Facility Managing to Zero
AGU’s headquarters building is striving to be the first net zero energy commercial renovation in the District of Columbia

By Cristine Gibney, Net Zero Building Operations Specialist, American Geophysical Union

Capital Chapter of IFMA member and AGU’s Net Zero Building Operations Manager, Matthew Boyd, manages a building with a mission. AGU is a global community of 60,000 earth and space scientists residing in 135 countries. In 2013, when the mechanical systems of this owner-operated property began to fail, the AGU Board of Directors explored three options: 1. Moving; 2. Razing the building for new construction; and the selected approach 3. Renovating the existing building. There is more to this project than just renovation, which is highlighted in the AGU building’s mission to “Serve as a beacon for progress in achieving sustainability and embracing learning and collaboration.”

This mission led to a bold proposal: striving to be the first net zero energy commercial renovation in Washington, D.C. As of May 2019, the New Buildings Institute (NBI) database lists a total of 108 zero energy-verified buildings in the U.S. In 2016, AGU took the first steps to join this group and is currently listed as a zero energy emerging project.

The design team knew the combination of climate (ASHRAE Climate Zone 4A) and compact urban footprint made AGU’s aspirations exceptionally challenging. This led to focusing on four key engineering strategies—generation, reduction, reclamation, and absorption—which is different than most net zero energy projects. Those projects typically determine the program first and then plan to generate the power needed to meet the building’s requirement.

AGU’s building team explored more than 50 strategies aligned with the goals and implemented 24. The primary generation strategy involves installing more than 700 photovoltaic (PV) panels that are designed to power this 62,000 square foot multi-use building.

Whose Hat is it Anyway?
The Importance of Ergonomics in the Workplace

By Zack Koutsandreas, Ergoworks Consulting

Today, more than ever, the role of the Facility Manager in an organization continues to grow in responsibility. IFMA lists 11 core competencies for the Facility Manager (FM) to strive for in the professional world. Who knew you would need skills in Finance/Business, Technology, Leadership and Human Factors? Wait, did you just say Human Factors? YES, I did. To read the skill set desired in the section on Human Factors, one can easily be intimidated. Some of it reads as if it were written straight out of the 1910 CFR-OSHA Rule Book!
From the President

It’s a brand-new year for myself and our new CCIFMA Board. I feel very blessed to be with you a second year as the President of the Capital Chapter. I am also very excited with our new Board, which is comprised with a good mix of new faces, along with some returning Board Members (some from several years past). Our planning for the upcoming year has been ongoing for the past couple of months and it thrills me to hear some of the things we’ll be bringing to provide you with an amazing membership experience. We’ve rallied around an aspirational message that will keep us focused on not only being a resource for facilities management knowledge and relationship building, but help impact and inspire more effective facilities solutions amongst our membership. At the recent Annual Meeting we shared accomplishments from last year, while providing a teaser of what lies ahead.

A new year also means a fresh new look! We rolled out a new website (along with new logo and branding) which we will continue to work on to provide valuable substance, including some members only content. The website contains a blog which you can comment on, registering made easy when logged into the website (you should have received an email regarding login in July), and information on volunteer opportunities to get involved in the chapter! I hope you’ll take some time to look through the website and provide us with your feedback.

Being part of IFMA and the chapter’s leadership, is an opportunity to help shape our profession. And be it that we are in the DC Metro area we have a unique opportunity to help shape the future of legislation as it pertains to facility management. Each year, IFMA organizes Advocacy Day, a two-day event at the Hill to help Facility Managers talk with their representatives and senators about what matters to us. Representatives from other chapters make their way to DC to represent their states. We can show in numbers to drive that message home not just to our DC, VA, and MD representatives, but also help with numbers with other groups. Some of the issues we are focusing on include the disposal of excess property, education on total cost of ownership, workforce training, and lease reform/green leasing, to name a few. If you have not had the opportunity to attend Advocacy Day, I ask that you consider at least attending Wednesday morning for the group photo and the public policy forum. So, save the date for September 17th and 18th and stay tuned for registration information. Hope to see you at Capitol Hill!

Another great opportunity for networking and learning about the latest and greatest in facility management is IFMA’s annual premier conference, World Workplace. If you’ve never attended one, I strongly encourage you to do so. This year I will be attending for the first time. Well, let me explain. I have been at World Workplace for many years. Often teaching, presenting, or working a booth (sometimes, all of the above). Never truly “attending.” This year I am looking forward to taking advantage of all the conference has to offer. From workshops, to presentations, to networking events I will be there to fill my FM Knowledge Cup. Won’t you come and fill yours up with me too? This year, the conference will be held in Phoenix, AZ, a place that our past Vice President of Membership, Jim Stevens, now calls home. We can’t wait to say hello to him and other CCIFMA alums. That’s right, it is at World Workplace that we also get to connect with past CCIFMA members who have moved away, but still consider our chapter their family. It is one of the things I love most about this chapter. The warmth of our members, their welcoming vibe, and that overall family feeling. Now, while you may run into our CCIFMA alums in the many educational sessions and the expo floor, the best place to connect with them and other chapter members is at our own Happy Hour event to be held on October 16th. If you are planning on attending World Workplace, make sure you add this to your calendar! Registration to attend is up on our website.

Hope to get to meet you at one of our events this year. Better yet, hope to see you volunteering in one of our committees so you can truly get the most out of your membership. To learn more about volunteering, visit our website. Stay tuned for a special recruiting event happening later this year!

Here’s to a great new year,

Mayra Portalatin, SFP
President Capital Chapter of IFMA 2018-2019
Committee Member Spotlight

Julia Craighill, President, Ensight Consulting

By Dorothy Scholnick, CADD Microsystems

Julia Craighill is President of her own company, Ensight Consulting, which focuses on sustainable operations for businesses and buildings. While much of the green building world is captivated by new construction, Ensight Consulting is motivated to improve the environmental impacts of the often-overlooked existing building sector.

Julia started her career as a Registered Architect and then moved on to Commercial Construction Management, where she became aware of the negative impacts of construction activities on the environment. From then on, she has been involved in green buildings and sustainability. Always a leader, she was one of the first people to become LEED accredited in Maryland and not long after, created the position Director of Green Building for a construction and development firm. She then moved on to building performance consulting before starting her own company in 2014.

For Julia, sustainable building and business operations address the biggest need that gets the least attention. As she explained, "New construction is shiny and exciting, but we cannot build our way out of our problems. There are many more existing buildings than new buildings built. Why not get the biggest bang for the buck by improving 80% of the building stock by 20% rather than improving 20% of the stock by 80%?" With this approach, you can utilize operating funds to improve building sustainability rather than relying only on capital funds to make a substantial impact.

How did you get involved with CCIFMA?

In 2016, I co-chaired USGBC-NCRs Existing Buildings’ Task Force, the first concerted effort by the chapter to create programming for that sector. Of all the associations that we contacted, CCIFMA was the most receptive to collaboration. So, I joined CCIFMA to learn more about facility management and explore opportunities to create more sustainable workplaces.

What is your current role within the Committee? What are your goals for this year?

Right after joining CCIFMA, I signed up for the Professional Development committee. Now I enjoy continuing to work with USGBC to

Continued on page 4

TECHNOLOGY CORNER

Not So Hot in the City

Integrated Rooftop Technologies to Improve Building Performance and Mitigate Urban Heat Islands

By Stephen Meador, CEM, LEED AP O+M

Unless you’ve limited your summer reading to beach novels, it’s been hard to escape the stories of heat waves across Asia and Europe that have shattered temperature records and killed tens of thousands of people over the past 15+ years. Europe is again surpassing records this summer, while parts of the U.S. have also experienced record-breaking heat waves, most notably Alaska. Although the U.S. has not experienced the heat mortality of other continents, scientists say extreme heat is still the biggest weather-related killer in the nation, averaging more than 600 deaths per year and making it historically deadlier than all other extreme weather events combined. Because temperatures are climbing globally, the threat will only get worse. Climate scientists expect heat waves to increase in frequency, intensity, duration, and lethality. A 2016 study of over 200 U.S. cities by the U.S. Global Change Research Program projected an increase of about 2,000-10,000 premature heat-related deaths annually by the end of the century, although future adaptations will likely reduce these impacts.

Cities are particularly susceptible to heat waves due to something called the heat island effect, where urban areas become significantly hotter than their rural surroundings due to scarcity of vegetation and an excess of building materials like concrete, brick, and steel that gain solar heat throughout the day and then radiate this absorbed energy to the surroundings. These urban heat islands (UHI) can be worsened by man-made heat sources like vehicles and HVAC equipment. According to a 2014 study by Climate Central, of the 60 largest cities in the U.S., Washington D.C. had the sixth most intense summer UHI during the daytime, averaging nearly 5°F hotter than surrounding areas. With a difference of more than 7°F, the city performed even worse at night, which is particularly concerning

Continued on page 12
IFMA’s World Workplace 2019 Conference and Expo

Take Your Facility and Your Career to New Heights at IFMA’s flagship annual conference and expo. World Workplace facilitates idea-sharing and knowledge-exchange between all professionals who support the work environment. Collaboration between all members of our community is key to our profession’s rise as a career of choice. We have many resources at our fingertips, but in today’s digital world, a swipe of the finger can’t replace the handshake of a colleague.

**Dates:** October 16 – 18, 2019  |  **Location:** Phoenix Convention Center  |  **Address:** 100 N 3rd St, Phoenix, AZ 85004

Capital Chapter Happy Hour At World Workplace

Take time out from IFMA’s 2019 World Workplace to connect with colleagues. Join fellow Capital Chapter members for cocktails, food and camaraderie!

**Date:** October 16, 2019  |  **Time:** 5:00 PM - 7:00 PM  |  **Location:** The Park  |  **Address:** 3 S. 2nd St., Phoenix, AZ 85004

Sponsored by:

- [Able](#)
- [HITT](#)
- [Kimball](#)

New Member Spotlight  *Continued from page 3*

provide programs of mutual interest to both organizations. For example, the Resilience at the Wharf program was a collaboration between CCIFMA and USGBC-NCR. During the program, both architects and property managers were present to discuss challenges faced during the design phase as well as after the building was occupied. It’s becoming increasingly important for design and management to talk and learn from each other’s perspectives. For this year, I look forward to working with USGBC and CCIFMA to help educate others on the new building energy requirements under the DC Building Energy Performance Standard (BEPS).

**What is your favorite part of working with the Committee?**

It’s a great group of people! Many are longtime members who are very knowledgeable about FM and have great perspectives on where the profession and professionals need.

**What advice would you give to others who are interested in getting more involved?**

My advice is the same for any membership organization – join a committee. No matter what you do or your level of experience, you can benefit from being on a committee. For younger members, it’s an excellent opportunity to get mentored or step-up to a leadership role. For those farther along, it’s a great way to give back and work on those things that really interest you.

**What do you like to do in your free time?**

Free time? No, just kidding. I enjoy yoga and TRX classes, walking my dog (when she’s cooperative), and hiking with my now grown-up kids (when they will wait-up for me).
Golfers Brought Their “A” Game to the Annual Golf Outing

Fellow CCIFMA members and friends had a great time at the Annual Golf Outing, held May 20th at the International Country Club in Fairfax, VA. The event was an opportunity for members to connect with one another and have fun while raising money for a great cause. Through raffle and mulligan sales, the event raised $2,670 plus a $330 donation from our 50/50 raffle winner that was donated to So Other Might Eat (SOME).

New this year, the chapter added a corn hole tournament, providing another opportunity for the non-golfers to get involved. There was no ‘cornfusion’ the teams had great fun with this new addition to the outing.

Winners of the tournament:

**GOLF**

**1st Place:** Christopher Andrews, Lance Miles, Cody Reiter, Bobby Blabolil
*Atlantic Corporate Interiors, Teknion, JK Moving, Gensler*

**2nd Place:** Karl Warner, Matt Potocko, Ron Joswick, Joe White
*Spacesavers Interiors*

**3rd Place:** Mitch Bono, Sean Welch, Matt Buchanan, Calvin Trivers
*Corporate Care, APTA, AIR, Hilldrup*

**CONTESTS**

**Men’s Long Drive:** Issac Bucher, *Siemens*

**Women’s Long Drive:** Sue Hedges, *Eaglemat*

**Closest to the Pin:** Christopher Andrews, *Atlantic Corporate Interiors*

**Putting Contest:** Andrew Fentress

**Corn Hole Tournament:** Kelly Whitfield, *Avitecture* and Collin Schwarz, *Star-Centric Telecom*

We thank our sponsors for another wonderful outing and hope to see you all next year!
On Wednesday, June 12th, Capital One opened the doors of its newest building and treated attendees to a behind-the-scenes tour hosted by Erin Mical, Senior Director of Workplace Solutions, and Jon Griffith, Senior Manager.

Erin presented a wonderful overview of the planning and design of the campus and provided insights into lessons learned from each phase of this on-going, extensive development in McLean, VA. Jon shared his experiences as a hands-on manager overseeing construction and commissioning. Both then answered questions from the large crowd before leading multiple groups on detailed tours of the building and its many amenities.

From the indoor-outdoor staff café and lounge to the conference center to perimeter, all-glass work areas and the 360-degree penthouse catwalk view of the Northern Virginia skyline, every space draws the user into a relationship with the building and the broader community outside.

Continued on page 7
Tour of CapitalOne  Continued from page 6

So many of the project’s aspects are inspiring and everyone was frankly envious of those who call M2 home. When asked what were the most memorable aspects of this Capital Chapter program, attendees indicated:

- The Community-focused spaces that include retail (a Wegman’s is coming) and a world-class performing arts center;
- How many varieties and types of space were created for meeting and collaboration;
- A multi-use space strategy offering many areas with multiple potential uses;
- Extensive amenities that reflect a clear focus on attraction and retention of staff;
- The minimalist or less-is-more furnishings approach; and
- Relatively large transition areas and open sightlines to outside that create a wonderful sense of openness that is both calming, relaxing, and welcoming.

To say the space is inspiring and impactful is an understatement; the pictures cannot do the space justice and underscores the intense value of face-to-face interactions with those responsible for all aspects of a project. With over 60 attending, many expected no less and CapOne certainly did not disappoint.

Control Costs and Increase Efficiency with Our Turn Key Approach

- Office, Warehouse, and Industrial Relocations
- Project Management Services
- Space Planning
- Modular Furniture Installation/Restoration
- IT Disconnect/Reconnect Services
- Paper and Data Shredding
- Excess Asset Recycling/Reuse
- Secure and Climate Controlled Storage
- Archiving/Records Management

Plan the performance of a lifetime.
Siemens service experts can help you achieve optimal results for the life of your facility.

Siemens Industry, Inc.
6435 Virginia Manor Rd.
Beltville, MD 20705
Tel. (301) 419-2600

www.usa.siemens.com/buildingtechnologies
Facility Managing to Zero  Continued from page 1

building. PV is just the start of the technology in this building, which also incorporates electrochromic windows, direct current power to lights and workstations, radiant cooling, a hydropic phytoremediation—or green—wall, and perhaps AGU’s most popular building technology, a municipal sewer heat exchange system. Yes, AGU has tapped into the sewer dating from the late nineteenth century to heat and cool the building.

AGU found a strong partner in the District of Columbia. Mayor Muriel Bowser selected AGU’s headquarters as the backdrop for the signing of the Clean Energy DC Omnibus Amendment Act of 2018. Also, in recognition of AGU’s commitment to sustainability through its net zero energy headquarters renovation, the Washington, DC Department of Energy and Environment awarded AGU the first-ever Clean Energy DC Award in April.

This quest for progress, sustainability, learning, and collaboration is now in the final stages of construction and commissioning. The staff has moved into their beautiful workspaces and the conference center has a steady stream of organizations enjoying this state-of-the-art facility valuing sustainability. AGU also offers net zero energy tours. The building itself is a living laboratory and upon completion of commissioning, there will be a treasure of building data shared online where observers can track our energy, water and even recirculated air use.

Two critical members of AGU’s building team are AGU Executive Director/CEO Chris McEntee, as well as Matthew Boyd. Their involvement since the design phase of the renovation, along with AGU’s leadership and vision, has set the organization up for success.

A colleague from the National Renewable Energy Laboratory (NREL) recently referred to Matthew as “the first net zero Facility Manager” Of course, this seemed like a story that would interest the Capital Chapter of IFMA. Below is my conversation with Matthew about managing a net zero energy facility from design to operations.

CG: How did you start preparing for running a net zero energy facility?

MB: The first thing I had to figure out was: What is a net zero facility? It turns out that it isn’t as simple as it might seem since there is not a single definition of net zero. Several programs include more than just energy. If you look at everything that we’ve done with our project, most of our activity has been aligned with the intent of the programs. As our building mission states, we are really interested in stewardship, collaboration, and education. The NBI standards are simple and focus on energy so it is an easy way to communicate our intent by saying net zero energy. We did the renovation because, organizationally, we understood the environmental impact of limiting waste and preserving resources like energy and water. Sometimes we don’t get rating system credit for some of these efforts, but our project is not about chasing points, it is about being good to humanity and the earth. As an example, in addition to retaining the shell of our building, we went to great lengths to save furniture, large decorative installations like our compass rose, and even carefully removed 5,000 bricks for reinstallation. An exciting and notable feature is AGU’s terrazzo flooring, which is made from the old toilets, sinks, and windows removed during demolition. We are striving for net zero energy and a whole lot more.

CG: What is the key role of a net zero facility manager?

MB: The net zero facility manager bridges the gap between design intent and actual operation. I was fortunate to bring the knowledge of years of experience as a building engineer and facility manager to the design of the building to inform decisions early in the project. When we added the new technology, I knew I needed to learn and to help others develop expertise. One of the things I did during design and construction was to put every designer and installer I could in front of the camera to talk about the specific technology of each component. As we work in the building over the next several years, we will have that human component to guide us as we work with each subsystem. Too often this knowledge is lost and the videos are my attempt to bridge that gap between design intent and operations.

The Capital Chapter of IFMA toured AGU on July 23, 2019. If you missed the tour, you can stop by AGU for a public tour on Mondays from noon until 3:00pm and Wednesdays from 11:00am until 1:00pm. Private tours can be scheduled by contacting netzerotours@agu.org.

CG: What is the key role of a net zero facility manager?

MB: The net zero facility manager bridges the gap between design intent and actual operation. I was fortunate to bring the knowledge of years of experience as a building engineer and facility manager to the design of the building to inform decisions early in the project. When we added the new technology, I knew I needed to learn and to help others develop expertise. One of the things I did during design and construction was to put every designer and installer I could in front of the camera to talk about the specific technology of each component. As we work in the building over the next several years, we will have that human component to guide us as we work with each subsystem. Too often this knowledge is lost and the videos are my attempt to bridge that gap between design intent and operations.

The Capital Chapter of IFMA toured AGU on July 23, 2019. If you missed the tour, you can stop by AGU for a public tour on Mondays from noon until 3:00pm and Wednesdays from 11:00am until 1:00pm. Private tours can be scheduled by contacting netzerotours@agu.org.

CG: What other organizations helped you understand net zero requirements and prepare for operations?

MB: I was fortunate to spend three weeks at the National Renewable Energy Lab (NREL) in Colorado. There, I saw how a net zero facility operates and learned from experts about trends and challenges on most net zero projects. One of these key lessons was looking at what others have done successfully to determine how to apply it to our staff and our building.

I also went to Seattle where I visited the Bullitt Center and other net zero energy buildings. It was very helpful to see other buildings in operation, especially so early in our project.

CG: What were your key takeaways from that experience?

MB: There are some practices that are important in all buildings that become even more important when you have an energy goal. Of these lessons—probably the biggest one—is understanding your plug loads. There has been a lot of progress with Building Automation Systems, especially when you zone the building and use sensors and meters for systems like lighting and air conditioning. Plug loads, on the other hand, are much more difficult to zone and monitor.

I also learned that some of the most cutting-edge technology requires special attention because it is new. This new technology is not something that everyone will know how to operate and interact with, from the maintenance and cleaning crews to the employees experiencing new technology.

That leads to another main lesson: education. While none of the technology is new, our building hosts a lot of technology that has never been used together before. That means that everybody, myself included, needs to be educated about the proper way to interact with the technology to make sure that it functions properly and works properly for the user.

Part of this education is signage. Large signs with instructions are helpful and ensure that occupants and visitors understand how to interact with the building positively.

It is important to talk about energy efficiency, but we can’t forget the importance of health and wellness. From NREL, I learned that applying my understanding of the way occupants interact with our building was important. I shared these habits with the engineers and architects to help them organize and design the building function to encourage good habits for our specific organization.

Finally, I learned to keep it simple. The technology in a net zero energy building can be complicated, so everything we can do to limit complexity will help simplify operations and maintenance.

CG: What is the key role of a net zero facility manager?

MB: The net zero facility manager bridges the gap between design intent and actual operation. I was fortunate to bring the knowledge of years of experience as a building engineer and facility manager to the design of the building to inform decisions early in the project. When we added the new technology, I knew I needed to learn and to help others develop expertise. One of the things I did during design and construction was to put every designer and installer I could in front of the camera to talk about the specific technology of each component. As we work in the building over the next several years, we will have that human component to guide us as we work with each subsystem. Too often this knowledge is lost and the videos are my attempt to bridge that gap between design intent and operations.

The Capital Chapter of IFMA toured AGU on July 23, 2019. If you missed the tour, you can stop by AGU for a public tour on Mondays from noon until 3:00pm and Wednesdays from 11:00am until 1:00pm. Private tours can be scheduled by contacting netzerotours@agu.org.
So, what exactly does Human Factors really mean? According to Google definitions,

“Human Factors (also known as ergonomics) is the study of how humans behave physically and psychologically in relation to particular environments, products, or services.” A human factors specialist typically has an advanced academic degree in Psychology or has special training.

Just when you finally understood the wiring diagrams on the HVAC unit and the special plumbing needs of the cafeteria you now need a Psychology degree! Don't fret, it's really not as bad as it reads. I think we can all see the need for intentional design and coordination with FMs when it comes to humans interacting in a work environment.

When I started out on the ergonomic field over 25 years ago, our primary point of contact was usually the Safety Manager or the HR Department. Today, Ergonomics/Human Factors is often controlled and implemented by the FM. For the most part, FMs typically end up being the "hero" in this story.

Providing a Healthful & Safe Work Environment you have to admit that every now and then you just get a little annoyed at the requests from employees stating their office is too hot, too cold, too noisy, furniture is uncomfortable, lighting is too bright, etc. But truth be told, these are all important issues that not only deal with Ergonomics/Human Factors issues, but employee productivity and efficiency as well. Ergonomic studies continue to support the need for a work environment that not only provides HVAC and lights, but one that aims to improve employee productivity and efficiency. So how does the FM accomplish that?

First and foremost, acquire a true and accurate understanding of what the employee is being tasked to do in the workplace. Will they be sitting in a chair, at a desk, working on the computer all day? Maybe they will be on the phone constantly interacting with clients or getting up frequently to attend meetings. The FM needs to understand what the employee is being asked to do and compare that to the work environment. Does that environment support the employee's primary functions? If not, why is it deficient and what can be improved, (now you are thinking like an ergonomist). While you may not be the main decision maker when it comes to the final design, you are a key influencer and should be heard if you have concerns.

I once was asked to review an office design at a call center. Employees would need to interact with their computers while on the phone constantly. In order to save space, (and money), the initial design plans called for a cube style workstation with eight cubes on one side and eight more on the back/flip side facing each other. The architect of the workstation design had thus determined they could really save some space by making every other workstation design with a left-handed return. Sounds great right? Problem is that on average 90% of your workforce is right-handed. Thus, many employees would be working in a cube designed for a left-handed person. In ergonomic terms, we call this a functional disaster. Exactly how was that going to help employee productivity and efficiency?

One size fits all mentality -- another key area for the FM to be involved with is the purchasing department, especially FF&E (Furniture, Fixtures and Equipment). Adjustability in today's work environment is key as we all come in different shapes and sizes. The biggest office change in the last few years has been the adjustability of the desk or work surface, which is wonderful. The FM is smiling that more modern offices are moving in this direction so that the desk height can be quickly and easily adjusted from 25" to 45" in height (as measured from the floor to the top of the work surface). Once we complete a typical office ergonomic assessment, we often tie in a copy of the report needs to the FM. By doing this, the FM and the ergonomist are both on the same page if any corrections/adjustments are needed for the workstation.

In the same light, one chair is probably not going to fit all your employees. On the one side of the spectrum, you have the millennials who are constantly moving about the workplace often found sitting on "ball-chairs" or chairs that look like pogo sticks with a seat on top. On the other side, we have the Silver Tsunami of aged workers who are well over 50 and desiring to sit a bit more frequently throughout the work day. They tend to really enjoy that soft cushioned chair with superb lumbar support.

However, one good adjustable chair is likely to satisfy upwards of 70-80% of your population. The smart FM is going to know what are the better chairs that can accomplish this as well as the "exception chair" that may be necessary for the big and tall or the short and sweet, (those over 6'3" and those under 5'2"). The smart FM will have an ear in the purchasing department when it comes to acquiring FF&E items. Employee input is also highly encouraged when it comes to selecting chairs. As the FM, try to step in between the purchasing department and the end user (employee) to set up a simple "chair selection" trial. You will only come out a hero in this matter.

Here are some additional questions to consider when looking at the work environment:

- What tools are you using in the workplace and will they still be impactful?
- Do employees have their “own” workspace or is it shared?
- Will they be using laptops or desktop computers or both?
- How many monitors will be used?
- How will lighting play an impact on the work being performed?
- Will “office noise” present an issue?
- Are employees going to be on the phone when on the computer?
- Can they use a docking station?
- Does the office offer different chairs, keyboards or mice to use?

Lastly, the internet has a plethora of free ergonomic check lists and training tools to assist you. One website that is particularly helpful is the Department of Labor-OSHA website, see their Ergonomic Checklist here.

By focusing some of your time on Ergonomics/Human Factor Issues, you can begin to successfully oversee the work environment to support staffing and productivity, create an environment conducive to current trends and provide a healthful and safe work environment.

About the Author:

Zack Koutsandreas, VP, Ergoworks Consulting, has been practicing ergonomics for over 25 years working with Private, Federal & Military ergonomic programs. He can be reached at Zack@ergoworksconsulting.com or 301-417-2077
Get the Most from Your Membership with CFM, FMP and SFP Designations

A key benefit of IFMA membership is maintaining professional growth through the facility management professional program which offers three designations: Certified Facility Manager (CFM), Facility Management Professional (FMP) and the Sustainability Facility Professional (SFP).

The CFM credential sets the industry standard for continuing the knowledge and abilities of practicing facility managers.

You can also earn the Facility Management Professional (FMP) designation, a knowledge-based credential demonstrating a proven comprehension of the basics of facility management. The FMP designation can be completed in approximately 12 months, and FMP candidates may customize their training to build the specific knowledge they need to meet individual goals.

IFMA’s SFP is an assessment-based certificate program delivering a specialty credential in sustainability. By earning your SFP credential, you will develop and gain recognition for your expertise in sustainable FM practices while impacting your organization’s economic, environmental and social bottom lines.

Joint Chapter Virtual SFP Series

The Capital Chapter is joining forces with IFMA to provide an online SFP Course. The class will be presented in 14 half-day sessions over the course of four months. To sign up, go to ifmaphoenix.org/education.
2019 World Workplace Events and Sessions

October 16-18 | Phoenix, Arizona

Please join the IFMA Foundation at World Workplace, meet the 2019 student scholarship winners, watch the Ignite FM! Student Competition, and learn how the IFMA community is making a difference in the future of our field. To learn more, go to the IFMA Foundation’s new website at https://foundation.ifma.org/ and click on events.

IFMA Foundation World Premiere Casino Royale: Shaken Not Stirred
Featuring the “Battle of the Bonds”
Tuesday, Oct. 15, 7:00 PM - 10:00 PM
Hanger One, 15220 N 78th Way, Scottsdale, AZ 85260
(transportation provided from Convention Center)

Ignite FM! The Student Challenge
Student’s receive problem to solve
Wednesday, Oct. 16, 2:00 PM - 5:00 PM
Phoenix Convention Center, West 212 A-B

Academic Scholarship Presentation
Thursday, Oct. 17, 8:00 AM - 8:30 AM
Phoenix Convention Center, North Ballroom

Moving the Needle: A GWI Case Study
Thursday, Oct. 17, 10:30 AM - 11:30 AM
Phoenix Convention Center Expo Education Arena 1

Women in FM: A Panel Discussion
Thursday, Oct. 17, 1:45 PM - 2:45 PM
Phoenix Convention Center, Room 126

Ignite FM! The Student Challenge – Student Presentations
Thursday, Oct. 17, 3:00 PM - 4:00 PM
Phoenix Convention Center North, Room 124B

FM Academic Research Track Sessions
Thursday, Oct. 17, 1:45 PM - 2:45 PM / 4:15 PM - 5:15 PM
Phoenix Convention Center North, Room 124B

Awards of Excellence
(IFMA Foundation Trustee Awardees and Ignite FM Winners Presented On-Stage)
Friday, Oct. 18, 1:15 PM - 3:15 PM
Phoenix Convention Center, Street Level, North Ballroom

The IFMA Foundation Needs You!
The IFMA Foundation is looking for volunteers interested in leaving a legacy and igniting the future of facility management. If you are interested in making a difference and furthering the cause to mainstream FM as a career of choice and develop the workforce of the future, please stop by the IFMA Foundation booth at WWP and/or contact Christina Gonzales at christina.gonzales@ifma.org

You too can make a difference… Join us!
because there is less chance for people to recover and prepare for the next hot day. The most vulnerable to heat-related illnesses include the elderly, children, and the economically disadvantaged. People with heart and kidney disorders are also at greater risk, as are those with asthma. That’s because certain pollutants, when mixed with sunlight and hot, stagnant air, create excessive ozone. Not only do extreme heat events impact vulnerable residents and add pressure to emergency services, they also increase the use air conditioning and therefore energy demand, which can cause utility grid disruptions.

Melissa Deas is a Climate Program Analyst for D.C.’s Urban Sustainability Administration. She says like most cities, D.C. is trying to better understand and quantify the effects of urban heat on city residents. She says potential risk mitigation strategies include setting maximum permissible indoor air temperatures for summer months (consistent with D.C.’s minimum temperature requirement for winter habitability) and monitoring indoor temperatures in select buildings that aren’t always air-conditioned.

“I see that as an area of huge risk for the District, especially as we’re seeing a lot more heat days in the future,” said Deas.

Deas understands that simply assessing the risks to urban residents is one of the biggest challenges. Government agencies and researchers often use a combination of satellite and geographic information system (GIS) technologies, georeferenced temperature measurements, and demographic data to assess risk on a macro scale. For example, Baltimore’s Office of Sustainability developed an innovative, but short-lived program to deploy wireless sensors throughout the city to monitor heat events and track effectiveness of adaptation measures. In a 2017 study in Richmond, VA, researchers used teams of volunteers on bikes and in cars to capture air temperature data throughout the city to create a heat map, then integrated land cover information and census data on income levels to develop a quantitative index to identify neighborhoods at risk. Volunteers collected similar temperature data last year in D.C.

As a facility manager, you may wonder how relevant this is, especially if your assets aren’t located in a highly urbanized area. Still, there are technologies you can implement on your roof to increase your building’s sustainability and performance while helping to improve the region's overall heat resilience.

Many FMs know one of the cheapest, easiest, and most established technologies is a cool roof, which increases the solar reflectance (i.e. albedo) and thermal emittance of a roof through coatings or modified materials. Cool roofs can reduce building temperatures and energy consumption (including peak demand) in the summer, increase efficiency of rooftop HVAC equipment (due to lower roof air temperatures), reduce greenhouse gas (GHG) and other emissions, and extend the service life of a roof, all while reducing a building’s contribution to UHI. Cost-effectiveness of a cool roof is dependent on climate geography, along with factors like roof thermal properties, HVAC efficiency, and operating schedule. A 2015 report by Capital-E on the cost-benefits of “Smart Roofs” in D.C. estimated a cool roof installed on an average city-owned building with a low-sloped roof would have a simple payback of two years based on all benefits to the building owner and the environment, including energy savings, health (i.e. ozone, particulates, and heat mortality), and climate change.

When considering direct energy benefits alone, payback was nine years.

D.C. implements cool roofs through a combination of incentives and mandates. Because new large buildings must earn LEED certification, cool roofs are incentivized through LEED points. The D.C. building code requires cool roof technology for new roofs and major retrofits, but it’s not required for partial roof replacements on existing buildings. Deas says the impact of this mandate on urban heat mitigation has been limited.

“What it’s not achieving, because we have so many existing roofs in the District that are not being replaced in full, it’s not getting cool roofs on those buildings,” she said.

Another common rooftop technology in the DMV is vegetated or green roofs. With over 3M square feet, the District boasts the largest area of green roofs in all North American cities, with Gaithersburg, MD also in the top ten (as of 2017). Green roofs have all the advantages of cool roofs, plus they directly improve air quality, absorb CO2, create habitat, and can improve aesthetics and occupant well-being. However, where green roofs truly outshine cool roofs is in improved stormwater management. Deas says stormwater is driving green roofs in D.C., noting most new large buildings include green roofs because of stormwater requirements. Lisa Walsh, a project developer for Solar Energy Services (SES) in Maryland, agrees.

“Washington D.C. has a desperate need for stormwater management solutions. There’s just no real estate,” she said. “You have to meet stormwater requirements or pay huge fines. You can either give up precious parking spaces and put retention tanks underground, or you can install a green roof.”

Because green roofs can be difficult to retrofit on existing buildings due to structural considerations, emphasis is on new construction. And while the D.C. building code doesn’t mandate green roofs for private buildings, they are incentivized through rebates as well as LEED points. Still, design requirements and economics make them challenging. The Capital-E report estimated an average D.C. green roof would have a payback of 11 years based on all benefits, even when factoring in stormwater retention credits, or SRCs. SRCs can be earned by installing green infrastructure such as green roofs, rain gardens, cisterns, permeable pavements, and bioswales, and can be sold to large development projects to help them meet stormwater management regulations.

Here's where things get more complicated, but more interesting, Walsh specializes in the nascent area of integrating solar with green roofs, aka biosolar roofs. While a typical rooftop solar system can provide cheaper energy, reduce GHG, and even mitigate UHI by reducing daytime temperatures through solar absorption and shading, an integrated system can do much more. To understand the benefits of integrating the two technologies, it helps to understand their drivers. If stormwater is driving green roofs in the District, then economics are driving solar.

Continued on page 13
D.C. has a huge market for Solar Renewable Energy Credits, or SRECs. Every time a solar photovoltaic (PV) system generates 1 MWh of electricity, it earns a SREC, which can be sold or traded. SRECs are typically sold to power companies (through aggregators), which aggressively seek them out to meet their state-mandated (and increasing) renewable energy obligations and avoid financial penalties. Because SRECs are market-traded, their value varies over time based on supply and demand. And because states have differing renewable energy generation requirements for power companies, SREC values also vary by geography. For example, in July 2019, SRECs in D.C. were worth around $400, while SRECs in Maryland were worth around $50. Virginia does not have a renewable generation requirement and therefore lacks a viable SREC market. For solar owners, revenue generated through SRECs provides an additional benefit to the free energy generated by solar power, so SRECs can substantially improve the cost-effectiveness of PV systems. Michelle Moore of Groundswell, a community solar developer, says payback for even a small rooftop PV project in D.C. is around four years, due in part to the government’s “really awesome solar policies.”

D.C. has the most lucrative market in the U.S. for SRECs along with a lucrative stormwater retention credit market. According to Walsh, this makes battling the challenges of solar/green roof integration worth it. “You don’t have to be environmentally motivated to put these two together,” she said. “In other parts of the country, it’s more a thing of beauty, a thing of elegance. In D.C., it’s driven by economics.”

The biggest challenge to integration is mounting the PV panels (i.e., racking) without impairing the function of the green roof. Solar systems must meet strict ballasting requirements set forth in wind code, so Walsh and her green roofing partner Furbish developed a “symbiotic” racking system that uses the vegetation (in special trays) as ballast, while the PV panels provide shading and weather protection benefits to the vegetation. The D.C. government was helpful with the design and now has standardized requirements that others can follow. Solar green roof racking is about twice the cost of standard solar racking, but because the green roof becomes an integral part of the PV system, it may be eligible for the 30% federal tax credit associated with typical solar installations.

Walsh says another rapidly growing technology is bifacial solar, where specially designed PV panels collect light on both sides, thereby capturing reflected energy from the rooftop. When integrated with reflective cool roofs, Walsh says the system can perform up to 30% better than typical PV systems. And like a solar green roof, the reflective roof becomes an integral part of the PV system and may be eligible for the federal tax credit.

Assuming common hurdles like utility interconnection can be overcome, deploying solar has never been easier. Systems can be financed through power purchase agreements (PPAs) and leases (where a third party owns, installs, operates, and maintains), Commercial Property Assessed Clean Energy (C-PACE) financing and commercial loans (both of which avoid third party ownership), and shared or community solar (for non-owners, or when shading or structural limitations prevent on-property deployment). Walsh says an integrated project at a storage facility on Taylor Street in NE D.C. used DC-PACE to finance both the solar and green roof elements of the system.

Mitigating UHI often involves approaches that don’t affect building energy performance, such as increased urban canopy and green space, reflective and permeable pavements, and high-albedo concrete. Fortunately, some states have expanded C-PACE financing beyond energy performance. For example, Colorado made green roofs eligible based on water conservation goals while New York enabled coastal resilience measures. Scott Dicke, SRS Virginia’s C-PACE Program Director, says legislation will go into effect October 1st rendering stormwater management and other resiliency measures eligible for C-PACE in Virginia.

Localities experiencing UHI that don’t have formal mitigation strategies can still improve heat resilience by deploying stormwater management technologies that provide UHI co-benefits. Ultimately, multiple approaches that increase solar reflectance, shading, and evapotranspiration are necessary to mitigate UHI. A 2013 study by the Global Cool Cities Alliance estimated that by increasing urban surface reflectivity by 10% and vegetative cover by 10% in Washington D.C., mortality based on historic extreme heat events could be reduced by 7%. By combining integrated rooftop technologies with neighborhood adaptation approaches like resilience hubs, cooling centers, and splash pads, we can make the DMV safer, healthier, more sustainable, and more resilient.
Welcome New Members

Omega Armah • FRB
Nicholas Atwell • FRB
Michael Bache • Browns Construction Services
Ebonee Bachman • Crypton
Jose Casas •
Steven Claussen • AOC/OSP
Stacey Cohen • Marriott International
Tom Cook • Marriott International
Allison Dichoso • Federal Reserve Board of Governors
Javier Dussan • Inter-American Development Bank
Harold Erwin III •
Marcelo Espinosa • 1Rivet
Michele Hart • PenFed
Gregg Holland • District of Columbia Child and Family Services Agency
Zach Johnson • Jones Lang LaSalle
Mark Lichter •
Matthew Middleton • Compass Group
Lisa Parlin • Inter-American Development Bank
Kinjal Patel • ATCC
Phyllis Robinson • Federal Government
Christian Servant • Fairfax County Public Schools
Twigs Sevco • JK Moving
Adam Siegelbaum • Meridian Imaging Solutions
David Taylor • Abbey Commercial Flooring
Mike Terry • Certapro
Brian Trucksess • Fastsigns
Marcos Vargas • American Association of Airport Executives
Charles Welsh • General Conference of SDA
Catherine Willis • CRTKL

Capital Chapter’s JOBnet Delivers!

Looking for a Job? Looking for a great candidate to fill a vacancy? Visit the Capital Chapter’s JOBnet and access jobs and candidates in the metro-DC area. The most recent job postings are listed below:

Title: Senior Manager, Facilities Services
Company: Choice Hotels
Location: Rockville, MD
Posted: 7/24/19

Under the general direction of the Facilities Director, the candidate will organize, coordinate, and oversee all vendors, projects, space planning, tenant improvement, budgets, and operations. Lead Facilities Maintenance Technicians with encouragement by understanding their work and developing them.

Title: Director of Building Services
Company: The Optical Society
Location: Washington, DC
Posted: 7/23/19

The Optical Society (OSA) is recruiting for a Director of Building Services. The successful candidate directs the design, planning, and maintenance of an organization’s facilities and property for OSA and tenants. Supervises and coordinates building maintenance engineering, security, safety, utilities, custodial, waste management, landscaping, extermination, parking and other contracts and programs related to building operations. Oversees daily distribution functions to include postage and all delivery requirements of mail correspondence. Assists with management of conference facilities. Responsible for relationship of building tenants. Responsible for liaison with neighbors and neighborhood facilities-related organizations.

Title: Facilities Manager
Company: American Institutes for Research (AIR)
Location: Crystal City, VA
Posted: 6/27/19

The position reports to the Senior Facility Manager and will have a key role in the implementation and management of the Facilities’ department objectives and expectations for AIRs sites on the East Coast. Additionally, the incumbent will be working on AIR-wide functions in support of strategic goals in the area of space management, budget and real estate.
Special Thanks to Our Capital Chapter Partners

PLATINUM

JK Moving

GOLD

FM Studios

Siemens

Spacesaver Interior

SILVER

Able Moving and Storage

Miller’s Supplies at Work

BRAVO! Facility Services

NOS, Inc.

CORT

Office Liquidation Solutions

Eighth Day Design

Procon Consulting

Haworth/PriceModern

Tarkett

Hilldrup

The Blue Book Network

Kimball

The MCS Group, Inc.

BRONZE

Avitecture

Meridian

Facility Engineering Associates, P.C.
milliCare by EBC Carpet Services

Get Linked into the Pulse of the Capital Chapter!

LinkedIn

This is your invitation to get more involved with the Capital Chapter of IFMA through our LinkedIn Group! LinkedIn is a great tool to connect with those in the FM industry; stay informed on current events and industry news; and share your knowledge. Visit www.linkedin.com to create an account, then search for the group IFMA-Capital Chapter and follow the prompt to request to join. Note: This group is only open to Capital Chapter members. If you’re not a member, navigate to the chapter website and click the JOIN link at the top of the screen. We’ll see you online!

Contact:
Don Proia
301-854-2118
dproia@millersoffice.com

- Office Design and Furnishings
- Facilities and Janitorial Supplies & Equipment
- Coffee and Breakroom Equipment and Supplies
- Imprinted Promotional Items
- Printing and Engraving
- Office and Computer Supplies
Capital Chapter Upcoming Events…

Sept. 9: **Summer Wunder Hour Young Professionals Celebration**
        Wunder Garten, Washington, DC

Sept. 12-13: **Joint Chapter Virtual SFP Series**
              Your Computer

Sept. 17-18: **Advocacy Day**
              Capitol Hill, Washington, DC

Sept. 23: **IFMA's Second Annual Chili Cookoff / Bakeoff**
           Steelcase, Washington, DC

Oct. 16: **Capital Chapter Happy Hour (at WWP)**
         The Park, Phoenix, AZ

Oct. 16-18: **IFMA’s World Workplace**
             Phoenix Convention Center, Phoenix, AZ

For more information, or to register, visit the Capital Chapter [website](#) or call 703-691-IFMA.