

Green Thoughts

Sustainability leaders on the greening of parking, what's ahead, and why it's all so important.

GREEN PARKING IS MORE THAN A CATCHPHRASE: It's a new way of thinking about the parking industry and doing business in a way that's attractive to employees, customers, and the bottom line. And it's moving super fast, with advances and new developments almost every day. We asked four leading experts to share their thoughts on green parking, what it means, where it's going, and how parking professionals in all sectors can get in on the action.

MAHESH RAMANUJAM is chief operating officer of the U.S. Green Building Council (USGBC) and president of Green Business Certification, Inc. (GBCI). He has a passion for people, the global business case for a sustainable built environment, and a strategic operational focus to a rapidly expanding organization that is certifying more than 1.9 million square feet of LEED commercial office space every day across the globe.

LAURA LONGSWORTH is vice president of parking operations for Brookfield, a commercial real estate corporation that owns, manages, and develops premier assets in the world's most dynamic and resilient markets. She has furthered Brookfield's commitment to sustainability, environmental awareness, and technological advancement for the company's parking operations. She is a board member of the Green Parking Council (GPC), a longtime advocate for parking-industry certification programs, and responsible for the world's first Certified Green Garage.

ANDREW MITCHELL is project manager for the U.S. Department of Energy's (DOE's) Better Buildings Alliance (BBA), an effort to promote energy efficiency in U.S. commercial buildings through collaboration with building owners, operators, and managers. In this role, he manages the technical solutions teams by balancing input from alliance members in the private sector, industry experts, and national labs. Prior to working at DOE, he held positions at General Electric, AEP Energy, and EnerNOC.

PAUL WESSEL is executive director of the Green Parking Council, home of Green Garage Certification. He has extensive experience in creating, troubleshooting, and managing community development projects uniting residents, businesses, public agencies, nonprofit boards and staff, and other diverse communities. His involvement as Connecticut's director of traffic and parking led to the reorganization of the City of New Haven's Traffic and Parking Department. He has been a board member of the Greater New Haven Clean Cities Coalition, New Haven Parking Authority, and Greater New Haven Transit District.

Why are parking and sustainability not mutually exclusive?

MAHESH RAMANUJAM: Parking and sustainability are not mutually exclusive concepts. Every story about green building is a story about people—and every story about parking is a story about the connection between people and planet. Through collaborative, integrated, and innovative green parking practices, we can promote sustainable mobility. This will enable our parking structures to achieve increased energy efficiency, reduced environmental impact, improved parking space management, integrated sustainable mobility services and technologies, enhanced performance, and stronger community relationships.

At USGBC, we work toward market transformation for the built environment through our globally recognized Leadership in Energy and Environmental Design (LEED) program. A global, regional, and local green building rating system, LEED helps us build green, healthy, and sustainable communities. Similar to how LEED has undeniably changed the built environment, implementing green building practices can transform the parking industry.

The Green Parking Council's Green Garage Certification, the world's only rating system for sustainable parking, was developed to create an industry-specific approach for recognizing green garages and draws from knowledge developed through experience with LEED certification and alignment with USGBC's mission and goals.

LAURA LONGSWORTH: The demand for green parking and sustainable parking solutions is one of the most impactful on the industry. As everyone is talking about going green, consumers continue to seek environmentally friendly businesses. Across the board, companies are trying to improve their image and corporate social responsibility as it relates to sustainability. The parking industry is no different. Solutions such as LED lighting, solar power, electric vehicle (EV) charging stations, bike facilities, related amenity programs, etc., go a long way in improving the overall green image of the property.

ANDREW MITCHELL: 21st century parking is going beyond flat. More than ever, energy, water, and habitat are all fair game. Today, we can save energy with more efficient lighting and air handling. We can capture runoff from rain and snowmelt and re-use or redirect it. We can incorporate landscaping features, including native landscaping, in ways that limit energy use and water runoff while providing habitats for birds and insects.

Sustainable parking also comes with savings. Across the parking industry, owners are saving as much as 70 percent after upgrading lighting and adding control technology.

PAUL WESSEL: I grew up in the in 1960s and '70s against a backdrop of all those Apollo moon landings. In high school, I encountered the idea of "Spaceship Earth," pioneered by the architect/philosopher/futurist Buckminster Fuller. The idea was that, like those space capsules we watched carry astronauts into space, we lived in this bubble, we had finite resources, and whatever garbage we produced, we had to account for. From that perspective, we had—and have—no choice but to do everything sustainably, to think about limiting resource use and reducing the crap we leave behind in all we do. Fifty years later, the idea is sinking in in how we run businesses, in how we run cities, and even in how we park cars!

Based on your organization's mission, what do you see as your most important initiative during the next five years?

LAURA LONGSWORTH:

At Brookfield, our mission is to provide the highest quality space (commercial, retail, residential, and hotel). An integral part of this goal is Brookfield's unyielding commitment to programs that lower operating costs, reduce energy consumption, and curtail greenhouse gas emissions in all of our properties. Environmental initiatives are a major component of the annual strategic business plan. Sustainability is a top priority within the company and is treated as a business objective along with revenue growth and risk management.

ANDREW MITCHELL: The DOE is working to create a clean energy economy. The Office of Energy Efficiency and Renewable Energy (EERE) leads the efforts through the Better Buildings Initiative, which was launched in 2011 to bring together building energy stakeholders to improve energy use intensity of the nation's buildings by 20 percent by 2020. By partnering with leading organizations, Better Buildings supports the adoption of innovative organizational strategies and technologies by



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leveraging the sharing of successful models more broadly in the marketplace. For parking, that means promoting ever more efficient technologies so that lot or structure stays safe and bright year after year while using less and less energy from equipment that lasts longer and longer.

The Better Buildings Alliance has formed critical partnerships with key stakeholder groups, including the GPC, IPI, the Building Owners and Managers Association, and the International Facilities Management Association to organize the Lighting Energy Efficiency in Parking (LEEP) Campaign. This effort focuses on helping facility owners implement energy-efficient lighting solutions in their parking facilities by providing technical assistance and highlighting strategies participants find are the most impactful.

So far, LEEP participants are collectively saving more than 120 million kilowatt-hours and over \$10 million annually. We invite parking facility managers interested in improving the energy efficiency of their parking facilities

lighting to join us: leepcampaign.org.

PAUL WESSEL: Green Garage Certification has proven more transformative than I expected. From the individual garage manager to the architect to the developer, everyone is learning how to take fuller advantage of the sustainable opportunities in parking garages. Growing the program through our work with IPI, the USGBC, the Ur-

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MAHESH RAMANUJAM: Our vision is simple: to build a healthy, smart, productive, efficient, equitable, resilient, and above all else, sustainable society so we can pass on a legacy of sustainability to our children, their children, and generations yet to come. To achieve this vision, GBCI, the organization that I am fortunate to serve as president of, has expanded to administer several other

rating systems in addition to LEED, including PEER, the WELL Building Standard, the GRESB Benchmark, the Sustainable SITES Initiative, EDGE, and now, Green Garage Certification. These systems have a comprehensive scope and promote sustainable power system performance, human health and wellness, the economic case for green building/communities, sustainable landscape design, the mainstreaming of resource-efficient buildings and communities in more than 140 developing countries, and green parking policies.

How can the parking industry shift its practices for maximum environmental effect? Are there any smaller steps they should consider along with major changes?

ANDREW MITCHELL: A quick win for parking is updating the lighting to the most efficient and cost-effective option available. In addition to LEEP, there are a variety of technologies available to building owners to benefit from parking lighting system upgrades or replacements. Each measure can reduce cost while also improving safety. To help the industry pick the most advanced technologies, the Energy Department has been working with members of the Better Buildings Alliance to design a number of high-impact technology specifications that, when applied, can save building owners between 30 and 80 percent:

- **Wall Pack Lighting Specification and Application Guidance:** Wall packs have been identified as an area in which the effective application of more efficient lighting dramatically improves lighting quality and energy performance.
- **Site Specification:** Most parking lots are illuminated by older high-intensity discharge (HID) lighting technology without any energy-saving controls. New light-emitting diode (LED) technology with controls can cut parking lot lighting energy bills by 40 percent or more while delivering additional benefits, including long life, reduced maintenance costs, and improved lighting uniformity.
- **Parking Structure Lighting Specification:** The latest high-efficiency lighting alternatives with energy-saving controls—including LED, induction, and fluorescent technology options—can save building owners more than 40 percent on their parking lot lighting bills.

PAUL WESSEL: Like every journey, every step counts. The feedback we've gotten from the industry is that looking at Green Garage Certification and going through the checklist of what you are doing, what you might do, and what you want to do, helps people develop the short-, medium-, and long-term approaches to building a high-performance parking program. Certification really is a road map; some people will arrive at the end tomorrow. Others will take a slower journey.



RAMANUJAM

MAHESH RAMANUJAM: The parking industry has a unique opportunity: Buildings and transportation are the two biggest drivers of CO₂ emissions globally, and investors, property owners, and consumers are looking for greener solutions. At this moment in time, we are being challenged to make a positive difference. We have it within our power to positively impact the quality of our built space. And Green Garage Certification is a key solution to achieve this and mitigate the current challenges associated with parking and, eventually, mobility.

The world's only rating system defining and recognizing sustainable practices in parking structure management, programming, design, and technology, Green Garage Certification defines the standard for parking sustainability and the goal for parking owners and operators.

LAURA LONGSWORTH: Awareness is key. Parking facility managers really need to understand all aspects of their parking asset (purchasing, operations, mechanical, etc.). They also need to understand what it means to create a green garage program. The parking operator should be involved in preparing and presenting a five- to 10-year capital sustainability plan for the garages that they manage. This will help the property owner and the parking operator work together to create a reasonable, well-prioritized path toward sustainability. Going green is a complex process that needs to be taken one step at a time while replacing current methods and products with green ones. Parking operators should be out in front of this issue/opportunity leading this discussion.

How can parking professionals, organizations, and the industry help educate drivers/consumers about green parking initiatives and practices? Why is that important?

PAUL WESSEL: Pew Research found this summer that the three biggest worries globally are about climate change, terrorism (ISIS), and economic instability and that climate change was the most widespread concern of all the issues they asked about in the 40 countries surveyed. People know we can't go on the way we are. They've seen the pictures of smog in China and of garbage patches in the ocean. They know about rising asthma rates. We all know things have to change but often we don't know what we can do as individuals. The opportunity for parking professionals and our organizations is to promote what we are doing and what others can do.

MAHESH RAMANUJAM: Leaders across the globe understand that sustainability works. By committing to sustainability, they are actually committing to build healthier, more sustainable communities where performance and human health is prioritized and enhanced. The parking industry can help educate drivers and consumers about green parking initiatives and practices by leading by example,

implementing green parking policies. Their exceptional vision will raise the bar high and transform the market.

LAURA LONGSWORTH: Having a green garage program is important. Being able to tell a meaningful story about the benefits of a green garage is equally important. At Brookfield, when we introduce new green amenity programs such as car share, virtual commuter bulletin boards, electric car charging, etc., we will always try to promote the sustainability angle.

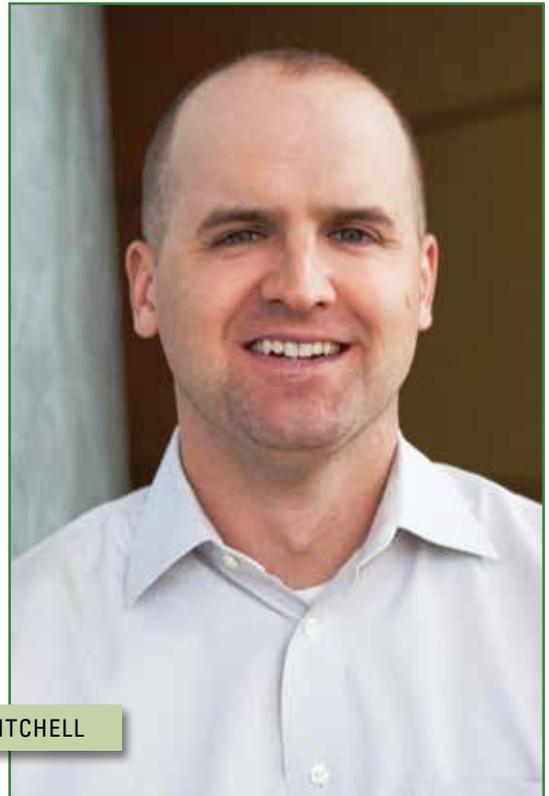
ANDREW MITCHELL: Parking professionals have always been clever about getting messages across to their consumers. The nice thing about lighting projects in parking is that they are obvious—they literally light up and the consumers can see the results for themselves. Clearly written and understandable signage can help consumers understand why a property manager has implemented sustainability measures.

What book or publication had the most impact on your view of sustainability? What should be required reading for parking professionals?

LAURA LONGSWORTH: I would encourage all parking professionals to read the Green Garage Certification Standard. Green Garage Certification is the world's only rating system defining and recognizing sustainable practices in parking structure management, programming, design, and technology. You can learn more about this program and publication at greenparkingcouncil.com.

ANDREW MITCHELL: I am a fan of the website Energy Manager Today (energymanagertoday.com). I get updated headlines in my inbox every day and never think I will have time to read them, but when I click, I inevitably find a short article related to an energy issue that I am working on.

PAUL WESSEL: That's a tough one. I've been thinking a lot lately about the Ray Bradbury short story "A Sound

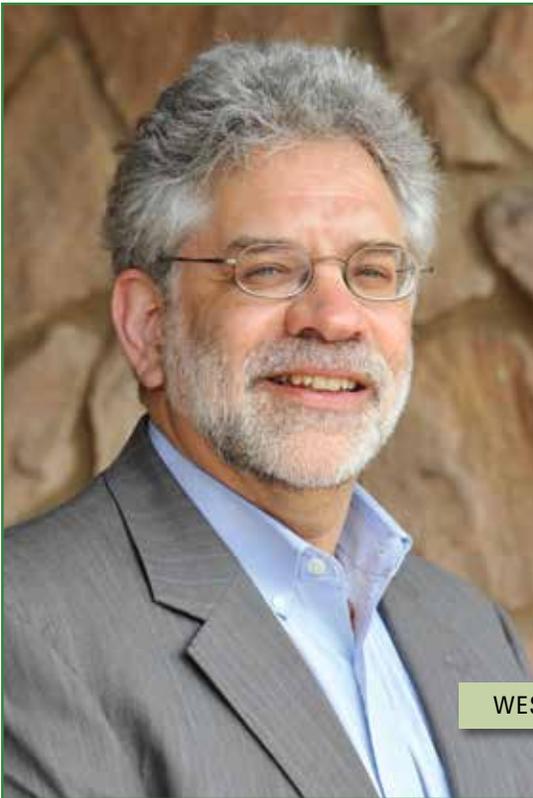


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of Thunder.” It’s about time travel, dinosaurs, and how, when we veer off the path, we can screw things up. Looks like there was a really bad movie version, but you can find the story online.

Why is sustainability important to you personally? What’s the most difficult or challenging change you’ve made to live in a more sustainable way?

ANDREW MITCHELL: I take the 1987 UN Brundtland Commission definition of sustainability seriously: meeting the needs of the present without compromising the ability of future generations to meet their own needs. Since becoming a father that is more clear to me. But even for those without kids, this can be reworded as “Don’t be a jerk to future generations. You might need them!”



WESSEL

PAUL WESSEL: I’d like to leave the world in a better shape than I found it, not worse, so thinking about my physical impact on the planet is important to me. The most important thing I could do but haven’t yet is install solar panels on my roof. I looked into it but got stuck on what looked like I was signing a second mortgage. But I really should do it.

MAHESH RAMANUJAM: I grew up in India where 70 percent of the population is poor and urbanization is creating serious environmental challenges, including energy shortages, water scarcity, waste accumulation, and an air quality crisis. Sustainability is a mission grounded in the core beliefs of Indians everywhere—that we care for our fellow humans, our future generations and Mother Earth. Living sustainably has always been central to my beliefs—learning to use everything I had and making do without the things I did not.

LAURA LONGSWORTH: It is no secret that people are living longer and that the global population is on the rise. It is projected that there will be more than 10 billion people

living on the Earth by the year 2100. This explosion in population is perhaps one of the greatest reasons why sustainable development and green initiatives are so important. A rising population will also make use of the bare essentials of life, such as food, water, and shelter. The provision of these essentials is based around having an infrastructure that can sustain for the long term. Sustainable development is cleaner, has the potential to be more efficient, has long-term potential, and is the only way forward for a growing world economy. Over enough time, being sustainable will no longer be an option for people who want to feel good about their choices. It will be the only available option for cities and regional development. It isn’t just the current generation that needs to deal with this massive issue; it will be a challenge for future generations.

If all your dreams came true, what would parking look like 10 years from now? How would it change to be more green?

PAUL WESSEL: In 2025, I look forward to having a Spotify for mobility subscription, where I pay every month for easy access to whatever car, truck, bike, bus, train, sailboat, jet pack, or scooter I want to use to get from point C to point D. One price for access to everything. Parking is in the background—like the cloud—always there, ready for me to access my transportation modes from it, all around me, but out of sight.

MAHESH RAMANUJAM: We would have tangible results: a measurable reduction in CO₂ emissions, a measurable reduction in traffic congestion in developing countries, a measurable reduction in pollution in the environment, and a measurable increase in human productivity. We would also ramp up sustainability in our built environment globally, achieving speed-to-market transformation for green parking and the built environment—and by extension, strengthen our planet and its people.

LAURA LONGSWORTH: In order to meet demand, stay relevant, and attract the transportation customer of the next generation, I believe that parking garages will continue to evolve into urban mobility hubs. These mobility hubs will combine intermobility, technology, sustainability while contributing to the community. In addition to providing traditional parking services, these locations will offer bike parking, shower/restroom facilities, car/bike share, transit services, travel information, Wi-Fi, refreshment stations, etc.

ANDREW MITCHELL: More trees in parking lots. More solar canopies and storage to power lights at night that keep us safe and use energy generated onsite. More walkways in lots. More permeable surfaces, water catchment, and filtration. **P**