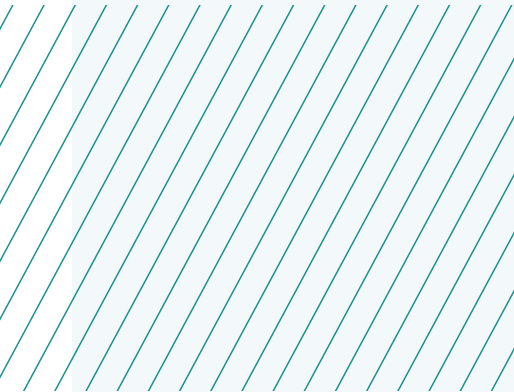




ULI Global Sustainability Outlook

2022



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The Urban Land Institute is a nonprofit education and research institute supported by its members. Its mission is to shape the future of the built environment for transformative impact in communities worldwide. Established in 1936, the Institute has more than 45,000 members worldwide representing all aspects of land use and development disciplines.

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The ULI Greenprint Center for Building Performance is a research organization focused on climate mitigation and makes the business case for green buildings by tying carbon reductions to increased asset value. ULI Greenprint also includes a worldwide membership alliance of leading real estate owners and developers committed to improving the environmental performance of the global real estate industry, striving to reduce greenhouse gas emissions by 50 percent by 2030, and achieving net zero carbon operations by 2050. ULI Greenprint is organized within the ULI Center for Sustainability and Economic Performance, which also oversees ULI's Urban Resilience Program and the Building Healthy Places initiative.

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Urban Land Institute
2001 L Street, NW, Suite 200
Washington, DC 20036-4948

About the ULI Americas Sustainable Development Council

The ULI Americas Sustainable Development Council (SDC) aims to accelerate the adoption and implementation of sustainability, resilience, and health across the real estate industry. The council provides a forum for the exchange of emerging best practices, including planning, financing, entitlements, design, construction, and operational aspects of projects that advance triple-bottom-line benefits while fostering more sustainable built environments.

About the ULI Asia Pacific Resilient Cities Council

ULI Asia Pacific Resilient Cities Council's mission is to share best practices and gather collective thoughts on how to decarbonize the built environment and win the fight against climate change.

About the ULI Europe Sustainability Council

ULI Europe's Sustainability Council brings together investors, occupiers, developers, public officials, and academics from across Europe to debate and explore best practices in sustainable development. The council examines a wide range of issues—from investigating new ways to measure the environmental performance or the social contribution made by individual buildings, through to the longer-term planning considerations of European cities to ensure they are both successful and sustainable.

About Ferguson Partners

Ferguson Partners is a global talent management boutique that orchestrates tailored strategies that focus on essential disciplines. Ferguson Partners' global real estate and real assets services include executive and board recruitment, compensation, leadership and management consulting, and help for organizations that capitalize on the advantages of great leadership.

Report Team

ULI Project Staff

Andrea Carpenter
Director, Women Talk Real Estate

Marta Schantz
Senior Vice President, Center for
Sustainability and Economic Performance

James A. Mulligan
Senior Editor

Barbara Hart
Publications Professionals LLC
Manuscript Editor

Brandon Weil
Art Director

Deanna Pineda
Muse Advertising Design
Graphic Designer

Member Contributors

ULI Americas Sustainable Development Council

David Cropper—TMG Partners

Jonathan Flaherty—Tishman Speyer

Julie Hiromoto—HKS

Joceyln Hittle—Colorado State
University

Melissa Kroskey—WoodWorks

Jon Moeller—BlocPower

Ben Myers—Boston Properties

Judi Schweitzer—Schweitzer +
Associates Inc.

Brian Swett—Arup

Rives Taylor—Gensler

Peter Tomai—Specific Performance Inc.

ULI Asia Pacific Resilient Cities Council

Esther An—City Developments Limited

Albert Chan—Shui On Land

Gordon Hatton—Pembroke

Nina James—Blackstone

Kiyoul Rhee—IGIS Asset Management

Raymond Rufino—NEO

Doug Smith—Green Generation

Bennett Theseira—PGIM Real Estate

ULI Europe Sustainability Council

Mathieu Elshout—PATRIZIA

Maximilian Kufer—Invesco Real Estate

Elsa Monteiro—Sonae Sierra

Philip Mueller—LaSalle Investment
Management

Mette Søs Lassen—Ramboll

Jerry Ryan—HKR Architectural
Services Ltd.

Paul Stepan—Jones Lang LaSalle

Lisette van Doorn—ULI Europe

Derek Wilson—Transport for London

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Introduction

We are proud to sponsor this year's *ULI Global Sustainability Outlook*. It is an excellent opportunity to hear from experts about what is top of mind for this most vital work and what to expect as we move into 2022. Environmental, social, and governance (ESG) criteria no longer constitute a niche opportunity but are a fundamental responsibility for companies to be competitive in today's global markets. Rapid intensification of climate-change implications requires adaptation and mitigation in communities and cities of the future. This year's report brings a global view on ESG and real estate thanks to ULI member leaders from the ULI Americas Sustainable Development Council, ULI Asia Pacific Resilience Cities Council, and ULI Europe Sustainability Council. The importance of tackling this together cannot be underestimated.

This year's *Sustainability Outlook* addresses many of the critical concerns in the market, including creating more resilient buildings in the face of climate change, as well as the quickening pace of action and scope in the race to net zero. It also tackles issues that require more industry collaboration, such as finding consistent ways to understand embodied carbon in materials and knowing how to standardize reporting on ESG progress.

Immediate action on sustainability for the built environment is imperative, requiring a holistic approach driven by a long-term strategy, aggressive capital management, and agility to adapt to climate change. Leaders who have a strong clarity of purpose and follow this path will be those who provide global stewardship and a viable framework for the future of the built environment, as well as generate long-term value for shareholders.

In the same way that many topics in this report are emerging fields, leadership for sustainability is undergoing the same evolution. It is critical that the real estate industry sets goals and commitments on sustainability, necessitating strong leaders with influence and decision-making power.

Ferguson Partners is working with organizations and enterprises worldwide as they develop and implement their ESG strategies from human capital, management, compensation, and leadership perspectives. We have seen firms progress in addressing ESG

concerns by allocating responsibilities among several team members—a “green team,” if you will. However, to effect real change, firms need to position a senior strategic role for ESG to take a holistic approach across the business, whether that is the pathway to net zero or to impact investing.

We are already seeing ESG targets factored into annual incentive compensation structures for real estate firms, thereby reflecting the trend to link executive pay to ESG performance as seen in many high-profile companies outside the industry. This linkage is undoubtedly a way to hold leadership teams accountable for decision-making that supports their firms' responsible investing.

Reports such as the *ULI Global Sustainability Outlook* and the excellent work of ULI to convene experts to raise awareness and share best practices will help bring much-needed progress on all these topics amid the growing climate crisis that we face across the globe.

Linda J. Isaacson

Senior Managing Director, Global Head of Innovation, Sustainability + Technology, Ferguson Partners

ULI Global Governing Trustee and Member of the ULI Americas Executive Committee
New York, New York

Charlie Barton

Managing Director, Executive Search, Ferguson Partners

Head of ESG, Europe
London, United Kingdom

Matthew Hardy

Head of Australia, Executive Search, Ferguson Partners

Head of ESG, Asia Pacific
Sydney, Australia

Top Five Issues for 2022

ULI is eager to keep its members abreast of the topics and issues that are mounting in sustainable real estate across the globe. In late 2021, ULI's Greenprint Center for Building Performance interviewed members of the ULI Americas Sustainable Development Council, ULI Asia Pacific Resilient Cities Council, and ULI Europe Sustainability Council to inform an outlook for 2022: *What sustainability topics and issues are on the rise, why do they matter, and what should the industry do about it?* On the basis of knowledge shared by those experts, Greenprint identified five issues that will shape real estate decision-making in the months ahead and beyond:

1. Advancing the net zero agenda
2. Navigating the reporting and measurement landscape
3. Confronting climate risk
4. Prioritizing existing buildings
5. Focusing on building materials



1

Advancing the Net Zero Agenda



We're seeing a compression of where net zero is landing, and it's end-to-end. It's starting at the biggest pension funds, and it's landing in the facilities managers."

—NINA JAMES

Managing Director and Head of Asia ESG,
Blackstone Real Estate
Sydney, Australia

1

Advancing the Net Zero Agenda



Net zero is no longer a long-term pipe dream in the real estate sector. For 2022 and beyond, the new era of net zero is pragmatic, serious, and action oriented. Many leading companies are already walking the talk and have set realistic net zero goals for their portfolios with global targets aligned with such frameworks as the World Green Building Council Goal, ULI Greenprint Net Zero Goal, United Nations Asset Owners Alliance, and others.

But with awareness being greater than the built environment, the entire industry will be under growing pressure from stakeholders across the value chain—investors, occupiers, governments, and communities. The Intergovernmental Panel on Climate Change (IPCC) “code red” report released in summer 2020 was a serious call to action. Meanwhile, the 2021 United Nations Climate Change Conference, commonly referred to as COP26, in Glasgow in November 2021 may not have resulted in the strongest commitments or climate pledges, but there was global agreement to accelerate action on climate change during this decade to keep within the 1.5 degrees of pre-industrial temperatures.

That said, the entire real estate sector has not bought in. Many others now need to determine their commitment to address the climate crisis and the scope of responsibility they are willing to accept. For most, the adoption curve for net zero is still in the early innovation stage, but for anyone already on it, that curve will ramp

up fast in the next year. “With the innovation adoption curve to carbon neutrality globally, it’s very disruptive,” says Judi Schweitzer, founder and chief sustainability adviser of Schweitzer + Associates Inc. “It’s still in the innovation or early adopter stage; which is why there are so many disparate terms, or tools, and approaches. As adoption of carbon neutrality throughout the supply chain matures, a more cohesive path forward will become more clear.”

Although the industry has not yet fully bought in to tackling Scope 1 and 2 emissions, a growing plurality has accepted this responsibility of emissions under operational control. Further, more stakeholders are starting to demand that real estate expand its boundaries into the territory of measuring and reducing Scope 3 emissions, especially emissions generated from real estate construction and from tenant energy use.

Scope 1 is direct emissions, which are those directly from operations that are owned or controlled by the reporting company, such as natural gas burned onsite. Although Scope 2 is indirect, it is focused on emissions from electricity purchases, and it can be relatively easily managed.

Scope 3 is all indirect emissions that occur in the value chain of the reporting company, both upstream and—as many companies are finding—downstream. “We’re seeing a compression of where net zero is landing, and it’s end-to-end. It’s starting at the



biggest pension funds, and it's landing in the facilities managers," says Nina James, managing director and head of Asia ESG for Blackstone Real Estate.

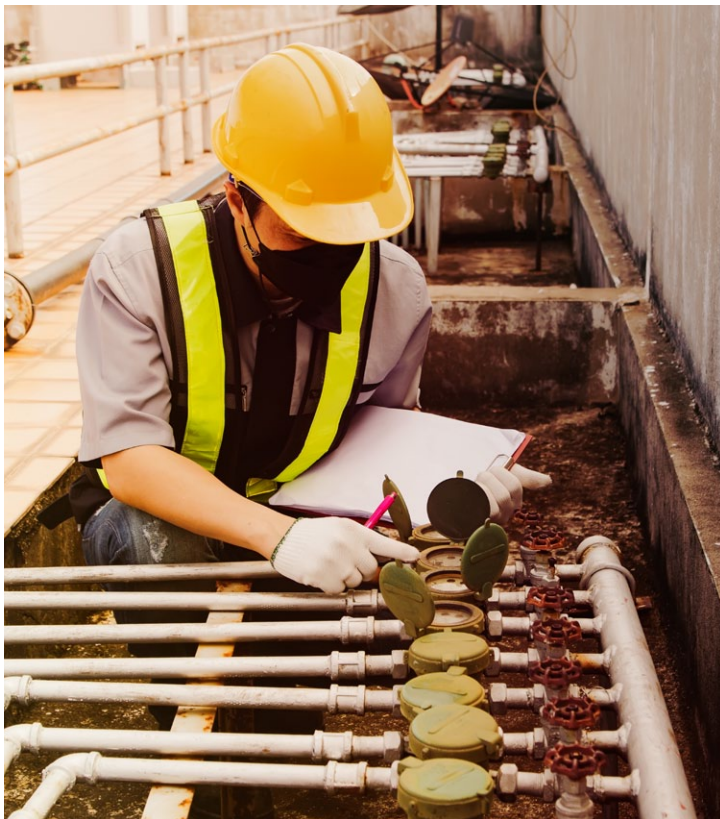
A new focus on Scope 3 creates a demand for new collaboration through the value chain. First stop is the tenants, for owners to be able to influence energy use in the space they do not directly control. "Tenant engagement 1.0 needs to shift to 2.0, particularly if we're trying to hit net zero operations in buildings. Tenants really need to buy in, in a different way," says Ben Myers, vice president of sustainability at Boston Properties. "We need to figure out new methods of engaging tenants in our net zero journey, as an industry."

There is already more desire among tenants to know how waste and energy are handled in their buildings; with momentum carrying that sentiment, the desire might finally help identify the green premium soon. "In many cases, our tenants also have reporting requirements, and it's important that they understand they can piggyback on what we're doing and take some credit for occupying a superior building. We may actually achieve that long-sought rent premium for sustainable building after all," says Gordon Hatton, vice president and head of Asia Pacific Development for Pembroke.

After tenants, the next step will be the suppliers, who represent a wide range of emissions from embodied carbon in materials through to transportation and construction. The industry is only on the edge of tackling this challenge, but anyone believing a short-cut logic that everyone's Scope 3 is someone else's Scope 1 and 2 will be in for a reputational shock.

"When you look at leaders in ESG, they absolutely expand their boundary of influence," says James. "It's expected that we expand our boundary of influence beyond the operations of the asset that we own. And we don't have to look too far to see what happens when you don't take care of your social license to operate."

Learn more: [ULI Net Zero Compendium](#)





2

Navigating the Reporting and Measurement Landscape



The next frontier of things that need to be developed is just some clear guidance on some of the impact measures and how do we really measure up against this. That will be something big to think about in a way that's somewhat standardized to avoid any risk of different stakeholders taking their own interpretation.”

—MAXIMILIAN KUFER

Head of ESG, Invesco
London, United Kingdom



2

Navigating the Reporting and Measurement Landscape

One of the big issues in the spotlight for 2022 is how to achieve transparent and thorough reporting and measurement of the environmental, social, and governance (ESG) performance at a portfolio or entity level. Avoiding the threat of being accused of greenwashing is important to every real estate firm.

This approach is not easy: not all buildings in all regions collect data or analyze it in the same way. “We are interested in green tech for [improved] data accuracy,” says Kiyoul Rhee, directing manager of real estate development at IGIS Asset Management. “Without accuracy of data, we cannot diagnose and we cannot build any solid plan and strategy. IGIS is gathering data of all our buildings across the world, but we still have a lot of difficulty to have accurate data.”

Because more pressure from investors and other stakeholders has driven increased measurement and reporting, ESG is going to become more important, and the burden for owners is only going to get greater. “Every month, we have at least one [investor] questionnaire, and they are overlapping,” says Esther An, chief sustainability officer at Singapore-based City Developments Limited. “There are just so many, and then the scope and the depth [of each investor request] is actually growing every year.”

This sentiment is echoed throughout the three global regions. Examples of different voluntary reporting structures are numerous including U.N. Principles for Responsible Investing, GRESB (formerly the Global Real Estate Sustainability Benchmark), ULI Greenprint, CDP (formerly the Carbon Disclosure Project), and Dow Jones Sustainability Index (DJSI). In addition, an increase in regulatory requirements is expected to continue to emerge at city, state, national, and regional levels.

Part of the problem for the industry is that so many issues regarding reporting and measurement are in flux as we head into 2022. The sophistication of what needs to be measured is growing, whether it is additional metrics on social sustainability or the integration of net zero targets. Then, there is the potential inconsistency of implementation, whether at a city, state, or federal level in the United States, or European Union-wide standards versus those in a specific country in Europe. Such an inconsistency hinders managers’ abilities to home in on a single best-practice approach.

“The next frontier of things that need to be developed is just some clear guidance on some of the impact measures and how do we really measure up against this,” says Maximilian Kufer, head of ESG for global private markets at Invesco. “That will be something big



to think about in a way that's somewhat standardized to avoid any risk of different stakeholders taking their own interpretation.”

Finally, there is the crisscross of well-intentioned investors taking their preferred reporting approaches internationally, which will often add to a local team's reporting effort. This added work can be particularly difficult for small- or medium-sized firms to navigate.

“[It's about] how to get consistency, how to find organizations to try to make—as silly as it sounds—an international climate code, so that a property in one place designed by us isn't so different from just down the road in another state, county, or country. To me, that is going to be one of the conversations we need, as an industry, to get our arms around,” says Rives Taylor, director of design resilience for Gensler.

The industry will voice such concerns more loudly in the coming year, with industry consensus expected to rally around the need for an integrated approach that standardizes reporting methods—as difficult as that appears to be at the moment. Which standards rise to the surface will be about leaning into the industry's increasing sophistication when it comes to ESG and the need to make all reporting count. “There is a maturing in the sustainability dialogue from where it was in the past around risk and compliance to its tangibly being a value generator,” says Paul Stepan, head of client sustainability solutions for Europe, the Middle East, and Africa, at Jones Lang LaSalle.

Some frameworks have already demonstrated such depth and credibility—in this case, in the form of regulation. The European Union's Sustainability Finance Disclosure Regulation, which was enacted in early 2021, imposes mandatory ESG disclosures for asset managers and financial players. It applies to anyone raising European capital, not just those owning European assets. “SFDR [Sustainable Finance Disclosure Regulation] is likely to be a significant driver in the future of product differentiation in the private markets, in a very good way,” says Jonathan Flaherty, global head of sustainability and building technology innovation at Tishman Speyer. “It will eliminate a lot of the greenwashing that's going on out there, especially on the private side, where there's nobody to really hold your feet to account except your investors.”

Learn more: [“Global Goals: A Primer on the U.N. Sustainable Development Goals for Real Estate”](#)

3

Confronting Climate Risk



Many people think of sustainability and put resilience in a different box. In the future you won't be able to talk about sustainability without talking about resilience."

—RAYMOND RUFINO

Chief Executive Officer, NEO
Manila, Philippines

3

Confronting Climate Risk



With a global climate emergency in place, the industry will be paying attention in the coming year to managing climate risks, because those risks form the very heart of maintaining sustainable and resilient investments.

Climate risk comes in two forms: transition risk and physical risk. Transition risk centers on the economic impact of climate policies and the move to a low-carbon economy, while physical risk includes the impact of catastrophic events such as wildfires, flooding, or storms on assets. Such events may lead to increased insurance premiums, decreased availability of insurance, higher operational costs, and reduced asset value. Changing weather patterns—such as increased precipitation, extended periods of drought, and higher temperatures—also elevate assets’ physical risk by increasing maintenance needs and reducing building performance. Both physical and transitional risks are increasingly leading to threats that make certain buildings become financially obsolete over time, which will be an increasing driver of climate action for the real estate sector in 2022.

The world continues to see an increase in frequency and intensity of extreme weather events: from wildfires in California, to winter storms in Texas, to floods in the U.K. and China, to extreme heat in

Canada and Russia. Global losses from natural disasters in 2020 alone came to US\$210 billion, of which only US\$82 billion was insured. This volume of loss is taking its toll on properties and communities and, in the long run, has serious consequences for cities and regions through climate migration. Risk assessment is critical to the long-term viability of our buildings and communities: “Many people think of sustainability and put resilience in a different box. In the future you won’t be able to talk about sustainability without talking about resilience,” says Raymond Rufino, chief executive officer at NEO, in Manila, the Philippines.

In preparation, investors and investment managers have already stepped up to become increasingly sophisticated when it comes to assessing such risks at the asset and market scale. “One of the issues about resilience is you can’t simply put your own property in a box and say ‘we’ve covered it—we are resilient’ because there [are] so many things that are actually outside of your control,” says Gordon Hatton, vice president and head of Asia Pacific Development for Pembroke. “We’re seeing these broader factors in heat and the flooding and the landslides and the fires that we’ve experienced and need to be addressed as we act collectively as an industry and society.”



Owners and managers will turn to software tools including granular geocoding of properties to identify the asset-specific impact of physical risk as well as the local dependencies, including infrastructure risks such as flooding on access roads. Those tools are already becoming increasingly common to support decision-making in acquisitions, developments, and operations. Although many of the tools use the same underlying data, the risk assessment outcomes are often very different, which indicates improvement is still needed to confidently incorporate the results into deals and transactions.

On the transition risk side, attention will turn to addressing stranding risk, particularly with the development of the Carbon Risk Real Estate Monitor (CRREM), a European Union-backed initiative that is now going global.

CRREM helps asset owners understand the risk of an asset being “stranded”—essentially becoming financially obsolete—if they

do not meet expected requirements about energy performance and carbon-mitigation strategies. Building performance standards in U.S. localities such as New York City (Local Law 97), Boston (BERDO 2.0), St. Louis, Washington D.C., and Washington state also drive this pressure. The Minimum Energy Efficiency Standard (MEES) in the United Kingdom and the ELAN Law and Decree on Housing in France are similarly sparking action.

Other regulations are ramping up the pressure such as the Sustainability Financial Disclosures Regulation that demands disclosure for European capital while a recent Financial Stability Oversight Council report in the United States is expected to lead to more regulatory action and disclosure requirement for banks. More countries across the globe are expected to make carbon reporting and climate risk reporting a part of regulatory compliance.

Once again, making progress in addressing climate risk will come back to regulatory consistency. For example, at the country level, France is pushing for nuclear energy solutions while Germany is switching off its nuclear power plants. In the United States, some states push for sourcing renewable energy locally while others promote sourcing from where the maximum carbon benefit is, regardless of distance.

Both transition and physical risk will play a growing role in the business case for decarbonization, which will be reflected in asset and fund valuations. Investment is needed to execute this change, but the motivation to do so is limited without the appraisal and valuation community sufficiently reflecting the “green premium” of high-performance low-carbon buildings and the “brown discount” of potentially stranded assets.

Learn more: [ULI climate risk and real estate publications](#)

4

Prioritizing Existing Buildings



There needs to be a shift in how we talk about our real estate portfolios from energy efficiency and the path to net zero energy, to thinking about zero carbon. It's one thing to have that conversation on the level of new construction, but how we do this in a cost-effective and a feasible way for existing buildings becomes another challenge.”

—JULIE HIROMOTO

Principal and Director of Integration, HKS
Dallas, Texas

4 Prioritizing Existing Buildings



As real estate gets increasingly serious about decarbonization, building performance will come under increased scrutiny in the year ahead. About 80 percent of buildings that will exist in 2050 have already been built. Thus, a major climate priority is addressing carbon emissions of the existing building stock. New developments may well provide a clean slate for best practice, but the major challenge and greater impact for 2022 and beyond is how to decarbonize existing buildings in a cost-effective and timely manner.

So far, the industry at large has not prioritized deep-energy retrofits for existing buildings, but it now understands the criticality of doing so to achieve ESG goals. Innovation and investments will need to occur to address challenges across the real estate sector. At present, this prioritization is not happening nearly fast enough, and other barriers stand in the way such as supply issues, occupier preferences, and investors' return requirements.

"There needs to be a shift in how we talk about our real estate portfolios from energy efficiency and the path to net zero energy, to thinking about zero carbon. It's one thing to have that conversation on the level of new construction, but how we do this in a cost-effective and a feasible way for existing buildings becomes another challenge," says Julie Hiromoto, principal and director of integration at HKS.

The challenge is undeniable but without a clear business case. Therefore, it provides obstacles for existing owners and a liquidity of existing assets. "When the possibility is there to acquire a building, and you try to run your numbers, you want to take everything into account that you think you should be changing to the building, and it makes it simply impossible to acquire," says Mathieu Elshout, head of sustainability and impact investing at PATRIZIA. Where costs exceed what the market will justify, a successful outcome will require a level playing field, as well as forward-looking incentives for green initiatives in the form of tax-offsets, density bonuses, or fast-track planning pathways. Because many owners also want to achieve more social outcomes, there needs to be more discussion as to how social equity is considered in the transition to a net zero economy.

Thus, it is possible that change will come from the top down rather than the bottom up. If owners in the short-term put off deep decarbonization of existing buildings, then it is likely they will have to achieve net zero through renewable energy purchases and carbon offsetting, rather than installation of on-site renewables. "It will be interesting to see if the capital markets respond to that and show preferences for portfolios that are actually decarbonizing [their buildings directly] rather than using offsetting to achieve net zero," says Derek Wilson, head of sustainability at Transport for London (TfL) Commercial Development.



Rapid investment and progress in property technology (proptech), particularly climate technology (climatetech), are creating opportunities for deep-energy efficiency retrofits that before may have been considered cost-prohibitive or unfeasible with technology available. Innovations that advance the sophistication and impact of building equipment, materials, and operations are quickly strengthening the business case for decarbonization: new cost-effective cladding and insulation techniques, better heat pumps that function in colder climates, and smarter use of passive strategies to heat and cool buildings. Owners are getting more innovative in how they finance those deep retrofits that take advantage of the new climatetech solutions, many leveraging green bonds, efficiency-as-a-service contracts, and other financial tools that make the projects cash-positive and accreditive to value from day one.

In the United States, moves to make electrification a big part of upgrading all existing buildings are expected to continue. “These [are] grand plans that New York and other states have to electrify

the whole commercial real estate sector. [It] looks like the easiest one of all the sectors of the economy, because the pathway’s understood, and we generally have the technology,” says Jonathan Flaherty of Tishman Speyer.

However, others suggest that cities underestimate the coordinated effort it requires between utilities providers, financiers, building owners, contractors, and state or local governments to make it work. Despite this nuance, cities are showing signs of leadership and progress on the topic. In late 2021, Ithaca, New York, announced plans to electrify the entire 6,000 buildings in that city by 2030, and more cities will follow in the years ahead.

That said, no one wants to be late to the game. “We have an 875,000-square-foot tower under development that we’re likely going to convert to all electric. We’re doing that even though we’re grandfathered [from a regulatory perspective] to use gas. It’s the right decision, and it’s a defensive move: no one wants to have the last non-electric building built,” says David Cropper, director of development at TMG Partners.

How occupiers react will be another unfolding story for existing offices. As working patterns change, the pandemic will continue to provide uncertainty about how much office space companies need and which types of buildings will be successful. “Many operators or property companies are struggling with all the impact of COVID. It could be a negative impact on the trend to renovate or to do all the things that need to be done to cope with climate change,” says Elsa Monteiro, head of sustainability at Sonae Sierra. Major occupiers will also need more education to consider the value of repurposing existing assets rather than the current preference to meet their sustainability needs through creating new buildings.

Learn more: [ULI Blueprint for Green Real Estate](#) and [PropTech: Changing the Way Real Estate Is Done](#)



5

Focusing on Building Materials

“

A lot of the players are challenged because of supply chain issues. And that has, in some cases, financial impacts as well, and it also maybe impacts potentially on the willingness to move very forcefully ahead on the sustainability agenda.”

—METTE SØS LASSESEN

Executive Director, Ramboll Environment and Health
Copenhagen, Denmark



5 Focusing on Building Materials

The life cycle impacts of buildings start with materials, and those materials will become central to sustainability on two fronts in the year ahead: health and sustainability. Reducing emissions through the embodied carbon in materials will be essential for net zero, whether it is making best use of existing materials onsite or reducing carbon emissions in the production and supply chain. With a global spike in interest in well-being, healthier building materials will become a logical focus area for real estate in the future.

Tools to measure both building materials' health and embodied carbon content are available though not yet widely adopted. With more questions than answers at this stage, the industry will need to address the materials issue. In addition, the quality and uniformity of information about building materials is currently inconsistent across global regions, with the United States ahead of Europe and Asia.

"There [are] a lot of questions about where to start, how to measure it, what should be measured, what matters, and what can be done," says Myers of Boston Properties, in discussing embodied carbon in materials. "What actual practical substitution alternatives can be specified on ground-up development to achieve meaningful outcomes? That's a lot of the work we're focused on right now."

One major issue with embodied carbon in materials is empirical data. "We intrinsically know what's more environmentally friendly than others," says Bennett Theseira, managing director at PGIM Real Estate and head of Asia Pacific. "But in terms of trying to get to that total absolute number with some degree of accuracy, I find it really tough to know really how much embedded carbon there is other than just intrinsically knowing something's better or worse."

In the United States, some progress has been made with many designers starting to use lifecycle assessments (LCAs) as part of their ESG commitments, and those assessments have been picked up by members of the public sector that have acted as early adopters. However, some developers and owners have so far been reluctant to pay for LCAs, while others feel they have incentivized the reduction of embodied carbon. Without the right data, it is still too difficult for a government body to regulate life-cycle carbons.

Future years will see more regulators set policies aiming to drive down embodied carbon as those regulators learn from the mixed success of policies in place today. In the United States, for example, some states have started to regulate the use of high-embodied carbon materials such as concrete and steel. However, a crack-down on environment credentials for a main supplier in Sweden



has resulted in concrete shortages rather than choices. Moving forward, the industry will have to work with policymakers to develop embodied carbon standards that help accelerate the decarbonization of building materials without stopping all construction in its tracks and without increasing exposure to physical risks.

For the immediate term, the industry is contending with current supply chain issues that push up construction costs and that could affect a developers' ability to select materials thoughtfully. "A lot of the players are challenged because of supply chain issues. And that has, in some cases, financial impacts as well, and it also maybe impacts potentially on the willingness to move very forcefully ahead on the sustainability agenda," says Mette Søs Lassen, executive director of Ramboll Environment and Health.

The difficulty in addressing embodied materials means it becomes "the Goliath in the room" versus the measurement of operational carbon. In addition, market dynamics such as shorter leases and

faster fit-outs may exacerbate the problem. "The typical lease in New York is now less than five years, and our tech companies are looking at 18 months, because they think it gets dreary after a year of use," says Taylor of Gensler. "[It's] this tenant life mind-set of faster and faster and faster, stuff that takes millions of years to make, and it has a three-year life."

For 2022, the topic definitely requires a new footing with suppliers. "Today, they understand what Scope 3 is, but without knowing what exactly it covers. We have to educate [suppliers], engage them, and also make it a business case," says An of City Developments.

On the wellness front, stakeholders across the real estate value chain will pay more regard to the effect that building materials have directly on human health and the greater ecosystem. Throughout their life cycle, building materials are responsible for many adverse human health and environmental impacts, including illness, habitat and species loss, pollution, and resource depletion. With people traditionally spending 90 percent of their time indoors, it is vital that developers create and maintain buildings that enhance well-being.

In the past, consumers had far fewer options to confirm what building products were composed of, and it was often difficult to confirm if the disclosed substances posed any threat to occupants. Looking forward, there will likely be an increased use of resources to raise awareness of regenerative and nontoxic materials.

Such resource are the International Living Future Institute's Materials Petal certification, which aims to remove the worst offending materials and practices and to drive business toward a truly responsible materials economy; the Declare database, which provides an "ingredients label" for buildings materials; and the Living Building Challenge's Red List, which is part of efforts to eradicate worst-in-class materials from construction. Another useful initiative involving transparency of building materials is the mindful MATERIALS (mM) owners' initiative, supported by ULI and technology partner GIGA, which compels stakeholders across the supply chain to provide data about their materials for building projects.

A proliferation of such lists and tools will once again raise the question of consistency and an ability to standardize an approach. Others think that outlawing materials is fine in theory, but in practical terms, it is often much harder to find alternatives.

Learn more: ["Embodied Carbon in Building Materials for Real Estate"](#)

Conclusion

This year's *Sustainability Outlook* demonstrates the increasing sophistication of the global real estate industry when it comes to ESG initiatives. This progress is critical because there is a quickly accelerating urgency to address the climate crisis, and time is against us. We have until 2030 to halve global emissions or otherwise face irreparable damages to the warming planet Earth.

The industry is a long way from its early forays into ESG. As we go forward into 2022, the industry is now pushing for efficiencies that come from consistency and standardization so it is able to scale its efforts to cost-effectively meet both investor and society demands. Net zero will not be optional for long; it will be a ubiquitous expectation of the industry.

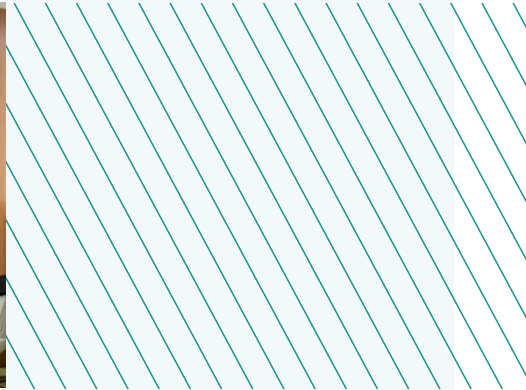
This movement is evident in the early, informal growth of metrics and frameworks, which raised awareness and supported reporting needs but now requires streamlining and organizing to meet the demand for quality of information over quantity. The same goes for

newer areas such as materials where a fast track to global standards will enable the industry to adopt best practice quicker and thereby reduce embodied carbon and create healthier buildings.

This evolution is happening in a changing regulatory landscape where initiatives by different levels of government look likely to continue to increase, thus making it harder for industry players to replicate best practice within a country, let alone regionally or globally.

The push for standardization and consistency comes as the issues being tackled also become more demanding for 2022. The minds of the industry will be focused on efforts to create pathways to net zero and to address the physical and transition risks of climate change for future resilience. This focus is fundamentally changing the business of buildings across the globe. For the industry, the challenge will be to translate the early foundations of its ESG work into effective and efficient approaches for the long term.





Urban Land
Institute



Ferguson Partners

Urban Land Institute
2001 L Street, NW
Suite 200
Washington, DC 20036-4948
uli.org