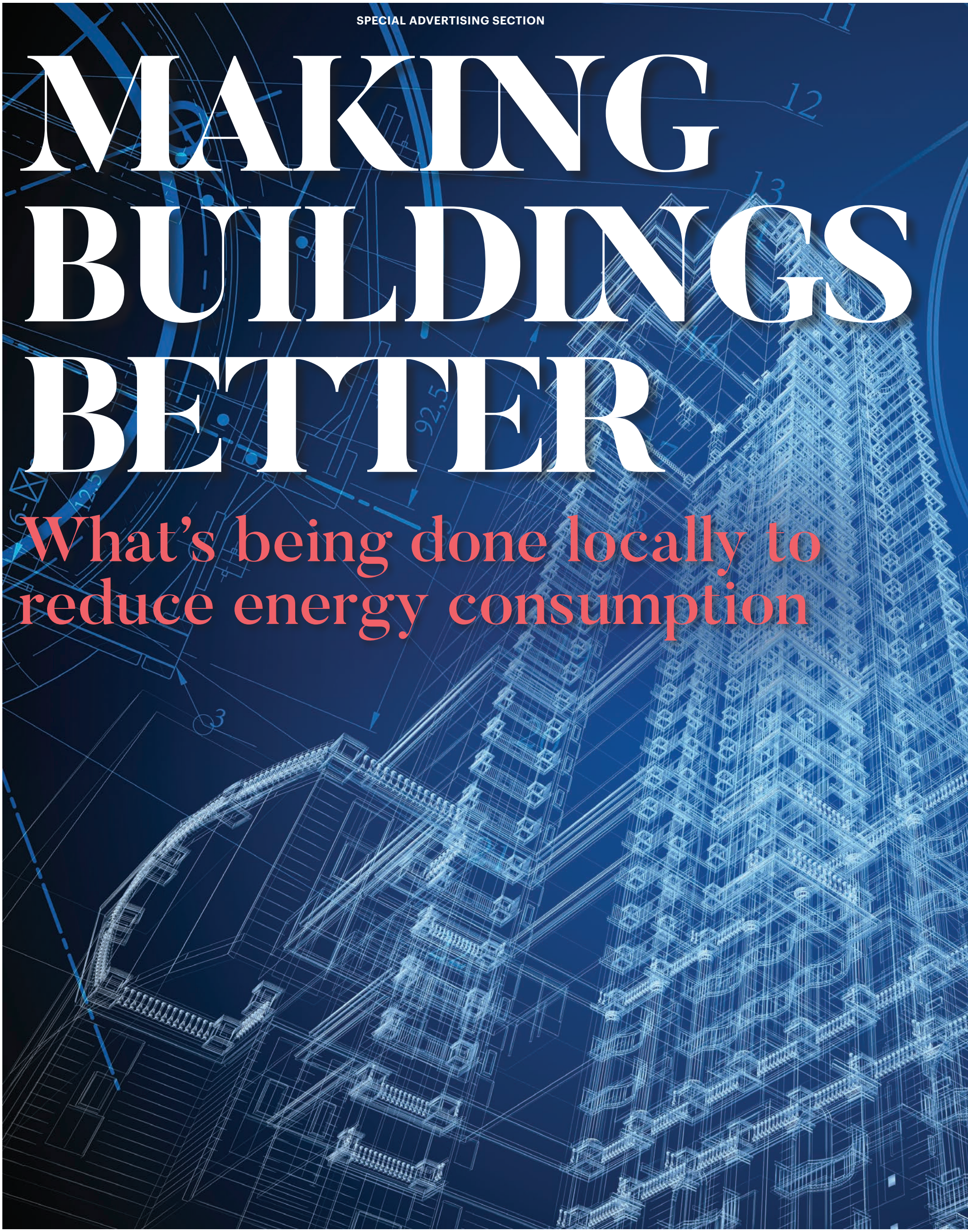
SPECIAL ADVERTISING SECTION

MAKING BUILDINGS BETTER

What's being done locally to reduce energy consumption



Buildings are one of the primary consumers of energy. Finding ways to reduce energy costs will benefit the climate and free up money for more productive and more sustainable uses. The Milwaukee Business Journal recently assembled a panel of experts to discuss where Milwaukee is in the quest for energy efficiency, as well as the programs and the financing options that are available.

TABLE *of* EXPERTS

ROSE BUSS
City of Milwaukee, Environmental Collaboration Office

Rose is the program manager for the city's energy efficiency programs, including the Milwaukee Energy Efficiency (Me2) program, the PACE financing program, and the Better Buildings Challenge. Rose received her undergraduate degree in international relations from Boston University and holds a master's degree in environmental policy and planning from the University of Michigan.

BEAU ENGMAN
PACE Equity, Founder

Founder of PACE Equity who has pioneered the use of PACE financing in commercial real estate. Beau also serves on the board of PACENow, a non-profit organization focused on promoting and implementing PACE around the country. Through top level executive roles with Johnson Controls, non-profits, and prominent private equity firms, Engman has consistently led efforts to break down barriers to energy efficiency in the private sector.

BILL JACKSON
Johnson Controls, President of Global Products

Bill is responsible for all product development, engineering, design, manufacturing and distribution within Building Technologies & Solutions. Global Products represents about $10 billion of the company's $30 billion in annual revenue. Bill previously ran Building Efficiency, which enabled customers around the world to decrease their facility costs and carbon footprints. Prior to Johnson Controls, he was a senior partner at Booz Allen Hamilton.

MARK NICHOLSON
Two-Fifty East Wisconsin Avenue, General manager

Mark Nicholson is responsible for the oversight of the extensive renovations, lease up and operations at Two-Fifty. Mark is a senior property manager with broad experience in commercial real estate, specializing in the management of large Class-A office properties for owners and third-party clients. His unparalleled attention to detail and management skills have a proven track record of maximizing the value of clients' assets.

TRACY JOHNSON
CARW - Commercial Association of REALTORS® Wisconsin, President & CEO

Tracy has more than 20 years of association management and non-profit experience and has held roles with TEMPO Milwaukee, Milwaukee Symphony Orchestra, and an association for plumbing and mechanical contractors. She is involved in Downtown Milwaukee Rotary Club, Public Policy Forum, Marquette University Business School Alumni Board, and The Regional Transit Leadership Council.

SPONSORS

BETTER BUILDINGS CHALLENGE
ecoCITY of MILWAUKEE
PACE Equity
Johnson Controls
TWO-FIFTY

> "You're hitting a home run anytime you can take $100,000 out of your building's cost structure. It allows you take the money you are saving and put it into enhancements that will attract or retain tenants."
>
> **BILL JACKSON**
> President of Global Products, Johnson Controls

TRACY JOHNSON (MODERATOR): MANY BUSINESSES WANT TO BE MORE ENERGY EFFICIENT, BUT THEY ARE CONCERNED ABOUT THE COST AND DON'T KNOW WHAT THEY CAN DO. WHAT RESOURCES ARE OUT THERE FOR BUSINESS OWNERS TO TAP INTO?

BEAU ENGMAN: Milwaukee has some good things to offer in terms of resources Focus on Energy has a design assistance program that you can provide assistance on both simple and complex projects. The city of Milwaukee, through a Department of Energy grant, provides free building assessments to identify energy-saving opportunities. The city was also one of the first in the country to have a PACE program, which stands for Property Assessed Clean Energy, which lets building owners repay funding for energy-saving projects through a special 20-year tax assessment on the property.

ROSE BUSS: The city of Milwaukee, through the Environmental Collaboration Office (ECO), is very involved in energy efficiency and sustainability. The Better Buildings Challenge is our primary program for commercial buildings. Its goal is to reduce building energy use by 20 percent over a decade. We bring all of the energy-saving resources together so building owners have a single point of contact. We can find answers for them if they have questions or don't know where to go. Right now, we are providing free energy assessments for office space, small commercial and K-12 schools in the metro area. The assessment includes benchmarking the building in the EPA's Energy Star® Portfolio Manager® program and making sure the building operator knows how to use this free online tool to monitor their building's energy use. We can bring in an energy engineer to identify energy and cost savings that can be achieved through basic operational changes, low- and no-cost improvements and capital improvement projects. We also look at the Focus on Energy incentives that may be available. We went through Mark's building, for example, and identified 11 projects that would generate approximately $120,000 in annual cost savings and potentially qualify for almost $49,000 in Focus on Energy incentives. This is on top of the $10,000 in free services that the program provided and the $18,500 in Focus on Energy incentives the building has already received.

BILL JACKSON: You're hitting a home run anytime you can take $100,000 out of your building's cost structure. It allows you take the money you are saving and put it into enhancements that will attract or retain tenants. It will drive economic development.

MODERATOR: MARK, AS THE BUILDING MANAGER AT TWO-FIFTY, WHY DID YOU DECIDE TO DO THIS?

MARK NICHOLSON: It is something that I have always been conscious of, but before working for Fulcrum and Millbrook, it was a constant battle to make building ownership groups invest in these upgrades. Research says on average 30 cents of every dollar that organizations spend on energy use in commercial buildings is wasted through inefficiencies. At Two-Fifty, there really wasn't an option for us to procrastinate. We had high utility costs and failing mechanical systems so we had to do something. If you lower operating costs, you are going to have money to do other enhancements to the building that will help you attract and retain tenants. That leads to higher occupancy and better rental rates. We have undertaken a number of projects, including the installation of a new building automation system. The building automation system was a critical element of what we did. If you do not have control over your HVAC, you are just wasting money. That was a simple improvement to identify. Even with the recent increase in occupancy, the building's energy usage has decreased with utility bills 30% less than budgeted in the first quarter of 2017. We have also installed LED lights in the parking garage, building lobby, tenant lounge, indoor bike room, common hallways and new tenant spaces, which was huge, and we are just wrapping up our elevator modernization and air handler upgrades.

MODERATOR: WHAT IF YOU HAVE A NEWER BUILDING? WHAT ARE SOME OF THE THINGS YOU CAN DO TO SAVE MONEY?

BUSS: One of the things that can benefit all buildings old or new is an operations review. One of our program partners comes onsite and meets with the building engineer or building operator to identify simple things that can be done on a day-to-day basis. They can help to show when to ramp up service and ramp down service depending on building occupancy and peak energy times. They can also work with tenants so that they understand the connection they have to the building's energy use.

MODERATOR: WHAT ARE SOME THE THINGS THAT JOHNSON CONTROLS OFFERS?

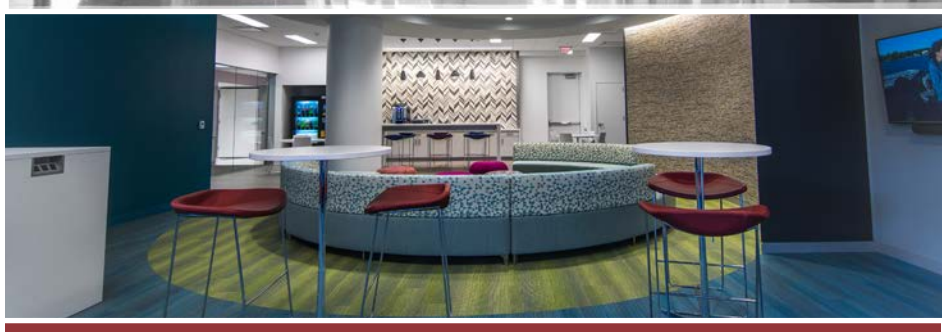
JACKSON: The trick to energy savings is to make sure that things are turned

IMAGE COURTESY OF JOHNSON CONTROLS. CONTACT ALEX RUNNER FOR MORE INFORMATION: ALEX.E.RUNNER@JCI.COM

off when they should be off and that your set points for heating and cooling are appropriate. Our *Metasys*® building automation system is a perfect solution for complex buildings. We also have a *Verasys*™ plug-and-play controls system for light commercial buildings. Every building has its own profile and there are certain things that will make it more efficient. Occupancy determines how much air you need to circulate. There are ways to monitor occupancy and change the air circulation accordingly. We're using data and sensors to create meaningful value. For example, we monitor store lighting, refrigerators and other devices for a business that has 4,000 stores. We can tell if a refrigerator door has been left open or lights are on or the temperature set points are off. Most the issues we can correct remotely. Our systems can even predict when elements of the heating and cooling system are going to need repair.

JLL FULCRUM Asset Advisors, LLC. MILLBROOK REAL ESTATE COMPANY

DISCOVER THE NEW
TWO-FIFTY
EAST WISCONSIN AVENUE
OFFICE SPACE AVAILABLE FOR LEASE



DANIEL JESSUP: 414 944 2101
DAN.JESSUP@AM.JLL.COM

TWOFIFTYMKE.COM

MODERATOR: HOW DOES MILWAUKEE COMPARE TO WHAT OTHER CITIES ARE DOING IN TERMS OF BUILDING EFFICIENCY?

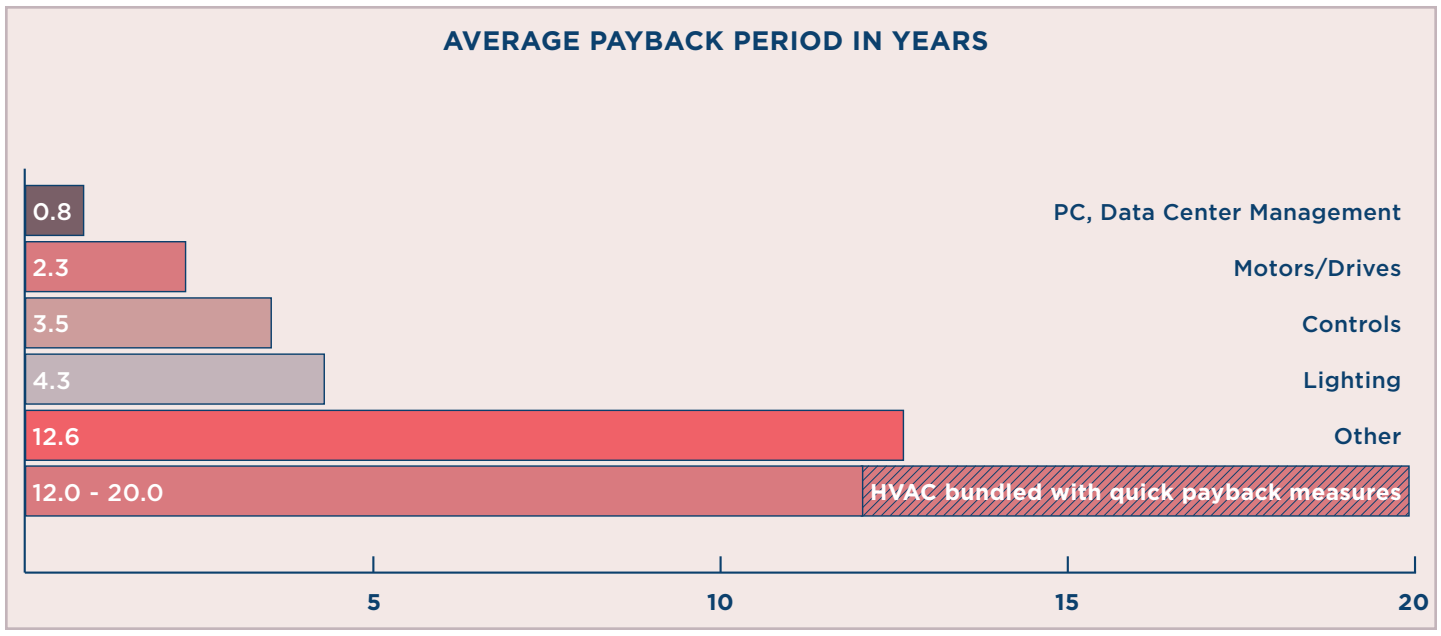
ENGMAN: I think you can look at it two ways – where Milwaukee is compared to other cities, and how the resources here compare to other cities. I think Milwaukee's level of sustainability is probably middle of the road. We are not market leading like cities on the East and West coasts, but we are probably like many of the Tier 1 and Tier 2 cities in the country. In terms of available resources, I think Milwaukee is a leader. It was one of the first to have a PACE program and is currently number five in the country in terms of PACE dollars deployed. That's pretty good. With Mayor Tom Barrett and the city of Milwaukee, you have a very supportive environment here that you do not have elsewhere.

MODERATOR: BILL, SO YOU HAVE SEEN DEVELOPMENT ALL OVER THE WORLD. MILWAUKEE IS NOT LIKE SOME CITIES IN CALIFORNIA, RIGHT?

JACKSON: I think California is energy efficient due to legislation. People there are required to be responsible with energy usage; here it is more voluntary. It's difficult to compare cities, but I would say we are doing very well in Milwaukee. You win this game building by building. For example, we are working with Marquette to make sure all of its new buildings are state-of-the-art. We are using the same technology

> "Milwaukee is one of the leading cities in the U.S. in terms of innovation and resources available for commercial building owners."
>
> **BEAU ENGMAN**
> PACE Equity, Founder

> "For lighting, moving from incandescent to LED has the shortest payback period. It is definitely under two years. . . . Someone did a computer management program to make sure computers were powered off at night and the payback on that was less than a year."
>
> **ROSE BUSS**
> City of Milwaukee, Environmental Collaboration Office



as our new Asia Pacific headquarters in Shanghai, which has been recognized as one of the most efficient buildings in China. Milwaukee is doing well, and programs like the Better Building Challenge and PACE will put us at the forefront.

ENGMAN: Milwaukee has another excellent energy-efficiency example. The Westin Milwaukee hotel was the first new construction project to use PACE financing. Its energy savings are 40 percent greater than a regular code building. PACE financing for new construction is now being replicated in states across the country, including Rhode Island, Colorado, California, Arkansas and Missouri. It's also important to note that we have a very big energy storage provider here, which is Johnson Controls. They have the ability to store energy in batteries so buildings can use it during peak power times to lower costs. That is a technology that is being developed here.

MODERATOR: LET'S TALK ABOUT PACE FINANCING? WHAT IS IT?

ENGMAN: PACE uses a mechanism that has been around for 200 years to pay for sidewalks or firehouses. Private investors put up money that is used to fund energy-saving projects. There is no public liability. That money is repaid through a special property tax assessment on that property over 20 years. The assessment stays with the property if you sell the building. What's nice about PACE is that it doesn't encumber debt for the property owner per se. So instead of looking at energy-saving investments from an ROI perspective, you can start looking at them from a cash-flow perspective. That really changes the game. It is easier to get positive cash flow to improve your operating income and fund other projects.

MODERATOR: DO YOU FIND THAT THE BUSINESS OWNERS ARE DRIVING ENERGY EFFICIENCY OR IS IT THE EMPLOYEES?

BUSS: From what we are seeing so far, it is the building owners. As we increase awareness and recognize properties, I think it will be driven by the public, including building tenants and employees. We are currently working with Doors Open Milwaukee to make sure participants in the Better Building Challenge are recognized publicly for their participation and to draw attention to the program among the public. We also have our first awards celebration in October to highlight building successes. And we are talking about success stories like Two-Fifty to raise awareness among not only building owners but their occupants as well.

ENGMAN: We're finding that it is being driven mostly by building owners and the reason they are doing it to attract and retain tenants. That's what's compelling.

MODERATOR: WHAT TECHNOLOGICAL ADVANCES HAVE MADE IT EASIER AND/OR LESS COSTLY TO IMPLEMENT GREEN TECHNOLOGY?

JACKSON: The ability to collect data and understand the efficiency of your building has improved dramatically. We can predict when a chiller is losing efficiency or when it needs repair. We can see whether the flow through the air handler is appropriate. You can monitor your building's occupancy and the movement of people to change how you manage the building. We just made an investment in a Silicon Valley company that uses sensors throughout the building to make almost real-time changes in how they operate the building. At the same time, the interface for building controls has become very user-friendly and can be accessed remotely – even from a cell phone.

MODERATOR: WHAT ARE SOME OF THE QUICK PAYBACK TECHNOLOGIES THAT BUSINESSES CAN IMPLEMENT?

NICHOLSON: Changing to LED lighting because the cost has come down considerably, upgrading your exit signs to LED and putting in occupancy sensors and timeclocks to shut off lights when rooms are not being used. Those are relatively simple things. Energy efficient lighting also has longer lifetimes, require less maintenance and can reduce HVAC costs with the reduced heat loads.

MODERATOR: HOW LONG DOES IT TAKE TO RECOUP SOME OF THESE ENERGY-SAVINGS COSTS?

BUSS: For lighting, moving from incandescent to LED has the shortest payback period. It is definitely under two years. If you are moving from fluorescents, the payback is a little longer, maybe three to five years. The payback on motors and drives for equipment is around 2.5 years, while controls are around three years. A computer management program that makes sure computers are powered off at night showed a payback less than a year. An operations review, where someone comes in and helps you put together a building operating plan, has a two-year payback.

ENGMAN: You are just now seeing things like solar have positive cash flow. Two years ago you would not have seen that.

MODERATOR: IS THERE ANYTHING THAT CAN BE DONE FOR INDUSTRIAL BUILDINGS?

ENGMAN: Absolutely. There are great opportunities in buildings with more than 100,000 square feet, but there are fewer people with the expertise to do that.

BUSS: Our Better Building Challenge is focused on commercial buildings and schools, but we have a second program in partnership with the University of Wisconsin – Milwaukee. It is called the Industrial Assessment Center and does free energy assessments for industrial buildings. Industrial buildings are also encouraged to join the Better Buildings Challenge for the benefits outside of the energy assessment and to allow us to recognize their achievements.

MODERATOR: EVEN THOUGH THE UNITED STATES HAS CHANGED ITS STANCE ON GLOBAL ENVIRONMENTAL POLICIES, MANY CITIES AND LARGE BUSINESSES HAVE PLEDGED TO CONTINUE THEIR EFFORTS, SPECIFICALLY RELATED TO THE PARIS ACCORD. DO YOU THINK THAT THERE IS ENOUGH OF A BUSINESS CASE TO CONTINUE PURSUING ENVIRONMENTALLY SUSTAINABLE PRACTICES WITHOUT OVERARCHING GLOBAL ACCORDS AND AGREEMENTS?

ENGMAN: I think the lack of commitment at the federal level makes it more challenging across the board. It would be helpful to have that commitment. What we have been talking about today has been initiated by the city, by private companies and by states, but that doesn't mean that the lack of a federal commitment will not have negative consequences.

JACKSON: Developing a new product like a chiller is a $100 million bet. The U.S. market is important, but it is not the only market. However, if the U.S. wanders away from where the rest of the world is headed, companies like Johnson Controls could end up having to make two product lines instead of one, which means more investment and design costs. We will continue to follow the Paris Accord and drive forward on creating sustainable environments. It is part of our values as a corporation.

NICHOLSON: Large corporations are making a commitment to lower their carbon footprint. And they recognize that having better operating systems is going to improve employee comfort and improve employee satisfaction, which makes it easier to retain employees. Studies have shown that 94% of employees are happier at work with better indoor environmental quality. Similarly, if you can improve the efficiency of your building, it is going to be easier to attract and retain tenants. I think that when it comes to sustainability, everyone should do their part. It is everyone's responsibility to reduce their carbon footprint.

BUSS: I agree that the lack of support at the federal level makes it more challenging, especially when the initial impacts and costs of climate change are felt at the city level, through flooding in Milwaukee and other cities for example. But having mayors, city councils and businesses step up shows that there is broader public support than federal actions display. Mayor Barrett and the common council have made Milwaukee one of 367 cities and mayors that have signed on to the Paris Accords. That is no small number. And our Better Buildings Challenge and PACE financing programs show that we are backing up our climate commitments with tangible programs that to benefit building owners and the planet.

> **"Large corporations are making a commitment to lower their carbon footprint. And they recognize that having better operating systems is going to improve employee comfort and improve employee satisfaction."**
>
> **MARK NICHOLSON**
> Two-Fifty East Wisconsin Avenue, general manager