

# Net Zero for All

A Just  
Transition for  
Real Estate



**Urban Land  
Institute**



# About the Urban Land Institute

The Urban Land Institute is a global, member-driven organization comprising more than 45,000 real estate and urban development professionals dedicated to advancing the Institute's mission to shape the future of the built environment for transformative impact in communities worldwide.

ULI's interdisciplinary membership represents all aspects of the industry, including developers, property owners, investors, architects, urban

planners, public officials, real estate brokers, appraisers, attorneys, engineers, financiers, and academics. Established in 1936, the Institute has a presence in the Americas, Europe, and Asia Pacific regions, with members in 80 countries.

More information is available at [uli.org](https://uli.org). Follow ULI on [Twitter](#), [Facebook](#), [LinkedIn](#), and [Instagram](#).

## About ULI's Randall Lewis Center for Sustainability in Real Estate

The ULI Randall Lewis Center for Sustainability in Real Estate is dedicated to creating healthy, resilient, and high-performance communities around the world. Through the work of its Greenprint, Building Healthy Places, and Urban Resilience programs, the center provides leadership and support to real estate and land use professionals to invest in energy-efficient, healthy, resilient, and sustainable buildings and communities.

## About the ULI Net Zero Imperative

Thanks to a generous gift from Owen Thomas, ULI launched the Net Zero Imperative (NZI)—a multiyear initiative to accelerate decarbonization in the built environment. Additional gifts from Lynn Thurber, Joe Azrack, Franz Colloredo-Mansfeld, and Dan Cashdan further support and bolster the NZI program's scale and impact. Work to advance the initiative includes technical assistance panels in multiple global cities each year, designed to help developers, building owners, cities, and other relevant constituents reduce carbon emissions associated with buildings, communities, and cities. The fundamental goal of the effort is to provide concrete ideas and strategies to real estate owners, public sector leaders, and the general public to eliminate carbon emissions from the built environment to reach net zero. Through its work, the initiative also creates global resources (research, toolkits, and other tools) to help all ULI members accelerate decarbonization in their real estate operations and in their cities.

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Urban Land Institute  
2001 L Street, NW, Suite 200  
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*Net Zero for All: A Just Transition for Real Estate* provides an introduction for real estate owners, developers, and investors to understand why and how to center marginalized communities in the process and outcomes of achieving net zero.

This introduction draws on work conducted under the ULI Net Zero Imperative, a multiyear initiative to accelerate decarbonization in the built environment, and is based on research demonstrating that prioritizing social and racial equity within decarbonization helps realize better environmental, social, and governance (ESG) and real estate outcomes for all.

### This publication presents:

- › The concepts and applications behind equitable decarbonization;
- › The business case and market drivers for an equitable transition; and
- › Project profiles of real estate-based solutions demonstrating how to integrate equity into every step of ULI's Real Estate Journey to Net Zero.



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The business case for a net zero real estate industry is clearer than ever. Rising stakeholder pressure to decarbonize, alongside the scale of business opportunity, has ensured that the companies who lead that effort will see the highest value creation.

Moreover, the broader case to reach net zero remains pressing. As the window to avoid catastrophic climate change narrows, the need to drastically reduce emissions could not be more urgent. Buildings are responsible for roughly 40 percent of global emissions, and reaching net zero by 2050 or sooner will be possible only with rapid acceleration of that effort.

*“Traditionally, when major advancements are happening in technology, clean energy, or life sciences, Black and low-income communities and people have been left out of the resulting economic upward mobility and opportunity for wealth creation. That has to be central this time.*

*“It means turning the page from environmental issues that plague predominantly Black communities, and [thinking through] how real estate can help to not only not continue those cycles but really be a part of the solution going forward.”*

*—Derrick Tillman, chief executive officer  
Bridging the Gap Development*

Simultaneously, the need to address social inequity and the structural forces of exploitation—whether based on race and ethnicity, wealth and social class, gender, or any other social factor—also grows continually more pressing. Marginalized communities (such as Black, Indigenous, and other communities of color and low-income communities) experience the effects of climate change first and worst, and are often shut out of the environmental, economic, and social benefits of the net zero transition.

Real estate's role in achieving net zero and building community well-being situates the industry in a unique position to address these intersecting challenges. Real estate leaders in sustainability and equity have already begun implementing equitable decarbonization strategies in partnership with community stakeholders, demonstrating their transformative capacity.

By following suit, real estate investors, developers, and owners can support environmental and climate justice and link the net zero and social (E and S) goals of their corporate ESG programs, achieving greater long-term impact for their businesses and the communities they work in.

This publication introduces the concept of equitable decarbonization, explains the business case for centering equity within the net zero process, illustrates what this process might look like in practice, and presents examples of real estate actors implementing equitable decarbonization solutions.

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# Real Estate's Role in an Equitable Transition

Decarbonization of the built environment affects the entire real estate value chain. Therefore, prioritizing equity within that transition will also affect all real estate stakeholders.



“Through the development, construction, and operation of real estate assets, we have the ability to create family-sustaining jobs for populations for whom those have been difficult to get. A key component is our ability to think about how we can create pipelines to employment for the chronically unemployed and underemployed.”

—Joe Ritchie, managing director of business development and head of diversity and inclusion, Tishman Speyer

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A just transition to net zero for real estate includes a wide array of strategies, including several depicted here, designed to correct social inequities and expand access to the economic, social, and environmental benefits this major transformation may generate.

Source: ULI.

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Developers, owners, and investors of every asset type can work to achieve significant equity outcomes while bringing the entire real estate life cycle to net zero emissions, from construction/acquisition to disposition. The following questions illustrate how decisions made at every stage can further or hinder social equity as net zero development and existing building retrofit projects are completed:

- › How diverse is our internal staff working on this project, from entry level to senior leadership?
- › What kind of community will we site this project in? Can we site it in a community that has historically lacked real estate investment without causing displacement?
- › How early and how deeply will we seek community input to inform the project, and how thoroughly will we integrate what we learn?
- › Where are we getting our development capital from, and who are our development partners? Who else can benefit from the financial and other returns this project will deliver?

- › Who are we providing development capital to, and how will we set our expectations around achieving high-performing social and environmental targets?
- › Who are we hiring as vendors, contractors, and suppliers to build and maintain this project and ensure it reaches net zero? How will this project's completion further the skills and employment opportunities of the surrounding community?
- › What kind of tenants will occupy our building? How will they help generate community wealth and well-being?
- › What kind of co-benefits can this project's net zero features provide? For example, can we reduce energy costs and pollution burdens, support healthy lifestyles, or reduce the impact of extreme weather?

While an equitable transition to net zero is by no means an easy task, it starts with changing the answers to questions real estate companies may already be asking about their projects.

### Social Equity and the ULI Net Zero Imperative

Several engagements with cities and local governments through the ULI Net Zero Imperative have sounded the call to centralize equity within the net zero transition.

Common themes appeared across these technical assistance panels. For example, many touched on the need to address historical and current inequities in communities; to develop financial and technical support tools for inclusive economic growth; and the private sector's opportunity to collaborate with public and community stakeholders to reach net zero equitably. For example:

- **ULI Austin** explored real estate's role in supporting the city's Climate Equity Plan, studied the foundation of Austin's net zero goals, and recommended equity be woven into all net zero

planning. The panel defined equity in net zero as avoiding displacement, unaffordability, or utility burdens, and emphasized that "An equitable process should serve as a catalyst for growth, job creation, and prosperity—serving all beneficially."

- **ULI Kansas City** examined launching a [green bank](#) to finance energy efficiency upgrades to multifamily housing with a focus on equity, supporting community impact in sustainability and inclusive prosperity, health, and safety.
- **ULI Minneapolis** created a [road map](#) for developing a net zero framework for the nascent Root District, an area affected by historical inequity and displacement. The panel recommendations included enhanced community engagement to define what equity looks like and establish an equity system framework to bridge gaps and build trust.



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# The Business Case for a Just Transition

Pursuit of either net zero or social equity in real estate makes a compelling business case, and linking the two can often strengthen the proposition. Although the specifics of a return on investment will differ across property types and sectors, macro-scale market and policy drivers suggest real estate can create material financial and nonfinancial returns by investing in an equitable transition to net zero.

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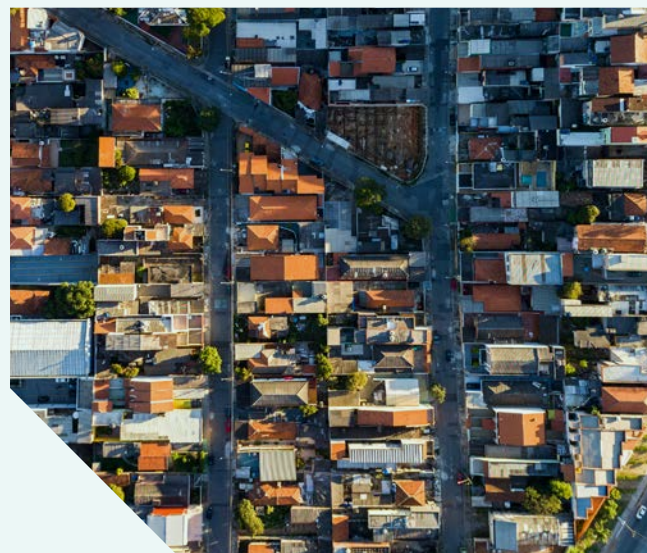
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Sources of returns from equitable decarbonization can include:

**Stable markets.** According to ULI Los Angeles's *The Case for Social Equity in Real Estate*, investing for social equity and directing capital into previously disinvested areas can enhance value over time by demonstrating the potential for untapped markets, redirecting spending to community-based enterprises, and activating unexpressed human and social capital. Understanding this impact can often mean adjusting assumptions and metrics around anticipated/observed returns toward broader, longer-term indicators of well-being, such as employment rates, graduation rates, or access to goods and services (such as renewable energy).

**More valuable buildings.** Net zero real estate assets outfitted with upgraded, efficient technologies in envelopes, HVAC systems, energy generation, and building management increasingly capture a green premium, carrying lower operating costs and higher net operating income (NOI), and often qualifying for better finance terms. Studies have documented rental premiums of 3.5 percent and sale premiums of around 13 percent for highly efficient buildings, as well as up to 7 percent higher occupancy rates from better tenant attraction and retention. Sharing these boosts in value with occupants and communities helps ensure net zero also supports economic justice.



**Investor demand, access to capital, and brand benefits.** Real estate firms are increasingly expected to act on both climate change and social equity by investors, tenants, and the wider public. Firms that effectively link the E and S aspects of their ESG program will be considered increasingly competitive for investment. For example, nearly 70 percent of investors and 100 percent of investment managers surveyed for ULI's *Social Impact: Investing with Purpose to Protect and Enhance Returns* report expected their social value and social impact activity to increase over the next three years. The largest market driver behind this growth, identified by 75 percent of investors, was public pressure and reputational benefits.

In addition, local governments, at least in major U.S. markets, often prioritize or even require high performance on net zero and social equity when awarding subsidies for projects such as affordable housing, meaning projects that have a strong track record on these topics will be more competitive for funding.

*“We raise capital from third parties for our deals. Those LPs are more and more interested in diversity and racial equity and seeing that manifested in the people with whom they do business—both in their employee makeup and their business practices. As that grows, it will be more of an imperative for all of us to think about it.”*

—Joe Ritchie, managing director of business development and head of diversity and inclusion, Tishman Speyer

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**Increased community and financial support for development.** Projects that incorporate strong net zero and social equity goals are more likely to win backing from community stakeholders, which can reduce or eliminate costly delays caused by public pushback. Similarly, local permitting authorities are often more keen to approve projects with these attributes, helping reduce costs and lead to faster development timelines.

**Diversified, resilient supply chains.** Setting targets to increase hiring of local, minority and/or women-owned business enterprises (MWBs) as vendors, suppliers, and contractors on net zero development projects increases the development team's flexibility and adaptability to changing market conditions. This can help support project delivery, increase local insight into community needs, and lower barriers to growth for communities traditionally cut off from capital and business opportunities.

Moreover, projects that incorporate workforce development aspects or support capacity- or experience-building for the next generation of sustainability-focused professionals and firms can help meet real estate's exploding demand for labor, reducing the potential for workforce shortages and increasing supply chain resilience.

**“U.S. consumers spend over a trillion dollars a year on energy. If your fuel source is coal, gas or oil, that dollar is leaving your pocket and going to the giant corporations that extract, refine, process and burn those fuels to deliver you power. On the other hand, you could own solar panels on your roof and generate your electricity from the daily sunshine. Rather than a trillion dollars every year leaving our communities, that money could go back into our pockets by people owning local distributed energy generation technology.”**

—Andreas Karelis, chief executive officer of RE-volv, [interview](#) with the Kresge Foundation

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**Policy drivers.** Policy is moving toward prioritizing social equity within net zero, and real estate leaders can get ahead of the curve by strengthening the equity focus of their decarbonization programs now. Many localities have institutionalized equitable net zero in policy and are approaching built environment regulation accordingly, such as through Austin's Climate Equity Plan, the updating of a similar plan in Minneapolis, or the work of the New York City Mayor's Office for Climate and Environmental Justice.

Equity concerns in leading legislation around net zero, such as the exemptions for affordable housing in New York City's Local Law 97, affect the playing field significantly. Real estate actors must be knowledgeable in these developments, especially as they affect issues such as which buildings are covered under new laws, or how tenant engagement and lease structures might change as landlords become responsible for whole-building emissions reductions.

The recent formation of the federally-led National Building Performance Standards (BPS) Coalition also signals an intent to move cities and the industry forward on high-performing, low-carbon buildings, and the coalition has incorporated equity as a central goal for upcoming BPS standards.

Similarly, significant funding has been allocated to environmental justice projects and communities through federal programs. These include the Inflation Reduction Act, which includes an estimated \$40 billion in direct benefits for environmental justice communities, and the Justice40 Initiative, which works to ensure that "40 percent of the overall benefits of certain Federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution."

These are just a few potential sources of value for real estate to invest in equitable, net zero development, in addition to the well-known returns from sustainability investments, such as reduced operating costs and increased NOI from lower energy and utility costs, higher demand from end users and investors, lower transition risk, higher employee productivity, and more.

Developing for social and environmental impact is likely to become best practice over time. For more on the returns from equitable and social impact development, see ULI's *Social Impact: Investing with Purpose to Protect and Enhance Returns* report.



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# Fostering an Equitable Transition to Net Zero

“Building electrification must focus first and primarily on the goal of improving the health and resilience of the people rather than the goal of decarbonizing our building stock. . . . Instead of adding one more problem for families to solve, an equitable transition will position electrification as a solution to existing household problems—one that lowers bills, improves health, and makes homes more comfortable.”

—Greenlining Institute, *Equitable  
Electrification Framework*

Net zero in real estate refers to a building portfolio that is highly efficient and fully powered by on-site and off-site renewable energy sources, so its annual and life-cycle carbon emissions drop to zero or negative over time.

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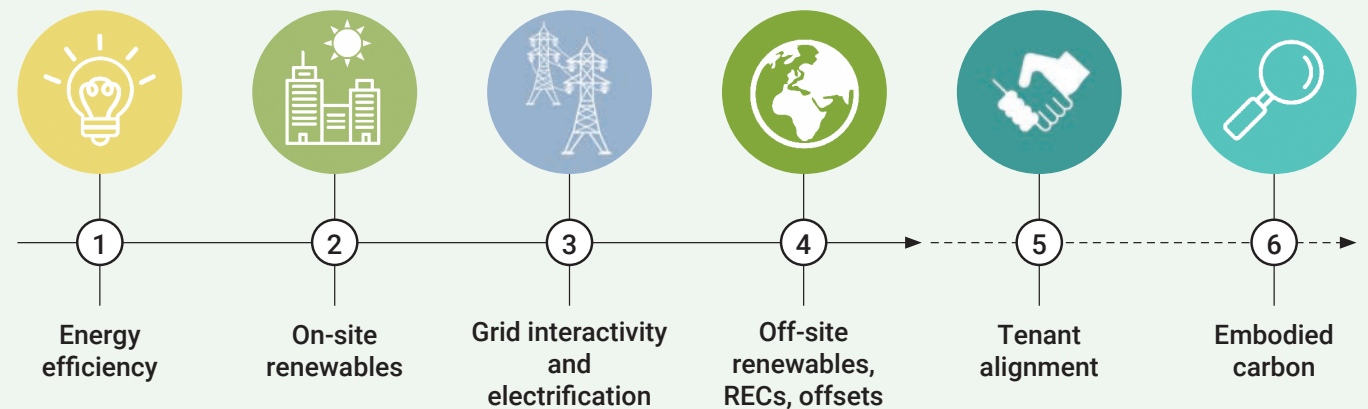
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ULI'S REAL ESTATE JOURNEY TO NET ZERO



Source: ULI.

The figure above illustrates how to reach that point—ULI’s Real Estate Journey to Net Zero. The journey starts with energy efficiency as the most cost-effective solution for carbon reduction, then prioritizes on-site renewables, grid interactivity coupled with building electrification, and balances the remaining emissions with off-site renewables, renewable energy credits (RECs), and offsets.

Last, strategies to engage tenants in reducing their emissions and achieve embodied carbon reductions in building materials remain a challenge for the industry to solve to reach net zero on a whole-building level that encompasses Scope 1, 2, and 3 emissions.

A just transition to net zero for real estate means embedding social equity—defined as “just and fair inclusion into a society in which all can participate, prosper, and reach their full potential”—in each step of this pathway.

**“If a developer is planning to engage a community, you need to acknowledge where the line of power lies. If the community wants something that the developer may not want, what’s the level of commitment to engage with that?”**

—Daphany Sanchez, executive director  
Kinetic Communities Consulting

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Research points to three main goals for that process:

- › Decreasing economic, social, and environmental burdens for marginalized communities from the fossil-fuel based economy;
- › Increasing access to the triple-bottom-line benefits of the clean energy transition; and
- › Expanding decision-making power for how the first two goals should be accomplished through deep, meaningful community engagement.

Understanding why and how to center equity within decarbonization begins by working with affected Black, Indigenous, and people of color (BIPOC) and low-income communities to understand both the current inequities in the energy and built environment systems, and the possibilities decarbonization presents for transformative change.

## What is an equitable transition to net zero?

The just and equitable transition from the current carbon-intensive energy system to decarbonized technologies and fuels in planned, managed steps, so that the benefits and costs of that transition are equitably distributed across society.

If successful, all groups—across class, race, geography, and gender—will have parity in outcomes and fully realize the economic and health benefits of this new energy system.

Source: Adapted from the [Center for Energy and Environment](#).



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## Community Engagement on Net Zero Projects Drives Better Outcomes

Deep community engagement and stakeholder empowerment in low-carbon real estate development projects help ensure that the local community's goals, needs, and visions are thoroughly incorporated, supporting an equitable approach. Dream, a Canadian impact-centered real estate company focused on creating inclusive communities, exemplifies this model through projects such as *Zibi*, the country's first One Planet Living Community.

Located in the Ottawa and Gatineau area on islands in the Ottawa River, this award-winning 4 million-square-foot, mixed-use development is planned to use zero-carbon energy, using industrial waste energy for heating and the river for cooling.

*Zibi*, from the Algonquin Anishinabe word for river, is a site of great importance to the First Nations people of the area, who are an integral part of the *Zibi* community. Dream made it a top priority to consult and engage with the Algonquin Anishinabe at every stage of the development process, creating a true partnership.

They engaged in years of engagement with Indigenous elders and advisers to ensure that the project would meet their needs and support their communities, including creation of jobs for Indigenous people. The development's proactive collaborative approach is unlike that of any other in the region, and Dream is committed to improving the way Indigenous peoples and non-Indigenous private-sector companies work together. The site's engagement with the Algonquin Anishinabe began in 2013 and is ongoing.



Rendering of the Zibi project.



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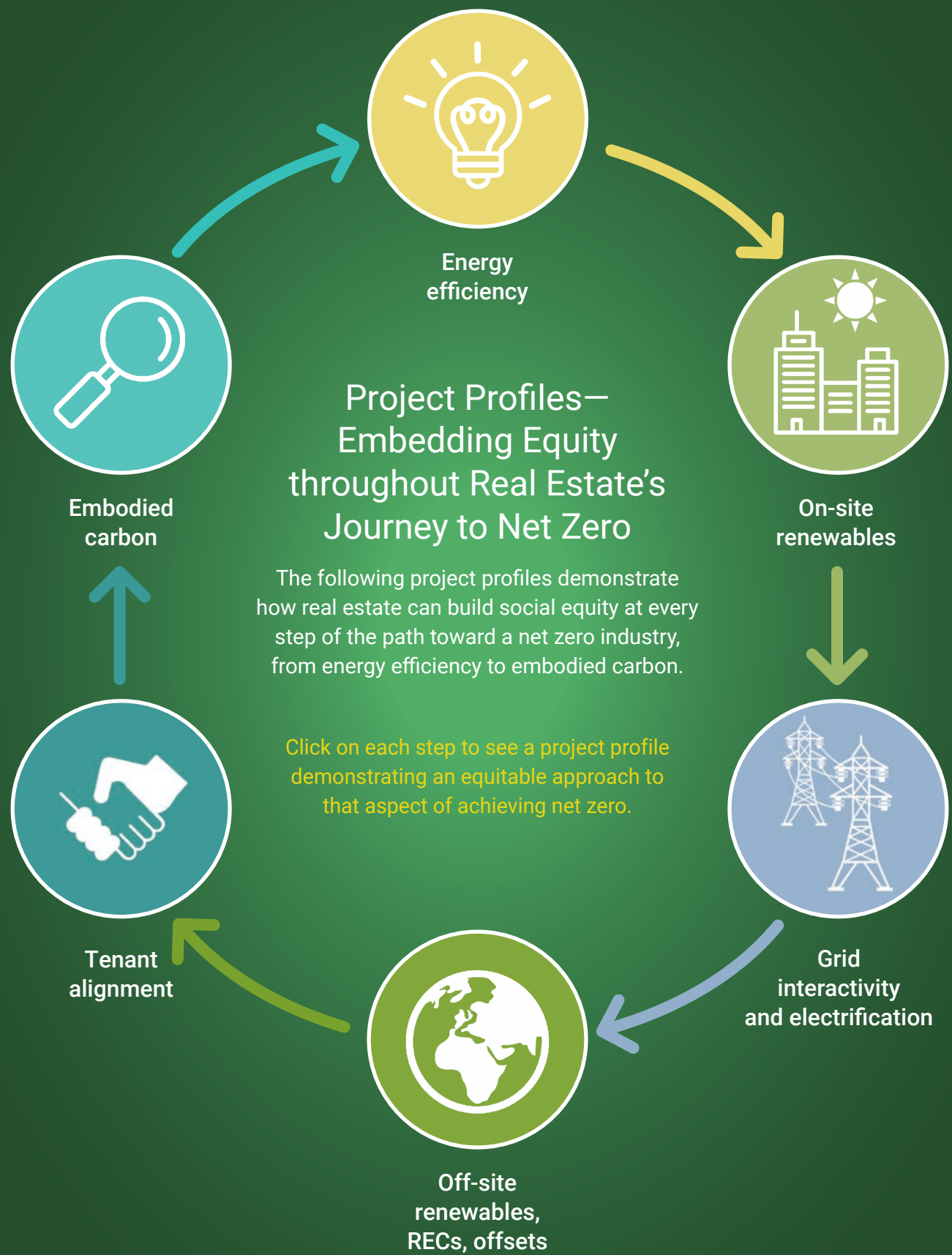
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# Mixed-Income Passive House with Bridging the Gap Development

Pittsburgh's Bridging the Gap Development (BTG), led by chief executive officer Derrick Tillman, is pushing the boundaries of what an energy-efficient redevelopment in an underinvested area can accomplish.

Its *Fifth and Dinwiddie* project, a \$66 million mix of new construction and existing building rehabilitation, will provide 171 new apartments—20 percent of which will be affordable—alongside commercial office space, co-working space for small local businesses, 12,000 square feet of local retail, and a multipurpose public plaza for community events. All this will serve the Uptown neighborhood, a multiracial low-income community devastated by urban renewal in the mid-20th century.

The project is designed to Passive House standards and is planning a rooftop solar array to reach net zero energy, reducing carbon emissions and the energy burden for low-income residents, while also targeting Fitwel certification and the RESET Air quality standard for their extensive health benefits.

Perhaps most notably, part of the project will include a workforce development hub. "We're training people to install solar panels and [work on] solar farms, and connecting with industry partners to deploy them to good-paying jobs. We are an engine for upward mobility, and we'll directly benefit low-income people in this community by having that resource there," says Tillman.



Fifth and Dinwiddie is highly energy efficient, designed to Passive House standards.

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BRIDGING THE GAP DEVELOPMENT.

Fifth and Dinwiddie will also host a solar array to reach net zero.

Building on BTG's mission for upward mobility, especially for Black communities in Pittsburgh, Tillman notes, "Everything that's important and you hear [a need for] in communities, we're accomplishing it in one development, and advancing economically, socially, environmentally. . . .

We also have other partners and community agencies that will house companies on site, a consortium of community impact all working together to advance equity, impact low-income people and communities, and provide avenues for upward mobility."



## Veridian at County Farm

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Veridian at County Farm's mixed-income homes are all-electric and generate renewable energy.

Veridian at County Farm is a collaboration between THRIVE Collaborative (a building, development, design, and consulting firm based in Detroit and Ann Arbor) and Avalon Housing, a nonprofit affordable housing developer. Transforming the site of a former juvenile detention facility in Ann Arbor, the Veridian neighborhood aims to be a model for low-carbon, climate-resilient, socially focused, ecologically regenerative, and healthy living.

Equity, in terms of providing homes for people at all income levels, is fundamental, according to Matthew Grocoff, founding principal of THRIVE. "We said from day one that equity is a precondition to sustainability. That's it. There's no such thing as a sustainable society from an ecology point of view unless society itself reconciles its challenges." For THRIVE, the partnership with Avalon deepens Veridian's ability to provide high-performing housing for the area's most vulnerable residents.

While Veridian is considered one neighborhood, because of funding requirements, THRIVE and Avalon are developing two adjacent parcels, with distinct but complementary goals for residents. The eight-acre THRIVE parcel offers for-sale units at a range of price points as well as a public commercial space. THRIVE is also aiming for master plan Living Community Challenge certification, which is an expansion of the stringent Living Building Challenge from the International Living Future Institute. THRIVE is designing its buildings to be all-electric and 100 percent powered by solar energy, with battery storage to provide additional backup power.

For Avalon, the partnership with THRIVE has helped push the designs of Veridian's most deeply affordable and supportive housing (known as the Grove) to be all electric and solar ready, elements the nonprofit developer was eager to incorporate.

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“The Grove at Veridian development will create an innovative model of affordable housing development in terms of climate impact, income mix, and access for all. Our belief is that providing this community to people who have experienced homelessness can help transform the lives of people who’ve experienced marginalization, systemic racism, poverty, trauma, and unstable housing,” according to Wendy Carty-Saxon, Avalon’s director of real estate development.

Avalon is also working toward Net Zero Energy Certification for the Grove’s community center through the International Living Future Institute Affordable Housing Pilot Program, another example of THRIVE’s influence.

The Grove’s 50 one- to four-bedroom rental apartments will be available for tenants earning up to 60 percent of area median income (AMI), with more than half reserved for tenants earning up to 30 percent of AMI. Avalon staff will provide a range of supportive services for tenants, including case management, a food pantry, youth programs, and community-building activities.

In addition to the partnership with Avalon, mixed-income design is THRIVE’s most important method of achieving equity from the private-sector perspective. Sara Hammerschmidt, THRIVE’s director of sustainable development, notes that “THRIVE is selling housing at a variety of price points

to help with housing attainability. Our \$200,000 to \$400,000 homes are most in demand, as there is not a lot of inventory in Ann Arbor at those price points. These homes are appealing to people, and having the ability to purchase them helps them build equity without the barriers you’d have trying to buy any other home in Ann Arbor, where the average home is \$500,000.”

Notes Hammerschmidt, “Designing for mixed price points is not easy. We have \$200,000 units, but they’re 400 square feet. You can’t move a family into them. But I also wouldn’t recommend developers just go out and build deeply affordable housing into their projects because that’s a whole other challenge. Partnering with organizations like Avalon is critical to ensure the right type of housing and the right services are available.”

Avalon provides decades of experience and deep expertise in the affordable housing space. Developing the Grove alongside THRIVE’s homes will benefit the whole community by helping remove the stigma of affordable housing. “While many of Avalon’s properties are located adjacent to market-rate developments, Veridian will be Avalon’s first experience developing supportive housing in coordination with a market-rate developer,” notes Carty-Saxon. “Avalon’s on-site services can play a significant role in promoting social bridging and challenging socially constructed notions of ‘the other.’”



The community also includes significant green space.

## Electrification Retrofits with BlocPower

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Retrofitting existing buildings to reach decarbonization goals can be difficult and expensive, from both a design and cost perspective. These barriers rise even higher for low-income owners and renters who may not have the capital or technical expertise to shoulder the upfront costs and navigate the process of retrofitting.

Enter BlocPower, a prominent, Black-owned clean energy company with an economic and environmental justice mission. The company provides comprehensive electrification and weatherization, becoming known for installing heat pumps for heating and hot water, and providing solar panels, electric vehicle charging, electric appliances and induction stoves, air sealing, insulation, and double-glazed windows.



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Focusing on older buildings in low-income and BIPOC communities, BlocPower developed a financing model that eliminates upfront costs using a leasing system that requires no money down and no loans. Low, predictable monthly payments are made while utility bills drop, and once electrification is completed, costs from delivery, operation, and maintenance of fossil fuel systems are eliminated.

A potential barrier to electrification is increased utility costs for tenants, as often they are responsible for metered electricity bills while owners cover whole-building natural gas charges. “When assets are converted to all electric, the burden of the increased electricity usage falls onto the residents. While this isn’t a reason to avoid going all electric, it brings up social and racial inequities that need to be addressed,” explains Abhishek Dash, vice president of engineering management at BlocPower, in ULI’s *Electrify: The Movement to All-Electric Real Estate* report.

However, reducing energy use and costs by upgrading the whole building’s systems and efficiency helps mitigate potential cost increases. Green leases can also come into play here, to allow owners—who benefit from retrofits by gaining a more valuable, regulation-friendly building—to share costs with tenants.

To expand access to the wealth-building opportunities the company is generating, BlocPower has brought its model to help cities across the United States electrify, such as Ithaca, New York, and Menlo Park, California.

The company has also offered crowdfunding investment opportunities through the [Raise Green](#) platform. The company has also launched a clean energy workforce development program for low-income New Yorkers affected by gun violence, the [Civilian Climate Corps](#). To date, the program has trained 1,700 participants (97 percent of whom are BIPOC and 25 percent are women) and greened over 500 buildings. An investment of \$54 million from the New York City Mayor’s Office will expand the program further.

# Community Solar in STAG Industrial's Solar Portfolio

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STAG Industrial's 9.6-megawatt community solar array in Maryland.

Community solar is one of the most effective ways real estate can transform unused square footage (such as large, empty rooftops) into value, while supporting cleaner, more affordable energy supplies for nearby communities. As nearly half of households and businesses cannot host solar arrays of adequate size on their properties to meet their energy needs, real estate can fill a critical gap in access through community solar.

This is how community solar works: real estate owners rent space, often on rooftops, to solar developers who mount and operate solar arrays. Clean energy is supplied to the grid, and local homes and businesses sign up to use it through the utility, cleaning their energy mix and reducing their utility bill.



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STAG Industrial (a Boston-based industrial real estate investment trust) hosts 25.6 megawatts (MW) of solar on its U.S. properties, including 20.7 MW of community solar. With assistance from Black Bear Energy, a commercial buyer's representative specializing in on-site renewable energy and cleantech services, STAG has completed community solar in Minnesota, Illinois, Massachusetts, and Maryland, with additional projects under construction in New Jersey.

Over the past year, STAG has sought ways to evolve its strategy to provide renewable energy both to tenants and to local communities. Accordingly, the company combines "hosted solar"—in which its generated electricity is either purchased by the utility and distributed locally, or in locations with community solar programs, residential customers and businesses receive discounted clean electricity—with plans for "amenity solar," in which its industrial tenants receive green energy to reduce their tenants' Scope 2 emissions and STAG's Scope 3 emissions, helping place STAG on a path toward decarbonization in alignment with its Science Based Targets initiative goal.

STAG's largest array—reportedly the largest community solar project in the country when it came online—is in Hampstead, Maryland. The 9.6 MW system provides clean energy to subscribers in Baltimore and several surrounding counties and is part of Maryland's community solar program that provides low-cost renewable energy to local homes and businesses. Co-developed by Black Bear Energy and Summit Ridge Energy, the system will generate enough energy to power nearly 1,300 homes.

Community solar faces some barriers, but the outlook overall is positive, according to Black Bear. "REITs should view hosting community solar as one additional option in their toolkit to be net zero. While solar economics really only currently support rooftop community solar (as opposed to ground mounts) in seven states, as more states come to recognize the myriad benefits of community solar, the opportunity to host solar on industrial rooftops will create an incredible opportunity for REITs to tackle a significant portion of their net zero goals and, more importantly, contribute to greening the grid. STAG's work to date is exemplary and incredibly impressive," according to Drew Torbin, CEO of Black Bear Energy.

## Beach Green Dunes II by L+M Development Partners

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Commercial tenant selection is a critical piece of expanding access to high-performing net zero buildings, while also boosting social equity outcomes.

L+M Development Partners in New York's tristate area exemplifies this practice. Committed to "fostering economically diverse communities by developing mixed-income and mixed-use buildings," L+M has also gone all in on sustainability.

Its portfolio includes the innovative Beach Green Dunes II, a mixed-use, 127,000-square-foot project in the low-income Edgemere neighborhood of Queens, New York City. Developed by L+M in partnership with Triangle Equities and the Bluestone Organization, the building includes 127 rental apartments affordable to households with income below 100 percent of AMI.



Beach Green Dunes II features an efficient envelope and solar and geothermal energy.

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The efficient building design and solar and geothermal systems enabled achievement of the rigorous Passive House certification and compliance with the U.S. Department of Energy's Zero Energy Ready Homes, among other standards, and significantly reduce residents' energy burdens.

To further the development's equity impact, instead of bringing in any chain restaurant or retailer, L+M selected its first-floor commercial tenant

carefully. The company partnered with The Campaign Against Hunger to open the nonprofit's first café, which serves low-cost healthy meals and locally grown produce, while also hosting culinary job training. This selection of a community-focused organization as a tenant, a process any market-rate developer can replicate, increases local access to the net zero-ready building while supporting food equity, economic growth, and creating community space.



The Campaign Against Hunger runs the first-floor café and serves low-cost, healthy meals.

# BoKlok's Modern and Sustainable Modular Housing

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BoKlok, a joint venture to provide quality housing at an affordable price formed by developer and construction firm Skanska and home design firm IKEA, both global companies based in Sweden, was formed in the 1990s to address rising costs of living.

To determine how much their homes should cost, the companies looked at the cost of living for a hypothetical single mother with two children, working as a nurse. "How much can she spend on clothing, transportation, living a good life? How much money does she have left to pay for living costs? That was our roof, and we needed to build a home that matches that maximum. We started the opposite way around, and it affects everything we do," says Jenny Adholm, head of sustainability at BoKlok.

To meet that need, the company developed a factory-based, modular, all-wood home building system, and does everything in house from design and construction to purchasing land and selling homes, which keeps costs down enough to sell to low-income families and young or first-time buyers. Prices are fixed and no buyer can up the price to get a nicer home: "We call it democratic application: we want to give each potential customer an equal chance to buy our homes," says Adholm.

The homes (both single-family detached/semi-detached and multifamily apartments) are built through a proprietary, robotic building system, using FSC- or PEFC-certified sustainable wood, which creates efficiencies in energy use, prices, materials, energy consumption, and waste while offering safer working environments than traditional outdoor construction projects.

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Each home is highly energy efficient, using solar panels (standard in Swedish markets), geothermal energy heat pumps, exhaust air heat pumps, triple-glazed windows, and air ventilation with heat exchange (standard in Nordic markets).

Life-cycle carbon emissions have been pared down to roughly 50 percent those of a conventional home. Homes have reached net zero operational carbon, though it is not yet standard, and the company is beginning work in 2023 on its first net energy positive project in Malmo.

From there, the company works with local municipalities to source affordable land in developed areas, close to services and transportation but not in expensive city centers, and builds open, publicly accessible communities with gathering spaces like playgrounds and parks.

Adholm notes that the return on investment for this approach is broad: "It gives us a competitive advantage, as we can target groups other competitors can't. It also makes it easier to access land, as municipalities want to be able to offer this kind of home."

She also cites the brand and reputation benefits, attractive lower operating costs for homeowners, and better financing opportunities from banks. "The [banks] are looking for green investments. I think this will become even more important when the EU taxonomy comes into force."

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# Key Issues for a Just Transition in Real Estate

Several critical equity-related challenges that marginalized communities face have been identified through decades of work in the fields of environmental justice and equitable development, and are presented below. Each can be addressed within a just transition to net zero, and real estate developers, owners, and investors wield powerful tools to do so.

The Zero Cities Project's *Equity Assessment Tool* and the Urban Sustainability Directors Network (USDN) and partners' *Equity and Buildings: A Practical Framework for Local Government Decision Makers* document many of these issues, including sustainability challenges. The issues are summarized in the remainder of this section, along with specific examples and various solutions for the real estate industry.

“In the real estate community, buildings may be looking to transition or electrify, but how can we ensure those costs are not passed on to renters who can’t afford them? How do we avoid green gentrification that might result from making upgrades that will benefit the Earth as a whole but might disenfranchise communities that are already the most vulnerable?”

—Meishka Mitchell, president and chief executive officer, Emerald Cities Collaborative



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## Energy Burdens

### THE PROBLEM:

Black, Indigenous, and people of color pay a significantly higher share of income on household energy bills because of the combination of higher energy bills (stemming from often living in less-efficient housing stock) and having lower average household income relative to average energy bills.

### FOR EXAMPLE:

Native American households spend 45 percent more of their income on energy costs than white households, while Black households spend 43 percent more and Hispanic households 20 percent more. High energy burdens are associated with outcomes such as greater risk of respiratory disease, increased stress, and reduced economic mobility.

### WHAT CAN REAL ESTATE DO?

Ensure net zero reduces energy costs equitably. For example, real estate can

- › Partner with experienced providers to expand supply of healthy, resilient, net zero affordable housing to reduce overall costs of living, for example through modular housing;
- › Develop shared ownership, local on-site and off-site renewable energy (e.g., rooftop solar, microgrids, community solar) in partnership with stakeholders from marginalized communities, or provide technical assistance with renewable energy procurement;
- › Use or help residents use existing utility programs like Mass Save or Austin Energy's Weatherization Assistance, or government funding programs under the Inflation Reduction Act for low or no-cost home energy efficiency upgrades (e.g., envelope weatherization or insulation, energy-efficient appliances and HVAC systems), or locate external funding sources to conduct these upgrades without passing the cost on to tenants.

“Innovative structures like community solar shift the conversation away from, ‘As a developer I’ll reduce my operational costs by having a solar array,’ into ‘How can I build a model where my residents are having zero electric bills, and how does that translate into value? How does that impact my Scope 3 emissions?’”

—Renee Loveland, senior manager, ESG programs, ReTech Advisors; former director, ESG, The Green Cities Company; and Net Zero Imperative panelist





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## Economic Exclusion

### THE PROBLEM:

BIPOC households and businesses possess less wealth, higher unemployment, and lower access to capital than white households. A lack of financial resources to cover the upfront cost of net zero upgrades or fluctuations in energy costs will disproportionately affect low-income and BIPOC populations and risk stranding them with energy-inefficient, high-carbon, unhealthy buildings and systems.

### FOR EXAMPLE:

Black and Latinx-owned businesses were less than half as likely as white-owned firms to be fully approved for loan applications from 2020 to 2021, even when all were categorized as low risk. Though BIPOC-owned firms represent 29 percent of all U.S. firms, their combined gross receipts are 10 percent that of white-owned firms.



“Born and raised in public housing, I’ve seen firsthand what it’s like in winter to not have heat or to see rust-filled water coming out of the tap. At the core of this company is ensuring that people that are like me, who have grown up in these situations, get the opportunity to participate and even lead this transition.”

—Daphany Sanchez, executive director,  
Kinetic Communities Consulting

### WHAT CAN REAL ESTATE DO?

Use the net zero transition to slow or reverse economic and structural inequalities. For example, real estate can

- › Diversify procurement policies and supply chains to prioritize women- and BIPOC-owned businesses that provide clean energy or decarbonization services;
- › Lease office, retail, or community space to BIPOC-owned businesses and organizations;
- › Include workforce training hubs and programs in developments for BIPOC residents and communities for decarbonization-related professions to support wealth-building and supply chain resilience;
- › Consider launching (or investing in existing) wealth-building and investment opportunities for marginalized communities in real estate decarbonization ventures, for example using equitable crowdfunding platforms such as Small Change or setting targets for raising equity from BIPOC investors;
- › Partner with BIPOC-owned real estate companies on net zero development projects.

# Gentrification and Displacement

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## THE PROBLEM:

Low-income residents and tenants, many of whom are BIPOC, are already at increased risk of displacement from a lack of affordable housing. Although property values and residential or commercial rents are often higher in net zero buildings, overall tenant costs are often lower due to the extremely low (or potentially zero) energy costs and protection from utility rate structure increases. However, if this is not the case, net zero new buildings or retrofit projects could potentially exacerbate displacement.

## FOR EXAMPLE:

Though operating costs can be lower, LEED-certified office buildings in the United States carry an average 4 percent rent premium over noncertified buildings; other studies show green building certifications create a rental premium of 6 percent and sales premium of 7.6 percent across commercial and residential properties.



In 2020, nearly a third of U.S. households were cost burdened, spending over 30 percent of income on housing; Black households saw the highest increases in cost burdens from 2020 to 2021 (2.4 percent, compared to 1.6 percent for whites), as did those earning between \$30,000 and \$45,000 annually (4.2 percent).

## WHAT CAN REAL ESTATE DO?

Investment in net zero buildings should help stabilize existing community residents and prevent additional displacement. For example, real estate can

- › Ensure net zero upgrades or energy procurement strategies reduce tenant energy costs as much as possible, if not to zero;
- › Partner with experienced providers to expand market supply of healthy, resilient, net zero affordable housing;
- › Use green leases in commercial and multifamily buildings to align tenant-landlord expectations and responsibilities on sustainability, resilience, and social equity goals (see ULI's Taking Green Leases to Net Zero primer);
- › Contribute to local or national affordable housing trust funds, which can also support weatherization of existing homes;
- › Support tenants with rental costs through credit recognition for on-time rent payment programs, flexible payment plans, or reduced fees or deposits;
- › Engage with policymakers on development of affordability and anti-displacement policies;
- › Assist with community wealth-building activities (see Economic Exclusion above).

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## Low Housing Quality and Health Risks

### THE PROBLEM:

Low-income and households of color are more likely to live in housing of poor quality, with increased exposure to mold, lead, poor indoor air quality, pests, and asthma triggers, all of which also increase stress and broader health disparities. These issues may need to be addressed to bring homes up to code standards before electrification can begin.

### FOR EXAMPLE:

Black and Hispanic households are roughly twice as likely as white households to reside in moderately or severely inadequate housing. Fossil fuel-based HVAC systems and appliances like gas stoves are tied to significant health risks such as asthma, for which Black and Hispanic children are twice as likely as white children to be hospitalized.

*“We’re being thoughtful and saying we’re going to decarbonize our whole portfolio. It’s not just the high-end units in our luxury buildings that will get induction stoves, for example, but every unit will get best-in-class components to improve air quality and health.”*

—Colleen Graham, director, Tishman Speyer

### WHAT CAN REAL ESTATE DO?

Use net zero investments in new construction or retrofits to remediate housing quality issues. For example, real estate can

- › Pursue net zero strategies (e.g., natural ventilation and enhanced filtration, or continuous air barriers) and prioritize strategies with greater health impact;
- › Electrify building HVAC equipment and appliances to eliminate on-site pollution;
- › Include health certifications (e.g., WELL, Fitwel, or RESET) or associated strategies as part of construction or retrofit planning and design;
- › Address additional environmental issues contributing to housing quality, such as persistent flooding that leads to mold.



## Higher Environmental Risks

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### THE PROBLEM:

Low-income and neighborhoods of color are more likely to be exposed to highway pollution and industrial or hazardous land uses, including fossil fuel production facilities and “peaker” plants, which exacerbate health disparities.

### FOR EXAMPLE:

Black households making between \$50,000 and \$60,000 a year experience the same level of pollution burden as white households making \$10,000 or less, indicating the primary role of race as a determinant of exposure. Long-term exposure to “peaker” pollutants has been linked to asthma, Alzheimer’s, heart disease, chronic kidney disease, diminished fertility, miscarriages, and more.

### WHAT CAN REAL ESTATE DO?

Prioritize net zero development/retrofit strategies that protect indoor air quality and, where possible, reduce outdoor air pollution. For example, real estate can

- › Include health certifications (e.g., WELL, Fitwel, or RESET) or associated strategies as part of construction or retrofit planning and design;
- › Expand use of on-site and off-site renewable energy, battery storage, and demand-response or peak-shaving programs to reduce grid use of fossil fuel power plants and the dirtiest “peaker” facilities, often sited in communities of color;
- › Reduce broader dependence on cars by emphasizing compact infill development and multimodal/public transit;
- › Locate industrial developments with potential air quality impacts (e.g., through manufacturing and/or increased truck traffic) outside residential areas, especially low-income or BIPOC neighborhoods.



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## Increased Urban Heat Islands

### THE PROBLEM:

BIPOC and low-income communities have fewer green spaces and less-efficient buildings, increasing illness and mortality from extreme heat, raising demand for energy-intensive air conditioning, and risking utility grid strain.

### FOR EXAMPLE:

Formerly redlined neighborhoods (historically, neighborhoods of color) can be up to 20 degrees Fahrenheit hotter than higher-income white neighborhoods, dramatically increasing health risks.

### WHAT CAN REAL ESTATE DO?

Focus on maintaining safe indoor temperatures while reducing the urban heat island effect and furthering net zero goals. For example, real estate can

- › Partner with experienced providers to expand supply of affordable, heat-resilient homes and commercial buildings in low-income and BIPOC neighborhoods;
- › Incorporate building-, site-, and neighborhood-level green space and tree canopy, which can provide significant cooling and improved air quality, while sequestering carbon, boosting flood resilience, and supporting social and ecological health and well-being (see examples in ULI's *Scorched: Extreme Heat and Real Estate* and *Nature Positive and Net Zero: The Ecology of Real Estate* report with Jacobs).



## Decreased Resilience to Disaster and Disruption

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### THE PROBLEM:

Low-income and communities of color are at greatest risk from climate hazards (e.g., flooding or loss of power) and often have the least financial resources to recover.

### FOR EXAMPLE:

FEMA's National Risk Index indicates that in the United States, Indigenous households are most at risk from drought, riverine flooding, wildfires, and cold storms, while Black households are most at risk from hurricanes, tornadoes, heat waves, and coastal flooding.

### WHAT CAN REAL ESTATE DO?

Net zero new construction and retrofits should also prioritize resilience to climate hazards to remain safe, occupiable, and valuable, boosting community well-being year round. For example, real estate can

- › Incorporate hazard resilience strategies into net zero development in low-income and BIPOC neighborhoods at the building, site, and neighborhood scale (see ULI's *Resilient Retrofits: Climate Upgrades for Existing Buildings* and *Enhancing Resilience through Neighborhood Strategies* reports, as well as the Developing Urban Resilience site);
- › Incorporate local microgrids and disaster-resistant renewable energy to maintain power during climate hazards.



# Tools and Resources

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The following tools and resources can help real estate operationalize and deepen its work on an equitable transition.

### > ULI resources

- [\*Environmental Justice and Real Estate\*](#) report
- [\*10 Principles for Embedding Racial Equity in Real Estate Development\*](#) report
- [\*Social Impact: Investing with Purpose to Protect and Enhance Returns\*](#) report
- [\*Zooming in on the S in ESG\*](#) report
- [\*The Case for Social Equity in Real Estate\*](#) report

**“In real estate, there’s a huge opportunity to think about access—recognizing that as a property owner, you can play a significant role in improving social outcomes based on how you design and operate your properties, create community spaces, and invest in your local community.”**

—Renee Loveland, senior manager, ESG programs, ReTech Advisors; former director, ESG, The Green Cities Company; and Net Zero Imperative panelist

### > External resources

- The Initiative for Energy Justice [\*Workbook\*](#)
- The Greenlining Institute’s [\*Equitable Building Electrification\*](#) framework and [\*Greenlined Economy Guidebook\*](#)
- The NAACP Centering Equity in the Sustainable Buildings Sector’s [\*Guidelines for Equitable Community Involvement in Building Projects and Policies\*](#)
- Movement Strategy Center and Facilitating Power’s [\*The Spectrum of Community Engagement to Ownership\*](#)
- The EPA’s [\*EJScreen Tool\*](#)
- Autocase’s [\*Building EJ Tool\*](#)
- [\*Spark Map\*](#)
- UK Green Building Council’s [\*Defining Social Value Framework\*](#)
- The Zero Cities Project’s [\*Equity Assessment Tool\*](#)
- ACEEE’s [\*Leading with Equity, Energy Equity, and Residential Retrofits for Energy Equity \(R2E2\)\*](#) initiatives
- [\*Emerald Cities Collaborative\*](#) resources

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**The net zero transition and the enormous economic, environmental, and social changes it will usher in present real estate with a chance to right historical and current inequities. Opportunities exist to boost positive social change in every step of ULI's Real Estate Journey to Net Zero, and calls to do so from the industry and its chain of investors, regulators, and community stakeholders are growing.**

Real estate companies that successfully prioritize equity in the net zero transition will see the greatest benefits to their combined social, environmental, and economic bottom line. And if done right, owners, developers, and investors can use this moment to orient their collective pool of capital and expertise toward building a cleaner, greener, healthier, wealthier industry in partnership with low-income and BIPOC communities.

Leaders in the industry have already shown that a net zero carbon society physically cannot, and morally should not, be achieved without everyone receiving the benefits. Real estate can look to these leaders, and the leadership of the most affected communities, to take up the charge.





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# Project Team

## Urban Land Institute

**August Williams-Eynon**

Manager, Randall Lewis Center for  
Sustainability in Real Estate (lead author)

**Kara Kokernak**

Senior Director, Randall Lewis Center for  
Sustainability in Real Estate

**Billy Grayson**

Executive Vice President, Centers  
and Initiatives

**Marta Schantz**

Co-Executive Director, Randall Lewis Center  
for Sustainability in Real Estate

**James A. Mulligan**

Senior Editor

**Laura Glassman, Publications**

**Professionals LLC**

Manuscript Editor

**Brandon Weil**

Art Director

**Thomas Cameron**

Graphic Designer

## Interviewees

**Jenny Adholm**

BoKlok

**Wendy Carty-Saxon**

Avalon Housing (written)

**Jonathan Flaherty**

Tishman Speyer

**Colleen Graham**

Tishman Speyer

**Matthew Grocoff**

THRIVE Collaborative

**Sara Hammerschmidt**

THRIVE Collaborative

**Renee Loveland**

ReTech Advisors

**Meishka Mitchell**

Emerald Cities Collaborative

**David Natt**

Avanath Capital Management

**Spencer Orkus**

L+M Development

**Joe Ritchie**

Tishman Speyer

**Daphany Sanchez**

Kinetic Communities Consulting

**Derrick Tillman**

Bridging the Gap Development