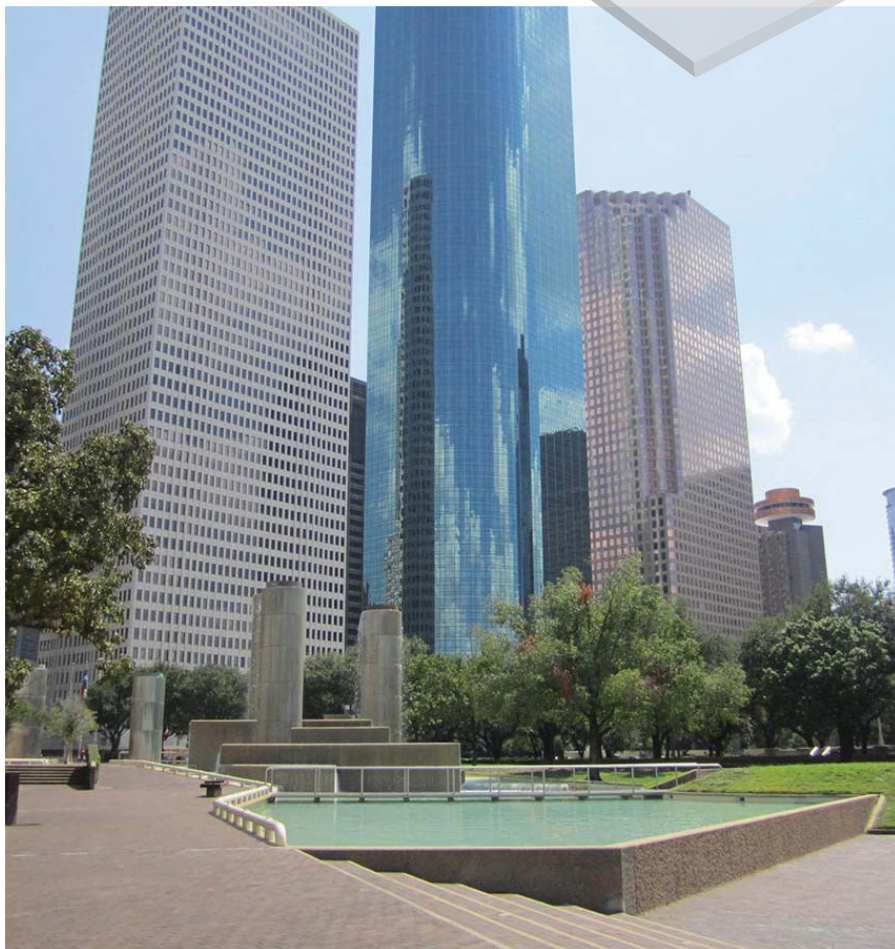
**Earn a competitive
advantage —
earn the FMP!**

Earn the MUST HAVE Credential in FM!

www.ifma.org/FMJ-FMP



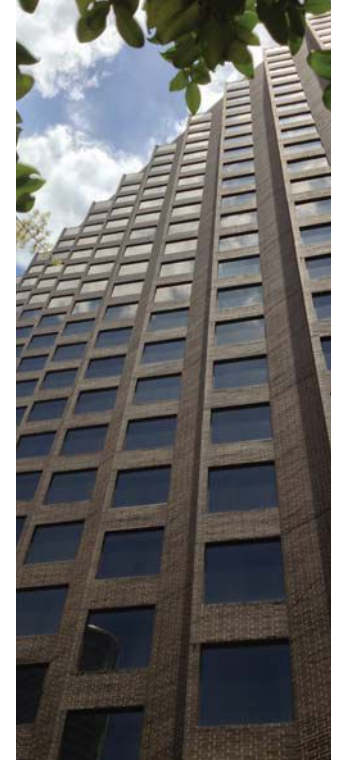
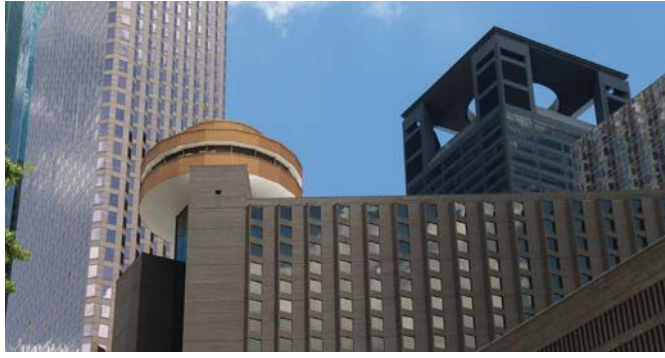
ENERGY-SAVING IMPACTS OF WINDOW FILM



BY STEVE DEBUSK

You don't often find an energy-efficiency investment that will positively affect the performance and energy usage of several building systems at once. But recent technology advances have made window film a viable option that holds this promise for commercial buildings.

Although windows provide much-appreciated views and connections to nature, they don't typically offer sufficient insulating power. In fact, windows are typically known as being the worst-performing component of the building envelope when it comes to preventing solar heat gain and thermal conduction (both heat gain in summer and heat loss in winter).



SOLAR HEAT GAIN THROUGH WINDOWS IS RESPONSIBLE FOR NEARLY ONE-THIRD OF A BUILDING'S TOTAL COOLING COSTS.

Although you may not be able to get rid of your windows (and you probably don't want to), there are solutions that will help improve their energy efficiency without replacing them — even if the windows are decades old.

Today's high-performance, low-emissivity (low-e) window film can actually improve the insulating power of glass as part of the building envelope — an important component to consider when investigating possible energy-efficiency improvements, since the building envelope influences the amount of lighting, heating and cooling your facilities require.

Almost like adding more insulation to the walls or ceilings, window film can help maintain stable indoor temperatures by reducing hot and cold spots. High-performance, low-e window film reduces heat loss in winter and solar heat gain in summer, providing comfortable temperatures year-round for building occupants.

The technology being incorporated into some of today's low-e films adds as much as 92 percent more insulating

power to existing windows. Installing newer low-e films, for example, can give single-pane windows the same insulating performance as double-pane windows and can offer double-pane windows the same insulating performance as triple-pane windows.

Because of its insulating effect, window film can also impact HVAC and lighting system usage, as well as plug load. In the right situations, facility managers may experience savings in all three of these areas after low-e window film installation.

Window film's impact on HVAC

Many factors influence the performance of your building's HVAC system: maintenance schedules (or lack thereof), thermostat location, placement of workstations and furniture, number of occupants, the amount of heat given off by office equipment and building envelope insulation.

A sometimes-overlooked factor affecting HVAC performance, however, is solar heat gain from glass and windows. According to the U.S. Department of Energy, solar heat gain through windows is responsible for nearly one-third of

a building's total cooling costs. If not controlled, solar heat gain can wreak havoc on the best-laid HVAC efficiency plans. For example, HVAC systems may be oversized in order to keep tenants and occupants comfortable, and equipment life cycles can be shortened by long runtimes and heavy cooling loads.

All HVAC equipment will eventually need to be replaced, but it's possible to extend the life of existing systems by reducing these loads and runtimes. Before investing in HVAC upgrades or replacements for energy savings, a good first step is to reduce your building's heating and cooling loads. There are several ways to do this:

- Install energy-efficient cladding
- Consider additional wall or ceiling insulation
- Invest in reflective roof systems
- Reduce lighting levels
- Improve the R-value (conductance and resistance) of windows through use of low-emissivity window film

A recent ConSol study of California buildings pinpoints window film as the most cost-effective solution for energy savings and reducing carbon footprints

when compared to air-leak sealing and caulking, adding R-38 ceiling insulation or updating HVAC systems.

Because window film reduces solar heat gain in summer and heat loss in winter, it can prevent heating and cooling systems from running as long or as often. This may result not only in year-round comfort and energy savings, but also in reduced HVAC maintenance costs.

Window film's impact on lighting

Despite the notion that window film makes indoor spaces dark and increases reliance on electric lighting, window film can actually decrease lighting costs.

Because newer low-e films are spectrally selective, they reduce a greater portion of infrared heat versus visible light. This means that the right window film will allow daylight in through your building's windows while at the same time minimizing uncomfortable heat and controlling glare.

The many benefits of daylighting in commercial facilities are no secret to facility managers. But solar heat gain, glare and uncomfortable temperatures from near windows can cause occupants to shut blinds and shades if no other options are in place to control these uncomfortable issues. Blinds and shades definitely help reduce solar heat gain and glare, but closing them may mean sacrificing access to

natural light. As a result, the need for artificial lighting may increase when occupants rely on it as the only source of light in the building.

A research team at the University of Padua (Italy) recently studied window film's affect on lighting at the MG Tower Building. As a modern Italian office tower, the building had up-to-date HVAC systems and new windows. But the facility managers still struggled to help occupants who were uncomfortable due to solar heat gain and glare from the windows. By installing window film, the facility team was able to reduce solar heat gain and glare — but also experienced a considerable increase in useful daylight because blinds were closed less often. (The University of Padua research team was also able to show that there wasn't a measurable increase in interior lighting energy at MG Tower after window film installation.)

Another way window film can affect electric lighting: the ENERGY STAR® Building Upgrade Manual points out that 5 percent of U.S. electricity is used for cooling in order to offset waste heat from artificial lighting. The more you use available daylighting (and the less often the lights are on), the smaller this percentage will be in your facility.

Window film's impact on plug load

As buildings become more energy efficient, plug load is moving into the spotlight as one of the fastest-growing

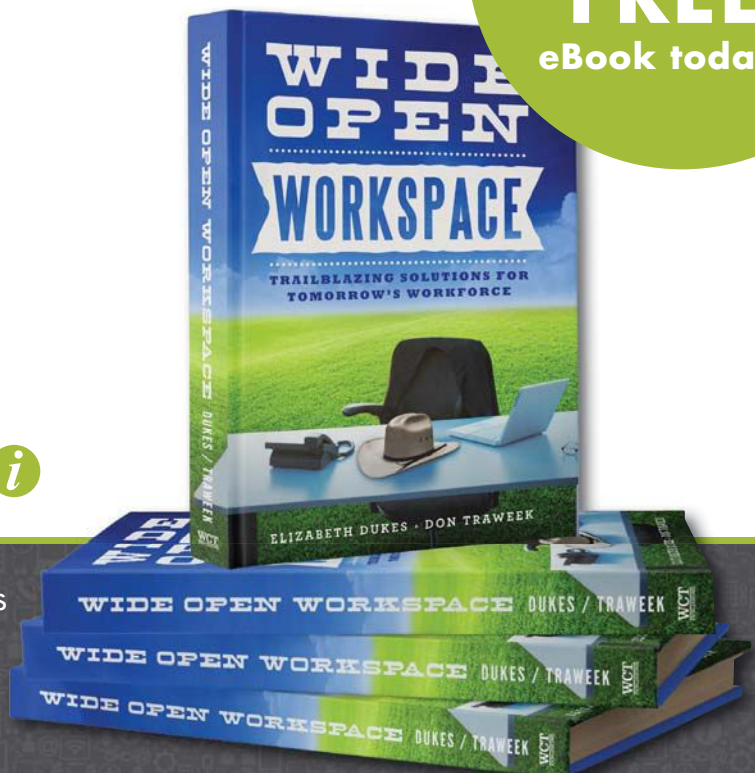


helping facility managers
lead the herd for tomorrow's workforce

A WIDE OPEN FRONTIER OF SOLUTIONS

Blaze new trails and embrace new ways
of working to get ahead of the herd!
Get the new trailblazing book by iOffice.

Download your free eBook today!
www.iofficecorp.com/free-ebook



Download your
FREE
eBook today!

sources of energy use in commercial buildings. Because efficient building systems use less energy, plug load is becoming a bigger part of buildings' overall energy equation because it's not shrinking as fast.

The U.S. Energy Information Administration (EIA) released a statement indicating that 15 to 20 percent of total energy use is currently dedicated to supporting occupant plug load: fans, computers and monitors, printers, copiers, phones, coffee makers, space heaters, task lights, chargers and anything else that can be plugged in. Buildings with energy-efficient HVAC and/or lighting systems sometimes experience plug loads as high as 50 percent of total their energy use. The EIA estimates that plug load levels will grow by another 60 percent by 2030.

The good news is that low-e window film can also help facility managers control plug load. Because it reduces hot and cold spots throughout the facility, occupants located near windows may not need to run individual fans and/or space heaters as often to stay comfortable. Task lights may not be needed as often, either, if occupants have access to controlled daylight that isn't making it difficult to see their computer screens (and can keep blinds and shades open).

Tackling energy efficiency and building system performance is no small task, but the right technology can help. Window film isn't the only option to consider when deciding on your next green building investment, but it's certainly one that can provide a high return on investment through prolonging HVAC and lighting equipment life, providing extra insulating capacity to the existing building envelope and decreasing plug load. **FMJ**



Steve DeBusk is global energy solutions manager for the window film division at Eastman Chemical Company. DeBusk has 30 years of experience in energy efficiency.

He is a Certified Energy Manager, a Certified Measurement and Verification Professional and a Certified Sustainable Development Professional. You can visit his blog at blog.vista-films.com or follow him on Twitter @greenbldgs.



HOW HYATT REGENCY HOUSTON IMPROVED HVAC EFFICIENCY

At the request of its local utility, the 30-story Hyatt Regency Houston recently suspended all new energy-efficiency projects for six months to test the savings from high-performance, low-e window film. The hotel was hoping that window film would help decrease its annual US\$1.6 million energy bill.

Hyatt Regency Houston was receiving frequent guest complaints about uncomfortable temperatures in southeast- and southwest-facing rooms. The single-pane, bronze-tinted windows experienced near-window surface temperatures as high as 125 degrees Fahrenheit during the day.

After low-e window film was installed in 48 of the southeast- and southwest-facing rooms, energy management consultant Green Generation Solutions installed an extensive sub-metering system to analyze energy savings. Precise temperature readings and HVAC usage were measured in the rooms with window film installed. That data was then compared to data captured from 48 southeast- and southwest-facing rooms without window film. From July through December, the guest rooms with window film showed a reduction of 23 percent in cooling energy use and 25 percent in heating energy. Daytime surface temperatures near the windows during summer months also dropped by 30 to 40 degrees Fahrenheit in rooms with window film.

Taking a local utility rebate into account, the energy savings from window film will provide the Hyatt Regency Houston with a full payback in 3.6 years. The hotel also reduced solar gain by 63 percent and improved insulating performance of its windows by 42 percent, resulting in energy savings as high as 30 percent during days when HVAC systems ran most often.

FOUND
IN YOUR BUILDING



graybar.com/my-rebate

CLAIM YOUR MONEY NOW

The Graybar PowerSmart® Rebate Advantage Tool makes it easy to find utility rebates nationwide.

- 98% accuracy and 100% U.S. zip code coverage
- Guidance through deadlines, paperwork and approval processing
- Single unit, multi-site and multi-state projects all applicable

To learn more or request an assessment, please visit graybar.com/my-rebate.

Find your Energy Products Specialist today
Call 1-800-GRAYBAR or visit graybar.com



IMPACT YOUR TRIPLE BOTTOM LINE

I AM a facility professional looking to stay current in my profession and gain a long-lasting competitive edge.

I AM not a facility professional, but would still like to distinguish myself by mastering sustainability topics.



I AM a LEED accredited professional looking to further expand my knowledge and professional network.

I AM an employer who would like to enhance the image of my company and employees while impacting the triple bottom line.

Earn IFMA's Sustainability Facility Professional® (SFP®) Credential



IFMATM

International Facility Management Association

Empowering Facility Professionals Worldwide

ifma.org/sfp

FMJARTICLEEXTRA

CLICK TO VIEW

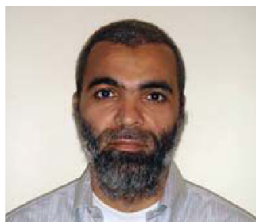


New Phase of Faculty
Housing Complete, Embeds
Green Concepts



INSPIRING SUSTAINABILITY INNOVATION IN EGYPT

BY IFMA'S PROFESSIONAL DEVELOPMENT DEPARTMENT



Insights with
Sherif Maged,
MBA, MSC,
SFP, senior
director facility
housing and
transportation
at The
American
University in
Cairo

Founded in 1919, The American University in Cairo (AUC) is the region's premier English-language University — an essential contributor to the social, political and cultural life of the Arab world. The university has nearly 5,000 undergraduates from every corner of Egypt and from 113 countries around the world. The university's 260-acre New Cairo campus represents a major investment in the future of the city, the country and the region — a state-of-the-art facility for advanced research, innovative teaching and civic engagement.

The AUC is not only committed to the education of its students, but also its staff. With one international training opportunity each year, Sherif Maged, MBA, MSC, senior director of facility housing and transportation, set his sights on earning a highly respected international credential in 2012.

When researching his options, he discovered IFMA's Sustainability Facility Professional® (SFP®) credential. He expected that the SFP would provide ideas on how he could better serve his community, but after attending a six-day course in December 2012, he was amazed with the new knowledge and tools he had acquired and was energized to return to Cairo to begin implementing green ideas at the AUC.

At the time, the AUC was in the midst of the development of a new faculty housing project. When Maged returned from his SFP training, the building was in the final stages of design. However, armed with a new-found passion and triple-bottom-line methodology, he approached his supervisors with the idea of creating one of the first green buildings in Cairo and Egypt. He was able to convince a committee based on the financial, social and environmental merits of the project.



IF YOU PERSONALLY VALUE SAVING THE ENVIRONMENT, THEN YOU MUST PURSUE THE SFP CREDENTIAL.

Financially, the estimated 5 percent cost increase was deemed acceptable when viewed in context of the associated gains. Socially, the green building would be attractive to forward-thinking faculty members seeking housing. Environmentally, they would save resources and reduce waste.

After an initial two-month study, Maged and his team began working on a number of initiatives including the use of low-volatile organic compound (VOC) paint, the installation of low-flow water aerators, plastic window film to reduce thermal load and a green roof. However, many projects posed challenges because the necessary technology was not available in Egypt and had to be imported from Europe and the United States. Non-chlorofluorocarbon refrigerant for air conditioning units was imported from the United States. Solar headers were brought in from Germany and Greece. Even light-emitting diode (LED) lighting had to be imported.

In December 2013, the new faculty housing building was completed and tenants began moving in with an initial 25 percent occupancy. Maged and his team met their initial short-term goals of being one of the first green university buildings in the region and providing modern housing using up-to-date technology for faculty members. Looking forward to the longer term, this project has spurred innovative plans for future buildings, has become an education model for students learning about the application of green concepts, has helped to set policies and guidelines for sustainability in Egypt, and has become a research center for sustainability consultancy in the region.

IFMA gets up close and personal with Sherif Maged to learn about how his sustainability knowledge shaped his present goals.

IFMA: *When did your passion for sustainability begin?*

MAGED: Sustainability has always been popular at the university. I joined a group that was discussing how to make AUC more sustainable. Since I am allowed to have international training annually, I discussed options with my boss and he suggested that I check out IFMA. When I did, I was grateful to find the SFP course. That is where my passion began.

IFMA: *How has the SFP enhanced your professional credibility?*

MAGED: After attending IFMA's SFP course, I was energized by the information I received. At the time, we were constructing a new faculty housing residential building for the American University in Cairo and the project was about to be finished in a few months. When I returned home, I talked to my supervisors and they advised me to present in front of the university facilities planning committee to get my proposals approved.

By the following month we had the first sustainable initiatives presentation that allowed us to apply for a green building certificate.

I used the triple-bottom-line teachings, combined with a case for return on the proposed investment, to convince the committee on why sustainability was vital in the building's construction. By holding the SFP designation, I was seen as the leader of

BY HOLDING THE SFP DESIGNATION, I WAS SEEN AS THE LEADER OF THE WHOLE SUSTAINABILITY PROCESS FOR THE PROJECT.

the whole sustainability process for the project, which included scoping green roofs, VOC paint, LED bulbs, recycling initiatives and the use of solar energy, among other things.

As a result, and in the short term, we are proud to have our first green building in the university — attracting tenants and serving as a benchmark for other projects. Long term, the project will serve as a best practices lesson for students. AUC also hopes to set sustainability policies and guidelines in the country by becoming a leading research center for sustainability consulting in Egypt and surrounding regions.

IFMA: *As an expert in sustainability, what is next for you in your career?*

MAGED: My next step is for my team to apply for LEED registration fees, as we aim for the building to be LEED certified. Personally I am working toward a Master's degree in sustainability in the near future.

IFMA: *Any advice to those interested in pursuing the SFP?*

MAGED: If you personally value saving the environment, then you must pursue the SFP credential. You will not save the planet, but at least you will be involved in a great role and you will feel good about it. It is only a six-day course, and believe me, it will change your life. **FMJ**

Classroom Lockdown

XME9000/XCE9000 - Keypad

FME4000/FCE4000 - RFID



XME 9000



XCE 9000



FME 4000



FCE 4000

IFMA Credentials

Open doors to new possibilities!

“Earning the CFM credential has reinforced my value as a proficient facility manager. A globally recognized endorsement of my expertise, the CFM has heightened my coworkers’ respect for my role as a leader. I would recommend the CFM for anyone seeking to gain a competitive edge.”

- Robert Kleimhagen, Jr., CFM



Certified Facility Manager®

CFM® Certification

The Certified Facility Manager® (CFM) credential sets the industry standard for ensuring the knowledge and competence of practicing facility managers.

IFMA's certification process is designed to assess competency in the field through work experience, education and the ability to pass a comprehensive exam that covers 11 competencies that make up the facility management body of knowledge. Since the program began in 1992, more than 3,100 facility managers from 32 countries have achieved this prestigious recognition.



Learn more about IFMA's CFM Credential at
www.ifma.org/CFM-SAME



IFMA™
International Facility Management Association
Empowering Facility Professionals Worldwide



Interview with
John Perry



Getting to Know **JOHN PERRY, IFMA COO**

“Having assumed my position as IFMA’s chief operating officer in September, my first day on the job was opening day of the World Workplace conference – quite an awe-inspiring orientation for a new employee. But for anyone new to IFMA, you won’t find a more enlightening, all-encompassing or entertaining introduction to this association than World Workplace.”

– JOHN PERRY

On Sept. 15, 2014, IFMA welcomed John Perry, MBA as chief operating officer. Prior to joining IFMA, Perry served as chief innovation/quality officer with Houston-based NACE International, where he leveraged a background in information technology and change management to improve member value and bolster productivity. He also developed the market-entrance strategy for the establishment of a Middle East training facility and office for NACE International.

Prior to NACE, Perry was director, business application development for ADP in Jersey City, New Jersey, where developed and brought to market several products and established the Hong Kong software development group. Perry has an executive MBA and Bachelor of Science in economics from the University of Houston and completed undergraduate studies in economics and psychology at New York University.

FMJ Editor-in-Chief Andrea Sanchez had a chance to sit down with Perry to chat about his background and his thoughts on IFMA.

FMJ: What would you like people to know about you?

PERRY: I’m a huge proponent of feedback. I give and receive feedback with the same passion and want to encourage the membership and staff to share feedback freely with me. In turn, I will share feedback with you, understanding that it’s with the utmost respect and humility. My goal is to help us be more productive, improve relationships and help IFMA succeed.

FMJ: Why IFMA?

PERRY: I think IFMA is poised for radical success in the near future. I have a background in IT but my first passion is organizational psychology. When I see the activities occurring around the BIM [Building Information Management] and WE [Workplace Evolutionaries] groups, I can see that this organization is moving forward in the right way. I really want to be a part of that. I think it’s important for us to have a workplace that’s safe, healthy and happy.

FMJ: What draws you to association work?

PERRY: I like the passion around the association world. What has really surprised me about IFMA is the level of engagement and work that our volunteers put in. I see a lot of people wanting to give it their all and that just makes one want to participate.

FMJ: First impression of IFMA in three words?

PERRY: Global, poised and energized. The office space is phenomenal. I really hadn’t seen anything like it before. It really opened my eyes to what the workspace could be.

FMJ: How do you believe you will add value to the association?

PERRY: I think the first thing I bring is a global business background. In the 2000s I did extensive work in the U.K, Hong Kong and most recently in India and the Middle East. I believe I can bring ideas to the organization on how to work with those markets and be a success.

Secondly, folks who know me know that I am driven by metrics. I’m really looking forward to help IFMA embrace metrics. I think we’ve worked tremendously hard and now it’s time to draw our line in the sand to show successes, and in turn celebrate when we achieve them.

The final thing I’d like to bring is culture in terms of feedback. It will really change the way the organization works when we can share feedback with each other and really work as a team to get our goals accomplished. **FMJ**

The complete video interview is linked on the online version of this article at www.ifma.org/fmj (use your IFMA member ID to log in).

CLICK TO VIEW



IFMA's World Workplace
2014 New Orleans

IFMA'S WORLD WORKPLACE 2014:



Letting the Good Times Roll

BY ERIN SEVITZ

Still dreaming of Mardi Gras World? If you returned from World Workplace newly inspired at work or craving beignets, you're not alone.

IFMA staff and board members would like to thank attendees, volunteers, exhibitors and sponsors for making the 2014 World Workplace Conference and Expo an event to remember. Held this year in New Orleans, Louisiana, USA on Sept. 17-19, World Workplace brought together members of the FM community from all over the world for a week of education, networking and celebration.

Among the 4,300 attendees at this year's event were more facility management professionals from outside the United States than ever before. A total of 57 countries were



IFMA's
World Workplace

The Facility Conference & Expo

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



represented, along with industry leaders from across the United States.

Attendees benefited from groundbreaking educational and networking opportunities as well as demonstrations of cutting-edge products and services relevant to the facility management industry. In addition to captivating keynote speakers, forward-thinking facility management conversations and receptions worthy of the venue, IFMA recognized outstanding achievements in facility management.

While the majority of World Workplace typically takes place over the last three days, some key activities were held prior to the official Wednesday start.

Pre-conference learning

Held in conjunction with the conference and beginning on Saturday, Sept. 13, IFMA's Fall Symposium offered instructor-led knowledge- and skill-building classes for those interested in continuing FM education. The symposium included courses for IFMA's Facility Management Professional and Sustainability Facility Professional® credentials, exam preparations for IFMA's Certified Facility Manager® credential and IFMA's newest introductory-level FM program, Essentials of Facility Management.

On Tuesday, Sept. 16, IFMA staff, board members and volunteer leaders led the House of Delegates and Annual Meeting.

They presented high-level views of progress made during the 2013-14 fiscal year toward meeting the objectives outlined on IFMA's balanced scorecard and shared insight into the association's planned future trajectory.

In addition, three four-hour afternoon master classes allowed attendees to gain in-depth learning on emergency preparedness through hands-on simulations, strategic thinking and planning for the "new normal" of FM and lessons learned and insights on workplace analysis.

IFMA Foundation celebrates success

The IFMA Foundation got the festivities underway before the official conference start with a golf tournament and celebration gala held on Tuesday, Sept. 16.

The 24th Annual Doug Underwood Memorial Golf Tournament, presented by DTZ, IFMA's Utilities Council and the IFMA Foundation, was held at Stonebridge Golf Club of New Orleans. Despite some uncooperative weather, the golfers were able to experience Stonebridge's unique course winding through the bayou landscape while contributing to the foundation's mission of supporting the long-term success of the FM profession.

That evening, supporters of the foundation were invited to don their best to celebrate the group's 25th anniversary at the





Silver Jubilee Casino Night and IFMA Foundation Celebration. Held in the expo hall, the event recognized the past year's successes and the generous contributions that helped make them possible while offering an opportunity for attendees to give back to the FM community by bidding on auction items.

Through sponsor donations, the foundation was able to award US\$140,000 in scholarships and fully subsidize World Workplace travel and participation for 37 outstanding FM students. Those students were able to participate in the conference activities, serve as volunteers for an inside look at the event and were recognized for their academic achievements at the Academic Awards Reception on Thursday.

In addition, the foundation recognized Texas A&M University as its 31st Accredited Degree Program for facility management, presented on the Global Workplace Workforce Initiative which will introduce FM as a career of choice to high school and college students, named its ePoster competition award winners and supported the Academic and Research track educational sessions.

Experiencing New Orleans through the eyes of FMs

One of the best ways to explore a city as a facility manager is to see what makes key features of the built landscape tick. On Tuesday afternoon, those who arrived early were able to take advantage of exclusive behind-the-scenes looks at New Orleans with tours at state-of-the-art research, airport, military and sports facilities.

Tours included front- and back-of-house areas and were guided by facility staff who provided insight into project initiatives, sustainable/energy-efficient features, upgrades, strategic

space planning, innovative technologies and daily operations in the post-Katrina cityscape.

The spaces explored included the New Orleans BioInnovation Center and Louisiana Cancer Research Center; New Orleans Lakefront Airport; Federal City; 17th Street Interim Closure Structure and Permanent Pumps Complex and Bonnet Carré Spillway; and the Mercedes-Benz Superdome, home of the New Orleans Saints National Football League team.

First-time attendee orientation

Ever attended a conference for the first time and had no idea where to begin? IFMA designed its highly popular first-time attendee program to help break the ice and give first-timers unique insights into the opportunities available throughout the three-day World Workplace event.

The orientation was presented to a packed room as IFMA members and staff guided attendees through program highlights and shared valuable tips on making the most of the conference offerings. Solo attendees had the chance to connect over coffee and breakfast and a few lucky winners started off the day with some great prizes.

FMJ-hosted panel on leadership

Now in its second year, the Wednesday morning FMJ-hosted panel brought together thought leaders from various aspects of the industry for an enriching discussion on the interplay between FM and leadership.

Moderator Bill Conley, IFMA Fellow, CFM, SFP, FMP, LEED AP, engaged the panelists in a people-focused discussion on how FM shapes individual leadership, how FMs serve as leaders within their organizations and what leadership opportunities the profession can offer to entice new practitioners. Panelists included Melissa Van Hagan, IFMA Fellow, CFM with Oracle, who provided insights as a seasoned FM; John Ringness, SFP, MRICS with NEXT Facility Management Solutions, who shared his perspective as an international FM consultant; David Smith with Lencore, who contributed his thoughts as an industry partner/vendor; and Sam Bent, 2014 IFMA Foundation International Student of the Year, who provided a student/emerging FM viewpoint.





Opening keynote

Attendees were officially welcomed to World Workplace by IFMA President and CEO Tony Keane, 2014-15 Chair Jim Whittaker and international business consultant Peter Sheahan. Keane kicked off the social spirit of the conference by taking a selfie with the audience in the background, while Whittaker quoted former chair Marc Liciardello who famously said of FM, “If you don’t have a seat at the table, you’re on the menu.”

Founder and CEO of ChangeLabs™, and author of FIIP and Generation Y, Peter Sheahan is known internationally for inspiring innovative business thinking and creating lasting behavior change. He has worked with some of the world’s leading brands, including Google, News Corp., Harley Davidson and GlaxoSmithKline. Sheahan continued Whittaker’s theme by spotlighting how the facility management profession fosters individuals who can successfully challenge business conventions. He shared how the world’s leaders distinguish themselves by taking intelligent risks to innovate and drive change and held a book signing following the session.

Welcome reception at Mardi Gras World

Always a highlight of World Workplace, this year’s opening reception at Mardi Gras World proved no exception.

Guests were met with the awe-inspiring sight of hundreds of official Mardi Gras floats as they wound through the parade storehouse to find the festivities. They were welcomed by some surprise IFMA VIPs dressed in traditional Mardi Gras gear tossing strings of beads from up on the floats.

The venue provided an authentic New Orleans experience, complete with outdoor views of the Mississippi River and Cajun and Creole specialties. Attendees danced the night away in front of two live music stages, got dressed up for the photo booth, had their fortunes told and met a live baby alligator.

Thanks to Caterpillar for making the “bon temps” kickoff such a success!

Educational sessions

This year IFMA introduced four learning labs (Leadership, Leading and Bleeding Edge, Management Skills and Performance) to help attendees tailor their learning experience.

Sessions followed 14 topic tracks at three different experience levels reflecting the facility





Looking for more photos? Official photos from **World Workplace New Orleans** can be viewed online on IFMA's Flickr page.

management competencies defined by IFMA's global job task analysis, including operations and maintenance, real estate and property management, human factors, finance and business, environmental stewardship and sustainability, project management, leadership and strategy, quality, communication, technology, emergency preparedness and business continuity, workplace, academic and research and FM solutions.

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.

Solutions on the expo floor

The exhibition area provided a perfect networking opportunity for FMs at all stages of their career. Attendees browsed nearly 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.

Serving as the heart of the expo floor, the IFMA Central area offered a space for

attendees to network and learn about the association. Attendees could also visit the Council Pavilion to meet with professionals who share common work environments and gain insight into how IFMA's 17 councils support the specialized vertical markets in which IFMA members practice.

Solutions Arenas, located around the perimeter of the show floor, offered exhibitor-led product demonstrations and information sessions. Sponsored by IBM and FM:Systems, the Solutions Arenas held sessions by Archibus, FM:Systems, IBM, the IFMA Foundation/JLL, ISS and Manhattan Software. These presentations offered strategies and solutions centering on BIM, outsourcing, analytics and space utilization to help FMs maintain and improve the facility landscape.

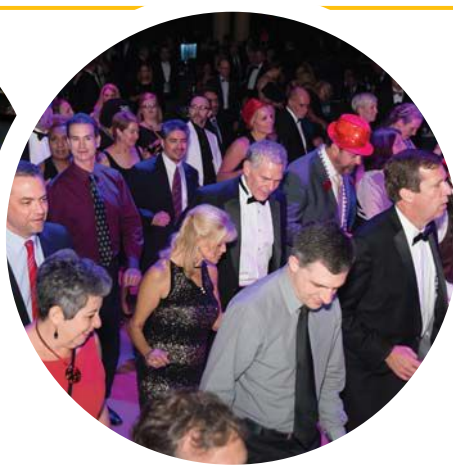
Networking opportunities and career fair

Following IFMA's first virtual career fair held in June, the inaugural career fair at this year's World Workplace connected FM job seekers with prospective employers in a face-to-face setting.

Attendees also got to experience a taste of New Orleans while participating in unique networking opportunities. Among these were receptions geared toward young professionals (students and those within the early stages of their FM careers), recognizing IFMA credential holders and for members of IFMA's Canadian chapters.

Awards of Excellence luncheon and evening gala

On Friday, Sept. 19 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 honored were the 2014 class of IFMA Fellows (see page 16 for more details), as well as outstanding chapters and leaders. In addition, IFMA Chair Jim Whittaker awarded Joseph M. Drew, CFM, SFP and Kit Tuveson, IFMA Fellow, CFM, SFP, with Chairman's Citations in honor of their behind-the-scenes leadership, hard work, selfless actions and exceptional achievements.

The festivities began with a luncheon during which three renowned speakers shared their insights in condensed, impactful presentations modeled after the popular TED Talks. Leadership "imagineer" and former Disney Institute sales director Simon T. Bailey encouraged the audience to shift their thinking, social media guru Crystal Washington demonstrated how FMs can leverage online platforms for critical communications during times of disaster and motivational author Kaplan Mobray showed how leaders can create the right conditions to encourage innovation. Book signings by each of the speakers followed the lunch presentations.

Awardees recognized at the luncheon included:

- Chapter Associate Member: Robert Dills, SFP
- Chapter Government Affairs: Central Pennsylvania Chapter (Kristan Screen accepting)
- Chapter Professional Development Large Chapter: Denver Chapter (Lone Libby accepting)

- Chapter Professional Development Small Chapter: San Antonio Chapter (Robert Mosher, SFP, CFM accepting)
- Council Communications: Information Technology Council (Ted Ritter accepting)
- Council Programs and Professional Development: Corporate Facilities Council (Serena Pancoast, CFM, SFP accepting)
- Distinguished Author Article or Research Paper: Peter Kimmel, IFMA Fellow
- Distinguished Author Book or Instructional Materials: Christopher P. Hodges, CFM, IFMA Fellow and Mark Sekula, IFMA Fellow, CFM, FMP
- Distinguished Author: Web Based/Social Media: Tiffany Rivers (James McDonald accepting)
- Emerging Professional: Anthony Maddox
- International Associate Member: Kate North

The celebration continued at the formal evening gala with dinner, entertainment and plenty of dancing.

Awardees recognized at the banquet included:

- Chapter Distinguished Member: Wayne D. Veneklasen, Ph.D., CFM
- Council of the Year: Airport Facilities Council (Eddie Clayson, AAE, CFM, SFP accepting)
- International Distinguished Member: Stephen Ballesty, CFM
- Large Chapter of the Year: Silicon Valley Chapter (Jennifer Olsen,

CFM, SFP, FMP accepting)

- Sheila Sheridan Award for Sustainable Facility Operations and Management: William D. Broome, SFP, CFM, LEED Green Associate
- Small Chapter of the Year: Sacramento Valley Chapter (Rob Turnage accepting)
- Student Chapter of the Year: Greater Phoenix Student Chapter (Anna Thurston accepting)

Both the luncheon and evening gala were hosted by members of Brave New Workshop, the U.S.' oldest satirical comedy theater, who entertained the audience with off-the-wall improvisations.

The evening banquet was generously sponsored by ISS.

See you in Denver!

We are thrilled to take World Workplace to the Mile-High City for the first time in 2015. The event will be held at the Colorado Convention Center in Denver, Colorado, USA on Oct. 7-9. A number of attendees and vendors took up the echo, "See you in Denver!" on the last days of this year's conference in anticipation of next year's event. The Denver Chapter of IFMA and Kiewit spurred on the excitement with some innovative Colorado-themed Lego creations (of which we've heard a rumor there is more to come).

Add worldworkplace.ifma.org to your bookmarks list and check back frequently for details on World Workplace 2015, including the call for presentations, registration, housing and exhibit and sponsorship opportunities. **FMJ**



Erin Sevitz is editorial manager for IFMA. She is responsible for internal communications, leads the copy editing, art direction and production of FMJ, and contributes to the development of IFMA's social media strategy. She is a University of Florida graduate with bachelor's degrees in English and French and tweets on leadership, branding and the workspace @ESevitz.

Our thanks to the following exhibitors for their support of and participation in IFMA's World Workplace 2014.

2/90 Sign Systems
4-M
A M King Facility Services
ABB
Able Services
ABM
Accruent, LLC
Acoustiblok, Inc.
AGF Manufacturing, Inc.
AHI Facility Services, Inc.
Airport Facilities Council of IFMA and
Atlanta-Hartsfield Airport
Alexander's Mobility Services
All Pro Painting and More LLC
AlliedBarton Security Services
American Louver
American Technologies, Inc.
American Time
Americo Manufacturing Company, Inc.
APCO Sign Systems
Apogee Enterprises, Inc.
AppTree Software, LLC
APTech Group, Inc.
AQUIS
ARAMARK Facility Services
ARC Document Solutions
ARCHIBUS, Inc.
Arizona State University
ASHRAE
ASI Sign Systems
Asure Software
Avian Flyaway, Inc.
Bauer's Intelligent Transportation
BELFOR USA Group, Inc.
Bentley Mills, Inc.
Big John Products, Inc.
Bobrick Washroom Equipment, Inc.
BOMI International
Bright White Paper Co.
Brock & Company, Inc.
Building Operating Management
Building Technology Associates
Buildings
CadapultFM
Cambridge IT Compliance LLC
Cambridge Sound Management
CannonDesign
CardioReady
Carrier Rental Systems
Cat® Rental Power
CE Maintenance Solutions, LLC
CentiMark
Century Sign Builders
CH2M HILL
Chesapeake Facility Resources
Cleaning Services Group
COIT Cleaning & Restoration Services
Commissioning Agents, Inc.
Compatico Inc.
Condeco
Connectrac
Construction Specialties Inc.
CORPORATE CARE
CORT
Cost Control Associates Inc.
Dadanco
DAVID Construction Inc.
Davies Office Refurbishing

Davinci Roofscapes
DC Group
Diama-Shield
Directional Systems
dPOP!
Database Software
DTZ
Durable Office Products
Dynasound, Inc., Soundmasking &
Eavesdropping Protection Division
Easi File
EasyKeys.com
eBid Systems.com
eCamSecure
EDM
EMCOR Facilities Services
EMS Software
Environmental Defense Fund
Esri
EthoSource, LLC
Eurest Services
Evac+Chair North America LLC
Exact Finish, Inc.
Excel Dryer, Inc.
Executive Management Services, Inc.
Facilities Maintenance Management
Facility Engineering
Associates, PC
FacilityDude
FBG Service Corporation
Fellowes Inc.
FlexPost Incorporated
FM-Systems
Follett Corporation
Forbo Flooring Systems
Fresh Wave IAQ/OMI Industries
FSI (FM Solutions)
GCA Services Group, Inc.
George Mason University
GOJO Industries
Graybar
Green Building Initiative
Haven Innovation, Inc.
HD Supply Facilities Maintenance
Honeywell International
IA Interior Architects
IBM Corporation
IFMA Foundation
Indus Systems, Inc.
Infor
Innerface Architectural Signage
Innovation Wireless, Inc.
InPro
Interface
Intermatic Inc.
Interstate International | Logistics
Division
Interstuhl Büromöbel GmbH & Co. KG
INVISTA/Antron Carpet Fiber
iOffice, Inc.
IREM Sustainability
ISCO Industries
ISS Facility Services, Inc.
ISSA, The Worldwide Cleaning
Industry Association
Johnson Controls, Inc.
Kellogg Brown & Root (KBR)
Keystone Blind Services
Kiewit Building Group

Kimball Office
Kimco Services
Lasertech Floorplans Inc.
Legrand
Lencore Acoustics Corp.
Light Pole Systems
Link Systems
LOFTwall
LogiSon Acoustic Network
Lowe's Pro Services
Manhattan Software
Marsden Services
Master Mfg. Co., Inc.
MelRok
Merit Service Solutions
MelRok
Merit Service Solutions
MilliCare Textile and Carpet Care
Milliken
Miracle Method Surface Refinishing
Mobile-Shop Co.
MRI Workspeed
NaceCare Solutions
National Purchasing Partners
Natural Choice Corporation
NEBB
Nespresso Business Solutions
New Orleans Chapter of IFMA
Nexstep Commercial Products
NFS Technology Inc.
Noble Americas Energy Solutions
North American Roofing
Off Duty Services, Inc.
Office Depot Conferencing & Meeting
Space for Attendees
Office Depot, Inc.
Office Moving Alliance, LLC
OfficeSpace Software
Olympus Building Services
ORR Protection Systems
Patcraft
Paul Davis National
Paulon Software
Polygon
Powering America (NECA and IBEW)
PPG Architectural Coatings
Precision Concrete Cutting
Prestige Maintenance USA
PRIDE Industries
ProGroup Contracting, a Licensee of
CertaPro Painters
Qube Global Software
R&K Solutions, Inc.
R.E. Whittaker Co.
REB Storage Systems International
REC Solar
RedVector
Rentokil/Ambius
Re-Stream
RE Technologies
ROE/Evolution Interiors
Royal Cup Coffee
RSMears
SALTO Systems
San Jamar
SaniGLAZE International
Sanvic, Inc

Sapling Company Inc.
Scranton Products
Sealed Air Diversy Care
Securitas Security Services USA
SELECT Hinges
Serve Ferrari
ServiceMaster Recovery Management & ServiceMaster Clean
Servpro Industries
Sika Corporation-Roofing
SKF Maintenance Products
Skyfold
Sodexo Facilities Management
Sound Management Group, LLC
SoundTITE Solutions, Inc
Special-Lite/Select Hinge
SprinkGUARD
Staples Advantage
Starnet Floor Care
StructureTec Group
Sunbelt Rentals, Inc.
Sustainable Modular
Management, Inc.
Swiftspace Inc.
Synergis Software
Systopia International Inc.
Takeform
Tarkett
Telgian Corporation
TEMP-AIR, Inc.
Tennant Company
Terminix Commercial
The Blue Book Building & Construction Network
The Budd Group
The Chief Engineers Association
of Chicagoland
The Global Display Solution
The Home Depot
The Millennium Group, Inc.
Thermal Remediation
TMA Systems LLC
Today's Facility Manager (Group C
Media)
TOPdesk
Trane
Tremco Roofing & Building
Maintenance
TURIS System, LLC
Tyga-Box Systems, Inc.
U.S. Department of State
U.S. Lawns
University of Wisconsin
URS Corporation
Vaughan Company Inc.
Versteel
VFA, Inc.
Visit Denver
Waterblasting Technologies
Water Signal
West Sanitation Services, Inc.
Whelan Security
Wizard Software Solutions
XP Solutions
Yardi Systems
Zep Inc.
Zip-Up
ZOO Fans Inc.



Companies in **BOLD** are IFMA's
Corporate Sustaining Partners

Our thanks to this year's World Workplace sponsors for their generous support of IFMA's annual conference and expo.

Premier Sponsors



Sponsors

ABM

Attendee Bags
Expo Aisle Sign

ARAMARK

Expo Aisle Sign

ARC Document Solutions

Expo Aisle Sign
Expo Prize Card
Expo Prize Donation

ARCHIBUS Inc.

Solutions Arena Session

CardioReady

AEDs

Cat® Rental Power

Welcome Reception
Expo Aisle Sign
Expo Prize Donation

CentiMark

Expo Prize Donation

COIT Cleaning & Restoration Services

Expo Prize Donation

CORPORATE CARE

Expo Prize Card

CORT

Education Track: Environmental Stewardship & Sustainability
FMJ Social Media Lounge Furniture
IFMA Central Furniture

DTZ

Expo Prize Card

Durable

Expo Prize Card

EMCOR Facilities Services

Expo Prize Card

Eurest Services

Expo Prize Card
Expo Prize Donation

Excel Dryer Inc.

Expo Prize Card
Expo Prize Donation

FM:Systems

Solutions Arena 2 Sponsor
Solutions Arena Session

GCA Services Group, Inc.

Expo Prize Card
Expo Prize Donation

GOJO Industries

PURRELL ELITE Sanitizer Stands

IBM Corporation

Solutions Arena 1 Sponsorship
Solutions Arena Informational Session

IFMA Foundation

Expo Aisle Sign
Expo Prize Card

Infor

Education Track: Operations & Maintenance
Education Track: Technology

InPro Corp.

Expo Prize Card

iOffice Inc.

Expo Aisle Sign
World Workplace Mobile App

ISCO Industries

Prize Card

ISS Facility Services Inc.

Awards of Excellence Banquet
Registration

Hotel Keycards

Coat & Bag Check
Expo Aisle Sign
Solutions Arena Session

Johnson Controls Inc.

Credential Recognition Reception

Kimball Office

Expo Prize Card

Lowe's Pro Services

Expo Aisle Sign

Manhattan Software

Expo Aisle Sign
Attendee E-mail Update
Solutions Arena Session

Marsden Services

Expo Prize Card

Master Mfg. Co., Inc.

Expo Prize Card
Expo Prize Donation

Natural Choice Corp.

Water Kiosks

Nespresso

Expo Prize Card

New Orleans Chapter of IFMA

Expo Aisle Sign

Office Depot

Expo Grand Opening

Patcraft

FMJ Social Media Lounge Carpet

Paul Davis National

Expo Prize Card

REB Storage Systems International

Expo Prize Card

REC Solar

Expo Prize Card

Rentokil/Ambius

Expo Aisle Sign
Expo Prize Card
Conference Greenery

RLE Technologies

Expo Aisle Sign
Expo Prize Donation

ROE/Evolution Interiors

Expo Prize Card

RSMeans

Expo Aisle Sign
Expo Prize Card

Servpro Industries

Expo Prize Card
Expo Prize Donation

SKF Maintenance Products

Expo Prize Card

Staples Advantage

Attendee E-mail Update
Cell Phone Charging Station
Expo Aisle Sign
Expo Prize Card
Information Booth
Morning Coffee
Official Time Sponsor

Synergis Software

Expo Prize Card

Telgian Corporation

Expo Prize Donation

Whelan Security

Expo Prize Card

Wizard Software Solutions

Expo Prize Card

FMJVIDEOEXTRA

CLICK TO VIEW



Interview with
Chris Hodges

INSIDE THE CLASSROOM

MEET IFMA INSTRUCTOR CHRIS HODGES, IFMA
FELLOW, P.E., CFM, LEED AP, FRICS



I'm Chris Hodges. I've been an IFMA instructor for more than 10 years. I conduct courses for the CFM®, SFP®, and FMP credentials and also IFMA's Essentials of FM program. My background is in engineering but I've also learned a lot about facility management along the way. We'd love to have you join our class sometime. Come learn about IFMA education at www.ifma.org/professional-development."

FMJ: How long have you been an IFMA instructor?

HODGES: It's been more than 10 years — I stopped counting after a while. I've had the pleasure of teaching all of IFMA's credential programs, and now the newest educational program: the Essentials of Facility Management.

FMJ: What is the value of instructor-led classes?

HODGES: The feedback we always get is that the interaction between students and the learning that goes on is phenomenal. It's one thing to sign up for an online course and work from your computer in the evenings. It's quite a different experience spending time in the classroom where there are eight or nine of your peers. The exchange of ideas and the willingness to share experiences (good or bad) are the real gems that we learn from.

FMJ: How would you describe your teaching methodology in the classroom?

HODGES: My job as an instructor is to first get the conversation going. Sometimes it takes a little time to do but once you get into it and you're using the content to get the conversation started, it's a matter of being a facilitator for the students.

As a facilitator, you get to steer the discussion. You stay on the content, but you have many opportunities to bring up questions and add some of your personal experiences to keep the flow going.

Ultimately what we're trying to do is get the students to set their own goals and realize what they have to accomplish once they leave the classroom. Whether it's a knowledge-based credential like the FMP or SFP, or a competency-based certification like the CFM, the students are the ones who have to cross the finish line. They have to pass the assessment, demonstrate their knowledge and show

their competency in facility management. Our job as instructors is to engage them — keeping the conversation going, providing them with key concepts and giving them the confidence to go through the assessment.

FMJ: What are some ways you've broken the ice in the classroom?

HODGES: Great question — we have many ice breakers we like to use. I try to bring in a lot of experiences from places like World Workplace. These include extra presentations, learning tools and activities that are not necessarily intensive on the learning experience but rather conversation starters. A little bit of humor also helps. These are the stories that build relationships and trust. I don't believe the classroom has to be serious all the time. I like to find activities and stories that get us talking and opening up a bit.

FMJ: What is your most memorable experience in the classroom?

HODGES: I've had the opportunity to train in many different places, as a result I have many. It's not so much one experience; it's the consistency of the experiences.

We try to create an environment where folks are provided with good teaching aides to remember key concepts. I love hearing people say, "I passed my CFM and the tools that I was given in your class were right on the mark." That's the most memorable. People are very passionate about the credentials, especially the CFM, and when they pass it is an immense celebratory experience for them that they love sharing with others.

FMJ: What have you learned from a student that you later shared with other classes?

HODGES: I can't think of one lesson — there are hundreds. That is among my

favorite parts of being in an instructor-led environment. The instructor, as a facilitator, tries to bring out those learning experiences. We probably get dozens of them from every single class. We also tend to collect those experiences through articles we've read, sharing those with each other.

FMJ: You've taught for many years. What keeps you coming back class after class?

HODGES: The students and the people I meet. These are folks who are out in facilities every day doing their jobs and want to know how to do it a little bit better. It's all about providing an environment in the classroom that allows them to gain some of those shared experiences from each other and from the instructor. That's what keeps me going back.

I learn so much from every one of my classes. After teaching the CFM exam review for many, many years I challenge every class to do something different. I remember being in a class where one of the students, over the period of the two-day class, made up a song about facility management and got up and sang it at the end of the course. It just goes to show how much passion there is among this business if people are willing to do things like that. I use that as an example for my future classes, to see if they can match the challenge.

Another thing that is amazing to watch is when the students are asked to take on the role as a facility manager who is addressing the C-suite. They usually give a 10-minute team presentation. The creativity of those groups when they take on roles, invent logos for their fictitious companies, have a make-believe marketing person, finance person, etc. is phenomenal. Especially since they are presenting on concepts they just learned an hour ago. **FMJ**

For more information on IFMA's professional development opportunities, or to sign up for the next instructor-led course, go to www.ifma.org/professional-development or contact education@ifma.org.

The complete video interview is linked on the online version of this article at www.ifma.org/fmj (use your IFMA member ID to log in).



FACILITY
MANAGEMENT?

FUNDAMENTALS OF FM...
ESSENTIALS FOR LIFE.

Want to know the basics of facility management but not sure where to start? Are you managing employees who need facility management 101? Understand the basics of this thriving industry with a flexible online workshop – **Essentials of FM.**

For more information
visit us at Ifma.org/essentials



IFMA™

International Facility Management Association



TRENDING TOWARD FULL DISCLOSURE

BY BILL CONLEY

“Sooner or later.”

These words echo repeatedly throughout the world of facility management. While simple, they can refer to many things. The vision of the future is rife with dire portents, warnings, threats and promises of consequences. However, through this miasma of “what-if” scenarios, there are also facts that must be acknowledged. Not ephemeral plausibilities, but truths that will define new roles in the built environment. Given the proper perspective, these facts can be taken as positive measures that will lead to sustaining an organization.

In the not-too-distant future, a day of accounting will arrive. Sustainability reporting is changing from being the smart thing to do into a necessity at the corporate and organizational level. For the U.S., ever since the Sarbanes-Oxley Act of 2002, corporate reporting has become increasingly prevalent and detailed. The current trend is to integrate environmental programs with finance to more fully disclose organizational performance. Never has transparency at the corporate or organizational level become more pronounced, as accounting now entails

SUSTAINABILITY REPORTING IS CHANGING FROM BEING THE SMART THING TO DO INTO A NECESSITY AT THE CORPORATE AND ORGANIZATIONAL LEVEL.

more than just numbers and includes overall performance reflected by non-financial information.

In 2010 the U.S. Securities and Exchange Commission (SEC) released guidelines for public companies that define the disclosures that organizations should be making relating to climate change. Institutional investors have been active in lobbying the SEC to create these rules so that companies will have to report when it comes to the challenges and opportunities presented by climate change. This guidance outlines climate-related “material risks” for which companies will be held accountable. These include the impacts of legislation and regulation, international accords, indirect consequences of regulation and business trends and the physical effects of climate change.

The recent European Union (E.U.) amendment to its general accounting directives is an indication of this same trend toward the disclosure of non-financial information on a global basis. It sets the requirement for the reporting of relevant and material information on policies, outcomes and risk. This includes non-financial key performance indicators regarding social, governance and environmental aspects and the due diligence implemented to minimize those impacts.

The E.U. amendment is aimed at larger companies at this time. However, the precedent being set that is requiring disclosure of material information will pervade throughout the E.U. over time, reflective of such mandates in other countries around the world.

This trend affects facility managers in a number of ways, as their role in the reporting process is critical. FMs are accountable for the environmental performance of the built landscape. Accountability refers to answerability and being called to account

for actions taken. It entails the expectation of taking responsibility for practices, processes and outcomes. Within an organization, the principles of accountability aim to improve internal standards of corporate conduct, as well as external factors that deal with sustainable economic and ecologic strategies.

As organizations are meeting the challenges of transparency and full disclosure, the operations and costs of the facility are an integral part of what is communicated to all interested parties. Communication is one of the 11 competencies (as defined by IFMA through a global job task analysis) upon which the facility management profession is based. As facility managers continue to measure and monitor their resource consumption and streamline their operations, the ability to report progress and convey status through concise and topical communication is paramount. In the near future, refrains regarding sustainability will be changing from “How will this be managed?” to “Why hasn’t this been done?” The choice is to start preparing for it now or to try to catch up later.

Reporting materiality

U.S. federal securities law seeks to protect individual investors by requiring publicly listed companies to disclose annual and other periodic performance information that would be necessary for a reasonable investor to make informed investment decisions. U.S. federal law requires publicly listed companies to disclose material information, defined by the U.S. Supreme Court as information presenting “a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the ‘total mix’ of information made available.”

The concept of materiality recognizes that there exists information that is important to the fair presentation of an entity’s financial condition and operational performance and that determines the content of a report. Disclosure of material sustainability issues is important to investors, companies, regulators and the public. Companies have limited resources and need to focus on managing the performance of issues that are material to their success. The potential for negative social and environmental impacts of operations can lead to high costs for companies, their investors and society as a whole and institutional investors have a fiduciary responsibility to consider material factors. As an added incentive, the SEC requires the



50% EASIER TO LIFT LINERS

The BRUTE® makes what was once backbreaking work easy with built-in venting channels that prevent the liner from sticking and cinches that keep the bag from falling in. It's innovation your workers (and their backs) can appreciate.



BUILT IN VENTING CHANNELS



CINCHES KEEP BAG FROM FALLING IN



BRUTE®



INCREASINGLY, THE MANAGEMENT OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE ISSUES IS BEING RECOGNIZED AS DRIVING IMPROVED CORPORATE PERFORMANCE AND ENHANCED INVESTMENT RETURNS.”

**- KATIE SCHMITZ EULITT
DIRECTOR, STAKEHOLDER ENGAGEMENT FOR SASB**

disclosure of material information in filings used by companies and investors.

Sustainability Accounting Standards Board

The good news is that new industry-specific standards are being developed to better clarify the reporting process. The Sustainability Accounting Standards Board (SASB) is an independent 501(c)3 non-profit organization that is striving to increase the relevance of information available to investors while improving organizational performance on those environmental, governance and social issues most likely to impact organizational or corporate value. As such, SASB is creating sustainability accounting standards for more than 80 industries in 10 sectors that are designed for the disclosure of material information related to sustainability issues in SEC filings such as the Form 10-K, in compliance with Regulation S-K that calls for reporting on climate change.

The SASB process is a multi-stage, multi-stakeholder endeavor. It relies on evidence-based research that has been vetted by industries and

investors before any standards are issued. SASB's work aligns with disclosure reform, encouraging not more disclosure, but better disclosure. SASB is working on the premise that the assessment criteria used to determine materiality in financial reporting can also be used in the non-financial reporting process.

Management of sustainability-related issues is an analog for good management. According to Katie Schmitz Eulitt, director, stakeholder engagement for SASB, “Increasingly, the management of environmental, social and governance issues is being recognized as driving improved corporate performance and enhanced investment returns. Investors have begun to see this and are increasingly interested in better visibility into how companies are managing these issues. They want improved transparency and better data on these issues.”

The intent of SASB is not to reinvent the wheel. To date, roughly 80 percent of the metrics used in SASB guidance have been drawn from other sources. The five types of capital, too, should sound familiar:



environment; social; human; business model and innovation; and leadership and governance. What SASB does intend is to provide guidance for companies that will help them with disclosure that would answer most of the questions posed by investors.

All standards issued by SASB meet a particular set of criteria. The metric should describe in adequate detail performances related to material issues to be relevant. The metric needs to provide information that companies and investors deem to be useful. The metric has to be applicable to most companies in the industry and comparable for peer-to-peer benchmarking. Data collection should be cost-effective and performed in a timely manner at a reasonable cost.

The metric, or set of metrics, needs to be complete, providing enough data to enable understanding and valid interpretation of performance related to material issues. The metric should be directional, making clear that an increase or decrease in any numerical value indicates a change in performance. Finally, the process should be auditable, ensuring

that the data that led to the metric can be verified. These are excellent guidelines for an FM sustainability report and set the stage for the organization, either as a template for corporate reporting or for integration into reporting disclosures.

Tie-in with IFMA

In looking at the sectors that SASB has defined, there are obvious correlations to IFMA councils and communities of practice (COPs). There is some overlap and some sectors may serve communities better than others, but as an overall guideline, IFMA councils and COPs pretty well fall within the following:

- The **Health Care Sector**, under which fall industries like biotechnology, health care delivery, health care distributors and managed care, sets the parameters for IFMA's Health Care Institute and Environmental Health and Safety Council.
- The **Financials Sector**, which includes commercial banks, investment banking and brokerage, asset management, consumer finance and insurance, supports reporting for IFMA's Banking Institutions and Credit Unions Council.

- The **Technology and Communications Sector** includes electronic manufacturing services and original design manufacturing, software and IT services, telecommunications and Internet media and services and relates to the Information Technology Council; the Manufacturing, Industrial and Logistics Council and the Data Center Community of Practice.
- The **Non-renewable Resources Sector** covers the full gamut of oil and gas industries, as well as coal, metals and mining and construction materials.
- The **Transportation Sector** deals with automobiles, transportation, airlines, air freight and logistics which would provide guidelines to the Airport Facilities Council and the Public Transportation Community of Practice.
- The **Services Sector**, which encompasses education, professional services, hotels and lodging, casinos and gaming, restaurants, advertising and marketing, and media production and distribution, would cover the needs of the Academic Facilities Council, the City and Country Clubs Council, the Facility Management Consultants Council, the Food Service and Restaurants Council, the Corporate Facilities Council, the Legal Industry Council, the Casino and Gaming Community of Practice and the Hospitality FM and Engineering Community of Practice.
- The **Resource Transformation Sector** details chemicals, aerospace and defense, electrical/electronic equipment, industrial machinery and goods and containers and packaging and could support the Research and Development Facilities Council.
- The **Consumption (I and II) Sectors** refer to both the creation of consumables and their distribution and sale and sets standards for the Retail Facilities Community of Practice.
- The **Renewable Resources and Alternative Energy Sector** includes biofuels, solar and renewable energy, independent power producers and energy traders, forestry and paper.
- The **Infrastructure Sector** involves all utilities, infrastructure construction, architecture, engineering and construction and real estate and establishes parameters that would benefit the Corporate Real Estate Council, the Public Sector Facilities Council and the Utilities Council.

FM importance and involvement

From an overall perspective, if organizations are going to be reporting on sustainability and environmental issues, then facility managers will need to be reporting, too. Such reporting is a vital step toward achieving a

sustained and sustainable organization and it provides a number of benefits. It showcases a facility management department's accountability for its impacts and helps build trust and credibility.

It's important to note that reporting serves two purposes: just as it supplies information to stakeholders, it also acts as a guide for continual improvement. It improves processes and systems, leading to cost reductions through the measuring and monitoring cycle. Through an analysis of strengths and weaknesses, it enables an FM to develop broader vision and strategies that will sustain long-term success. Most importantly, it adds relevant and critical information that the organization needs to present its environmental stance and enhance its corporate social responsibility.

Sometimes, too, impetus and momentum need to be created from the facility management department and driven up. FM practices do have a large impact on natural resources and the environment, so what better place to start? As demonstrated in the course materials in IFMA's Sustainability Facility Professional® (SFP®) credential program, and in successful FM practices worldwide, sustainable facility management entails integrating FM programs with an organization's strategic plan. FMs most effectively can lay the foundation for sustainability so when the SEC comes knocking on the door, or when investors want to put their money into the right company, that all their questions are answered?

FMs are pioneers in effective resource management. As such, they are poised to explore sustainability: the new frontier. From a strategic planning standpoint, their five-year mission can take them boldly where no one in the organization has gone before: evincing that accountability and sustaining an organization entails forward thinking — that they are not embarking on a three-month cruise, but a trek, with SASB as an available vehicle. **FMJ**



Bill Conley, IFMA Fellow, CFM, SFP, FMP, LEED AP is owner/CSO of CFM2, a facility management and sustainability consulting company based in Orange County, California, USA. Conley has more than 35 years of experience in the facility management

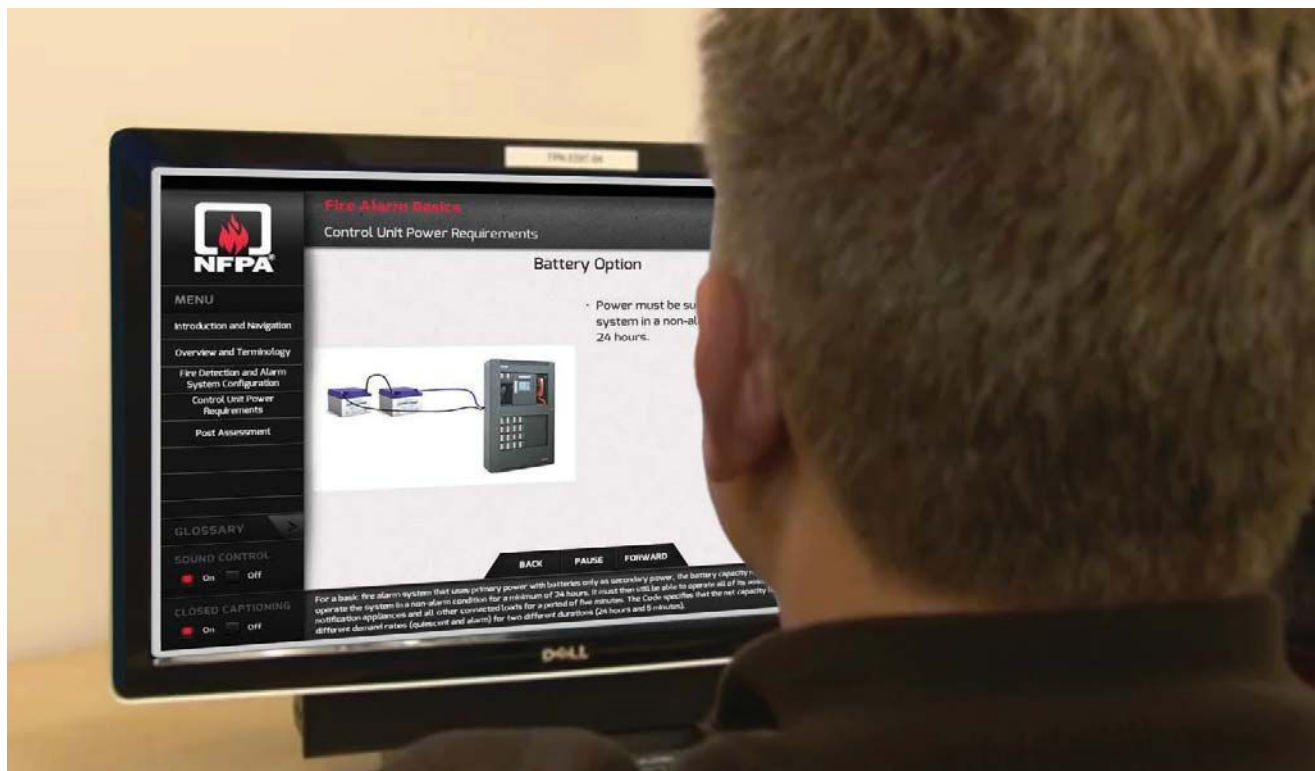
profession and has been a proponent of sustainable operations for more than 20 years.

Conley has served on the IFMA board of directors, is a recipient of IFMA's distinguished member of the year award and has twice received the association's distinguished author award.

FREE NFPA 72

Online Course for Facility Managers

Go to: www.nfpa.org/freeonlinecourse



NFPA self-guided online courses are designed to meet the busy schedule and budget concerns faced by facility managers all over the world. With NFPA courses, you can receive the code training you need, on your schedule, and at an affordable price.

“The difference between NFPA self-guided online training is simply the expertise.”

Russell Leavitt
SET, SFPS, Tempe, AZ

**Try an online course
for FREE.**

To register for the 2013 NFPA 72 Inspection Testing and Maintenance of Fire Alarm Systems course, go to:
www.nfpa.org/freeonlinecourse



IFMA
**FACILITY
FUSION**
Conference & Expo



FF
2015



March 10-11

Vancouver, BC | Sheraton Wall Centre



April 21-23

Orlando, Fla. | Rosen Shingle Creek

Mark your calendar – IFMA Facility Fusion is coming to Vancouver, BC, Canada, and Orlando, Florida, USA, in 2015.

Plan now to join us at one (or both) of these outstanding locations for three days of FM-focused professional development and career-focused leadership development. Facility Fusion combines all things FM into one compact conference.

Our thanks to the following exhibitors and sponsors for their support of Facility Fusion.



Exhibiting at Facility Fusion Canada:

British Columbia Chapter of IFMA
Pinnacle Group Inc.
Qube Global Software
Techni-Contact Canada Ltd.



Exhibiting at Facility Fusion USA:

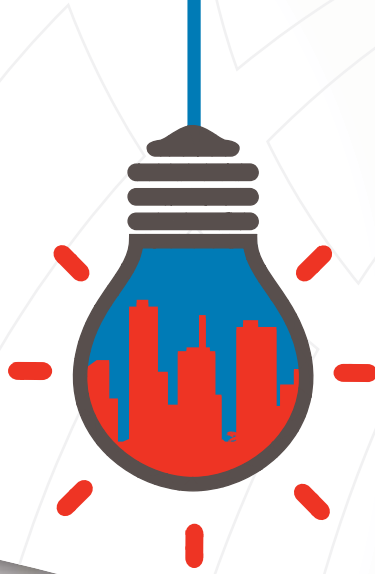
Cambridge Sound Management	George Mason University
Connectrac	HVAC ARMOR
CORT	ISCO Industries
Facility Engineering Associates, P.C.	Master Mfg. Co. Inc.
FM:Systems Inc.	OfficeSpace Software
GCA Services Group Inc.	Qube Global Software
	U.S. Department of State



Prepare for the Florida experience, brought to you by:

Jacksonville Chapter of IFMA
Orlando Chapter of IFMA

South Florida Chapter of IFMA
Suncoast Chapter of IFMA



Your facilities. Your career. Our focus.

We not only get what you do,
we give you the tools to do it.



Your facilities.

Education focused on your unique FM needs.
Solutions to address every FM challenge.

Your career.

Essential leadership development.
Intimate, dynamic networking.

Our focus.

Advancing the practice for 34 years.
Enhancing FM careers worldwide.



facilityfusion.ifma.org



IFMATM

International Facility Management Association

Empowering Facility Professionals Worldwide



INTEGRATING COMMISSIONING INTO THE BUILDING PROCESS



BY SCOTT E. LECLAIR AND
MATTHEW WHEELER

Commissioning is critical to the success of building projects and building operations. As a third-party review, the commissioning process bridges the inevitable gaps that occur in any complex project, despite the best design and intent on the part of the project team. When facility managers integrate commissioning into their processes, buildings run more efficiently, spending on maintenance costs, upgrades and repairs is reduced and operational needs and occupant requirements are met. This is especially true for buildings with complex systems and precise performance requirements, such as hospitals or academic laboratories.

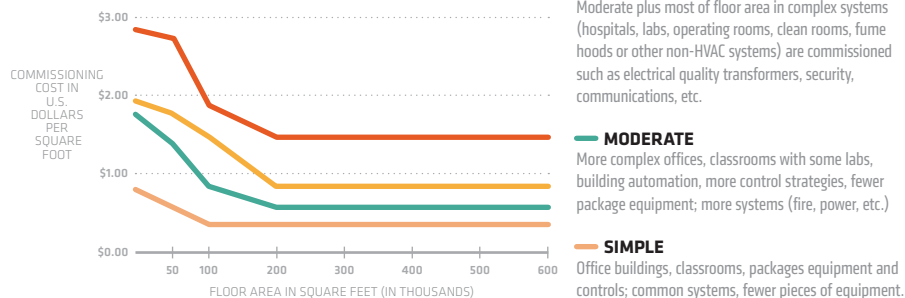
How can building owners ensure building systems meet expectations and operate with predictable costs? Integrate commissioning from day one to provide additional expertise, to ensure owners' and occupants' needs are met and to build highly efficient building systems that work as designed, at peak performance and with minimal interruptions or downtime.

What is commissioning?

Commissioning is a systematic quality assurance process for planning, delivering

COST SAVINGS

Benchmark commissioning cost by facility type¹
Estimates of construction phase commissioning costs



¹ <http://www.wbdg.org/cb/GSAMAN/buildingcommissioningguide.pdf>

and operating buildings' systems so they work as intended. It is a collaborative approach that ensures building systems perform according to design intent and ensures equipment and systems are installed according to manufacturer's recommendations, industry standards and best practices.

As many building systems have become more complex, often including digital systems controls and monitoring, the role of commissioning has expanded. Today commissioning can also include the building envelope and systems such as electrical, plumbing and fire protection.

After the introduction of a requirement for mechanical commissioning in the Leadership in Energy and Environmental Design (LEED) certification programs in 2000, U.S. energy codes changed and public attention shifted to environmental issues and corporate social responsibility. As a result, more facility owners and managers have begun to realize that commissioning is critical to successful business operations.

Market drivers leading smart owners to commission buildings

Environmental concerns, industry guidelines and complex building systems are a few of the market conditions encouraging smart building owners and FMs to reexamine how they design and construct building projects and integrate commissioning.

Environmental concerns

In the U.S. in 2013, the Building Commissioning Association and PECEI, a non-profit that helps utility providers and government agencies design and implement energy efficiency programs, surveyed attendees at the National Conference on Building Commissioning. The survey indicated that environmental concerns are a main driver for commissioning services. Sixty-eight percent of those

surveyed cited voluntary green building certifications as a motivation and 64 percent cited the building owner's environmental goals as a motivating factor.¹

- **LEED** – Commissioning is a prerequisite for LEED certification in the U.S. Many federal, state and municipal government agencies require LEED certification or compliance with certification requirements for buildings in their jurisdictions. For example, for certain health care projects, the Massachusetts Department of Public Health will only approve those that meet the equivalent of LEED Silver requirements.
- **ENERGY STAR**® – Commissioning is required for new buildings and retro-commissioning is required for certification of existing buildings.
- **Green Globes** – Commissioning is considered a best practice for Green Globe Design certification in Canada.

Even for FMs not seeking certifications for their facilities, commissioning provides significant advantages. Efficient and effective systems reduce energy usage, resulting in cost savings and demonstrating environmental responsibility.

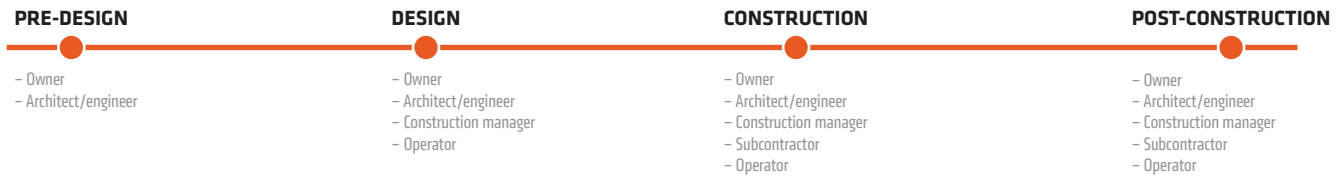
Industry guidelines

United States national building codes do not yet specifically require commissioning for buildings, but commissioning requirements in several guidelines play important roles in some industries. Most federal government agencies have formal commissioning requirements, including the General Services Administration, the Naval Facilities Engineering Command and the U.S. Army Corps of Engineers.

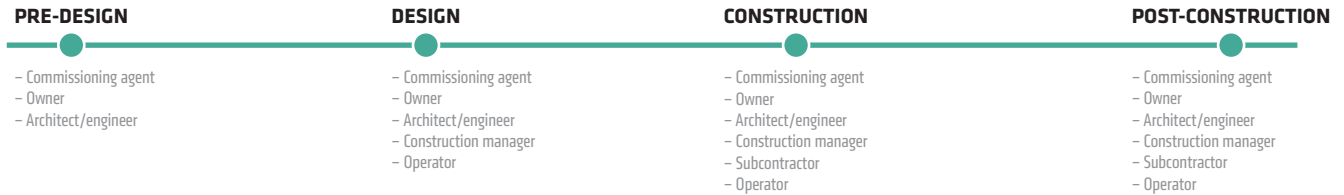
The Facilities Guideline Institute recently developed commissioning guidelines for buildings in the health care industry. The 2014 version of the Guidelines for Design and Construction of Hospitals and Outpatient Facilities now recommends minimum commissioning services

PROCESS INEFFICIENCIES

Traditional design process



Integrated commissioning process



for all new construction or modifications in areas critical to patient safety.

System complexity

Building systems are getting more complex and interdependent, making quality assurance provided by commissioning an even more important consideration. This is true for all types of building owners, but especially true for those with high levels of control and performance needs like pharmaceutical manufacturing and academic laboratories.

While building systems get more complex, integrated maintenance teams are actually getting leaner. Fewer people monitor and maintain these systems. In addition, downtime associated with repairing prematurely failed equipment is costly. This makes it critical that systems are designed, installed and calibrated to run as efficiently and effectively as possible.

What happens when owners don't commission

There are three primary challenges associated with building projects that do not include commissioning: increased costs, failure to meet expectations and process inefficiencies.

Increased costs

No matter how well designed, all buildings have challenges during the construction phase and after occupancy — the most common are systems that are not properly calibrated or integrated. When commissioning is not incorporated early in the building process, it is possible to lose input to or oversight of the design, purchasing, installation and setup of a building's systems. The result can be unnoticed problems and expensive mitigation:

- During construction

- Extensive change orders resulting in project delays and increased construction costs
- Lost time during rework of construction problems that could have been foreseen
- After occupancy
- System or building downtime to allow for repairs
- Cost for replacement parts or new equipment
- Unbudgeted service fees
- Overtime for maintenance personnel
- Demolition and remodeling costs
- Increased life cycle costs for equipment

Failure to meet expectations

All organizations have expectations for how their buildings will operate and how occupants will be served by the facility and its systems. However, problems can arise during the design and construction phases. Commissioning is a third-party review to ensure that the project as built matches the original intentions and expectations.

Lessees and other building occupants also have expectations for facility operations. They need to know their needs are being met and they will be able to operate efficiently in the space. The failure to meet these expectations can impact the primary functional goal of the building.

Process inefficiencies

Every new building system installed impacts systems installed prior to it and the design of each system may not completely take into account interaction with other systems. Failure to incorporate commissioning hinders the ability to impart a big picture view into the process. This includes design choices, installation, calibration and testing of systems with an eye toward integration and efficient operations. The result can be systems that fail outright or deliver unintended results.

Even buildings with relatively simple systems may operate inefficiently without a commissioning agent to oversee the process. In 2009, a report on commissioning from the Lawrence Berkeley National Laboratory noted the top faults causing energy inefficiencies in commercial buildings. Every year, building owners lose almost US\$1.0 billion to two items typically identified during the commissioning process: imbalanced airflow (US\$0.7 billion) and improper controls setup (US\$0.2 billion).²

The solution: Get started with commissioning

Sophisticated FMs are integrating commissioning into all of their building projects to keep costs in line, meet design intent and operational needs and improve the efficiency of their processes. The checks and balances provided by commissioning better a building owner's chance to make necessary modifications and changes early in the process, before challenges impact building operations and the bottom line.

There is value in commissioning a building at any stage in its life, but full-scale effectiveness increases the earlier the commissioning process is engaged. This is the best time to make necessary modifications in order to avoid increasing overall costs and potentially reduce expenses.

Commissioning works by helping in several critical stages of a project. A commissioning agent works with FMs to:

- Define project goals
- Establish system requirements
- Recommend standards and best practices
- Review design choices
- Identify potential problems
- Help manage construction process
- Track system performance throughout construction
- Train owners and facilities teams on systems
- Develop operations and maintenance manuals

How commissioning benefits a project

There are significant benefits when facility management professionals choose to commission building projects including increased value, improved system performance and life cycle and operational cost savings.

Increased value

Commissioning helps organizations develop and maintain a big-picture view of their projects. Owners are experts in their own businesses but not necessarily in building systems design and construction. Commissioning agents are experts

in the systems and controls that must be properly integrated for buildings to work as designed. Commissioning agents help set realistic expectations early in the process, adjust those expectations as require by budget and decrease the possibility of having to fix or modify equipment at a later stage because it does not meet the needs of the building.

In addition, commissioning agents can play a critical role as integrated team members, working together with engineers and facility representatives. The commissioning agent can help define the organizational needs and communicate to the design team. Together, team members discuss expectations and appropriate solutions to help make adjustments to the budget or design if necessary.

Improved system performance and life cycle

As systems get more complicated, proper design and integration is critical to successful performance. Any individual system has a scale of operation, from non-operable or inefficient to



**THE BIGGEST
RISK TO YOUR
BUSINESS
MAY BE
SITTING ON
TOP OF IT!**

Besides public health concerns, birds can do serious structural damage to your facility.

Bird droppings can accumulate and compromise the structural integrity of building materials. Droppings can also cause roof decay, ultimately causing water damage to whatever is supposed to be protected inside. That's why it's so important to keep rooftops and equipment free from bird droppings.

At No Fly Zone, we offer customized and humane bird control solutions for your facility that will deter, remove and eliminate all kinds of Avian issues. Contact us and find out why we're America's number one in bird control!



Call **866-NOFLY-99** for your **FREE** consultation today!
noflyzoneinc.com

fully operational and at peak efficiency. Evaluation of any building system must incorporate this scale and how it corresponds to the needs of occupants. A system may be turned on and working, but performing inefficiently.

Commissioning agents understand the intricate relationship between equipment specifications, system configuration, field conditions and organizational requirements. They work with the facility team to understand these types of subtleties and get the system working in the most efficient and cost-effective way possible.

In addition to assisting with system performance early in the process, commissioning can offer great benefits in helping FMs make the case for the value of systems over the life of the building. In early planning stages, commissioning agents can help select systems with optimal maintainability and ROI.

Another critical benefit of commissioning is the development of a list of major systems and expected life cycles. This list can help operators plan and budget for preventative maintenance, renewal cycles and reinvestments. After system installation, commissioning agents can also create custom operations and maintenance manuals that go beyond traditional manuals to assist with improved performance. This allows the FM teams to deal with future issues with workplace environments should they arise.

Cost savings

Commissioning adds value to a project by ensuring that the systems are built to the highest quality and performance requirements. The operating cost savings flow from there, in terms of maintenance budgets, equipment upgrade and replacement costs and ongoing energy and operational expenses.

The costs of not commissioning a building project are the costs to fix deficient systems plus the cost for inefficient operations (increased energy and maintenance labor costs) as well as the cost of operational downtime.

WHEN TO COMMISSION

GOOD

- Near the end of construction
 - Test systems for performance and efficiency
 - Ongoing review for completed and occupied buildings

BETTER

- Beginning of construction
 - Monitor and review construction and systems installation
 - Monitor and test systems throughout the construction phase
 - Final performance and efficiency tests
 - Ongoing monitoring and reviews for completed and occupied buildings

BEST

- Design phase
 - Help owner formulate project requirements
 - Review design and engineering plans
 - Monitor and review test systems throughout the construction phase
 - Final performance and efficiency tests; train building staff
 - Ongoing monitoring and reviews for completed and occupied buildings

Data about office buildings shows that commissioning buildings can result in energy savings of 20-50 percent and maintenance savings of 15-35 percent.

In addition to cost savings by commissioning from the start of a project, there is value in retro-commissioning existing buildings. Older buildings are often operated or maintained differently throughout their life cycles and may no longer be running at peak efficiency. Retro-commissioning analyzes and tests the existing building systems to bring them back to full operational performance, improving occupant comfort and saving energy and maintenance costs.

Other benefits include:

- Integration of maintenance and technical staff into design and construction to leverage their expertise, build a knowledge base about the project and increase understanding of new building systems;
- Improved cooperation on the construction project team;
- Training for facilities staff in systems operations and preventative maintenance; and
- Messaging to the public about a properly working building, building

certification or energy efficiency as part of a corporate social responsibility program. **FMJ**

REFERENCES

1. http://www.peci.org/sites/default/files/cx-survey-report-final_0.pdf.
2. Mills, Evans, Ph.D., "Building Commissioning: A Golden Opportunity for Reducing Energy Costs and Greenhouse Gas Emissions," Lawrence Berkeley National Laboratory, report prepared for the California Energy Commission, 21 July 2009. <http://cx.lbl.gov/documents/2009-assessment/lbnl-cx-cost-benefit.pdf>.



Scott LeClair, P.E., LEED AP is a Principal with Fitzmeyer & Tocci. A mechanical engineer, LeClair has 23 years of experience in the management, design,

specifying and construction observations of infrastructure systems with a focus on health care clients. He was a mechanical engineer with the 93rd U.S. Civil Engineering Squadron at Castle Air Force Base in California and an instructor of mechanical engineering design for the Air Force Institute of Technology at Wright-Patterson Air Force Base in Ohio.

LeClair holds a Bachelor and Master of Science in Mechanical Engineering from the University of Maine, Orono and is a licensed engineer in the states of California, Connecticut, Maine, North Carolina, New Hampshire, New York, Ohio, Rhode Island, Tennessee, Virginia and Vermont.



Matthew Wheeler, P.E., CxA, LEED AP is Commissioning Project Manager, Fitzmeyer & Tocci. With seven years of experience as a

commissioning engineer, his background working shipboard engine maintenance and landside power generation facility operations have enabled him to commission projects for a variety of health care clients.

Wheeler holds a Bachelor of Science in Marine Engineering from Massachusetts Maritime Academy and a Master of Science in Mechanical Engineering from Northeastern University. He is a licensed engineer in the state of Massachusetts.

ARE YOU AS GREEN AS YOU CAN BE?

Green has gone mainstream. It's no longer a "nice-to-have" but a necessity. Have you taken sustainability to the next level? A holistic approach can improve worker productivity and retention, tenant satisfaction, community recognition and economic building performance.

The ABM GreenCare® program can take you as green as you want go with services such as:

- Green cleaning & recycling programs
- Virtual security guarding
- Guaranteed energy saving programs
- Solar PV & renewables
- Parking garage lighting retrofits
- LPG fueled shuttle services
- Electric vehicle charging solutions
- Landscape & grounds management

Call us today at **800.874.0780** or visit **abm.com** to start building value the green way, inside and out.



ABM
greencare®
for facilities, inside & out

ABM®
Building Value

ELIMINATING PARKING HEADACHES

BY PATRICK BROOKE

Parking facilities are a crucial element of any building or complex. They often serve as de-facto lobbies, providing the first experience of a building to visitors and tenants. Parking facilities can therefore shape an individual's impression of an entire complex: inconvenient or unpleasant parking facilities may sour people's feelings towards a building, while clean, safe and convenient parking can make that same complex seem more attractive.





Parking also vitally impacts a building owner's bottom line. When inadequate, parking can undermine and counteract an owner's efforts to attract and retain tenants. Additionally, when owners rely on parking facilities to generate revenue, the importance of providing safe, convenient and pleasant parking becomes even more pronounced. Many building owners have experienced headaches triggered by parking-related problems. So, what can be done to optimize parking facilities and eliminate those headaches?

For many building owners, technology provides the answer. The parking industry is currently experiencing a technology renaissance, brought on by the constant introduction of new tools to help make facilities more user-friendly, profitable and convenient to operate. The past few years have seen parking innovations such as single-space sensors that guide parkers directly to open spaces; revenue

control tools that automate parking access and payment while providing real-time information about who is using a particular garage and how they are using it; cloud-based software packages that improve security by storing parking utilization and enforcement data off-site; and mobile technologies that permit more accurate enforcement while also providing enormous benefits to parkers. These impressive new technologies represent the tip of the iceberg – there are constant new innovations in way finding tools, mobile apps and other cutting-edge equipment that improve customer service while decreasing owners' costs.

Red light/green light

One of the most exciting trends in parking technology is the use of parking sensors. The sensors, which are located in each of a facility's parking spaces, record and display each space's occupation status with the use of a green (open), red (occupied) or blue

(handicapped) light. They can also be configured to indicate short-term parking or other special uses such as taxi- or shuttle bus-only spaces. The lights can either be installed on the ground adjacent to parking spaces or mounted above spaces, and they typically feature LED lighting, which is both extremely energy-efficient and easy for drivers to see and recognize. Some sensors are even solar-powered, which makes them virtually free to operate. The sensors also transmit utilization information to signs located at the entrances of each floor and at the ends of each parking aisle, telling drivers exactly how many available spaces can be found on a given floor or in a particular row.

The benefits to parkers are obvious. By guiding parkers to open spaces, the sensors eliminate the need to search for parking. As a result, drivers need not go aisle-to-aisle (sometimes floor-to-floor)

Some sensors can even enforce facility policies by alerting officers when parkers overstay their parking sessions. In addition to the obvious benefit of aiding enforcement, this feature can also influence parking behavior by increasing space turnover. For this reason, sensors are particularly attractive to owners of retail complexes and other facilities where parking space turnover is important.

The safer parking environment provided by the sensors can also yield financial benefits. By reducing the risk of accidents, owners can also reduce their liability and lower their insurance costs.

Finally, by reducing the amount of time drivers spend looking for a space, single-space sensors provide several additional benefits. They significantly reduce wear and tear on the parking structure, which cuts maintenance and repair costs, and can

THE PARKING INDUSTRY IS CURRENTLY EXPERIENCING A TECHNOLOGY RENAISSANCE, BROUGHT ON BY THE CONSTANT INTRODUCTION OF NEW TOOLS TO HELP MAKE FACILITIES MORE USER-FRIENDLY, PROFITABLE AND CONVENIENT TO OPERATE.



looking for an open space. This ensures a much more convenient parking experience, particularly for people who are in a rush and have no time to drive around looking for a space. Additionally, parking sensors confer an important safety benefit by significantly reducing the risk of vehicle to vehicle and vehicle to pedestrian accidents.

While these customer benefits are important, the direct benefits of parking sensors to facility owners and operators are just as significant. The sensors collect key data about parking utilization and trends within a facility, and then transmit that data to a cloud-based management system that tracks parkers' behavior. The data can tell owners and operators when peak parking hours occur and which areas within the structure are most attractive to drivers. That information can be used to operate the facility more efficiently and market it more effectively.

save owners hundreds of thousands of dollars over the life of the facility. There are also significant environmental benefits because the emissions produced by vehicles within the parking structure are reduced. This is a particularly important issue for owners seeking LEED certification for their facilities.

Single-space sensors can be installed both in new facilities and as part of retrofits. However, installation is easiest when completed during the first, rather than second, phase of construction. This is especially important for overhead sensors, where early installation will permit the necessary infrastructure to be set into ceiling areas. In addition to providing a cleaner look, this can also offer considerable per-unit savings.

Parking access and revenue control

The benefits of parking technology, later recognized



AVOID LOST INVENTORY AND BUSINESS.

Manage safety risks and minimize business interruption caused by roof collapses.

Roof Monitor™ is a technology-based system designed to monitor live loads of water and snow on the roofs of low-sloped buildings and to inform businesses of potential risk. Take the guesswork out of knowing when to take action.

While retail businesses face the costly threat of damage to or loss of inventory, the same safety risks and threats of business disruptions occur in almost every industry—including government and education.

Roof Monitor™ provides:

- Real-time information
- Solutions for both snow and water buildup
- Objective metrics with actual load measurements
- Alerts and alarms with protocols defined by the end user
- Nationwide Dealer Network



www.roofmonitor.com



CALL TODAY OR GO ONLINE TO SCHEDULE A DEMONSTRATION

www.roofmonitor.com

(844) 4 WARNING

Schedule a Demo (844) 492-7646

©2014 Roof Monitor™. All Rights Reserved.

by building owners, begin at a garage's entrance. Access and revenue control equipment regulates who can enter and leave a garage. Drivers take a ticket from a dispenser



upon entering a parking area, then pay either at a kiosk or an automated credit card machine located near an exit when they are ready to leave. Permit-holders can also use a tag, chip or electronic parking card to enter and leave a structure, and some technologies even allow

parkers to pay using their cell phones. Automating entry and egress provides several benefits. First, it streamlines the parking process, significantly reducing the time it takes to enter and exit a facility. In addition to increasing a facility's customer-friendliness, it also promotes sustainability by reducing the amount of time drivers spend idle in their vehicles waiting to leave. This, of course, minimizes unnecessary fuel consumption, but also creates a healthier environment for drivers and staff by reducing the amount of vehicle exhaust that is introduced into the air they breathe.

THE PROVIDED EFFICIENCIES, ADDED SECURITY AND CUSTOMER BENEFITS OF AUTOMATING GENERALLY ALLOW OWNERS TO EARN BACK THEIR INVESTMENT IN A VERY SHORT TIME.

Automating access and revenue control can also save owners thousands of dollars a year by reducing the risk of theft. Like any cash business, parking facilities are also susceptible to theft by employees handling money. Converting to credit card payment can eliminate this concern, dramatically impacting an owner's bottom line. Of course, decreasing the number of staff required within a parking facility also reduces the associated salaries and benefits.

Finally, and perhaps most significantly, modern access and revenue control equipment provides important administrative benefits by collecting and reporting utilization data. With this technology, owners and operators can measure how full a garage is from day-to-day; which times are peak hours; when there is likely to be an excess of empty spaces; and how long the average parker stays. This invaluable information can help owners and operators develop more effective rate structures and marketing programs for their parking facilities.

One of the most interesting recent developments to access and revenue control tools is that they

are no longer self-contained. In the past, they were essentially stand-alone tools that served a single function: controlling who entered and exited a facility and collecting parking fees for those parking stays. However, today many access and revenue control suites can be integrated with other tools provided by outside vendors, such as tags and mobile apps. As a result, systems can be programmed to read bar codes on cell phones, to charge credit cards associated with outside apps or even to provide validation from local businesses. Each of these additional benefits can make a structure more attractive to visiting parkers or tenants.

Access and revenue control equipment can be incorporated into the design of a new structure, or easily added as part of a retrofit. Additionally, because there have been so many technological advances in recent years, owners who already have equipment in their facilities may consider upgrading. The provided efficiencies, added security and customer benefits of automating generally allow owners to earn back their investment in a very short time.

Going mobile

Just as mobile technologies transform day-to-day lives, they also make parking operations more efficient and customer-friendly. The best-known mobile parking technologies are mobile payment apps, which permit parkers to pay using their cell phones. Some require parkers to keep a credit card on file, while others let drivers pay directly through their cell phone accounts. Many cities across the United States have recently adopted mobile pay technology, and private owners are beginning to follow suit because of the administrative and customer service benefits it provides. In addition to offering customer convenience, the apps also record utilization data that owners can use to manage their parking resources more effectively and make more informed pricing choices.

Mobile enforcement technologies have also become increasingly important for owners and operators. Several Android-based tools have been introduced that permit enforcement personnel to record and monitor parking behavior. This helps them assure that drivers are parking where they should be and that they are not overstaying the session for which they have paid. Bar code apps

can also be used to accept payment via cell phone for parking sessions.

Bar code technologies are making validation programs much more effective. When parkers visit participating businesses, they can simply scan the business' code with their cell phone and their parking account will be billed accordingly. Some systems even permit businesses to send push notifications to parkers letting them know that validation is available.

Other mobile apps can send push notifications to drivers telling them where parking is available so they do not have to search for on- or off-street parking. This can be a particularly attractive tool for owners with several parking facilities. By providing such added convenience to parkers, owners can gain more regular customers.

The technology revolution

The ongoing technology revolution regularly changes aspects of daily life. Technology is having a particularly transformative effect on the parking industry. The rate of innovation has been astounding, and new, formerly unimaginable developments are being introduced every year.

Facility owners are the beneficiaries of this technological innovation. By allowing owners to streamline their parking operations and by providing incredible utility, new parking technologies allow owners to better manage and market their facilities, thus significantly reducing operating costs. Additionally, by providing a more customer-friendly parking experience, they offer an important competitive advantage to owners who rely on their parking facilities for revenue. Finally, parking technologies improve tenants' quality of life. For parking owners who have not yet taken advantage of parking technologies, it is time to join the revolution. **FMJ**



Patrick Brooke is the director of technical services at Sentry Control Systems, Inc., the leading national provider of integrated parking technology solutions. He is an authority on parking technologies and technology trends.

Brooke may be reached at pbrooke@sentrycontrol.com.



IFMA FOUNDATION

ACADEMICS • STUDENTS • RESEARCH

Building the Future of FM

The IFMA Foundation **wishes to thank** our many supporters and constituents

for making our events at World Workplace 2014 a success and helping the Foundation make FM a Career of Choice. The Foundation is proud to have awarded US\$140,000 in scholarships and supported participation at World Workplace to 37 FM students, recognized Texas A&M University as our 31st Accredited Degree Program, presented the Global Workplace Workforce Initiative that will introduce FM as an excellent career option to high school and college students along with our annual Celebration, Doug Underwood Golf Tournament and FM Academic Research track sessions. For more information about the activities of the IFMA Foundation, download the Annual Progress Report from www.ifmafoundation.org.



2014 Scholarship Recipients



East Bay Chapter of IFMA receives the Foundation Trustees Award

2014 IFMA Foundation Celebration Sponsors:

Major Benefactors



IFMA™ New York City Chapter
International Facility Management Association



IFMA™ East Bay Chapter
International Facility Management Association

Platinum Sponsors



A&A MAINTENANCE
INTEGRATED FACILITY SOLUTIONS

MANHATTAN

Gold Sponsors

Atlanta Chapter of IFMA
Capital Chapter of IFMA
AquaTech Water Management
Milliken

Silver Sponsors

Denver Chapter of IFMA
San Francisco Chapter

Bronze Sponsors

Suncoast Chapter of IFMA
Los Angeles Chapter of IFMA
Boston Chapter of IFMA
Charlotte Chapter of IFMA
Corporate Real Estate Council
of IFMA

Philadelphia Chapter of IFMA
ICS-Innovative Cleaning Services
CORT

Friends of the Foundation

Nashville Chapter of IFMA
Greater Phoenix Chapter of IFMA
City & Country Clubs Council of IFMA

2014 IFMA Foundation Academic Awards Sponsors



IFMA™ San Fernando Valley Chapter
International Facility Management Association



2014 IFMA Foundation e-Poster Competition Sponsor



IFMA™ Utah Chapter
International Facility Management Association

2014 IFMA Foundation Chairman's Reception Sponsor

Steelcase

ABOUT US

ESTABLISHED IN 1990 AS A NONPROFIT 501(C)(3) CORPORATION AND SEPARATE ENTITY FROM THE INTERNATIONAL FACILITY MANAGEMENT ASSOCIATION, THE IFMA FOUNDATION HAS – FOR 20 YEARS – WORKED FOR THE PUBLIC GOOD BY PROMOTING PRIORITY RESEARCH AND EDUCATIONAL OPPORTUNITIES FOR THE ADVANCEMENT OF FACILITY MANAGEMENT. THE IFMA FOUNDATION IS SUPPORTED BY THE GENEROSITY OF THE FACILITY MANAGEMENT COMMUNITY, INCLUDING IFMA MEMBERS, CHAPTERS, COUNCILS, CORPORATE SPONSORS AND PRIVATE CONTRIBUTORS WHO ARE UNITED BY THE BELIEF THAT EDUCATION AND RESEARCH IMPROVE THE FACILITY MANAGEMENT PROFESSION. TO LEARN MORE ABOUT THE GOOD WORKS OF THE IFMA FOUNDATION, VISIT WWW.IFMAFOUNDATION.ORG. FOR MORE INFORMATION ABOUT IFMA, VISIT WWW.IFMA.ORG.



FINISH BUILDING PROJECTS FASTER

Bluebeam Revu® simplifies the way you manage construction and facilities documents. Review PDFs with project partners around the world in real time using Revu's integrated collaboration solution, Bluebeam Studio™, and comment on those PDFs with customizable markup tools. Apply stamps that include dynamic date and time, and sign electronic invoices and change orders. Access essential project documents like drawings, as-builts, maintenance manuals and warranties using electronic O&M manuals that include hyperlinks.

Anything is possible.

www.bluebeam.com/fasteraccess



bluebeam®
NO LIMITS®

Check part
availability



KEILHAUER

COMPANY NAME Keilhauer
EXPERTISE Furniture
CSP LEVEL Silver
CSP SINCE 1992
WEBSITE www.keilhauer.com

FMJ: *How does Keilhauer incorporate closed-loop manufacturing processes to benefit its clients?*

KEILHAUER: Closed-loop manufacturing is one of our highest priorities in achieving sustainability in operations.

Using the three Rs (reduce, reuse and recycle) as guidance, Keilhauer focuses its energy on targeting unnecessary waste streams, such as eliminating one-time-use products. We also partner with suppliers to ensure that products

used for shipping like containers and skids are sent back to the supplier to be reused. When reducing and reusing is not an option, Keilhauer ensures any materials generated from manufacturing are recycled. Our textile off-cuts are recycled and the leather off-cuts and remaining fabric rolls are donated.

Initiatives such as these are introduced from the top down. Company President Mike Keilhauer believes that sustainability is not a competitive advantage, but simply is the right thing to do. By ensuring that Keilhauer's waste becomes food, and by purchasing energy credits to offset 100 percent of its electricity use, Keilhauer is a steward of the environment, helping to ensure its health for generations to come.

FMJ: *What recent trends in workplace seating should FMs be aware of?*

KEILHAUER: There was a pendulum

swing from private work spaces and big meeting rooms to wide open collaboration areas, and the idea of the open office. What we're seeing re-emerge is the need for private spaces where people can work and meet without distractions. We've known for a long time that meetings don't always occur at a desk-height table in a suitably corresponding office chair, so we are focusing on where the pendulum is returning which is a balance between open and private spaces.

People want to be able to move around within a workspace depending on their needs. To address these different meeting styles, we've developed tables at different heights, but we've also designed seating that accommodates the different postures and behaviors we witness in the workplace when people meet spontaneously, or informally.



COMPANY NAME ABM
EXPERTISE FM Consultant/Services/ Providers
CSP LEVEL Silver **CSP SINCE** 1994
WEBSITE www.abm.com

FMJ: *What is ABM's approach to integrated facility solutions?*

ABM: ABM has a unique approach that solves a common problem with most integrated facility solutions: the fact that providers usually subcontract out many or all services, depriving the building owner or manager of control, consistency and transparency. At ABM, we self-perform most services (such as janitorial, security, energy management, building maintenance, landscaping, parking, etc.) while strategically directing facility operations.

Our infrastructure and ability to self-perform allow us to offer:

- One purpose/vision that matches facility culture/goals
- Deep expertise in all services provided
- Consistent training and processes according to industry best practices
- Flexibility to adapt staffing to business cycles
- Sustainable, compliant practices
- Quality standards/accurate benchmarked data
- Transparency/improved forecasting
- Liability coverage/employee health care/workers' compensation
- Business continuity planning
- 24-hour call center

ABM clients can keep a close eye on their facility through our integrated technology platform to discover the inherent cost efficiencies and feel confident that quality standards are met across the board.

FMJ: *What are the signs that it's time to replace rather than repair an HVAC system?*

ABM: We suggest replacing under these conditions:

1. Maintenance and operations repair costs or energy costs begin to escalate, and energy demand increases beyond 2-4 percent on a year-over-year basis.
2. Necessary replacement items are high cost in relation to a new system.
3. System becomes unreliable to operate in extreme weather conditions.
4. Comfort complaints from building occupants begin to escalate.
5. There are hot and cold spots throughout the facility, without a clear source of the problem.
6. Systems have gone beyond their useful life according to industry standards.
7. Local utility provides incentives to replace aging/inefficient equipment.

Behind every successful FM are a host of product and service providers that offer solutions to make the hectic task of ensuring seamless facility operations a little smoother.

IFMA's Corporate Sustaining Partners (CSPs) are trusted vendors that support the operational excellence of facility management

teams. By partnering with IFMA, this elite group demonstrates the highest commitment to creating a more comfortable and efficient built environment.

This showcase goes behind the brand to reveal the culture that makes these powerhouse businesses the best in class.



COMPANY NAME Milliken
EXPERTISE Carpet/Flooring/Textiles
CSP LEVEL Silver
CSP SINCE 1985
WEBSITE www.millikencarpet.com

FMJ: *Milliken was named one of the world's most ethical companies in 2014 – tell us about that.*

MILLIKEN: We are driven by the strong and collective sense of purpose to “do good.” We aspire to add value to people’s lives, improve health and safety, and make this world more sustainable. And we know that this can only be achieved by holding ourselves accountable to the highest ethical standards.

The World’s Most Ethical Company award recognizes organizations that continue

to raise the bar on ethical leadership and corporate behavior. Being named to the World’s Most Ethical Companies list for the eighth consecutive year confirms our nearly 150-year commitment to conduct business with the utmost responsibility and integrity, for our customers, our environment and ourselves. It is a continued source of pride for Milliken associates worldwide to receive this honor.

FMJ: *How can FMs select the right textile solution for their space?*

MILLIKEN: The right floor covering solution will make facility managers’ jobs easier. When selecting carpet, look for features that improve performance and ease of maintenance and create a safe interior environment without forsaking aesthetics.

Performance is key, especially in high-traffic areas. Product features

to enhance durability can include protection to resist soils and stains along with built-in cushion. Cushion provides comfort underfoot, acoustic qualities, and extends the life of carpet by up to 50 percent.

Modular carpet also offers ease of maintenance benefits, as individual tiles can be lifted for cleaning or replacement. The right installation technology can enhance the functionality of modular tile even more and enable facility managers to lift and replace tiles without chemical adhesives or additional tools.

To help create a safe environment, choose low-to-no VOC products that do not contain hazardous materials, such as PVC. Third-party certifications can provide transparency on product components and their impact on the environment.



COMPANY NAME Manhattan Software, A Trimble Company
EXPERTISE FM Software
CSP LEVEL Standard
CSP SINCE 2001
WEBSITE www.manhattansoftware.com

FMJ: *What benefits can IWMS and CAFM programs offer to facility managers?*

MANHATTAN: Facility and real estate management professionals face more challenges than ever before: control costs, collaborate with other departments and improve data accuracy. They must meet those goals while still increasing their own productivity and managing workspace for an increasingly mobile and dispersed workforce.

Modern, robust IWMS and CAFM

solutions offer FM and real estate professionals one Web-based, flexible, accurate system to manage all their space, operations and asset information. With this data, facility managers can use analytics and benchmarking tools to reduce costs and improve utilization by comparing the total cost of occupancy of all the buildings in their real estate portfolio to optimize operations.

Mobile apps allow remote reporting of operations and maintenance issues, which in turn drives more efficient use of property assets through on-demand scheduling and reporting. The leading solutions offer integrated flexible workspace systems that enable staff to self-select their workspaces as needed, potentially leading to reduced space requirements for their organizations. Finally, the interoperability of these solutions with CAD, BIM, GIS, financial, human resources and information services systems promotes collaboration and

streamlined workflows, saving hundreds of work hours by reducing redundant reports.

FMJ: *How can Manhattan's software solutions be tailored to fit the varying requirements of different facility types?*

MANHATTAN: Our solutions were developed around this basic premise: “configure, not customize.” This has delivered a highly configurable architecture through which specific customer requirements are met using configuration tools exposed in the administrator console. The vast majority of Manhattan implementations do not require changes to the source code of the solution, which means future upgrades are greatly simplified. Administrators can develop templates and workflows to drive user-defined processes to enforce business rules. We closely collaborate during discovery and design with Manhattan clients to ensure that the systems meet specific business processes.



IFMA's **Corporate Sustaining Partners (CSPs)** are an elite group of companies that have made a powerful statement in support of facility management by partnering with IFMA. It goes beyond just selling a product or service - these companies believe in the FM profession and believe in supporting its future.

These outstanding providers can enable you to:

- Easily find the top FM products and providers
- Make informed buying decisions
- Take part in increasing the role of your profession
- Help your association offer exceptional services, products, resources and opportunities



Contact **April Tone** to learn more about how you can benefit from IFMA's corporate programs.

+1-281-617-1338 | april.tone@ifma.org

Platinum



Gold



Silver



FM DEALS & DISCOUNTS PARTICIPANTS

ACOUSTICAL/SOUND MASKING

Cambridge Sound Management | www.csmqt.com
 Lencore Sound Masking & Acoustics | www.lencore.com
 LogiSon Acoustic Network | www.logison.com

AUDIO/VISUAL

AVI-SPL | www.aviinc.com

BUILDING MAINTENANCE/SUPPLIES

JLG Industries Inc. | www.jlg.com
 Lowe's Companies Inc. | www.lowes.com

BUSINESS SERVICES

RSMeans | rsmeans.reedconstructiondata.com

CARPET/FLOORING/TEXTILES

INVISTA/ANTRON® Carpet Fiber | www.antron.net
Mannington Commercial | www.mannington.com
MilliCare Commercial Carpet Care | www.millicare.com
Milliken Contract | www.milliken地毯.com
Patcraft | www.patcraft.com
The Mohawk Group | www.themohawkgroup.com

CEILING/CEILING CARE

Armstrong World Industries | www.armstrong.com

DISASTER RECOVERY/EMERGENCY RESPONSE

BELFOR USA Group Inc. | www.belforusa.com

ELECTRICAL/WIRE MANAGEMENT

NETA International Electrical Testing Association | www.netaworld.org 


ELEVATOR/ESCALATOR

KONE | www.kone.com

ENERGY SOLUTIONS/MANAGEMENT

Intermatic Inc | www.intermatic.net

FLOORING INSTALLATION/MAINTENANCE

Corporate Care | www.corporatecare.com 
INSTALL Floorcovering Professionals | www.installfloors.org
Johnsonite | www.johnsonite.com

FM CONSULTANTS/SERVICES/PROVIDERS

ABM | www.abm.com
Al Shirawi Facilities Management, LLC | www.alshirawifm.com
ALPHA Facilities Solutions LLC | www.alphafacilities.com
ARAMARK | www.aramarkfacilities.com
CH2M Hill Facility Services | www.idcfs-ch2m.com
DTZ, a UGL Company | www.dtz-ugl.com
EMCOR | www.EMCORGroup.com
Engineering Maintenance Company, EMCO-Qatar | www.emcoqatar.net
Eurest Services | www.eurestservices.us
Facility Engineering Associates, PC | www.feapc.com
FBG Service Corp. | www.fbgservices.com
HD Supply Facilities Maintenance | www.hdsupply.com
ISES | www.isescorp.com
ISMER Facility Management | www.ismer.com.tr
ISS Facility Services | www.us.issworld.com
Johnson Controls Inc. | www.johnsoncontrols.com
PCN Technology, Inc. | www.pcntechnology.com
Prestige Maintenance USA | www.prestigeusa.net
Qatar Foundation | www.qf.com.qa
S.A: Temco Services Industry, Inc. | www.temcoservices.com
SG Services LDA | www.sgs.com
Sodexo | www.sodexousa.com
TDGI - Tecnologia de Gestao de Imoveis | www.tdgiworld.com/en/
Terranum Administracion | www.terranum.com
URS | www.urscorp.com
Vertiv | www.veritivcorp.com

FM SOFTWARE

ARCHIBUS Inc. | www.archibus.com
FM:Systems Inc. | www.fmsystems.com
iOffice. | www.iofficecorp.com 
Manhattan Software | www.manhattansoftware.com
Planon Inc. | www.planonsoftware.com
TMA Systems LLC | www.tmasystems.com
VFA Inc. | www.vfa.com

FURNITURE

CORT Furniture Rental | www.cort.com
Davies Office Refurbishing | www.daviesoffice.com
Herman Miller Inc. | www.hermanmiller.com
Keilhauer | www.keilhauer.com
Steelcase Inc. | www.steelcase.com
Versteel | www.versteel.com

HAND DRYERS

Excel Dryer | www.exceldryer.com

HVAC/INDOOR ENVIRONMENTAL QUALITY SOLUTIONS

Halton Group Americas | www.halton.com

JANITORIAL SERVICES/CLEANING PRODUCTS

GCA Services Group Inc. | www.gcaservices.com
PRIDE Industries | www.prideindustries.com
Redlee/SCS Inc. | www.redleescs.com
ServiceMaster Clean | www.servicemasterclean.com

LANDSCAPE/MAINTENANCE/PLANTS /SERVICES/SUPPLIES

Ambius | www.ambius.com

OFFICE SUPPLIES/PRINTING

Miller's Office Products | www.millersop.com
Staples | www.staples.com

RESTORATION/MAINTENANCE

BehrPro: BEHR & KILZ Paints & Primers | www.behrpro.com

ROOFING

Sika Sarnafil Inc. | www.sikacorp.com

SECURITY

AlliedBarton Security Services | www.alliedbarton.com
Allegion PLC Security Technologies | www.securitytechnologies.ingersollrand.com
Securitas Security Services USA | www.securitasinc.com

SIGNAGE

APCO Sign Systems | www.apcosigns.com 

STORAGE/SHELVING/FILING

REB Storage Systems International | www.rebsteel.com

TECHNOLOGY SOFTWARE TOOLS

ARC Document Solutions | www.e-arc.com
The Blue Book Building and Construction Network | www.thebluebook.com

WATER & FIRE RESTORATION

Coit Cleaning & Restoration Services | www.coit.com

WATER TECHNOLOGY

Association of Water Technologies | www.awt.org
RLE Technologies | www.rletech.com

Learn more at www.ifma.org/marketplace



THE SUSTAINABILITY STRUGGLE

BY MICHAEL WILSON

A study conducted in 2008 and published in *Industrial Distribution*¹ said a lot about green and sustainable issues when it came to distributors of all types of products and goods. According to the 400 “top executives of distributorships” included in the survey, environmentally friendly or green products were simply not that big an issue. “We’ve promoted environmentally preferred products for more than 20 years,” said one distributor. “Most customers weren’t on the bandwagon.”

SUSTAINABILITY ISSUES WILL CONTINUE TO BE FRONT AND CENTER IN MOST INDUSTRIES AND BUSINESS OPERATIONS.

While this one distributorship did promote green products, that did not appear to be true with the majority of others involved in the survey. According to the study, most distributors indicated there simply was not a strong demand from their customers for green and sustainable products and that until there was, they had no plans to carry or promote such products. Complicating matters, a third of the distributors indicated that marketing green products added to their costs. Others said that in order to make marketing green products a success, they would have to lower their profit margins.

“I believe our customers conscientiously strive to do what is best for the environment,” said one distributor. “But I don’t feel like there has been a big push for [these types of products].”

The results of the 2008 survey reflect what was occurring at the time. For instance, many observers believe it would take several more years before businesses and industries started taking sustainability issues seriously. “These were the days when champions of sustainability were known simply as environmentalists and were essentially dismissed by many as nothing more than tree huggers,” says Betsy Cohen, vice president of sustainability at Nestle. Cohen adds, “It wasn’t until 2007 that this perception began to change.” Cohen notes that there was another big change occurring at this time: corporate and institutional stakeholders were placing less attention on corporate leaders and more on the ways their organizations operated.

Another timely factor that affected the findings was that the study was conducted just months before the stock market crashed and the Great Recession began. It was already clear to many distributors and the customers they served that the economy was in for a downturn; just how severe it would be was the big question. Instead of sustainability concerns, many businesses, including facility managers and the companies for which they worked, were far more focused on how the downturn would impact them and the facilities they managed.

How things stand today

Today, six years later, it appears the “tree hugger”

perception is long gone, but this does not mean it is all good news for advocates of green and sustainable practices.

A study published in December 2013 in the MIT Sloan Management Review² found that far more companies today are focused on sustainability issues. Nearly two-thirds of the respondents in this study, which was a collaboration between the publication and The Boston Consulting Group, rated social and environmental issues, such as pollution or employee health, as “significant” or “very significant” among their sustainability concerns.

However, while the study’s findings were encouraging overall, it did reveal a number of disconcerting issues as well. For instance, while a solid majority of those companies surveyed were concerned about green issues, “only about 40 percent report that their organizations are largely addressing them. Even worse, only 10 percent say their companies fully tackle these issues,” according to the researchers.

Further, the study found that while many companies and organizations are making real progress when it comes to sustainability, many organizations still appear to be struggling to move forward. For example, according to the report, the percentage of companies that have established a business case for sustainability — reasons to become more sustainable, whether cost savings, enhanced brand recognition or related factors — has grown only from 30 percent to 37 percent over the past five years.

The number of companies that have tried but failed to build a business case for sustainability actually increased from 8 percent to 20 percent during the same time period. Further, more than half of the respondents in the survey admitted they either have failed to establish a solid business case for sustainability or simply have not even tried to create one.

Getting more organizations on the bandwagon

The MIT study provided a number of reasons why some organizations are still struggling



with sustainability. It suggested that “collaboration is becoming more important, since the solution might lie outside a company’s direct sphere of influence. In addition, an individual company might not have the capabilities to address all issues on its own.”

The need to collaborate with distributors that can provide customized product use analysis is a recurring theme when working with managers in industries such as commercial office space and education, industrial and health care facilities. Facility managers and business administrators are grappling with huge amounts of data, covering scores of products used in these locations. It is essentially impossible to keep up with the features and benefits of such a large number of products, as well as to know that they truly are greener and more sustainable and how they fit into a business case for sustainability.

Because of this, many managers are making on-the-spot decisions that often are incorrect and do not achieve their sustainability goals. Many times managers could have made a more worthwhile and effective decision if they had more information at their fingertips.

Fortunately, some facility maintenance distributors now have access to new technologies such as analytical tools or computer-based dashboard systems that can help address this problem, providing answers that are quick and, even more importantly, accurate. How these systems work can vary; some are more comprehensive than others. When most effective, the facility maintenance distributor is no longer just marketing products but becomes a partner and consultant, helping the facility operate more efficiently and in a more environmentally preferable manner.



The Power of Performance.

URS Facility Management teams maximize plant capacity, improve productivity and reliability, and reduce operations costs.

Safety

- First in all we do
- Proven performance
- OSHA partnership
- Continuous training
- Safety Trained Supervisors

People

- Our key assets
- Self-perform model
- Empowered to act
- Continuous training

Management

- Highly trained
- Fully accountable
- Client aligned
- Asset focused
- Metrics managed

Organization

- Globally positioned
- Locally focused
- Site-to-site consistency
- Shared central services
- Workforce flexibility

Quality

- Value-based
- Cost-focused
- Metrics-driven
- Audited results
- High visibility

Finance

- 15-30% cost savings
- Performance-based contracting
- Locally competitive
- Metrics driven savings
- Seamless interface

Procurement

- Leveraged spending
- 10-20% materials cost reduction
- Rigid selection process
- Consolidation focus
- SDB mentoring

Work Processes

- Procedures driven
- Maximo® managed
- Proactive vs. reactive
- Site-to-site consistency
- Planning/Scheduling

To learn how the power of performance can help optimize the life of your facility, contact Mark Gynn, VP – Business Development at (281) 221-5370 or mark.gynn@urs.com.

URS

IPMA CSP
CORPORATE SUSTAINING PARTNER

19219 Katy Freeway, Suite 100
Houston, Texas 77094
281.646.2400 • www.urscorp.com

One of the first steps involves the distributor conducting an inventory of the products used in the facility. Taking cleaning products as an example, this would include items such as restroom cleaners and disinfectants, all-purpose cleaners, matting systems, floor care products and even vacuum cleaners and floor machines. This information serves as a benchmark for future reference. The distributor would then know what is being purchased and used in the location and then begin a search for comparable products that are green-certified, more sustainable and very possibly more cost-effective as well.

Depending on the system employed, the capabilities of these tools can run the gamut from simply providing product information and data sheets to comparing products and helping clients make solid, informed product selections. Usually at this point, the facility maintenance distributor uses what is known as a consultative process with the client. Along with selecting products that are green and sustainable, this approach involves asking questions about client-specific needs.

Combining a dashboard system and a consultative approach allows distributors to guide their customers in making the fact-based decisions that can hold up under C-level scrutiny, eliminating mistakes and trial-and-error decision making, and reaching specific sustainability goals. This approach appears to be supported in the MIT study as well. According to the authors, “working collectively, organizations can be more systematic and sophisticated in tackling significant sustainability issues.”

What the future holds

Based on the trends since 2008, it is reasonable to expect that sustainability issues will continue to be front and center in most industries and

business operations, including facility management. In fact, they will likely become even more prominent in the coming years, as more people and organizations recognize the growing need for sustainability, how it can pay off in terms of reducing operating costs and its public relations value.

But driving sustainability forward will also be the new technologies discussed earlier, a trend which can be compared to how green cleaning products evolved a decade ago. Before certification, while many managers may have wanted to select environmentally preferable cleaning products, they were never entirely sure if the product was indeed green. Certification changed this by allowing managers to be more confident in their green product selections. Similarly, with these new technologies, managers and administrators will have the information they need to make fact-based decisions on a variety of sustainability issues, ending uncertainty and moving their organizations forward on the sustainability journey. **FMJ**

REFERENCES

1. “Thinking Green? (Survey of Distributors on Environmental-Friendly Products)” by Jack Keough, Industrial Distribution, Aug. 1, 2008.
2. “Sustainability’s Next Frontier...Walking the Talk on Sustainability Issues That Matter Most,” MIT Sloan Management Review, Dec. 16, 2013.



Michael Wilson is director of marketing for AFFLINK, a leading sales and marketing organization for the facility management, health care, education, industrial,

hospitality and related industries. The company is also developer of the eLev8® process, analytical tool to help provide supply chain solutions. He may be reached through his company website, www.afflink.com.

COMBINING A DASHBOARD SYSTEM AND A CONSULTATIVE APPROACH ALLOWS DISTRIBUTORS TO GUIDE THEIR CUSTOMERS IN MAKING THE FACT-BASED DECISIONS, ELIMINATING MISTAKES AND REACHING SPECIFIC SUSTAINABILITY GOALS.

MEMBERS ONLY

Special Offers
Discounts

TOP products.
TOP companies.

Connect here:
www.ifma.org
under “**Marketplace**
/Deals & Discounts”

CSP **IFMA**
CORPORATE
SUSTAINING
PARTNER



Facility benchmarking has never been easier!

Compare building data anytime, anywhere.

Through IFMA's enhanced benchmarking portal, you have the power to filter building information by industry, facility type, geographic region and more. The BEX platform provides quick, convenient access to reports that target customized data unique to your facility.

The power is yours. Get started today!

www.ifma.org/bex

- Sign in with your IFMA username and password
- To enter your facility data: Create your portfolio (use the "Quick Start" as a guide)
- To access data: Click "Query Database"



IFMATM

International Facility Management Association
Empowering Facility Professionals Worldwide

IMPROVING WATER EFFICIENCY:

A Holistic Approach to Conservation

BY SCOTT KALE AND JOHN LIE-NIELSEN

FMJVIDEOEXTRA
CLICK TO VIEW

Energy 101: Energy Efficient Commercial Buildings

According to the U.S. Environmental Protection Agency (EPA), a government survey indicates that at least 30 states are anticipating local, regional or statewide water shortages. These statistics underscore our need to manage resources better at every level.

As evidenced through this summer's drought and high water rates, many facility and property managers are still missing the big picture when it comes to one of our most precious resources — water. While many attempt to “go green” to conserve water, most only implement

a single tactic that has little effect on a big scale and ends up costing more.

Only by taking a holistic approach to water conservation — one that analyzes the complete system rather than a single part to find a solution — will true water efficiency and savings be realized.

Through today's technology, you can implement a water conservation program that not only replaces inefficient equipment to reduce consumption but continuously measures water flow and immediately alerts you to potential leaks to save both water and money.

While buying and installing products may be simple, the hardest thing — and where most fail in creating an effective program — is developing the attitude that water conservation is important and the right thing to do.

Getting started

Creating a game plan for conserving water is the first step. An effective plan examines how much water is being used, when it is used and where it is being used. To accomplish this, your plan requires accurate data by starting with a water audit to set a benchmarks and using subsequent data to measure progress.

For commercial buildings, a successful water conservation program can have a big impact (and cost savings) in three major areas: restrooms (40 percent total water use), cooling and heating (28 percent), and irrigation (22 percent).

Through an audit, you can obtain information on where and how much water enters and leaves the system. One of the major objectives is to estimate and reduce unaccounted for water use that occurs through leaks, inoperative system controls and water used from unmetered sources. As the earlier percentages indicate, significant water usage and resulting bills could quickly add up if you are not tracking what is going on.

An audit typically includes a review of floor plans and occupancy and utility records to collect as much information as possible about a building's water use now and in the future.

Also, it's important to conduct a facility survey to understand how water is being used in the three major areas. Measuring fixture flow rates, irrigation system activity and cooling tower usage can help managers compute total water usage. If a significant difference between the facility's total usage and the sum of each area is discovered, a major underground leak may exist.

Finally, if a property houses multiple buildings with similar characteristics (square footage, occupants, etc.), an

audit can provide statistics to serve as benchmarks when comparing facility water use. If one building is using a far greater amount of water, it probably has one or more major issues that need immediate attention.

Time to execute

With the data and visual surveys collected, you can create a plan of action to launch your water conservation program. The plan should encompass the system and equipment changes required as well as a return on investment forecast considering rising water and sewer rates. It should include short-term fixes and long-term remedies for each of the three major water consumption areas.

General building and quick fixes

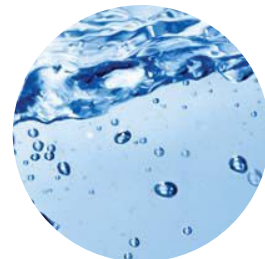
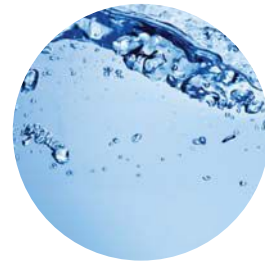
- Leaks and drips of faucets, if not repaired, can result in losses of as much as 10,000 gallons per month.
- Check water pressure of each building. Excessive pressure (more than 80 psi) can increase leaks.
- Inspect your buildings and walk your grounds weekly to identify leaks and potential problem areas.
- Check for wet spots and "alligatored" paving (characterized by interconnecting or interlaced cracking), which may indicate underground leaks.
- Monitor water lines to fountains.
- Inspect all units for leaks quarterly during regularly scheduled preventative maintenance.
- Keep accurate inspection reports to note changes that may indicate a potential problem.
- Educate tenants and employees on your conservation plan, what they can do to help and what to do if they spot a problem.

Restrooms

Many toilets, urinals and faucets in use today were not designed for water conservation and are the main culprits for water (and money) needlessly being flushed down the drain.

Here are some guidelines to conserve water and save money:

- Install low-flow fixtures and



Only by taking a holistic approach to water conservation will true water efficiency and savings be realized.

consider metered valve, self-closing, infrared and ultrasonic sensor fixtures.

- Keep toilets and urinals in good working order by periodically inspecting and replacing valves that malfunction and cause the fixtures to continually run — a stuck valve can leak 200 gallons an hour.
- Consider waterless urinals.
- Adjust flush valves to use less water.
- Train cleaning crews to spot potential problems.
- Post notices to encourage occupants to report problems as part of your conservation program.

Irrigation

For many properties, the owner and FM team want the surrounding landscape to be lush to please current occupants and recruit new tenants. Unfortunately, this often leads to overwatering. Since most sprinkler systems are set for pre-dawn watering, managers may not notice there is a major problem until they receive a high water bill at the end of the month.

Here are some guidelines for immediate water savings:

- Inspect irrigation system for leaks and broken heads.
- Adjust sprinkler heads to ensure you are watering landscape, not pavement.
- Reduce lawn irrigation. Train your grass to grow with less water.
- Install rain sensors so systems won't start while it's raining.
- Water before 9 a.m. to minimize evaporation.
- Consider irrigating from detention ponds or reservoirs.
- Stop using water to clean sidewalks, parking lots and other hard decks.

Heating and cooling

Cooling towers keep us comfortable, but

as the largest single water users, their water consumption can make us anything but. Designed to remove heat through a water and evaporation process, the system continuously replenishes water as it loses it from bleed-off required to remove chemicals, drift and leaks.

Some guidelines for conserving water required for HVAC processes:

- Inspect cooling tower for leaks and malfunctioning valves on a regular basis.
- Install flow meters on make-up and bleed-off lines.
- Read meters regularly and keep a log of make-up and bleed-off quantities.

New technology

Some building engineers routinely read water meters. But if a leak were to occur after the reading, after hours or over a weekend, the excessive usage spike may not be detected until the next reading, by which time thousands of gallons could be lost.

Water utilities typically read meters monthly. Based on this timeframe, a facility management team may not realize there is an unseen leak until a large water bill is received 30 to 60 days later.

This does not have to be the case. New technology is helping managers and owners manage their water conservation efforts through real-time viewing of water usage and immediate detection of water spikes related to potential catastrophic leaks.

This new technology features a self-contained, non-intrusive device that monitors water flow in real time. Through the process, data is collected and sent wirelessly to a website portal where managers and owners can view a property's water consumption for the entire month, day or even down to the

hour. Charts provide a quick comparative view of gallons used, if any day or hour had excessive usage and if non-occupied days (such as weekends or holidays) recorded higher than normal use.

Much like an energy surge that pops a circuit breaker, when water spikes above the preset hourly or daily limit, the device detects the problem and immediately alerts the building engineer. Also, if a building has more than one meter being monitored, such as one for the cooling tower and another for the main line, the engineer can quickly determine which meter spiked in order to isolate the problem area faster for repair.

How can you manage what you don't measure? With no end in sight to rising water and sewer costs, water monitoring becomes imperative. And with today's technology, water usage data can not only serve to improve water efficiency, but can also confirm the effective outcome of any water conservation measure taken. That's good for the environment, and good for business. **FMJ**



John Lie-Nielsen is CEO of WaterSignal. He has more than 25 years of leadership experience in technology and real estate including his founding of Johnstown American, which managed 180,000 apartment and condominium units.



Scott Kale is vice president of WaterSignal. An active member of BOMA and the USGBC-GA, he has been published in Insight Magazine and has spoken to various engineering groups, "Green Committees" and water utilities about the benefits of real-time water monitoring. He has more than 20 years of experience in sales and marketing within the technology, health care, manufacturing and commercial real estate markets.



“The Scenery Only Changes for the Lead Dog.”

Cliché? Sure. On the mark? 100%. For over ten decades, **The Blue Book Network** has been the industry leader in delivering information solutions that help connect – and build businesses.

Many of the companies that have challenged this claim are now up for sale, have been sold or just quietly left the scene. Today, with online usage up nearly 40% at thebluebook.com, over one million ITB and project messages sent weekly and the debut of a new industry-sweeping company profile called *ProView*, The Blue Book Network is the largest, most active network in the United States.

Through prosperous and challenging times, our 500 Employee-Owners have weathered the race with you – and for you. The Blue Book Network is stronger than ever. We don't see a finish line, just ever-changing opportunities for continuous improvement – *and a great view of what's ahead.*

**To keep your facility running strong,
connect with a Blue Book Business Development Consultant today.**

Call: (844) 249-5165 | Visit: www.FMdog.com



THE BLUE BOOK Building & Construction
NETWORK®

An Employee-Owned Enterprise    www.thebluebook.com



Which IFMA credentials are right for you?

Expand your skill set, earn instant credibility, distinguish yourself from your peers and demonstrate your knowledge and commitment to excellence to current and prospective employers.

Open doors
to new
possibilities



The first and **only**
global certification
for the profession



Build your FM career
on a **solid** foundation



The only sustainability
credential created **for**
FMs, **by** FMs

Certified Facility Manager® (CFM®)

Recommended for FM professionals who meet a higher level of education and work experience requirements.

Certification is granted to those who are able to pass a comprehensive exam covering all FM core domain areas, including:

As a result of the most recent IFMA global job task analysis, the CFM Exam has been updated to include 11 competencies!

- Communication
- Emergency Preparedness and Business Continuity
- Environmental Stewardship and Sustainability
- Finance and Business
- Human Factors
- Leadership and Strategy
- Operations and Maintenance
- Project Management
- Quality
- Real Estate and Property Management
- Technology

Although no coursework is required, CFM candidates have a variety of preparation resources available to them, including IFMA's new FM Learning System and CFM Exam Prep Workshop.

Earn the most prestigious certification in your profession—earn the CFM!

► www.ifma.org/cfm 

Sustainability Facility Professional™ (SFP™)

Recommended for all facility management and like-minded professionals who have an interest in sustainable workplace practices.

The SFP training and assessment program teaches professionals about sustainability across the entire FM spectrum, through three comprehensive focus areas:

- Strategy and Alignment for Sustainable Facility Management
- Managing Sustainable Facilities
- Operating Sustainable Facilities

The SFP program equips facility professionals with the knowledge and skills to:

- Integrate sustainability efforts with the organization's values and strategies;
- Present a business case for sustainability initiatives;
- Evaluate initiatives from a financial point of view; and
- Track and report accomplishments.

SFPs have the ability to implement sustainability strategies that will significantly reduce costs and positively impact their organizations' bottom lines.

Optimize FM performance for a better tomorrow—earn the SFP!

► www.ifma.org/sfp 

Learn more at www.ifma.org/credentials.

Earn the must have credential in Facility Management.

Facility Management Professional® (FMP®)

IFMA's Facility Management Professional (FMP) designation is a knowledge-based credential that will help to accelerate an FM's transition into the profession and demonstrate a proven comprehension of the foundations of facility management. It is ideal for:

- Facility management practitioners looking to increase their depth-of-knowledge in the foundational FM topics deemed critical by employers.
- Individuals who are transitioning into the FM profession.
- Related-industry practitioners such as architects, designers and safety engineers.
- Facility-related product and service providers.
- Students entering the profession from colleges, universities, certificate or technical programs.
- LEED professionals seeking continuing education hours.
- Federal employees and contractors looking to comply with the Federal Buildings Personnel Training Act (FBPTA).
- Experienced FMs intending to pursue the CFM credential.

Updated and enhanced courses addressing the foundational elements of facility management:

Operations and Maintenance: The primary role of facility managers is to manage/oversee an operating facility. To do this, facility managers must have a working knowledge of building systems, structure, interiors and exteriors and grounds so the facility and all of its required systems function efficiently, reliably, safely, securely and in a manner consistent with existing regulations and standards. Effective operation and maintenance of facilities is a complex responsibility in today's environment.

Project Management: Facility managers make use of all aspects of project management beginning with planning, scoping, scheduling and ending with evaluating. Project planning and management are core skills in facility management. The skills are particularly important because of the wide range of projects assigned to the facility organization. Projects vary in scope, complexity, duration and financial risk.

Finance and Business: Facility managers manage/oversee high-value assets that represent significant financial investment in technology, buildings, structures, interiors, exteriors and grounds. Since facility managers are typically responsible for the oversight, operation and maintenance of the buildings and grounds, as well as oversight of various service contracts, understanding the basics of finance and business is critical.

Leadership and Strategy: To be effective, facility managers must develop strategies to successfully carry out major initiatives by influencing the decisions and attitudes of others. Effective strategies require that facility managers are able to integrate people, places, processes and technology. They must be able to align the facility portfolio with the entire organization's missions and available resources, and to be innovative in order to move forward with their staff and processes to respond to the ever-changing requirements.

The IFMA FMP Credential Program is the only tool you need to earn your FMP. The program will help you gain a solid understanding of the facility management profession and develop the knowledge and skills demanded by employers.

Earn the must have credential in Facility Management and gain a competitive advantage—earn the FMP!

▶ www.ifma.org/fmp 



"I recommend the FMP program to everyone that considers themselves a facility professional. The FMP credential helps professionals better understand and apply the core elements of the various FM disciplines, challenges their decision-making skills and sets the stage for the CFM credential. I feel stronger in my knowledge base knowing I passed the rigorous FMP online self-study program."

- Brian Rush, CFM, FMP

Human Sustainability and Research-based Design in Higher Education



BARBARA WEITZ
COMMUNITY ENGAGEMENT CENTER



BY STEVEN J. ORFIELD

Good architecture needs no justification; bad architecture is not resolved by one.

The public has little problem recognizing wonderful spaces or bad ones, and they return to those they like, frequently by choice. However, there is a broad range of buildings that are public and which must be visited and used, independent of our feelings about them. Behind the broadly enveloping spirituality of good architecture is good science in psychology and perception, human factors, engineering, building performance, design, measurement and modeling.

Yet there are few architects or engineers trained in these complementary fields, and fewer yet who know of the tools available to model or measure their designs. Graduate training is available in the building performance sciences at some architectural schools, but even this training does not often include applied research and measurement. Orfield Laboratories (OL) has spent decades developing a research-based design tools and processes used to design, evaluate and test spaces and their users.

The Community Engagement Center project

The University of Nebraska at Omaha (UNO) intended to construct a stand-alone facility dedicated to expanding campus outreach efforts to new levels of national prominence. The Community Engagement Center (CEC), an outreach center between the university and the surrounding community, was proposed to meet this challenge.

Starting with a mission of community outreach and a progressive university facility department, an advanced 60,000 square foot CEC building was developed based on concepts of community interaction and human sustainability. Orfield Labs became involved in order to support the sustainability mission via a research-based design process related to the visual perceptual environment, including daylighting, lighting design, research and testing. Although not in the scope, the design considered other aspects of building performance including acoustics and thermal comfort. The project had an institutional focus on sustainability, as regents of the University of Nebraska require all new buildings to be minimally certifiable under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system.

In the mid-2009, George Killian, manager of architectural engineering and construction for UNO, began to assess the program for the design and implementation of the new Community Engagement Center. As an architect in a leadership position at UNO, he was aware from past projects that there was often a tension between large-scale campus architecture and the user. If sustainability was to assist in bringing together occupancy quality and architecture, it had to have a basis in sustaining students, faculty and the community. This would demonstrate how research-based design could inform and improve

new and renovated facilities on campus, a mission strongly supported by UNO's director of facilities, John Amend.

Orfield Labs developed a direct relationship with UNO to assist as a client-based consultant, in collaboration with the architect appointed by the UNO designer selection committee, Holland Basham Architects of Omaha, Nebraska, USA.

Killian took sustainability into account via two processes:

- He shared with his architect that a LEED worksheet had to be developed to demonstrate that there was a high probability that this project would comply with basic LEED certification requirements.
- He decided to proceed with a specialized focus on lighting and daylighting. This was the first UNO project to have specialized consultants for human sustainability based on perceptual comfort from lighting and daylighting.

Killian wanted to achieve a sustainable project without focusing solely on energy and sustainable materials, which is so often the case in LEED projects.

Previously, Orfield Labs had been retained to review a lighting retrofit plan that had been commissioned for Kayser Hall at UNO and not yet implemented.

The lighting review showed that:

- Where there was substantial energy savings, the lighting proposed was not as comprehensive as the lighting that was to be replaced.
- The brightness of the lighting proposed was measured and did not meet the perceptual comfort requirements of Orfield Labs, even though it may be considered minimally acceptable under less stringent glare standards.

Lighting was changed on this project due to that analysis and critique, with the intent of staying within the original project budget.

Daylighting – Design research and testing

A pre-design study had been completed on the CEC by BCDM Architects to develop the program for the building. Based on this information and the associated design models, Holland Basham developed a schematic model of the new building design in order to understand the relationship between the model and daylighting performance. This was the point at which the Orfield Labs consulting began. (Often, consulting starts with adoption of standards before the design team is engaged.)

As we began to look at the daylighting impact of the south-facing building with most offices in the north side, some initial conclusions were:

- There was a large, asymmetric south overhang on the front of the building that was severely limiting daylight penetration on the south face.
- There was no external shielding for daylighting control, thermal load reduction and interior thermal comfort.
- Glazing had not been selected and was a crucial issue.
- The north side of the building had substantial areas where opaque fascia materials were used aesthetically in lieu of windows, reducing daylighting.
- Most of the conference rooms were internal with no daylighting. This also put the meeting rooms next to the noise of corridors.
- The depth of the building made full daylighting penetration very difficult, which suggested depth changes, an atrium or skylighting in the center along an east-west access, which would also help the conference rooms.
- Public spaces on the north side had little daylighting exposure and were somewhat blocked by parking facilities and by non-glazed façades.
- Some of the larger room shapes were non-symmetric and less efficient in allowing daylighting penetration within and adjacent to these rooms.

Daylighting guidelines and the CEC design

Daylighting in buildings is normally analyzed for a series of objectives.

These include:

- Amount of daylighting entering a space.
- Depth of daylighting transmission and height of glazing wall.
- Use of space and benefit of daylighting.
- Control of glare by use of internal automated shades.

In spaces such as those in the CEC building, optimized daylighting can be achieved by penetration and reflection strategies to overcome obstructions and lower reflectance finishes, as well as open-plan offices with barriers to daylighting.

While illuminance calculations of daylighting are interesting, trying to convert gross illuminance to net luminance at the task surface is not trivial. Yet this method of daylighting (aiming only at illuminance) for energy savings is common.

In a normal open-plan office the net office lighting on a work surface is generally about a quarter of the gross illuminance in an empty room. When this is not taken into account in the calculations of illuminance, daylighting will be significantly reduced due to furnishings. Light's only path to most work surfaces distant from the window plane will be by inter-reflection from major interior building surfaces, which all must be light in reflectance. Close façade engineering via exterior shielding, and light transmission engineering via light shelves, can add significantly to this performance. On overcast days, daylighting will be nominally similar from all orientations, so all orientations should be designed for daylighting optimization.

As a result of initial findings, these actions were recommended for the CEC:

- Reduce the south overhang substantially.
- Shield the curtain wall by exterior shielding based on the submitted engineering approach.

- Select all major finishes and furniture based on minimum light reflectance standards.

The early strategy suffered from a façade design that was not intended to support daylighting, which the engineering team believed to be sufficient based on energy savings from daylight harvesting.

As this problem was in the process of being mitigated, the project was stopped and the site was changed to the other end of the campus due to a conflict with a campus memorial site. In the new location, the architect took to opportunity to simplify the project and to allow more daylighting penetration and shielding as a result of the efforts on the first design.

Lighting – Design research and testing

The open-office lighting system designed for the CEC is a cable-suspended direct-

indirect system that meets stringent visual performance levels and that architecturally enhances the space.

Since the brightness is so well controlled, illuminance can be dimmed to the minimum acceptable level. Also, since most open-area occupants at the CEC also have task lighting, illuminance can often be reduced if reflectance values meet standards. Each of the private offices typically employs a suspended direct-indirect luminaire with local control of switching and occupancy sensors in closed spaces.

Automated shades for the CEC building

Every project seems to teach some lessons, as did the CEC building. The use of automated shades with a minimum reflectance value was specified; however the shades selected by the interior designer did not account for the transmission value, resulting in

shades that let in a low range of daylighting.

The initial control system design focused on energy savings by reducing heat gain and loss at the building perimeter, but there was little focus on visual comfort or views. The only shade sensing on the building was via radiometers on the roof that measured and calculated heat loads on each vertical face of the building. The control strategy was to reduce heat load and no photometric detectors for visual brightness were installed.

The shades were set at major increments of adjustment (25 percent), and since they were often quite far down, large changes were occurring that were easily detected and sometimes heard.

Normally, when using manual shades, the range of adjustment during the

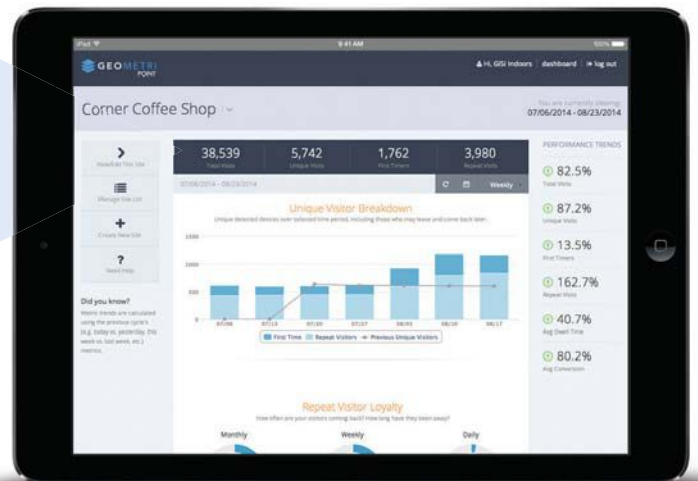
Simple and Easy Reporting for Space Planning & Utilization



Organizations everywhere are making it a priority to maximize efficiencies and identify underutilized space in their facilities. Accomplishing these goals doesn't have to be a costly and cumbersome endeavor.

GeoMetri Point is an easy to deploy technology that utilizes a single sensor that can measure traffic for spaces as small as a single conference room, all the way to 10,000 square feet. See daily, weekly, or monthly trending reports of new visitors, repeat visitors, and more.

Setup is easy and only takes a few minutes.



Sign Up for a FREE Trial Today!

point.gisinc.com

POWERED BY **GISi indoors**

COMMUNITY ENGAGEMENT CENTER INTERIOR



daytime is from fully open to retracted to the horizon (for brightness control). Commercially, the range is often narrower, in the range of 75 to 50 percent open, for more visual comfort. And if the shade fabric is in a reasonable transmissive range (normally in the 5 to 10 percent range), when shades are lowered, a view is maintained and daylighting is diffusing through the shade fabric when it is down. Shade selection for light transmission can also be different on different faces, so that the faces where glare and heat build-up our greatest, usually the south and the west, can use better glazing and more restrictive shading design or controls.

In the case of CEC, this set of problems is now being resolved by a different control strategy that is more focused on visual comfort and views and the daylight-harvesting lighting is being reevaluated for less noticeable control. In general, the shades will be open more, better views and more daylighting will be allowed, and human preference and comfort will be the priority, with energy secondary. **FMJ**

REFERENCES

1. Archi-Tech & Buildings. "Creation of the Architectural Research Consortium." May 2009.
2. ASID white paper. "Better Daylighting and Lighting Solutions." Orfield, Steven J.; Brand, Ph.D., Jay and Hakkarainen, Ph.D., Pekka. January 2005.
3. CIE Conference, Vienna, Austria. "Discomfort Glare Issues Lead to Discussion." Veitch, Jennifer. Sept. 11-12, 2014.
4. Contract magazine. "Critique: Occupancy Quality, Putting Forth a New Agenda for Sustainable Design." Orfield, Steven J. June 2004.
5. Environ 8. "A New Agenda for Sustainability: Human Sustainability." Orfield, Steven J.
6. Environment and Human Health, Inc. "LEED Certification, Where Energy Efficiency Collides with Human Health." Wargo, Ph.D., John, May 25, 2010.
7. Facility Management Journal. "The Open Plan Office." Orfield, Steven J. October 2000.
8. Herman Miller white paper. "Bright Idea: Personal Control of Office Lighting." Orfield, Steven J. 2006.
9. InformeDesign, Implications. "Design Success: Occupancy Research and Building Performance." Orfield, Steven J. September 2002.
10. Lighting Design & Application. "Asymmetric Office Lighting." Orfield, Steven J. Oct. 1, 1987.
11. Lighting Design & Application. "Open Plan Office Lighting." Orfield, Steven J. July 1, 1987.
12. Lighting Design & Application. "Photometry and Luminance Distribution: Conventional Photometry versus CAPCALC." Orfield, Steven J. Jan. 1, 1990.
13. Lighting Design & Application. "Video Conferencing Facilities: Perception, Comfort & Visibility." Orfield, Steven J. Jan. 1, 1992.
14. NRCC Canada: Institute for Research in Construction. "Do LEED-certified buildings save energy? Yes, but..." Newsham, G.R.; Mancini, S. and Birt, B. August 2009.
15. OPWG/ARC Corporate Consortium. "A Higher Education Case Study: The Community Engagement Center." Killian, George. Nov. 29, 2011.
16. St. Paul Business Journal. "Tennant Comfort."
17. "The Community Engagement Center." Presentation at the Society for College and University Planning North Central Conference. Killian, George. June 26, 2013.
18. Today's Facility Manager. "Occupancy Research and Building Performance – Before and after studies related to new construction and renovation projects empower facility managers." Orfield, Steven J. Oct. 21, 2009.



Steven J. Orfield, founder of Orfield Laboratories, Inc. in Minneapolis, Minnesota, USA, has been involved in the architectural and product consulting field for

four decades. His career began with acoustical and lighting research and design in open-plan offices and has since become involved in product research and evaluation methodologies for architecture.

Orfield takes a human factors approach to architectural technologies, emphasizing user experience. He has authored and been featured in more than 300 national articles and is the founder of the Open Plan Working Group and the Architectural Research Consortium. He can be reached at steve@orfieldlabs.com.



Credentials

The following people were awarded the Certified Facility Manager® (CFM®) certification in **JULY 2014:**

Mark Stubbolo, CFM
American Red Cross
Olathe, Kansas

Bryce Anderson, CFM, FMP
The Church of Jesus Christ of Latter-day Saints
Orem, Utah

Josh Twardowski, CFM
Sodexo
Bowling Green, Kentucky

Brent Saujon, CFM
Enterprise Holdings
Pearl, Mississippi

Cameron Bell, CFM
The Church of Jesus Christ of
Latter-day Saints
Salt Lake City, Utah

Terry Harp, CFM
Ameren
Swansea, Illinois

Philip Heavilin, CFM
Shiawassee County
Owosso, Michigan

The following people were awarded the Sustainability Facility Professional® (SFP®) designation:

Robert Holleman, SFP
AFLAC Inc.
Fortson, Georgia

Robert Parker, SFP, FMP
Baltimore Convention Center
Forest Hill, Maryland

Byron Mau, SFP, FMP
Oracle
San Mateo, California

William Lambe, SFP
Lambe Facility Management
Algonquin, Illinois

James Martin, SFP, CFM
Farmers/Global Business Services
Phoenix, Arizona

Benjamin Paredes, SFP
Tecta America Southeast LLC
Oveido, Florida

Ronald Hall Jr., SFP
Ameren
Columbia, Illinois

Lawrence Bray, SFP, FMP
Oracle
Redwood City, California

Michael Sinack, SFP
Dewberry Engineers Inc.
Fuquay Varina, North Carolina

The following people were awarded the Facility Management Professional® (FMP®) designation:

Curtis Slife, FMP
FM Solutions Inc.
Maricopa, Arizona

Kerry Emter, FMP
Grubb & Ellis Management
Services c/o Aetna
Bismarck, North Dakota

William Thalín, FMP
Fairchild Semiconductor
Concord, California

Steven Powell, FMP
Chugach Federal Solutions Inc.
Mechanicsville, Maryland

Anna Thurston, FMP
FM Solutions
Phoenix, Arizona

Kari Pratt, FMP
Johnson Controls
Allen, Texas

Russell French, FMP
New Balance Athletic Shoe
Norway, Maine

Pamela Vita, FMP
United Airlines
San Anselmo, California

Eric Behunin, FMP
BEA
Rigby, Idaho

Jay Henderson, FMP
Fairfax County Government
Bristow, Virginia

Douglas Sellers, FMP
CBRE
Morris, Alabama

Kevin Reagan, FMP
Los Angeles World Airports
Rolling Hills Estates, California

Jungsoon Park, FMP
Quintiles Transnational Korea Co. Ltd.
Songpa-gu, KR-11 South Korea

Aaquil Jillali, FMP
Queen Elizabeth Health Complex
Candiac, QC, Canada

Tommy Oliver, FMP
Pearson
Denver, Colorado

Ezequiel Morales, FMP
City of Houston
Houston, Texas

Natalie Tsantes, FMP
Terumo BCT
Lakewood, Colorado

Jeff Loeffler, FMP
American Council on Education
Beaeton, Virginia

Leela Baldeo, FMP
McGill University Health Center
Montreal, QC, Canada

Meredith Littlewood, FMP
Interactive Intelligence
Petersham, NSW, Australia

Scott Hayworth, FMP
Northwestern University
Bradley, Illinois

Joseph Gilpin, FMP
Society of Petroleum Engineers
Nevada, Texas

Traci Losasso, FMP
Hess Corp.
Fords, New Jersey

Prudence Uhrich, FMP
BCF Solutions Inc.
Huntsville, Alabama

Muhannad Al Teneiji, FMP
ENEC
Abu Dhabi, United Arab Emirates

Joshua Mischung, FMP
Arizona State University -
Performance Based Studies
Research Group
Tempe, Arizona

Syed Zeeshan Haider, FMP
Serco
Lahore, Pakistan

Jim Brown, FMP
CBRE
Lakeview, Alabama

Travis Raby, FMP
Oceanengineering Int.
Houston, Texas

Curtis Hinds, FMP
Caribbean Facilities Corporation Ltd.
San Fernando, Trinidad and Tobago

Kevin Bales, FMP
Altria Group Distribution Co.,
Crazy Mountain Ranch
Clyde Park, Montana

Stephen Labesa, FMP
Federal Inland Revenue Service
Abuja, Nigeria

Trisha Laquis, FMP
BP Trinidad and Tobago LLC
Trinidad and Tobago

Jason Largen, FMP
Logistics System Inc.
Owens Cross Roads, Alabama

Ebizi Deinkoru, FMP
Hometel Developers
Abuja, Nigeria

Tom Sigwin, FMP
Victoria, BC, Canada

Bogdan Karczewski Jr., FMP
ADS Systems LLC
Marrero, Louisiana

Martin Sharratt, FMP
Sodexo Canada
Guelph, ON, Canada

Sam Dienes, FMP
The Walt Disney Co.
Orlando, Florida

Michael Norris, FMP
Chumash Casino Resort
Los Alamos, California

Derwin Peppers, FMP
CBRE
Mansfield, Texas

Roderick Pierson, FMP
Grand Cayman, Cayman Islands

Martin Schadel, FMP
McGladrey LLP
Eldridge, Iowa

Jason Martindale, FMP
EMCOR Facilities Services
Discovery Bay, California

Michael Dowling-Collins, FMP
Bethel New Life Inc.
Chicago, Illinois

Christopher Sturgeon, FMP
Defense Construction Canada
Kingston, ON, Canada

Janet Hoyte, FMP
DCP Midstream
Missouri City, Texas

Kody Nelson, FMP
Conrac Solutions
Lisle, Illinois

Tom Otím, FMP
Fairfax County
Fairfax, Virginia

Thomas Aban, FMP
Fairfax County Government
Reston, Virginia

Kwabena Agyei, FMP
Fairfax County Government
Dumfries, Virginia

Jesse Bednarik, FMP
Pasco County
Palm Harbor, Florida

Jason Briggs, FMP
OSG Tap & Die Inc.
Lombard, Illinois

Kenneth Gaudio, FMP
SNC Lavalin O&M
Hinton, AB, Canada

Lloyd Bishop, FMP
Woodbridge, Virginia

Sky Thomas, FMP
Brossard, QC, Canada

Michael Dinius, FMP
Los Angeles World Airports
Los Angeles, California

Kevin Booker, FMP
Exponent
Antioch, California

Jonathan Krowisz, FMP
Kirco Management
Westland, Michigan

Want to see your name here?

Visit <http://www.ifma.org/professional-development> to find out how.



The following people were awarded the Certified Facility Manager® (CFM®) certification in **AUGUST 2014:**

Timothy Boerma
TMB Services
Whitby, Ontario
Canada

Jonathan Colvin, CFM, FMP
The Church of Jesus Christ
of Latter-day Saints
Alpine, Utah

Brett LoCicero, CFM
Marlborough Savings Bank
Charlton, Massachusetts

Richard Turner, CFM
Network Appliance Inc.
Santa Clara, California

Oziegbe, Aigbogun, CFM, FMP
Central Bank of Nigeria
FCT, Nigeria

Michael McDaniel, CFM
CBRE
Parkville, Missouri

Walker Webb, CFM
U.S. Department of Justice
Alexandria, Virginia

The following people were awarded the Sustainability Facility Professional® (SFP®) designation:

Deeanna Wohlglamuth, SFP, FMP
Resort Condominiums
International Inc.
McCordsville, Indiana

Byron Edwards, SFP, FMP
Western Area Power
Administration/U.S.
Department of Energy
Littleton, Colorado

Charles Phipps, SFP, FMP
Wyndham Worldwide
Zionsville, Indiana

Kelvin Bailey, SFP, FMP
Lockheed Martin Corp.
Arlington, Texas

Joe Kimitch, SFP
University of Colorado, Denver
Denver, Colorado

Arthur Shilling, SFP
KAUST
Thuwal 21534 Jeddah,
Saudi Arabia

Alexa Stone, SFP
Ecopreserve
Orlando, Florida

Samantha Todd, SFP, FMP
Canada Revenue Agency
Oxford Station, ON, Canada

Mark Lopez, SFP, FMP
Johnson Controls
Brazoria, Texas

Frank Youngblood, SFP, FMP
Johnson Controls
Gilbert, Arizona

David Thorson, SFP
University of Colorado, Denver
Mead, Colorado

Douglas Nass, SFP, FMP
Brookfield, Wisconsin

The following people were awarded the Facility Management Professional® (FMP®) designation:

Kenneth Dabney, FMP
Lockheed Martin Corp.
Irving, Texas

Andrew Lauber, FMP
Cushman and Wakefield
New Orleans, Louisiana

Gordon Nelson, FMP
ARAMARK
Edmonton, AB, Canada

Scott Jelleberg, FMP
Schlumberger Technology Corp.
Oshkosh, Wisconsin

Reginald Burrell, FMP
Los Angeles World Airports
Compton, California

Gregg Grummel, FMP
Nalco
Mt. Prospect, Illinois

Dimitry Dozhdev, FMP
Schlumberger
Tyumen, Russian Federation

Victor Albainy, FMP
Ricoh USA
Fair Haven, New Jersey

Russell Walsh, FMP
Terumo BCT
Denver, Colorado

Matt Cox, FMP
Jones Lang LaSalle
Marysville, Washington

Emil Bock, FMP
Nanaimo, BC, Canada

Ramesh Kuma Thonoor, FMP
Palakkad - 7, Kerala, India

Steven Limbacher, FMP
State of Ohio Dept. of Transportation
Stone Creek, Ohio

Chris Bayler, FMP
Lockheed Martin Corp.
Waxahachie, Texas

Blayne Radford, FMP
Springfield Public Schools
Nixa, Missouri

Dianne Gnatzig, FMP
CH2M Hill
West Allis, Wisconsin

Fang Wei, FMP
Shanghai, China

Matthew Burgess, FMP
Akamai
Dorchester, Massachusetts

Frank Petritis, FMP
Society of Critical Medicine
Chicago, Illinois

Alexey Grinchenko, FMP
TPV CIS
Saint Petersburg, Russian Federation

Jermain DeFreeze, FMP
City Of Austin - Austin
Resource Recovery
Austin, Texas

Phil Ferrara, FMP
School Facility Management
Franklin, Tennessee

Kennon Blackshire, FMP
HighMount E&P
Missouri City, Texas

David Hook, FMP
Bethel World Outreach Church
Franklin, Tennessee

Cecily Vos, FMP
Lockheed Martin Corp.
Dallas, Texas

Jillian Harvey, FMP
JV Driver Projects Inc.
Beachville, ON, Canada

Greg Arslanian, FMP
Salt Lake City International Airport
West Jordan City, Utah

LaTashia Dean, FMP
HighMount E&P
Houston, Texas

Heather Anderson, FMP
Cumberland Heights
Charlotte, Tennessee

Bamidele Ajileye, FMP
Broll Properties Services Ltd.
Lagos, Nigeria

Ray Mongi, FMP
Torrance, California

Alana Dunoff, FMP
AFD Facility Planning
Lafayette Hill, Pennsylvania

Ashraf Mohammed, FMP
TECOM
Dubai, United Arab Emirates

Anna Barras, FMP
ABB
Houston, Texas

Alex Carlson, FMP
CBRE
Urbandale, Iowa

Susan Dabbs, FMP
Sodexo
Calgary, AB, Canada

Jason Andruk, FMP
K&N Management
Austin, Texas

Jacqueline Major, FMP
Humble, Texas

Muhammad Asadullah Khan, FMP
U.S. Consulate General Lahore
Sialkot, Pakistan

Ryan Darnell, FMP
KHIDMAH
Abu Dhabi, United Arab Emirates

Jacqueline Chesson, FMP
Urban Land Interests
Madison, Wisconsin

John Moore, FMP
Lockheed Martin Corp.
Scurry, Texas

David Jolley, FMP
MWI Veterinary Supply
Meridian, Idaho

Christopher Bowman, FMP
SECCA
Mayodan, North Carolina

Mingzhu Li, FMP
Jilin Jianzhu University
Changchun, China

Stanley Hall, FMP
Los Angeles World Airports
Anaheim, California

Lane French, FMP
Pearson
Centennial, Colorado

Kelvin Bailey, FMP
Lockheed Martin Corp.
Arlington, Texas

Viriato Costa, FMP
Fort Worth, Texas

Mingzhao Li, FMP
Jilin Jianzhu University
Changchun, China

Eric Moran, FMP
Constellation Energy/Exelon
Wilmington, Delaware

John Walden, FMP
Ann Inc.
Louisville, Kentucky

Oluseyi Nwosu, FMP
Guaranty Trust Bank PLC
Surulere, Nigeria

Rahmon Adegbola, FMP
University of Saskatchewan
Saskatoon, SK, Canada

Scotty Austin, FMP
NANA Management Services
Anchorage, Alaska

Brian Mcpherson, FMP
U.S. Facilities
Pine Hill, New Jersey

Wade Hanna, FMP
ABM c/o Vanguard
Huntersville, North Carolina

Frank Peters, FMP
AIM Group
Bright, ON, Canada

Michael Buttler, FMP
Casula, NSW, Australia

Donald Robinson, FMP
Lockport, Illinois

Adetunji Kuku, FMP
Ultimate Innovations Consult
Lagos, Nigeria

INTEGRATING SUSTAINABILITY METRICS INTO DAILY OPERATIONS

BY LYNN BAEZ AND
ALANA F. DUNOFF

Remember 1990? In the U.S. facilities market, 1990 was a big year. That was the year the Americans with Disabilities Act (ADA) was passed. Within the months and years following, there were workshops, seminars, consultants, sessions as IFMA conferences, vendor-generated tools and other resources all designed to help FM's learn, plan and implement projects to comply with the new law. Today ADA is just part of our daily vernacular, just another process in our designs and operations.





We are experiencing a similar paradigm shift with sustainability. Once a foreign and perhaps scary concept to implement, sustainability has become woven into our organizations' corporate social responsibility statements and critical to our organizations' success. Like ADA, sustainability practices must shift from project-based activities to being fully integrated into our daily FM processes.

Value proposition

Integration of sustainability practices into our daily FM operations just makes good FM business sense. FMs are often the champions of sustainability within our organizations; it is only logical that we take the helm of transitioning sustainability into something we just do, not something we first plan then implement.

There are many reasons why sustainability integration is critical to FM operational success. It is how and what to integrate that can be the real challenge. We found two primary keys for successful integration:

- Focusing on obtaining good smart data and metrics
- Integration of these metrics into vendor management processes

Building a baseline of data

Good smart data is paramount to every decision we make; it is the foundation of our performance

measures and how we track our success. So, even though collecting data may require rolling up your sleeves and getting a little dirty, it is worth the effort to ensure you have reliable information.

The first step is creating a baseline of data. A baseline allows you to draw a line in the sand to understand where you are today and helps you identify where you want to be in the future. To build a baseline of sustainability data, start by collecting utilization and cost information for key operations such as:

- Utilities (electric, water, gas)
- Waste (recycle, trash, compost)
- Site services/amenities

You might collect information differently for each of these operational areas. For example, for utilities data you may need to dig out your monthly bills. Then in a simple excel document, record on a month-by-month, building-by-building basis, your consumption (kWh) and costs. If you can collect this data going back two to three years, you will build a historic perspective of your organization's utilization trends.

When collecting data from vendor partners such as custodial services, they may have their own internal processes to collect and track sustainable practices such as percent of green cleaning chemicals or overall percent of green clean within a facility. The challenge here is that you need to ensure their data



and processes are transparent and reliable — don't be afraid to ask them how they got their numbers!

Once you have collected your data, the second step is to build a dashboard. Creating a simple dashboard (e.g., using a spreadsheet) allows you to summarize your data such as yearly totals, averages, percentages and year-to-date information on a building-by-building basis. The value of the dashboard is that it can provide a big-picture view of your consumption, costs and processes. Dashboards do not have to be complicated — keep it simple and start off slowly. To get started, pick one building and collect and record your electrical consumption data, then summarize it. The dashboard becomes the foundation for collecting, analyzing, planning and acting (see Figure 1).

Identifying metrics

Baseline data tells you where you were. To help you get to where you want to go, you have to find, create and identify benchmarks, metrics, targets, key performance indicators or best practices. Whatever you call them, performance measuring tools allow you to compare yourself to the outside world and help you define goals that are reasonable and achievable.

In the beginning of this process, internal metrics are often the first and simplest to obtain. For example, if you look at your history of electrical consumption it may be easy to suggest a targeted decreased

Electric	Annual Expense 2012	Annual Expense 2013	Annual Expense Use Gal 2012	Annual Expense Use Gal 2013	Ave Monthly Use kWh 2012	Ave Monthly Use kWh 2013	Cost/RSQFT 2012	Cost/RSQFT 2013	ES&I Score 2012	ES&I Score 2013	ES&I Sub-Index	Target	Notes
Building 1	\$ 486,381	\$ 781,023	\$ 480,092	\$ 729,840	\$ 421,190	\$ 851,117	\$ 9.02	\$ 9.70	599.09	599.09	Greater than	Decrease	
Building 2	\$ 94,370	\$ 81,571	\$ 76,503	\$ 55,142	\$ 2,967	\$ 61,888	\$ 2.14	\$ 1.88	91.82	91.82	Less than	Increase	
Building 3	\$ 143,452	\$ 116,144	\$ 117,000	\$ 99,150	\$ 8,862	\$ 88,929	\$ 2.57	\$ 2.27	89.40	89.40	Greater than	Decrease	

Water	Annual Expense 2012	Annual Expense 2013	Annual Expense Use Gal 2012	Annual Expense Use Gal 2013	Ave Monthly Use gal 2012	Ave Monthly Use gal 2013	Cost/RSQFT 2012	Cost/RSQFT 2013	ES&I Score 2012	ES&I Score 2013	ES&I Sub-Index	Target	Notes
Building 1	\$ 10,009	\$ 10,500	\$ 11,184	\$ 11,700	\$ 4,486	\$ 78,143	\$ 0.07	\$ 0.08	27.58	27.58	more than	same	
Building 2	\$ 3,893	\$ 3,310	\$ 3,525	\$ 3,467	\$ 234	\$ 2,288	\$ 0.09	\$ 0.08	9.09	9.09	Less than		
Building 3	\$ 7,495	\$ 7,633	\$ 8,395	\$ 7,893	\$ 113	\$ 65,672	\$ 0.07	\$ 0.07	6.95	6.95	Less than		

Recycling/Waste Streams	Total Volume Tons 2012	Total Volume Tons 2013	Ave Monthly Use Tons 2012	Ave Monthly Use Tons 2013	YTD Use Tons 2014	YTD Use Tons 2014	% Recycling 2013	% Recycling 2014 YTD	% Recycle of total trash vol 2013	% Recycle of total trash vol 2014	Target	Notes
Building	33.73	53.18	4.43	22.49	8.23	38.64%	38.77%	38%	42%	42%	42%	recycled
Campus	33.36	80.88	8.71	25.33	9.05	35.64%	38.77%	38%	100%	100%	100%	Total Vol = 80.88

Cleaning - Green Cleaning	Vendor Reported 2012	Vendor Reported 2013	YTD Vendor Reported 2014	Target 2014	Notes
Building					

FIGURE 1 illustrates a working dashboard.

consumption level that is attainable, given certain projects you are considering implementing (e.g., new lighting or occupancy sensors).

Once you have advanced past your own internal benchmarks or if you are looking for gauges and guidance outside of your organization you will need to look for external benchmarks or metrics. External sustainability benchmarking data is out there but it can be challenging to find. In the IFMA Benchmarking Report for Operations and Maintenance #32 you will find helpful information on how to convert your data using the Energy Use Index so that it is comparable to outside organizations. IFMA's online Benchmarks Exchange (BEX) also can provide helpful utility consumption data.

An increasingly popular recording and benchmarking tool is the EPA's ENERGY STAR® program. Instead of an excel spreadsheet you can record your utility utilization data into the ENERGY STAR Portfolio Manager (www.energystar.gov). This easy tool provides internal reports as well as access to benchmarking data within their vast database.

If you are looking beyond comparative data and want to figure out what sustainable goals or targets you should be striving to achieve, check out the criteria for LEED Existing Building Operations and Maintenance (EBOM) (www.usgbc.org/credits/existing-buildings/v4). Even if you don't intend to obtain your LEED certification the EBOM is a terrific framework for building your own sustainability program and finding achievable metrics to attain. In eight categories, including energy and atmosphere, water efficiency, materials and resources, indoor environmental quality and innovation, you can understand in real operational terms what LEED defines as minimally acceptable standards. If you match your FM operations to these standards you know you will have achieved integration of sustainability practices into your daily operations.

Vendor management processes

Once you define the sustainability metrics and standards to which your organization is committed, your vendor partners will be the key to your organization's success. Understanding what you measure and the outcomes you want to obtain can be an organic process. Through your sustainability initiatives you will have current and new partners, providers and vendors engaged in daily operations.

Current vendors will want to work with you on supporting your goals in order to increase their services provided and invest time and resources to a potential benefit for future clients. Vendors range in all different sizes, regions and in their understanding of sustainability. The key is to level set your expectations. Host a kick-off event

which outlines your initiatives and your vision of partnership. Then provide expected outcomes per vendor type; for example, an office supply vendor would need to furnish specification sheets on each item on your property with transportation manifests to support a reduction of emissions. Partner with procurement and legal departments to ensure contracts reflect the enhancements in either products or services by existing partners.

As new partners emerge you will need to provide a roadmap of how they can integrate their products or services within your initiatives. Obtain support from your procurement and legal teams to include sustainability-related language for requests for information, requests for proposals and requests for quotations documentation. Attach site policies, procedures, service level agreements or statements of work that reflect how sustainability is supported daily, based on the type of service or product needed. Ensure through the negotiation process traceable examples can be furnished to confirm you have a solid understanding of what environmental impact the items or services maintain.

Each vendor will need to provide transparent data and details in regard to how they support your location's sustainability objectives. Ensure you provide a simple translatable method of data collection that can be furnished through contract language and exhibits. If your goal is to publish your results externally, make certain the story can be translated applying global standards using the Global Reporting Initiative as an example.

Final thoughts

Integration of sustainability data and metrics into daily operations can be a daunting task. It is important to remember to begin at the beginning and take your time to plan your integration methods and processes. You will have fits and starts. Here are some key lessons learned:

- Ensure you have a firm understanding of your data by

collecting from various resources utilizing tools that are simple and effective.

- Gain buy-in from leadership that your goals and visions may change as data begins to take shape.
- This is a marathon, not a sprint; outcomes from various resources will furnish the best results.
- Utilize both internal and external benchmark tools and guidelines to support your findings.
- Dashboards and presentations can help tell your metric story.
- Partner with your vendors to obtain a complete picture of site management through a sustainability focus as well as a financial and operations perspective.

Finally, it is clear that sustainability benchmarking data and metrics are not easily and readily available. Share your journey of integration within the online IFMA Sustainability Community to support a call of best practice and benchmark sharing so that we can all benefit from each other's efforts. **FMJ**



Alana F. Dunoff, FMP, IFMA Fellow is a strategic facility planning consultant at AFD Facility Planning and an adjunct professor at Temple University. In

her career of more than 22 years She has served on IFMA's board of directors and as president of the Greater Philadelphia Chapter of IFMA and believes in the power of turning data into actionable knowledge. Dunoff holds a Master of Science degree in facility planning and management from Cornell University and a Bachelor of Science in environmental psychology from Boston University.



Lynn Baez, FMP, SFP, CFM is workplace ambassador – south region for T-Mobile USA. Previously, she led Dr Pepper Snapple Group headquarters to obtain

LEED EBOM Gold in 2012. A member of the 2014-15 IFMA board of directors, Baez serves as the board liaison for the Environmental Stewardship and Sustainability Strategic Advisory Group and the Environmental Health and Safety Council.

WELCOME TO THE WORLD'S LARGEST

HVACR MARKETPLACE



2015 AHR EXPO®

CO-SPONSORS



HONORARY SPONSOR



JAN 26-28
McCORMICK PLACE
CHICAGO

FOR MORE INFO, PLEASE VISIT AHREXPO.COM OR CALL 203-221-9232



High-performance portable heat pump

MovinCool®, a brand of DENSO Corporation, the world's largest manufacturer of air conditioners, announced a new Climate Pro™ 18 portable heat pump, which combines both cooling and heating capabilities in a single, self-contained unit. The compact system is 13 percent smaller and 22 percent lighter than other comparable heat pumps, yet it offers significantly higher performance.

The Climate Pro 18's cooling capacity of 14,600 Btu/h, heating capacity of 13,700 Btu/h and minimum operating temperature with plenum of 24 degrees Fahrenheit make this unit the best-performing system in its class.

A new controller features a larger LCD screen that displays diagnostics and step-by-step instructions to start, set up or restore operation. The system is fully compatible with most standard, off-the-shelf wireless thermostats.

As with other MovinCool portable systems, highest-quality manufacturing details include hermetically sealed refrigeration units and fan motors, to ensure long-term reliability. MovinCool's industry-leading warranty covers parts and labor on the entire unit for three years.

For more information, visit www.movincool.com/portable-air-conditioners/climate-pro-18.

Multi-pump control solution

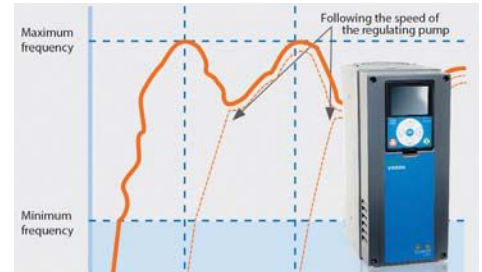
The VACON® 100 FLOW is an AC drive specifically designed to improve flow control for multi-pump applications in which several pumps are used in place of a single one.

Multiple pump solutions are desirable to lighten the load by spreading it across several pumps, thus providing greater energy efficiency and system redundancy. For operations in which demand fluctuates throughout the course of the day, the VACON 100 FLOW offers control of flow and pressure for a maximum of eight pumps (or fans) without the need for an external controller.

The VACON 100 FLOW AC Drive is equipped with built-in Ethernet as standard, eliminating any additional options or gateways needed to communicate with process automation. This also provides access for commissioning and maintenance through "VACON Live" and makes local or remote monitoring possible.

The VACON 100 FLOW offers three multi-pump control solutions.

For single-drive installations, one AC drive controls a lead pump. If demand exceeds the capabilities of the pump, additional fixed-speed pumps are brought online directly or with a soft starter. Users can choose between fixed setups and solutions in order for the



lead and auxiliary pumps to alternate roles to equalize wear and tear.

In multi-master mode, each pump is controlled by its own AC drive. The integrated interface allows the drives to communicate without the need for an external controller. As demand increases, the leading drive increases its speed until the capacity is exceeded, at which point the excess load is transferred to the next drive in the series. This method ensures pumps start and stop smoothly, and reduces the need for additional control wiring, motor protection relay and contactors.

Multi-follower mode is similar to multi-master except that as demand increases and the lead drive's capacity is exceeded, additional drives running in parallel are brought into operation. This ensures that all pumps run at the same operating speed, reducing noise and general stress, thus improving reliability.

Visit www.vacon.com to learn more.

New meeting room services help improve workspace management

Ricoh Americas Corporation has unveiled Ricoh Meeting Room Services, enabling companies to more efficiently use conference rooms and curb the expense of unused spaces.

Ricoh Meeting Room Services address inefficiency with an intelligent solution that minimizes no-shows by using ID sign-in technology and sensors to report occupancy rates and patterns in real time.

This solution provides information mobility for facilities, operations and office managers. The services capture real-time room usage data, analyze patterns and re-engineer optimization plans to help balance occupancy rates and drive measurable cost savings. Ricoh Meeting Room Services can

help companies manage an entire meeting room inventory via a software solution for booking meeting space, inviting attendees, reserving audiovisual equipment, ordering meals and activating electronic signage.

While managers oversee room usage, individual employees can swipe their ID cards or enter pin codes at any meeting room door to book the space on the fly, manage no-shows, begin meetings and release rooms at the end of the session. For further precision, wireless sensors can be added to remotely track actual room utilization.

For details on Ricoh's full line of products, services and solutions, please visit www.ricoh-usa.com.



Elevator display delivers RSS feed with wireless connectivity, eco-friendly features

E-Motive's new iS2 multimedia elevator LCD displays are now available from Janus Elevator Products. The iS2 is the first display to combine RSS feed technology, wireless connectivity and eco-friendly features.

The full-color TFT display provides customized in-car entertainment and information. With high processing capability, the iS2 renders quality high-definition video content and images. The RSS feed streams live Web content such as stock tickers and news headlines. Wireless access enables remote delivery of content updates, in addition to monitoring, diagnostic and elevator car surveillance functions.

The product's screen brightness dimming, LED backlit technology and scheduler for screen power management all reduce LCD power consumption, improving lifespan and satisfying OEMs' green rating requirements. The display is available in five sizes, ranging from 10.4 inches to 21.5 inches. The iS2 can be mounted in the car panel, auxiliary car panel, above the door transom and in the landing.

To learn more about the E-Motive iS2 from Janus, visit www.januselevator.com.

Natural stone tile collection inspired by Eastern art and culture

Crossville Inc. has announced the introduction of Yin + Yang, a collection of natural stone tile inspired by the allure and balance of Eastern art. The line comes in a range of versatile looks carefully blended to maximize the beauty of true stone while providing harmony and elegance to design.

Yin + Yang's art of balance is manifest in its mix of colors and size options. The collection is offered in eight stone shades: Snow Flower, Moon Gate, Black Dragon, Tea Garden, Silk Fan, Bonsai, Lotus Blossom and Koi Pond. Versatile sizes, including .5" x .5" mosaic, .5" x 1.5" stacked mosaic, herringbone, elongated hex, 1.5" x 7.75" brick, 3" x 12" plank and linear mosaic, invite creation of custom patterns and



looks. Product specifiers may select between natural or polished finishes.

Yin + Yang is recommended for interior and exterior walls and interior floors in commercial or residential settings.

For more information on the new collection, visit crossvilleinc.com.

Cloud-based solution for manual management

Introducing Dynamic Manuals, a mobile solution for the operation and maintenance of built assets. Using Windows tablets, facility management teams can dynamically manage digital O&M manuals in the secure cloud.

This is a logical extension of Smart Manuals, an online solution for contractors to efficiently build high-quality, digital O&M manuals during the project for timely delivery at practical completion. Based on Windows 8.1, Dynamic Manuals expands support to the most costly phase of the asset life cycle.

Aconex Handover solutions simplifies the handover process and improves the quality and usability of O&M manuals, as well as making the information easy to access, share, search, update and manage on mobile devices. The asset data is stored on the cloud-based Aconex platform, safe from catastrophic loss.

In addition to Smart Manuals and Dynamic Manuals, Aconex Handover solutions include Digital Manuals for delivery of digital O&M information on storage media and



O&M manuals linked to multidimensional building information models.

Dynamic Manuals provides users with an intuitive graphical experience and the ability to view and update documents and technical files in the field. They can barcode or QR-code each physical asset in a facility and then scan the code from a Windows tablet to access all information on that asset. They can also share asset information with subcontractors and other outside resources from the tablet desktop or via email. All document updates and communications are captured in a permanent audit trail.

For more information on Aconex Handover, including Smart Manuals and Dynamic Manuals, see www.aconex.com/operation-and-maintenance-manual.



IFMA™

International Facility Management Association

Empowering Facility Professionals Worldwide

The world's largest and most widely recognized international association for facility management professionals.

Collaborate without borders... on the updated

IFMA Community!

Exchange information and benefit from the collective knowledge and expertise of fellow FM professionals as a member of the IFMA Community.

Through the IFMA Community, members will have access to real-time discussion and information exchange related to facility management and building operations and management.

The IFMA Community provides a place for users to post and generate discussion on either a general or specific topic and to learn from the collective wisdom of peers.

Community volunteer opportunities:

- Volunteer manager
- Regular contributor
- Volunteer moderator
- Subject matter expert
- Share ideas, expertise, best practices




Have your say or follow a discussion on topical issues and matters that affect you professionally. Join the conversation at www.Community.IFMA.org.

Questions? Contact us at: components@ifma.org



GET THE MOST OUT OF YOUR BUILDING AUTOMATION

Integrate your Building Automation System with Proteus CMMS for:



- ➔ Automated work order generation from alarms/alerts
- ➔ Work orders sent to your mobile device
- ➔ Cost reduction! Customers often see a 15% reduction in their overall maintenance budget within the first few months!

1-800-388-3268
WWW.EAGLECMMS.COM



THERMAL REMEDIATION
FROM TEMP-AIR

BED BUG HEAT TREATMENT EQUIPMENT MADE IN THE USA



(800) 836-7432
www.Thermal-Remediation.com

#1 Solution for Real Estate, Infrastructure, and Facilities Management in the World



- Mobile Framework
- Performance Metrics
 - BIM 4.0
- Geospatial Extensions
- Workplace Services
- Home Page Navigation
- Quick Start Methodology
- Environmental & Risk Management
 - Space & Occupancy
 - On Demand/PM
 - Lease Administration
 - ...and much more.



ARCHIBUS, Inc.
Boston, MA USA
Tel: 1 617-227-2508
www.archibus.com


Looking for a job in facility management?

Looking for qualified facility managers?

IFMA's **JOBnet** is the go-to resource for your FM career! Go online today to post resumes and/or job openings.



jobnet.ifma.org



TEMP-COOL
PORTABLE COOLING SYSTEMS

INDUSTRIAL PORTABLE AIR CONDITIONERS MADE IN THE USA



(800) 836-7432
www.Temp-Cool.com

IFMA's FM BUYER'S GUIDE ONLINE

IFMA's 24/7 Web database will narrow your online search, connecting you to the facility solutions you need *FASTER*.

WHEN SEARCHING FOR FM PRODUCTS, SERVICES, AND LOCAL IFMA MEMBERS TURN YOUR SEARCH into FIND.



www.onlinefmguide.com

BUILDING MAINTENANCE/SUPPLIES			
<i>Lowe's Companies, Inc.</i>	107	+1-336-232-4801	<i>www.lowesforpros.com</i>
CARPET/FLOORING/TEXTILES/FLOOR COVERING			
<i>Forbo</i>	2	+1-800-842-7839	<i>www.forboflooringna.com/marmoleum</i>
<i>INVISTA/Antron Carpet Fiber</i>	11	+1-770-420-7700	<i>www.antron.net/carpetsearch</i>
EDUCATIONAL SEMINARS/WORKSHOPS			
National Fire Protection Association	57		www.nfpa.org/freeonlinecourse
ENERGY SOLUTIONS/MANAGEMENT			
Graybar	33		www.graybar.com/my-rebate
FM CONSULTANTS/SERVICES/PROVIDERS			
<i>ARAMARK</i>	5	1-800-901-7373	<i>www.aramarkfacilities.com</i>
<i>Sodexo</i>	23	1-888-SODEXO7	<i>http://bit.ly/sdx_fm_more</i>
<i>URS Corporation</i>	81	+1-877-278-3127	<i>www.urscorp.com</i>
FM SERVICES			
<i>ABM</i>	65	+1-800-874-0780	<i>www.abm.com</i>
FM SOFTWARE			
<i>ARCHIBUS, Inc.</i>	3, 105	+1-617-227-2508	<i>www.archibus.com/mobile-ifma</i>
Eagle Technology	105	+1-800-338-3268	www.eaglecmms.com
<i>FM:Systems, Inc.</i>	BC	+1-800-648-8030	<i>http://go.fmsystems.com/fmj</i>
<i>iOffice</i>	31	+1-713-526-1029	<i>www.iofficecorp.com/free-ebook</i>
HVAC/INDOOR ENVIRONMENTAL QUALITY SOLUTIONS			
AHR Expo	101	+1-203-221-9232	www.ahrexpo.com
<i>TEMP-AIR</i>	105	+1-800-836-7432	<i>www.temp-air.com</i>
JANITORIAL SERVICES/CLEANING PRODUCTS			
Rubbermaid Commercial Products	53	+1-540-667-8700	www.rubbermaidbrute.com
<i>Veritiv</i>	25		<i>www.veritivcorp.com</i>
LIGHTING			
CREE Lighting	7	+1-800-236-6800	www.cree.com/lighting/smartcasttech
PEST CONTROL			
No Fly Zone, Inc.	63	+1-866-NOFLY-99	www.noflyzoneinc.com
Orkin	27	+1-800-ORKIN NOW	www.orkincommercial.com
Thermal Remediation	105	+1-800-836-7432	www.thermal-remediation.com
RESTROOM PRODUCTS			
Dyson	13	+1-855-720-6378	www.dysonairblade.com
ROOFING			
Roof Monitor	69	+1-844-492-7646	www.roofmonitor.com
<i>Sika Sarnafil, Inc.</i>	9	+1-800-576-2358	<i>www.thicknessguarantee.com</i>
SECURITY			
TownSteel, Inc.	37	+1-877-858-0888	www.townsteel.com
TECHNOLOGY SOFTWARE TOOLS			
Bluebeam Software, Inc.	73	+1-626-788-4203	www.bluebeam.com/fasteraccess
GISi Indoors	93		http://point.gisinc.com
<i>The Blue Book Building & Construction Network</i>	87	+1-844-249-5165	<i>www.fmdog.com</i>

POSITION YOUR COMPANY AS AN FM THOUGHT LEADER



FMJ is the only magazine of its kind backed by the strength of IFMA's global network of facility management decision makers, who collectively represent **more than US\$100 billion** in buying power.

Visit http://bit.ly/IFMA_MediaKit to download IFMA's media kit, or contact Diana Maldonado at **+1-281-974-5674** or **diana.maldonado@ifma.org** to customize a marketing plan for your business.



LOWE'S® ProServices



Attention IFMA Members! Lowe's now provides 5% Off Every Day when you use Lowe's Business Credit*



Business Replenishment Program

For a \$150 minimum purchase + a penny, we'll provide a metal supply rack for things like cleaning products, safety equipment or maintenance supplies.

When we deliver the rack, we'll label the shelves, provide order forms and set up a schedule to replenish the shelves for you.

Delivery

Get your supplies delivered when your business needs them and where you need them at a reduced delivery rate available to our commercial customers.

Visit Lowe'sForPros.com to find your nearest store.

© 2014 by Lowe's. All rights reserved. Lowe's and the gable design are registered trademarks of LF, LLC.

*Ask for 5% Off offer. Offer is not automatic. Must request at time of purchase. If applicable, 5% discount will be applied after all other discounts. Subject to credit approval. Some exclusions apply. See store associate or credit promotion disclosures for details. Lowe's Business Account and Lowe's Accounts Receivable are issued by GE Capital Retail Bank.

TOOLS FOR MANAGING THE DYNAMIC WORKPLACE

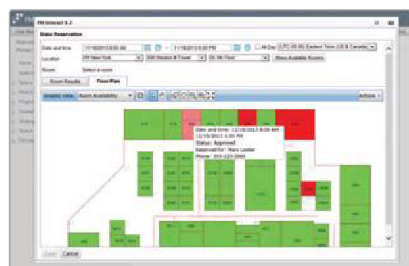
Rapidly changing workplaces are requiring facilities teams to plan, optimize and manage their portfolios in new ways.

Modern organizations are adopting new approaches to workplace planning and operations that have been enabled by mobile technologies and a highly dynamic workforce. These new approaches include



flexible workspace, support for cross functional teams, ad-hoc and collaborative areas, and flexible workspaces that break away from the practice of assigning one workstation per employee.

FM:Systems® has a powerful set of tools that are part of the FM:Interact® Integrated Workplace Management System that help organizations plan and manage alternative workplace strategies. Learn more at <http://go.fmsystems.com/fmj>



FMJ EXTENDED

NOVEMBER / DECEMBER 2014

THIS EXCLUSIVE ONLINE SECTION FOCUSES
ON EXPANDED FM COVERAGE.

110

Solar to Play Leading Role in Renewable Energy

ERIK ERNST

*Contribution by Facility Management Netherlands
(translated from original Dutch)*

112

Greening the Greens

*Biological nitrogen fixation offers sustainable alternative for
facility lawn care*

DOUG KREMER

115

IFMA and Sustainability: Whence, Thence and Hence

ERIC TEICHOLZ AND CHRIS HODGES

118

Vendor Profiles

SOLAR

to Play Leading Role in Renewable Energy

THIS ARTICLE WAS CONTRIBUTED BY FACILITY MANAGEMENT NETHERLANDS FROM THEIR OFFICIAL PUBLICATION, FMI, AND HAS BEEN TRANSLATED FROM THE ORIGINAL DUTCH.

BY ERIK ERNST

The solar power business is booming. According to information from Holland Solar, the industry organization of Dutch experts in solar energy, the Netherlands has been heavily involved in the development of solar energy.

The Netherlands also possesses unique technology and successful entrepreneurs in this industry. Contrary to popular opinion, the Netherlands has sufficient sun to apply solar power competitively on a large scale. The quantity of solar energy that the Netherlands receives per year is approximately 40 times greater than the country's total energy usage.

Furthermore, the Netherlands has much more diffuse light (originates omnidirectionally) which offers more possibilities for placing solar panels, even on southern-oriented locations. In addition to a significant quantity of

residences, the Netherlands also has many large office and commercial buildings on which there are many opportunities to generate solar energy on a large scale.

Legislation

European countries are increasingly developing regulations focused on private power generation for commercial buildings. For example, England has a regulation requiring new commercial buildings to generate 20 percent of their energy usage. Given that such buildings can have relatively little roof area, integration of solar energy in the façade at the architectural design phase is encouraged. This also creates a market opportunity for aesthetic façade solutions integrated with solar energy.

In addition, the Energy Performance of Buildings Directive (EPBD), which aims to promote the improvement of the energy performance of buildings

within the E.U. through cost-effective measures, is now in the process becoming national legislation. Following the EPBD, Flanders has an action plan to reach near net neutrality for its buildings. The Netherlands is also sharpening its Energy Performance Coefficient (EPC) standards.

The Dutch government has imposed stringent measures in order to achieve the highest possible adoption of sustainably generated power sources and aims to increase the share of sustainable power from 2 to 14 percent of total energy usage in the Netherlands by 2020.

There are two types of solar energy generation: active and passive solar energy.

The active technologies applied most frequently are:

- Photovoltaic (PV), the conversion of sunlight into electricity.
- Thermal, the conversion of solar



energy into heat (for example, use of a thermal storage system to take advantage of summer heat).

Examples of passive solar energy include architectural measures such as solar-focused structures like conservatories and glass balconies.

Solar energy products

We are currently seeing a massive price drop in standard solar panels. Standard PV material serves as a cheap semi-finished product for the creation of a large diversified market of building-integrated PV. We are heading toward the availability of hundreds of different affordable solar energy products for roofs and façades that will be available for consideration by architects and builders.

Large companies still purchase conventional energy collectively for less than 10 cents per kilowatt hour, but in time, solar power will become more competitive with conventional power and then further

expansion of solar can take off. The tipping point for individuals and subject matter experts has already been reached.

In the Netherlands, many companies are developing and marketing advanced solar energy products for the construction industry that perform basic structural functions while also generating power.

Offices and commercial construction

In comparison to residential construction, commercial building façades offer much better opportunities to apply solar energy generation. The façades of residences are, in general, too low and deliver too high a risk of shadow. In contrast, commercial building façades are often very high and take up a large surface area. In addition, façades designed at a specific angle by the architect can help maximize solar energy gain.

Glass-roofed atria in commercial buildings are also excellently suited for solar power generation. The major disadvantage of atria, overheating in the summer, can be avoided simply by incorporating solar panels in the design. In these types of applications either closed and illuminating or semi-transparent solar panels may be used. Illuminating solar panels are available in various degrees of transparency and allow sufficient light while preventing overheating. The architect must, however, properly conceal the cables from the solar panels in the design.

The application of a relatively new technology like solar power requires special attention in all phases of the construction process. In the planning phase, the basis for the realization of solar power systems is important in order to be able to offer a successful result. Even when solar power is not incorporated in the construction plan, it is important in the planning phase to take into account future developments so that solar power can be properly applied later.

Holland Solar vision

Holland Solar board member and treasurer Martijn Schootstra describes his vision of solar energy as follows:

“In the near future, there will be, on the one hand, a further increase in the improvement of the return, so more power generation per square meter, and on the other hand, there will be a further decrease in cost. Further developments depend on possible breakthroughs in the technology and there will be more customization taking place in integrating solar applications.”

How does solar energy relate to other sustainable energy sources? Schootstra: “The leader in the area of sustainable energy is currently still biomass, accounting for 70 percent, followed by wind energy. But I expect that solar will be the winner in the long term, particularly in the built environment. Wind is less easily applicable in more developed areas.”

On the question of whether the Netherlands can ever be carbon-neutral, Schootstra answers: “This depends very much on political choices. It is still the situation that, for example, the transport sector and the chemical industry are energy-intensive, but the application and expansion of sustainable energy will definitely increase.”

Tip for FM

Schootstra: “The focus now is still on cost. However, facility managers can impact the quality of the installation and of the installers. Zonnekeur is the Dutch quality mark for solar energy. It provides guidance when looking for reliable products and installers in the area of solar energy.”

In the very near future, this market development will lead to a situation in which not a single new building will be constructed without solar power, only near-net-zero buildings will be built, a large selection of beautiful solar energy products for construction will be available and solar energy will be practically free. **FMJ**

Erik Ernst is facility project leader at FrieslandCampina and a member of the FMI editorial board. For more information on Zonnekeur, visit www.zonnekeur.nl.

Greening *the* Greens

BIOLOGICAL NITROGEN FIXATION OFFERS SUSTAINABLE ALTERNATIVE FOR FACILITY LAWN CARE

BY DOUG KREMER

Facility managers face a constantly evolving set of challenges when it comes to growing, handling and maintaining turf grass. No matter the purpose of turf, be it a sports field, golf course or lawn, all organizations desire aesthetically pleasing and functional turf. Finding products that meet both environmental standards and counter repeated wear and tear is also a priority for facility managers.

Efficient and economical treatments that also yield non-weedy, dense turf can be tough to find. The market is saturated with products that over promise and under deliver, and FMs must consider the best maintenance for achieving preferred turf density, taking into account: correct mowing height for the particular grass species, weed control and especially proper fertilization. However, conditions can be unpredictable and FMs cannot assume that just relying on applied fertilizers will always

yield beautiful grass. In order to grow vigorous turf, facility managers need to consider other products and strategies.

Applied nitrogen and your turf

Nitrogen is a life-source for plants. It exists in many forms and its conversion among states or inclusion into compounds and subsequent breakdown products is called the nitrogen cycle. This cycle includes a journey through biological systems from microbes to plants and animals and back into the air. Finding a way to properly create and apply nitrogen has been a challenge which has led to the creation of many manufactured nitrogen fertilizers.

The fertilizers commonly used today are derived from the results of a chemical process called nitrogen fixation, which can be performed by animal manures, mined deposits, microorganisms and even lightning, that converts nitrogen gas to ammonium. However,

the use and impact of the man-made applied nitrogen fertilizers often results in leaching or volatilization.

Essentially, misusing these manufactured fertilizers can lead to the loss of water-soluble plant nutrients from the soil, which leads to many unwanted environmental impacts such as algae growth in ponds, nitrate contamination in water wells and hypoxic zones.

Nitrogen availability is a matter of matching turf grass needs with the soil's ability to meet those needs and the internal efficiency of turf grass to obtain and utilize nitrogen from the soil. The persistent nature and growth habits of most cultivated turf grasses, their fibrous root systems and the more intensive management of turf all contribute to the necessity of a specific process for managing applied nitrogen.

Biological nitrogen fixation

It is common that turf grass responds well to "spoon-feeding," or a slow release of nitrogen sources. By contrast, agricultural crops generally require a surge in nutrition in order to drive an increase in grain yield. This opens a window of opportunity for the use of biological nitrogen fixation (BNF) in turf applications because of the inherently slow-release nature of microbial BNF.

The integration of natural, microbially derived nitrogen into the management of turf grass is, therefore, a way to achieve strong turf performance while also minimizing negative environmental impacts. This is incredibly important in the turf industry, as the debate continues about the care of golf courses, sports fields and lawns and the unnecessary pollution that their maintenance can propagate.

Microbial products and BNF, by nature, do not have the same leaching and run-off impacts as manmade or mined materials. They do, however, still maintain the precision of other applied nitrogen fertilizers. Microbial inoculants, such as *Azospirillum*, serve as nitrogen "fixers." *Azospirillum* harvests nitrogen

from the air and soil and delivers it to the plant. The microbial inoculant acts to improve root structure year after year.

There has been great progress made in the quality and consistency of performance of microbial products. As more experience and additional products enter the market, the needs of the grower, the groundskeeper and the environment can all be met. The key is using nature with nature to promote a more sustainable approach.

Biological nitrogen fixation, almost by definition, is synonymous with sustainability. It is estimated that annually, nitrogen fixed through microbial processes represents two-thirds of the nitrogen fixed from the gaseous state by all processes. Plant systems capable of fixing their own nitrogen can essentially exploit their environment to provide a positive contribution to plant growth and yield. Since it requires a specific microbial process, though, BNF can only be achieved through the correct method.

In order to attain BNF, the correct microbes must be used to complete the process of converting atmospheric nitrogen into a plant-usable form. BNF can occur via many different microorganisms. Some of these microbes live inside of plants, some form structures within the plant, some attach to the plant, some live in the soil around plant roots and still others live in oceans and lakes. These classes of microorganisms have been characterized and studied for many years, but scientists have struggled to make them into useful and reliable products for the plant-growing and turf maintenance industries.

It has been a challenge in past years to grow and package these microbes in a fashion that keeps them alive prior to their application, but finding a solution has opened up many opportunities that were previously just speculation. The ability to keep select microbes alive in products that fit with facility managers' current practices has provided a chance for larger-scale adoption for commercial

application of microbial products, particularly the ones involved in BNF.

How to make microbes into useful economic products

Healthy soil relies on biological seed treatments like those using the microbial inoculant *Azospirillum*. At the most basic level, bacteria such as this impact plant growth by acting as a root stimulant and by converting nitrogen gas from the air into a form of nitrogen that can be used by the plant. However, BNF requires a precise methodology for determining the what, when and how of choosing the microbes involved.

The first step when considering the commercial use of a microorganism is determining the intended function. If the task desired is something that can be accomplished with a microbe, then the right microbe must be selected. Different microbes and functions are appropriate for varying environments. For example, when looking for a nitrogen-fixing microbe, a manufacturer must consider how the product performs regardless of the turf area's soil type, plant variety and geographical area.

Once the proper microbe is selected, it must be grown. This can be challenging, as not all microbes are amenable to growth in fermentation. The microbe must be kept at the right temperature and given the correct food source in order for its concentration in the final product to be effective and economical.

Next, the microbe must be prepared, which entails harvesting. Depending on the microbe, a concentration of the grown microbe must first be processed. In other situations, a spore will be more than adequate.

Lastly, the microbe must be stabilized, which is often a major piece of the trade secret application. Different microbes need to be in different stages of development or growth in order to be stable. Stability in this instance is measured by the ability to maintain viability of the packaged microbe and



IMAGE COURTESY OF TERRAMAX

Biological nitrogen fixation, almost by definition, is synonymous with sustainability.

retain package integrity. In other words, to keep the container from blowing up, the microbe must be put to sleep for transportation and then awakened upon delivery to the site of need.

Once all of these considerations have been fulfilled, the final microbial product will be ready for the commercial market and ready to help facility managers get the most out of their turf grass area. Ultimately, these types of microbial products will help managers get the best response per investment.

For fertility of turf grass, for example, BNF products will lessen

the expense of applied nitrogen fertilizer. The additional benefit of root stimulation provides a longer-lasting turf that stands up to repeated wear and tear. Furthermore, a vibrant root system aids a plant in recovery from the everyday onslaught of traffic, divots and drought.

Ultimately, turf managers must always be on the lookout for ways to best grow and maintain turf grass in a way that is economical, efficient and safe. Switching from man-made nitrogen fertilizers to microbial BNF products is a win-win. The natural process will help turf to be stronger and more beautiful, while still

keeping costs down and conserving the environment. **FMJ**



Doug Kremer, CEO at TerraMax, has 33 years of experience in various agricultural and horticultural businesses. His background in

research and development of cutting-edge technologies includes cell biology, genetic engineering and microbial formulation.

Kremer has developed previously patented technology for formulation of microbial technologies. In addition, he has been involved in all aspects of the technology business world from research scientist to founding his own business based on microbial inoculants.

IFMA AND SUSTAINABILITY: WHENCE, THENCE AND HENCE

This is the first in a new regular series on sustainability for FMJ. This initial installment has two parts:

- The annual sustainability report to IFMA's board covering the period from July 1, 2013 through June 30, 2014;
- A report on the new IFMA Environmental Stewardship and Sustainability Strategic Advisory Group's (ESS SAG)¹ initial thoughts concerning potential strategic and tactical initiatives for the 2014-2015 period to be developed into a proposal on the basis of input from the IFMA board and membership.

BY ERIC TEICHOLZ AND CHRIS HODGES

Part 1: Sustainability Annual Report: 2013-2014

Fiscal year 2013-14 saw the transformation of the IFMA Sustainability Committee to a strategic advisory group (SAG) formed around the core facility management competency of environmental stewardship and sustainability (ESS).

The primary responsibility of IFMA's Environmental Stewardship and Sustainability Strategic Advisory Group (ESS SAG) is to further the development of the ESS competency area by acting in an advisory capacity with respect to the policies and strategies pertaining to IFMA's performance as a sustainable organization, its development of an online ESS community and the development of ESS as a core

competency inherent to the already established Sustainability Facility Professional® (SFP®) credential.

Working with staff, the ESS SAG has been driving the development of the community model for IFMA around the theme of sustainability.

In helping to form a new ESS community, the SAG will continue the work of the former sustainability committee by focusing on three areas: knowledge management, communications and measurement, monitoring and reporting on science.

The ESS area of IFMA's newly relaunched online community portal is now the focal point of knowledge management in sustainability. The focus of the SAG's communications

efforts thus far has been collaboration with IFMA chapter sustainability liaisons and Sustainability Facility Professional credential champions at the local/regional level to promote validity of the SFP.

One of the most significant accomplishments in the area of measurement, monitoring and reporting was the development of the draft 2013 Global Reporting Initiative (GRI) report.

The draft report chronicles IFMA's commitment to the theme of sustainability and highlights some of the association's most significant sustainability achievements: measurement of the carbon footprint of IFMA's conferences; continuation of the sustainable exhibitor scorecard

program; expansion of the number of SFP credential holders; conducting conferences, expositions and webinars covering a range of sustainability topics; reinforcement of the energy reduction challenge; and documenting the move of IFMA's headquarters to its new, more sustainable Service Center of Excellence facility which enhances a healthy work environment for staff and serves as an example of IFMA's commitment to sustainable facility management.

Part 2: Initial thoughts for sustainability initiatives: 2014-2015

Strategic

The ESS SAG will work to update IFMA's sustainability strategic plan, articulating where IFMA is headed, what actions are required to meet specific sustainability goals and what benchmark metrics are needed to measure success.

Such a plan will enable the SAG to propose priorities for the organization's tactical initiatives focusing on available resources and undertaking to ensure that members, staff and other stakeholders can work toward common energy and sustainability goals as well as desired outcomes in the context of an evolving built environment.

Further updates on the plan will be included in the next version of the Global Reporting Initiative.²

Tactical

There are several existing (initiatives 1-3 below) and potential new (initiatives 4-6 below) SAG activities under consideration.

Once the sustainability strategic plan is completed and feedback from the board and IFMA members has been received, the initiatives described below will be reviewed and prioritized.

1. HOW-TO GUIDES

The How-to Guides are peer-reviewed reports designed to

provide data associated with a wide range of subjects related to sustainability and energy. The guides contain information related to implementation, cost-benefit analyses, case studies and sources of additional information. There are currently 14 guides available free of charge at www.ifma.org/sustainability.

The SAG goals related to the guides include:

- Updating outdated guides;
- Generating new guides;
- Upgrading the reviewer database;
- Making the guides more global in terms of content;
- Creating videos and webinars of the subject matter covered in the guides; and
- Expanding the coverage of references to third-party sources of relevant data.

2. ENERGY STAR®

ENERGY STAR is a program created by the U.S. Environmental Protection Agency to report on, among other things, energy use by buildings. The ENERGY STAR Portfolio Manager is an online software tool used to measure and track energy, water consumption and greenhouse gas emissions.

IFMA has supported this standard for a number of years in order to benchmark the performance of a single building or an entire facility portfolio. Data on more than 4,000 buildings managed by our members has been collected thus far.

Initially the SAG would like to:

- Expand the number of buildings that share ENERGY STAR data with members. Several cities (e.g., Chicago, New York, Philadelphia, San Francisco and Seattle) mandate the use of ENERGY STAR, which means IFMA

has many members who are reporting on their buildings in order to comply with local mandates but are not thus far sharing this data with the association;

- Generate and distribute reports about the data it has collected;
- Incorporate ENERGY STAR data with IFMA's existing benchmarking reports;
- Conduct research related to other global energy reporting standards used; and
- Determine how best to normalize data from non-ENERGY STAR standards so that IFMA can report on best practices and energy usage across these other global reporting standards.

3. SUSTAINABILITY FACILITY PROFESSIONAL (SFP) SUPPORT

There are currently more than 500 individuals who have earned IFMA's Sustainability Facility Professional knowledge-based credential. Individual SAG members have been involved in the creation and teaching of this certification.

The SAG's credentialing objectives include:

- Explore how it might expand its role related to the credential by increasing support for existing IFMA activities as well as creating new opportunities for promoting and keeping this credential current. A communications plan is being developed to bolster these efforts; and
- Determine how the SAG can help promote the Certified Facility Manager® (CFM®) competency-based certification which includes an environmental stewardship and sustainability component.

4. EMISSIONS

Commercial and residential buildings account for more than 39 percent of total U.S. energy consumption and 38 percent of U.S. CO₂ emissions. Greenhouse gas emissions from energy use in buildings consist of direct emissions from the on-site combustion of fuels for heating as well as the end use of electricity used to heat, cool and provide power to buildings. Buildings are responsible for almost 75 percent of electricity utilization in the U.S.

The SAG plans to:

- Explore how to educate our members about the best ways to reduce emissions; and
- Develop a business case for using low- or zero-emission energy supply technologies and other efficiency, conservation and demand reduction mechanisms.

5. BIG DATA AND URBAN ANALYTICS

Cities are collecting vast amounts of data to turn themselves into smart cities.³ The data is derived from traditionally structured public sources (e.g., the government), private sources (e.g., corporate or third-party databases) and, increasingly, from sensors and social media. Much of this data is being used to make cities more energy-aware, efficient and sustainable. Urban stakeholders are using big data associated with smart meters, smart grids and smart water, waste and electricity infrastructures for applications such as asset management planning and building energy optimization.

The SAG is interested in:

- Better understanding how IFMA should engage with city stakeholders, utilities and service providers about this issue; and
- Conducting research about

other organizations that are already working with urban building owners and managers on sustainability and energy projects that involve big data.

6. NET-ZERO-ENERGY INITIATIVE

Net-zero buildings, as defined by U.S. Executive Order 13514, are those buildings “designed, constructed and operated to require a greatly reduced quantity of energy to operate; meet the balance of energy needs from sources of energy that do not produce greenhouse gases and therefore result in no net emissions of greenhouse gases; and to be economically viable.”

The U.S. Energy Independence and Security Act of 2007 requires compliance with net-zero energy/emissions to existing commercial buildings with a 2050 deadline for 100 percent compliance.

The goals of this SAG initiative will be to:

- Understand the implications of this act for facility managers;
- Determine best practices for realizing the goals of net-zero energy; and
- Educate IFMA members as to how best to realize net-zero energy goals.

Conclusion

Sustainability is considered a theme within IFMA. A theme is a topical issue that runs through all aspects of an organization’s activities.

This article outlines just some of the areas in which the ESS SAG hopes to become engaged. The feedback and guidance we receive from the board and from IFMA members will ensure that our endeavors remain current, relevant and applicable to all aspects of IFMA’s activities and the priorities and concerns of both its leadership and its members. **FMJ**

NOTES

1. Current SAG members: Lynn Baez, CFM, SFP, FMP (IFMA board of directors); Bill Conley, IFMA Fellow, CFM, SFP, FMP, LEED AP (new member); Chris Hodges, IFMA Fellow, P.E., CFM, FRICS; Christopher Laughman, CFM, SFP, LEED AP O+M; Sheila Sheridan, IFMA Fellow, RCFM, LEED AP O+M (new member); Eric Teicholz, IFMA Fellow (SAG chair); and Kit Tuveson, IFMA Fellow, CFM, SFP.
2. A draft of the 2013 GRI report is available on the ESS community portal.
3. There is semantic confusion as to the definition of smart cities. Sarwant Singh, a contributor to Forbes (June 19, 2014) identified eight key aspects that define a smart city: smart governance, smart energy, smart building, smart mobility, smart infrastructure, smart technology, smart health care and smart citizens.



Eric Teicholz, IFMA Fellow is president of Graphic Systems, Inc., an FM technology consulting company. Within IFMA, he chairs the Environmental

Stewardship and Sustainability Strategic Advisory Group, is a member of various committees and task forces and is a former member of IFMA’s board of directors. He can be reached at teicholz@graphicsystems.biz.



Chris Hodges, IFMA Fellow, P.E., CFM, FRICS is a founding principal of Facility Engineering Associates with more than 30 years of experience in engineering

and facility management. Hodges is an active member of IFMA, having served as president of his local chapter, a certified instructor, an author and presenter, and on IFMA’s board of directors.

VENDOR PROFILES

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



Companies in **BOLD ITALIC** are IFMA Corporate Sustaining Partners.

BUILDING MAINTENANCE/SUPPLIES

Lowe's Companies, Inc.

Lowe's Commercial Services is your best partner in business with over 1,700 stores and more than one million items available for all your facility management needs.

www.lowesforpros.com | +1-336-232-4801

CARPET/FLOORING/TEXTILES/FLOOR COVERING

Forbo Flooring

Creating better environments...this statement reflects the mission and values for Forbo Flooring. From the indoor environment to the natural environment, Forbo's products and services combine design and functionality in world-class flooring solutions.

www.forboflooringna.com/marmoleum | +1-800-842-7839

INVISTA/Antron Carpet Fiber

Antron® fiber is a high-performance ingredient that can help carpet look newer longer. The Antron brand is part of INVISTA. Customers use Antron fiber to help make their carpet reach its fullest performance and aesthetic potential. Carpets made of Antron start beautiful and stay newer looking longer. Customers have an opportunity to replace their carpet when they want to; not because they have to. All Antron fiber is constructed with type 6,6 nylon and EPP certified by SCS Global Services based on life cycle analysis. For more information, call +1-877-5ANTRON or visit antron.net and [YouTube.com/AntronBrand](https://www.youtube.com/AntronBrand).

www.antron.net/carpetsearch | +1-770-420-7700

EDUCATIONAL SEMINARS/WORKSHOPS

National Fire Protection Association

The mission of the international nonprofit NFPA, established in 1896, is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus standards, research, training and education. The world's leading advocate of fire prevention and an authoritative source on public safety, NFPA develops, publishes and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks.

www.nfpa.org/freeonlinecourse | +1-888-344-3555

FM CONSULTANTS/SERVICES/PROVIDERS



ARAMARK

Innovation is what Aramark brings to the everyday to deliver comprehensive facilities management. United by a passion to serve, more than 270,000 employees make a meaningful difference each day for millions of people in 22 countries around the world. It's a quest for excellence that involves people with a strong sense of pride and passion in their work. This quest is simple in intent; complex in execution. It's all about continuously finding the perfect balance of doing things incredibly well over and over again to deliver experiences that enrich and nourish people's lives.

www.aramarkfacilities.com | +1-800-901-7373

Sodexo

Sodexo increases our client's competitiveness by delivering innovative workplace solutions that improve the building environment, employee engagement and enhance workplace and organizational effectiveness; ultimately delivering shareholder value.

www.sodexousa.com | +1-888-SODEX07

URS Corporation

URS Corporation is a fully integrated engineering, construction and technical services organization with the capabilities to support every stage of the project life cycle.

www.urs.com | +1-877-278-3127

FM SERVICES



ABM

Building Value with a Leader in Integrated Facilities Solutions

Do you seek — more than ever — to lower your facility's operating costs, increase efficiency and improve performance? ABM works with you to reduce expenses while keeping your property safe, clean, comfortable and energy efficient through stand-alone or integrated facility solutions.

www.abm.com | +1-800-874-0780

FM SOFTWARE

ARCHIBUS, Inc.

ARCHIBUS is the #1 global provider of real estate, infrastructure and facilities management solutions and services. With more than 30 years of continuous innovation, our industry-leading enterprise software delivers savings. Organizations of all sizes benefit from rapid deployment, improved business processes, lower life cycle costs, increased productivity and reduced TCO.

www.archibus.com | +1-617-227-2508

Eagle Technology, Inc.

Eagle Technology provides innovative facilities maintenance management software to more than 3,000 users worldwide. Eagle prides itself on its flexible software solutions, excellent technical support and software customization options. Software integrates seamlessly with popular building automation systems to increase building intelligence.

www.eaglecmms.com | +1-800-388-3268

FM:Systems, Inc.

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

www.fmsystems.com | +1-800-648-8030



iOffice

iOffice's facility management software technology works proactively to reduce and eliminate information roadblocks and daily problems that occur in FM. Our FM system is tailored to meet the unique office needs of our more than 1,800 clients, 20 percent of whom are among the Fortune 1,000.

www.iofficecorp.com | +1-713-526-1029

HAND DRYERS**Dyson**

Dyson has more than 1,500 scientists and engineers developing new technology globally. Dyson Airblade™ hand dryers are the fastest, most hygienic way to dry hands. No other hand dryer has the Dyson digital motor V4, HEPA filtration and Airblade™ technology. Engineered for different restroom environments: Dyson Airblade dB is 50 percent quieter than the original, Dyson Airblade V hand dryer is 60 percent smaller, and Dyson Airblade Tap hand dryer washes and dries hands at the sink.

www.dysonairblade.com | +1-855-720-6378

HVAC/INDOOR ENVIRONMENTAL QUALITY SOLUTIONS**AHR Expo – The World’s Largest HVACR Marketplace**

The AHR Expo brings together more than 2,000 exhibiting companies and 40,000 visitors, representing the entire spectrum of the industry including: engineers, facility managers, contractors, distributors, HVACR manufacturers and other OEMs, and other professionals. In addition, you’ll find more than 100 educational seminars, workshops (presented by ASHRAE and others) and new product presentations. If you’re looking to keep up with the latest energy-saving technology and trends, get face to face with the experts, and stay connected — then the AHR Expo is designed for you.

www.ahrexpo.com | +1-203-221-9232

Temp-Air

TEMP-AIR is the leading provider of temporary heating, cooling, dehumidifying and air filtration rental services — ideal for any industrial, commercial, institutional or construction needs.

www.temp-air.com | +1-800-836-7432

JANITORIAL PRODUCTS/SERVICES**Rubbermaid Commercial Products**

Rubbermaid Commercial Products, headquartered in Winchester, Virginia, is a manufacturer of innovative, solution-based products for commercial and institutional markets worldwide. Since 1968, RCP has pioneered technologies and system solutions in the categories of food services, sanitary maintenance, waste handling, material transport, away-from-home washroom and safety products. RCP, an ISO 9001:2000 manufacturer, is part of Newell Rubbermaid’s global portfolio of brands and continues to develop innovative products.

www.rubbermaidcommercial.com | +1-540-667-8700

Veritiv

Veritiv is a North American leader in business-to-business distribution of print, packaging and facility solutions. Helping shape success for your business drives everything we do. Our name is based on this commitment and on the core strengths of our business. Derived from verity, it says we’re true to our word, our beliefs and your needs. The words connective and active in our name signify that we collaborate with you to create solutions that work hard for your business.

www.veritivcorp.com

LIGHTING**Cree Lighting**

Cree is the leading fully integrated innovator of LED chips, components and complete lighting systems, providing energy- and cost-efficient LED lighting solutions with longer-lasting aesthetics and performance. With more than 25 years of experience, Cree offers an extensive collection of innovative indoor and outdoor LED lighting solutions to match any application.

www.cree.com/lighting

Graybar

Graybar is a leading nationwide distributor of electrical, communications, data networking and security products. Our Graybar PowerSmart® program helps facility managers identify, design and implement energy-efficient and intelligent building solutions. We can help you plan and install a building system, including lighting, communications, HVAC and security, that saves money and is easy to manage and maintain. Find out more at graybar.com/powersmart.

www.graybar.com | +1-800-472-9227

PEST CONTROL**No Fly Zone, Inc.**

The No Fly Zone, Inc. (“NFZ”) staff has been providing bird exclusion, bird control and/or bird deterrent services for more than 20 years. As a company, we differ from many of our competitors because we use the best quality products and employ the finest technical planners and installers to develop and install every bird exclusion, bird control and/or bird deterrent system. Moreover, all of our bird control specialists are fully trained in all phases of bird control, with our emphasis on quality and safety.

www.noflyzoneinc.com | +1-866-NOFLY-99

Orkin Commercial Services

Orkin's Precision Protection™ programs are tailored to fit your business. We start with a comprehensive inspection and deliver scientifically based pest management solutions to meet your exact needs.

orkincommercial.com | +1-800-ORKIN NOW

Thermal Remediation

Thermal Remediation® offers insect heat treatment equipment, application training and proven solutions for the battle against bed bugs and stored product pests.

www.thermalremediation.com | +1-800-836-7432

ROOFING

Roof Monitor

Roof Monitor™ is a technology-based system designed to monitor live loads of water and snow on the roofs of low-sloped buildings and to inform businesses of potential risk. Take the guesswork out of knowing when to take action.

www.roofmonitor.com | +1-844-492-7646

Sika Sarnafil, Inc.

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

usa.sarnafil.sika.com | +1-800-576-2358

SECURITY

TownSteel, Inc.

TownSteel is a manufacturer of high quality commercial grade builder's hardware, including locks, door closers, exit devices, hinges and general hardware.

www.townsteel.com | +1-877-858-0888

TECHNOLOGY SOFTWARE TOOLS

Bluebeam Software, Inc.

Bluebeam Software makes smart, simple solutions for paperless workflows that leverage the PDF format. Visit Bluebeam.com for further information.

www.bluebeam.com | +1-626-788-4203

GISi indoors

Geographic Information Services, Inc. (GISi) Indoors is an award-winning location-based technology and professional services firm headquartered in Birmingham, Alabama, with offices throughout the United States. Since 1991 our team of GIS professionals has been using geographic information systems and products to solve staffing, technology and business needs in markets ranging from federal, state and local governments to some of the largest public and privately held companies in the world.

<http://point.gisinc.com>

The Blue Book Building & Construction Network

Find, Qualify and Connect to Companies with ProView

Find the companies you need for your next project or maintenance contract fast. The all-new ProView provides fast, direct answers to all of your qualification questions! With ProView, you have complete company/project information right at your fingertips. ProView summarizes what a company does, who they've done it for and how well they've done it. Search now and get connected to the allnew ProView and the information you need now!

www.fmanswers.com | +1-855-805-2560

