BuildingGreen

SPOTLIGHT REPORT

Build More or Build Green? Affordable Housing's False Choice

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Edgewood Commons in Washington, D.C.

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About BuildingGreen

BuildingGreen is an independent consulting and publishing company committed to providing accurate and timely information to help building industry professionals and policymakers improve the environmental performance and reduce the adverse impacts of buildings. Our purpose is to foster a thriving and equitable world through a regenerative and resilient built environment. To this end, BuildingGreen facilitates collaboration, learning, and trust to accelerate the transformation of the building industry into a force for positive change.

Readers of this report are eligible for continuing education credits from AIA and GBCI. To claim your credits, take the quiz at www.buildinggreen.com/spotlight/affordable-1.

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Build More or Build Green?
Affordable Housing's False Choice

The U.S. is grappling with a housing crisis, climate change, and a legacy of racism and segregation. But we can address these problems all at once by centering community.

by Elizabeth Waters

This is Part One of a two-part series related to affordable housing. It emphasizes the critical importance of sustainability in affordable housing and details six steps building professionals can take to help that happen. Part Two supports project teams across disciplines and building typologies with 12 specific ideas for building green on a budget.

Solving our global housing crisis could have severe environmental and social impacts.

We'll have to produce 96,000 new homes *per day* to meet the world's affordable housing needs by 2030, according to UN–Habitat. But this isn't a future problem in a faraway land: right now in the U.S., we have fewer than 4 million affordable and available homes to house 11 million extremely low-income households—a devastating shortage.

If we were to develop enough new affordable housing to shelter all those who need it by using conventional design, construction, and operational strategies, the built environment would be an even bigger contributor to the climate and biodiversity crises than it is now, potentially pushing past the planetary limits of Earth, the only true home we've got.

There's another option, though: "We can leverage the [built environment] to heal the planet," said Gina Ciganik, CEO at Habitable (formerly the Healthy Building Network), in an email to BuildingGreen. To do that, she argued, we must engage the entire building sector to renovate and rehabilitate existing buildings, keeping them in service longer. And we must build with longer-lasting and reusable products to minimize extraction of raw materials.

Photo: Doug Walker/7 Directions Architects/Planners

Stillaguamish Elder's Longhouse is part of the Stillaguamish Village in Arlington, Washington. 7 Directions Architects/Planners and the Stillaguamish Tribe Housing Department led a community-based design process to engage Tribal members in creating a new community that, Daniel Glenn explained, is recognizably distinct as a Stillaguamish Village, celebrates the culture of the people, and is made up of economical, sustainable, and durable buildings that respond to the climate and place.

Can we do that—and the many other things that are required to meet people's economic and health needs—while addressing the nation's and the world's desperate, immediate need for affordable housing?

"Affordable housing," stated Ciganik, "is one small but powerful force in this whole picture and often gets called out as needing to be 'sustainable and equitable' and advancing change"—a double-edged sword. On one hand, she explained, this can put additional burden on a sector that already has many extra pressures. It can also be used to let the

rest of the building sector off the hook. On the other hand, she countered, the affordable housing sector can be viewed as a space for innovation, a leader the rest of the built environment could follow.

But owners and developers of affordable housing operate and build with razor-thin margins, and many perceive sustainability features as costly add-ons. This has helped create what Katie Ackerly, principal at David Baker Architects, characterizes in a blog post as "a persistent—largely unspoken—tension between the development work of people who are driven to solve the housing crisis and the sustainability approach of those who are dedicated to arresting climate impacts."

Therefore, cost premiums—whether real or perceived—of sustainability measures can be a significant barrier to their adoption. And short-term thinking and business-as-usual processes can prevent practitioners from reframing these first costs in a way that considers long-term maintenance and replacement, or addresses the potential impacts of buildings and materials on human health, energy poverty, and social and environmental justice up and down product supply chains.

Increased public support is crucial to addressing these issues. Still, the tension to which Ackerly refers and the recurring "debate about whether sustainability is 'essential'," she points out, are "perhaps a red flag that we are not successfully communicating the essential concept of sustainable design."

BuildingGreen spoke with affordable housing experts, developers, and designers about how the architecture, engineering, and construction (AEC) community can drive change in the affordable housing industry by:

- Adopting systems thinking to address intersecting crises simultaneously
- Reframing the conventional wisdom that sustainability and affordability are at odds
- Advocating for policies and regulations that build key sustainability needs into affordable housing requirements right at the funding source
- Leveraging existing systems to implement sustainability strategies centered on quality of life and culturally responsive community design.

In Part Two of this series, we'll share guidance to help project teams deliver affordable, integrative solutions that support the health and well-being of people, communities, and ecosystems.

Intertwined Crises, Intertwined Solutions

Housing shortages have become endemic in the U.S. and are particularly acute for low-, very low-, and extremely low-income people. To try to close the gap, many in the affordable housing world believe we should build more and rehabilitate existing affordable units as fast as we possibly can.

But others, while not wishing to slow the pace of development, point out that addressing systemic racism and the climate crisis is equally urgent and inextricable from providing long-term affordable housing—which, they argue, is far more than a roof over a person's head.

Crisis 1: the affordable housing shortage

According to the 2024 report of the National Low Income Housing Coalition (NLIHC), The Gap: A Shortage of Affordable Homes, there is an "absolute shortage" of 7.3 million affordable units for the 11 million extremely low-income (ELI) renter households in the United States. In other words, there are only 34 affordable and available homes for every 100 ELI households. This is due to a combination of:

What is Affordable Housing and Who Does it Serve?

There are three types of affordable housing:

- **Unsubsidized**, or "naturally occurring": privately owned affordable housing that does not receive any subsidies
- **Public**: housing owned by the U.S. Department of Housing and Urban Development (HUD) and managed by local public housing agencies (PHAs)
- **Subsidized**: housing made affordable through government assistance, namely tax incentives to developers, rent subsidies to owners, and vouchers to renters

Housing is generally considered "affordable" when it costs 30% or less of a household's income. Spending more than 30% renders a household *cost burdened*; spending more than 50% renders the household *severely cost burdened*, based on U.S. government definitions. To ease those burdens, affordable housing is meant to serve households that are:

- Low income (at or below 80% of their area median income, or AMI)
- Very low income (at or below 50% AMI)
- Extremely low income (at or below 30% AMI)

- there being too few affordable homes, and
- many of the affordable homes being occupied by higher-income households

As a result, reports NLIHC, many ELI households must rent homes that are too expensive for them, leaving almost 90% of ELI renters cost burdened.

According the NLIHC report, the overall shortage of affordable housing shrinks with each ascending income level until it disappears for renters above median income. So when looking at the big picture, the severity of the shortage for ELI renters is largely obscured.

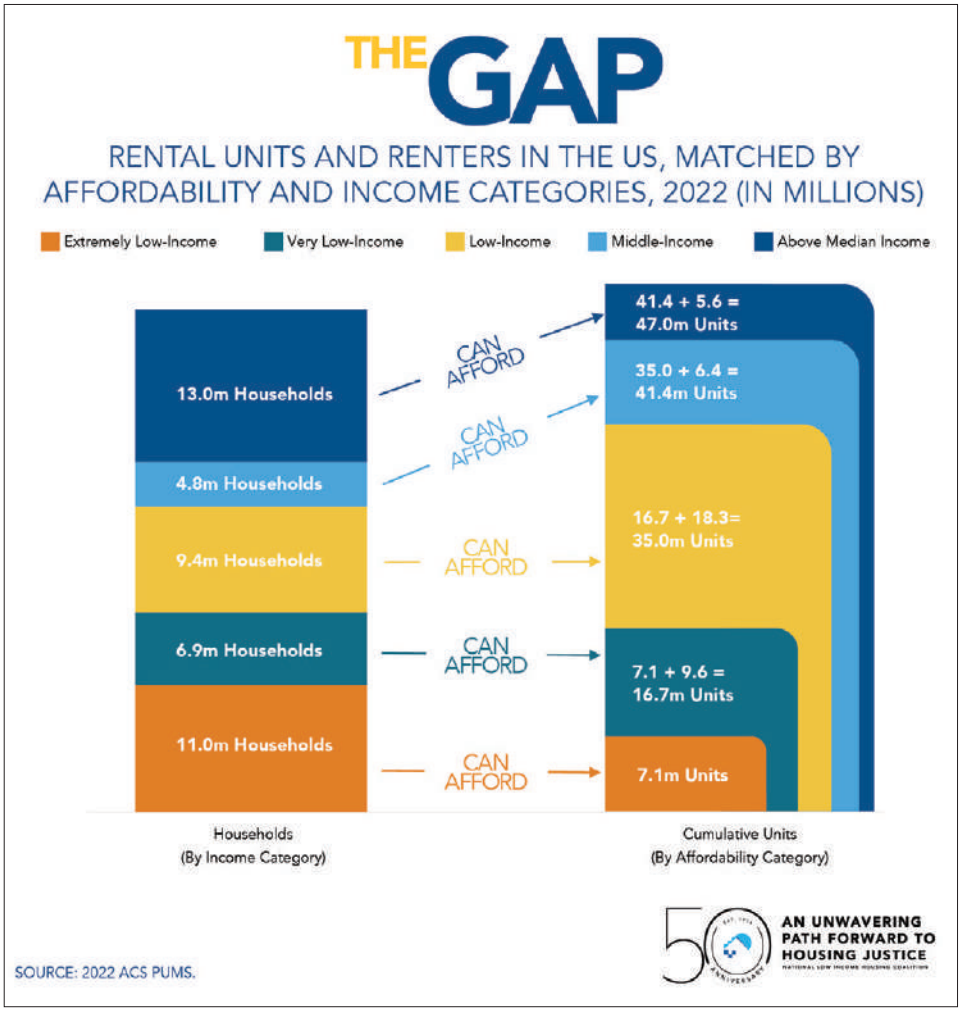

Image: National Low Income Housing Coalition

Crisis 2: systemic racism

The lack of affordable housing disproportionately affects Black, Latino, and Indigenous households because they are significantly more likely than white households to be renters and extremely low income. This is the legacy of 300 years of structural racism, including government-sponsored displacement, exclusion, and segregation of people of color, such as the systematic appropriation of Native lands, land-ownership restrictions, and discriminatory housing and zoning policies.

And, historically, public housing projects have exacerbated racial segregation and created more concentrated areas of poverty.

But housing discrimination is not entirely in the past. Inequitable housing practices, like exclusionary zoning and discrimination in lending, continue today. (See No More Red Lines: Undoing Our Legacy of Urban Segregation.)

Cities are still segregated by race and income due to zoning, explained Daniel Glenn, principal at Seattle's 7 Directions Architects/Planners, in an interview with BuildingGreen. First it was redlining, he said, and now local governments tend to zone land by half- or quarter-acre lots, which only the wealthy can afford.

A person's race and income often determine their zip code. And low-income communities and communities of color are more likely to be located close to major highways and to industrial sources of pollution, like power plants, factories, and hazardous waste facilities—the very same pollution sources that underpin our built environment.

Crisis 3: climate change

People living in these same communities face disproportionate vulnerability

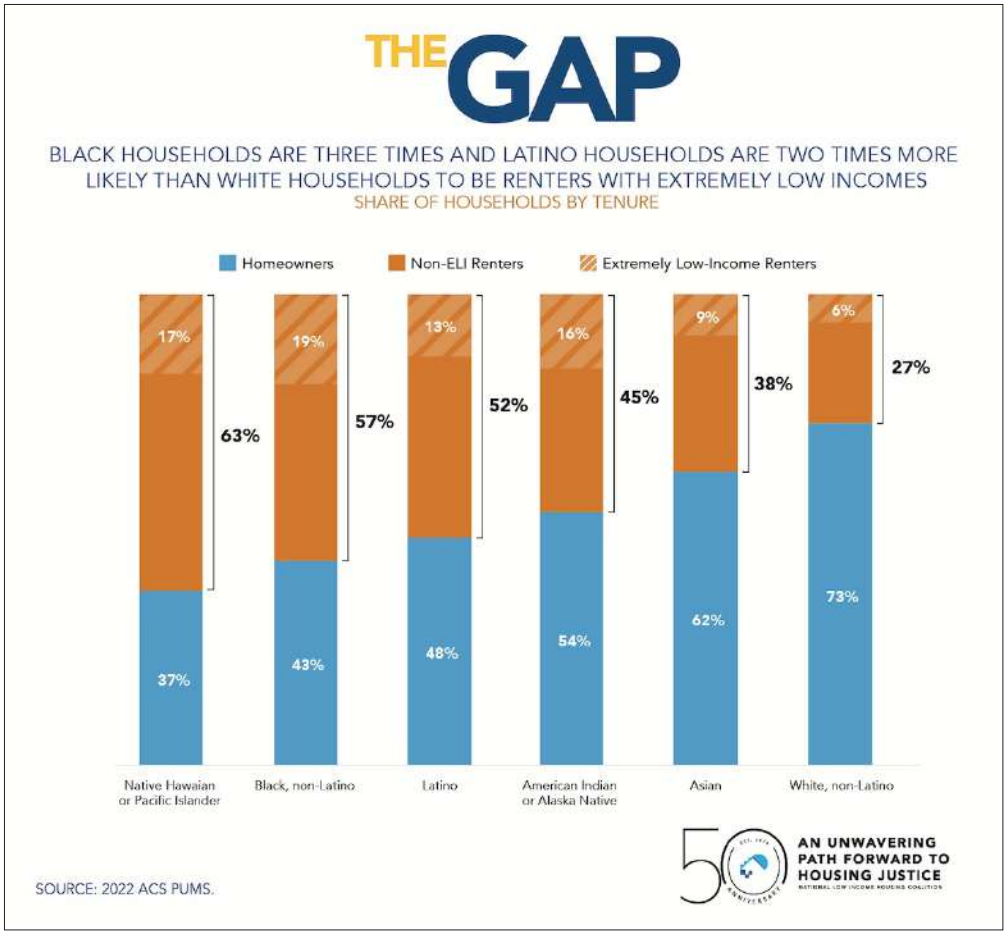

Image: National Low Income Housing Coalition

to climate change impacts as well. Low- to moderate-income communities are more likely to "live in areas vulnerable to natural hazards, tend to live in lower-quality housing, and are less likely to have the financial resources to prepare for a weather event," explained Krista Egger, vice president of the Building Resilient Futures team at Enterprise Community Partners.

They also face worsening air pollution as a result of rising temperatures and greater vulnerability to extreme-heat events due to lack of tree cover, air conditioning, and publicly accessible buildings to serve as cooling stations.

"Gray to green": A systems approach to just, sustainable housing

Housing of any quality may serve an immediate need for shelter, but it can also perpetuate problems like energy poverty, excessive greenhouse gas emissions, and systemic environmental injustice. Housing like this is sometimes referred to as "gray," explained Dana Bourland, senior vice president of environment and strategic initiatives at the JPB Foundation and former vice president at Enterprise Community Partners. Conversely—in her view—green housing is affordable, resource efficient, healthy, and decarbonized, and centers racial justice.

Our society's housing and land-use decisions are intertwined with the culture and the people we prioritize, contends Glenn. "Culture is embedded in every single thing we do," he said, "and we either do it correctly or incorrectly. How do you do it in a way that responds to the community?"

Our current approach to housing and the built environment is, in general, in service of our car-centric culture, Glenn continued. "Culture can create environments that are very energy consumptive," he pointed out. "Car culture and planning around that through zoning—housing over here, institutions over here, jobs over there—creates this extremely messed-up American suburban condition." Our dependence on cars, he continued, is a huge contributing factor to global warming, and it also disproportionally affects low-income people who are more likely to not own cars—despite often living next to highways, as well as the refineries and power plants that fuel our cars.

But culture can also support community and environmental health. Glenn referred to the model of a Native village. "What is a village compared to a subdivision?" he asked. "It's the polar opposite." Glenn described how, historically, people slept, played, and worked within villages, which were compact relative to their surrounding environment, leaving ample space for ecosystems and agriculture.

"We have to go from gray to green," emphasized Bourland, "but going green can't happen at the expense of making other communities gray." For instance, even a state-of-the-art, net-zero affordable housing development is not truly green if the extraction, manufacture, and transport of its materials and furnishings caused pollution along its supply chain.

Green building is a process, not a product

"I've come to understand that green building is not a product, but a process," Bourland said. "If we think about that, it's not an on–off switch. 'I'm going to supply a green home, or I'm not.' It's fundamentally putting whoever is in need of the home in the driver's seat." Throughout the whole process, their needs should be met, and our natural environment should not be degraded along the way, she argued.

Due to both historical and ongoing discrimination, the beneficiaries of our current built environment are "predominantly affluent and white [people], and we have to shift that," Bourland pointed out. "Because housing is more than four walls and a roof, there's tremendous opportunity to shift a lot of things," she added. "And if we center justice in that shift, we can come out of this not only greener, but in a much better place for everyone."

How to Build New and Preserve Affordability—the Right Way

Experts warn that to meet housing demand, we must rapidly build new units and preserve the affordability of existing housing stock—much of which needs to be updated. But the rising costs of operating, constructing, and insuring properties present challenges to that, noted Ethan Handelman, deputy assistant secretary for multifamily housing programs at the U.S. Department of Housing and Urban Development (HUD).

There's widespread concern about losing affordable properties faster than we can build new ones, explained Egger.

Developing new affordable housing

"We shouldn't be building more mistakes," Handelman summed up, adding that it's good for everyone "if we're building strong, resilient, low-impact stuff that can be around for a long time." Overcoming our history of affordable housing problems is vital climate and resilience work, he argued.

To support that, HUD and other agencies provide both funding and guid-

ance. But since federal sustainability *requirements* for affordable housing are few, and because the primary source of funding, the Low-Income Housing Tax Credit (LIHTC, pronounced LIE-tek), is allocated through the states, there's not widespread national adoption of green design and construction strategies—let alone technical assistance to support implementation.

Thus, embedding sustainability into LIHTC allocation requirements is one of the most important levers states and local jurisdictions have to drive green building practices in affordable housing development.

LIHTC can drive sustainability

The Low-Income Housing Tax Credit is the most significant public financing source for new affordable housing—and it can be used for rehabilitation projects too. But the funds are limited and highly competitive.

Both nonprofit and for-profit (sometimes referred to as "private") affordable housing developers qualify for the program, which is administered by HUD and the Internal Revenue Service (IRS) through public housing agencies (PHAs) and housing finance agencies (HFAs). Each year, LIHTC helps fund more than 50,000 new affordable housing developments, but there are many more projects applying for the credit than receiving it.

To be eligible for LIHTC, projects must meet the criteria of Qualified Allocation Plans (QAPs), and these criteria are decided not by HUD or the IRS but rather by each state. A majority of state QAPs incentivize or require projects to meet sustainability criteria—albeit in greatly varying degrees and effectiveness—and due to a points-based scoring system and the competitiveness of LIHTC, projects are incentivized to achieve as many points as they can above the minimum criteria.

The BlueGreen Alliance, in its report Building a Better Affordable Housing Future, assessed and scored each state's QAP on its healthy building practices, energy efficiency, and racial equity criteria. It found that an increasing number of states are incorporating health and efficiency requirements into QAPs, but the inclusion of racial equity components is seriously lagging.

Enterprise Green Communities

Enterprise Green Communities was created in 2004 and is the only national green building certification developed exclusively for affordable housing projects. It was created, said Dana Bourland at the JPB Foundation, to provide affordable housing projects with a framework for integrating sustainability with no cost differential. Eight categories cover integrative design, site, water, energy, materials, and health, and include mandatory and optional criteria. Krista Egger at Enterprise Community Partners explained that the criteria were developed in collaboration with experts and stakeholders across the affordable housing sector and can be applied to any affordable housing type.

Enterprise works closely with other rating systems to find alignment where possible. For instance, the organization partnered with the International WELL Building Institute

continued

Image: ESG Architects/KNTXT Group

LS Black Development's Canvas Apartments in northeastern Minneapolis, designed by ESG Architecture + Design, will include 160 mixed-income affordable rental units and a solar array that is expected to provide about a quarter of the building's electricity.

States often reference green building standards—most commonly, Enterprise Green Communities, LEED, and the National Green Building Standard—in their healthy-building and energy-efficiency criteria, with some states requiring projects to achieve Energy Star or other green building certifications.

For example, Minnesota, which scored highly in the BlueGreen Alliance report, requires affordable housing developments to be Energy Star certified and to comply with a Green Communities criteria overlay. BuildingGreen spoke with Laura Eder, vice president and sustainable design director at ESG Architecture + Design in Minneapolis, who explained that, because of the Green Communities requirements, "affordable housing is more sustainable than any market-rate housing we do."

But this is not the case in all states, noted Simona Fischer, director of sustainable practice at MSR Design, also in Minneapolis. The "less progressive" housing authorities, she said, feel they have a "mandate" to provide as much housing as possible, as cheaply as possible. In contrast, she added, "The more progressive acknowledge that better housing is better for people."

According to Egger, Enterprise views the integration of sustainability criteria into QAPs as one of the most effective tools to drive green building standards throughout the affordable housing sector, and the organization encourages states to require that projects achieve full Green Communities certification.

According to Eder, "In the built environment, to not do the actual certification is a flaw." It's important, she said, to have a third-party reviewer to hold project teams accountable.

"Advocacy on the QAP side is a good example of how designers can be informed and possibly engaged," suggested Ackerly. The International Living Future Institute (ILFI) released the Guide for Greener QAPs in 2020, in which the organization offers guidance and lessons learned from its own advocacy work encouraging state HFAs to include green and healthy building incentives in QAPs.

Funding mechanisms leave small margins for sustainability

When a project is awarded LIHTC, the credit is typically not enough to make the costs of development pencil out. Developers must still pull together funding from multiple other sources—in some cases up to 30, according to Habitable's Ciganik—to get a project off the ground. There is typically little if any margin for "extras"—a category into which sustainability often falls.

"Right now, a lot of the funding incentives are about competition," said Ackerly. "You might commit to going above and beyond code to get funding, but it doesn't mean that that funding pays for" the added effort.

"For a lot of affordable funding mechanisms, the goal is [to develop] the most number of units possible per dollar," recounted Fischer. "Sometimes they want quantity over quality," she said, because quality can be perceived as "an irresponsible use of funds." Fischer and her colleagues, she said, have several times run out of the time and energy to argue that, for instance, the savings from building one unit fewer could be used to improve the energy efficiency and quality of an entire project.

Willy Boulay, developer and vice president at LS Black Development in St. Paul, Minnesota, echoed this point in an email to BuildingGreen: For "direct-subsidy allocations on top of the LIHTC," he said, there is "absolutely a push and pull" between cost and sustainability. "Oftentimes, it feels like funders land on 'do both,' but then we get scrutiny for our projects being so expensive," he said, adding, "It's a tough balance."

(IWBI) during the development of its 2020 criteria to enable Green Communities-certifying projects to automatically receive WELL certification as well.

Green Communities certification includes pre- and post-build phases. In 2023, the organization certified 225 properties, comprising 19,800 units of housing, and approved 253 projects for pre-build.

Thirty-two states reference Enterprise Green Communities criteria in their QAPs.

Enterprise also recently launched the Affordable Housing Decarbonization Hub, in partnership with Rocky Mountain Institute and Housing Partnership Network, to provide affordable housing practitioners with guidance and resources to help the sector transition away from fossil fuels. (Disclosure: BuildingGreen's CEO, Nadav Malin, sits on the Hub Advisory Committee.)

The role of other green building certifications

Other green building certifications can also provide frameworks for projects and serve as a source of inspiration—even if a project is not pursuing certification, said Susan Puri at International Living Future Institute (ILFI). "It's actually really hard to come up with what sustainability means," she continued. "Not every team can do that, and [they] shouldn't have to." The organizations administering green building standards have done a lot of that legwork.

"ILFI, Passive House, Green Communities, LEED, all have slightly different philosophies on how we'd like to see the building sector evolve," considered Egger. ILFI, she elaborated, creates guidance to achieve the best possible building, whereas Green Communities looks at

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Build for long-term affordability

"Given that there isn't enough funding and action right now to create housing for everyone who needs it," Egger considered, Enterprise believes "it's important to ensure that any housing that is using a subsidy is not just affordable to build, develop, or rent, but is affordable long term."

She elaborated that utility bills are some of a property's largest controllable operating expenses. An owner or developer may not be able to control insurance or maintenance costs over time, she continued, but they can certainly do several other important things. She listed a few:

- Take action to reduce energy and water bills for both tenants and owners
- Prepare a property for climate disasters
- Ensure during design that the project will be in compliance with existing or likely building performance standards down the road

But we shouldn't rely exclusively on building performance standards or energy codes—even if they are progressive, cautioned Ackerly. Unlike green building certifications, energy codes don't address other essential elements of sustainability, including resilience, toxic chemicals, or quality assurance, she explained. "People mistake green building certifications as specification rather than assurance," she continued, arguing that the quality assurance and accountability embedded in certifications are crucial benefits.

Preserving affordability

There's a huge conversation in the affordable housing space about *preservation*, explained Egger—but not historic preservation. In the affordable housing world, this means "if there's a property that's affordable, how do you ensure that it stays affordable over time?"

Enterprise, she explained, sees "energy efficiency, resilience, and sustainability approaching sustainability in affordable housing at scale.

"It's helpful for the building sector at large to have these different philosophies across the market," Egger believes, while also noting that "more convergence" is happening among the different approaches.

Photo: Enterprise Community Partners. Used with permission.

Silver Gardens Apartments contains mixed-income rental units, from very low-income to market rate, and is available for previously unhoused tenants. The development is LEED Platinum certified and meets Enterprise Green Communities and Energy Star criteria.

upgrades as a strategy to encourage preservation." But finding the funding, capacity, and expertise required to plan and perform such retrofits at scale in both unsubsidized and subsidized affordable housing properties is one of the biggest challenges facing the sector.

The affordability of existing stock is at risk

Unsubsidized ("naturally occurring") affordable housing accounts for most of the existing affordable housing stock in the U.S.—an estimated 75%. Because it is not receiving public assistance, and much of it is older, it is particularly vulnerable to being sold and redeveloped. When this happens, affordability can be lost and cause renter displacement.

But many LIHTC-funded properties are also at risk of losing their affordability. Properties funded by the credit are typically required to remain affordable for 30 years, meaning the affordability requirements of those developed in the program's early days are now expiring. Instead of reapplying for the credit, many owners have chosen to sell or rent their properties at market rates, and there is deep concern in the affordable housing sector that, as restrictions continue to expire, more and more units will flip to market rate.

The reason behind this trend, explained Egger in a subsequent email, "is that given increasing costs associated with upgrading and operating buildings, it's often just not possible to keep rents at affordable levels without additional subsidy." And given the insufficient subsidies for affordable housing, plus the increasing cost of capital as interest rates rise, "many owners are seeing that they just cannot hold onto properties while providing affordable rates," she said.

Sustainability retrofits can support long-term affordability

Reducing a property's utility costs and adapting it to better withstand the myriad impacts of climate change while also keeping residents safe and healthy are

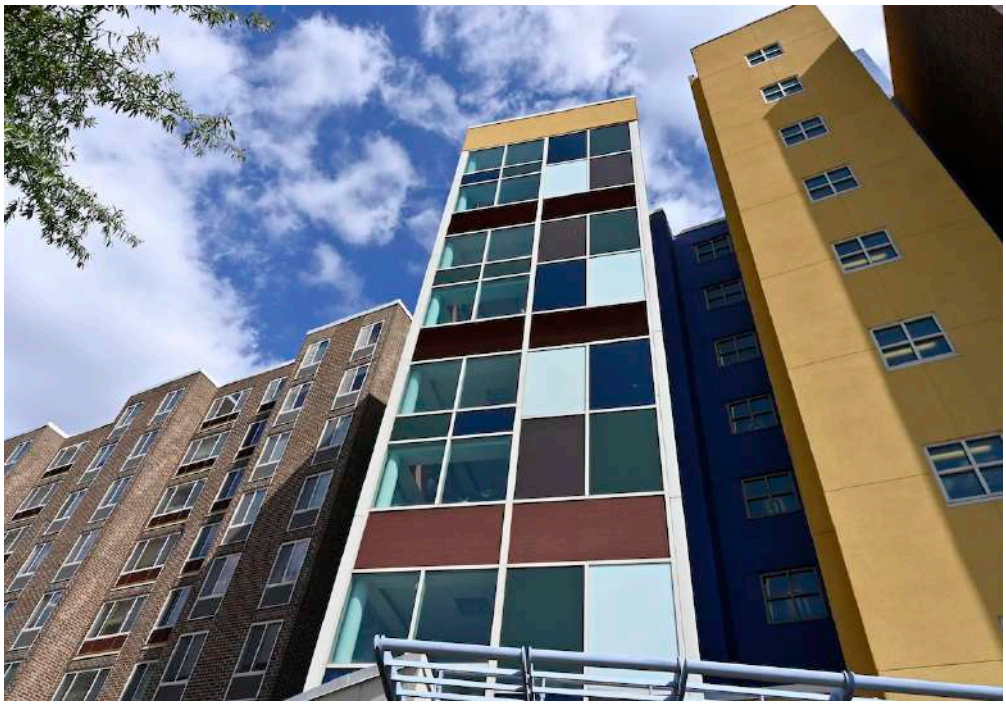

Photo: Enterprise Community Partners. Used with permission.

Enterprise Community Development is extending the period of affordability for the 300 affordable housing units in Northeast D.C.'s Edgewood Commons community, and it plans to make upgrades to improve resident comfort, as well as energy and water efficiency.

excellent ways to support long-term affordability.

Such sustainability upgrades, Egger explained, often come back to the basics, the tried-and-true methods that those in the green housing space have talked about for decades: weatherization, insulation, air sealing, water efficiency, and (if possible) solar panels. It's also common for retrofits to involve the installation of new systems, such as ventilation or electric heating, in houses that weren't designed for them, which can be costly and time-consuming, she explained.

Typically, subsidized properties are only retrofitted during their 15-year retrofit financing cycles—meaning that performing retrofits quickly and at scale is a difficult proposition.

The financing schedules of subsidized affordable housing properties need to be considered in the development and implementation of building performance standards (BPS), as well, said Egger, which a growing number of states and cities are developing to drive energy-efficiency improvements and decarbonization in existing building stock. To enable a just energy transition, it's important that affordable housing properties can comply with and reap the benefits of BPS, such as lower energy bills, in a way—and on a schedule—that owners can afford. (See Seeking a Just Transition to a Decarbonized Built Environment.)

"What if," Egger hypothesized, "you have a [BPS] compliance deadline that hits at year 7 of 15? What if you're planning to retrofit in the next year or so? It'd be really helpful to update in a way that you know you'll be in compliance for the next 15 years."

She noted that the jurisdictions passing the best BPS engage with their communities about how to ensure compliance can happen. Washington, D.C.; Montgomery County, Maryland; and Denver are a few that have established different parameters for affordable housing. It's not a lesser standard, she emphasized, just different in how you implement it.

Technical guidance from the AEC community is needed

Bourland noted that a lot of the challenge in integrating sustainability into retrofits comes down to the fact that owners often lack the time and expertise to make informed decisions that advance it. We need to strengthen the connection between owners and "professionals who have services to provide," Bourland said. "We need to build those relationships to more communities and make sure those services are accessible … when owners need or want them."

Egger added that it would be beneficial for owners if the AEC community could provide them with technical guidance in the design phase before scopes are locked in.

Photo: Enterprise Community Partners. Used with permission.

In 2019, Enterprise Community Development installed solar panels on all of the buildings in Edgewood Commons. Installing solar on existing affordable housing properties is an effective way to reduce utility costs, increase resilience, and support long-term affordability.

Federal funding and tax incentives

The 2022 Inflation Reduction Act (IRA) includes unprecedented levels of direct funding and tax incentives to drive sustainability in affordable housing through HUD, the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the U.S. Department of the Treasury.

Direct spending

The legislation provides more than $25 billion in direct spending that could be applied to affordable housing. Under its 2021 Justice40 Initiative, the Biden administration pledged to target 40% of certain federal climate-change investments and other environmental funding to "disadvantaged communities that are marginalized, underserved, and overburdened by pollution." (BuildingGreen's IRA hub links to a thorough breakdown of the Green and Resilient Retrofit Program, the Greenhouse Gas Reduction Fund and several other programs.)

Tax incentives

The IRA also provides for $36.5 billion in housing-related tax credits over ten years. All the tax incentives are available now. (BuildingGreen's IRA hub links to in-depth coverage of the ITC and has guidance on multiple other tax incentives by program name.)

When asked about the potential impact of the IRA in meeting the sustainability and production needs of the affordable housing sector, Egger commented, "I don't think it's reasonable for anyone to have expected it to be enough to retrofit every building in the country. The IRA doesn't do that." But the funding should be sufficient to help us identify ways to move for-

U.S. Programs to Fund Green Affordable Housing

Agency	Program	Funding	Eligible Recipients	Intent	Status of funding
HUD	Green and Resilient Retrofit Program	$837.5 million in direct loans and grants	Owners or sponsors of HUD-assisted multifamily housing under sections 8, 202, 236, and 811	Improve energy efficiency and climate resilience in HUD-assisted homes; support energy benchmarking	HUD has deployed about half of its funding Application deadlines are coming up in Q2 and Q3 2024
DOE	High-Efficiency Electric Home Rebate Program	$4.5 billion, including specific state allocations, in rebates	States and Tribal entities $225,000,000 is allocated for Tribes	Electrification upgrades	Rebates are not yet available in any state or territory, but DOE expects many programs to launch in 2024
	HOMES Rebate (Home Energy Performance-Based Whole House Rebates)	$4.3 billion for savings-based retrofit	States	Home energy retrofits for low- to moderate-income households	
EPA	Greenhouse Gas Reduction Fund	$27 billion in grants and technical assistance across three programs $15 billion specifically for low-income and disadvantaged communities	States, Tribes, nonprofits, and nonprofit financial institutions, which in turn will offer loans and grants to GHG- and pollution-reducing projects	Reduce greenhouse gas emissions and other air pollutants; mobilize financing and private capital	EPA has awarded all funding Next, recipients will finance projects meeting EPA's criteria

Source: Department of U.S. Housing and Urban Development, U.S. Department of Energy, and U.S. Environmental Protection Agency

ward, she said, adding that no one yet has a clear idea of the impact it will have.

And to deliver the impact of IRA to those who need it most, advised Bourland, "we must ensure funding reaches small-scale owners."

Housing First or Sustainability First? Six Workarounds to Help Eliminate an Impossible Choice

In contrast to many market-rate developers, said Susan Puri, ILFI's director of affordable housing, the motivation

IRA Provisions for Green Affordable Housing

Provision	Eligible recipients	Funding details	Stackability/ Direct pay
Investment Tax Credit, or ITC (Section 48)	Renewable energy projects beginning construction before January 1, 2025	6%–50% tax credit (with bonuses) for qualifying energy property	No longer reduces LIHTC basis Direct pay option
Clean Electricity Investment Tax Credit (Section 48E)	Facilities that generate clean electricity placed in service after 12/31/24	Tech-neutral tax credit that replaces section 48	
Low-Income Communities Bonus Credit (Section 48(e), Section 48(h))	Small-scale solar and wind facilities in low-income communities	Four eligibility categories with a 10%–20% bonus tax credit for ITC (section 48 and 48E)	Does not reduce the LIHTC basis
New Energy Efficient Home Tax Credit (Section 45L)	Homebuilders	Tax credits for homes that meet current Energy Star or Zero-Energy-Ready Home energy performance standards	Does not reduce the LIHTC basis
Energy-Efficient Commercial Property Deduction (Section 179D)	Owners, tenants Designers if owner is a non-taxable entity, such as a nonprofit housing developer	Deduction of up to $5 per square foot for certain energy-efficiency improvements to new or existing commercial properties	No direct pay because it is not a tax credit
Energy-Efficient Home Improvement Credit (Section 25C)	Homeowners; sometimes renters	30% tax credit for various efficiency improvements	No direct-pay option, which means that households with little or no federal income tax liability will be unable to claim the credit
Residential energy-related incentives (Section 25D)	Homeowners and renters	30% tax credit to install residential clean energy equipment	

Source: U.S. Department of the Treasury

of many affordable housing developers "is not quick turnaround in profit. They want their investment to be a good one." Affordable housing developers sometimes own their properties for 50 years and don't want to pay high utility bills or pass them along to their tenants, she explained.

Still, in the face of the severe housing shortage, many in the affordable housing space consider building as many units as possible, as fast as possible to be the top priority. In many affordable housing projects, affordability and the number of units being built can become pitted—however implicitly or reluctantly—against the cost of sustainability measures.

Developers face an untenable decision

Boulay expressed this sentiment in an email to BuildingGreen, explaining his firm's mission is to be an affordable housing developer, not a sustainable housing developer. Driven by the conviction that housing is a human right, the company's priority, he explained, is building affordable homes.

Affordable housing development is already extremely difficult because of the limited rents for tenants, he continued, so while he believes that sustainability requirements—e.g., reducing utility bills, lowering operating costs, and building an extremely efficient building—are the right thing to do and are great for long-term ownership, future tenants, and society in general, they do increase upfront costs and can make development of affordable housing more difficult, in his view.

Uche Okezie, director of real estate development at HomeSight, a Seattle-based community development financial institution, spoke to the same challenge. "Just because you're building affordable doesn't mean you get a discount," she said. "It's expensive to build to those higher standards, so the challenge is to find a margin to bring in those higher-quality products that will bring in outcomes" commensurate with the cost.

"The biggest challenge is cost, period," Boulay stressed. "That drives the conversation for any affordable housing project and limits how far projects can go with sustainability without additional subsidies." For this reason, he continued, sustainability "takes a back seat when a majority of households in the country are cost-burdened, and our society continues to struggle to house all its citizens."

"All that is to say," he summed up, "we'd rather build pretty sustainable affordable housing instead of extremely sustainable nothing."

Boulay explained what he meant by this in a following interview, providing an example of a project he worked on in St. Paul: the city had tried pushing the company to build all electric, but in Minnesota, the construction costs of installing heat pumps—and then the electricity costs of the heating itself—made the prospect "pretty much a deal-wrecker."

Although Boulay acknowledged that all-electric heating is a more sustainable solution in the long term, in this case, it wasn't feasible in the short term and would have prevented them from building. "I'd rather build a 95% Magic-Pak gas heater, solar on the roof, [and] purchase renewable energy credits," he concluded, "than not build."

Systems-level improvements are needed

But according to Bourland, "We don't have the luxury of that choice. That was a false choice in the first place."

Gas, she explained, must and will become obsolete. "If we are successful in our efforts to get away from fossil fuels," she continued, those residents will be

paying "the true cost of the fuel source, and that property will become the most expensive."

Crucially, she stressed, it's on the rest of society to stop putting developers, who are trying to do the right thing, in the position of having to make that impossible choice. "It should not be on their back to make an untenable decision," she said. "We need the housing too much, and we need to address climate change too much."

We need more support from every direction, Bourland said, "That's what we're missing: banks, community development financial institutions, philanthropy, the public sector."

Three things AEC should advocate for

Here are three things the AEC community can urge their governments and communities to do.

1. Increase public funding

"In an ideal world," said Ackerly, "there's direct funding programs for the things that cost money. The things that cost money are those that have a benefit beyond the property. And that's what makes them controversial."

She explained that society should bear the cost of sustainability and resilience strategies that benefit the larger system, such as:

- Distributed energy, especially battery storage and grid interactivity
- Graywater systems
- Reduction of plastics, like PVC, that can have horrific upstream and downstream impacts

"We need some combination of direct funding and regulation," she summed up. But, she added, advocating for increasing regulation is a big source of debate—largely because of the persistent

Photo: Enterprise Community Partners. Used with permission.

The community room and kitchen in the Cadence development, located in Fort Collins, Colorado, which was completed in 2022. The building was the first new construction project to meet Enterprise's 2020 criteria and the first to achieve Green Communities Plus Certification. It includes 55 affordable apartments for people 55 and older earning 20%–80% AMI.

Why Is There So Little Public Housing?

Close to a million households reside in public housing, but no new net public housing has been built since the 1998 passage of the Faircloth Amendment, which prevents housing authorities from increasing the total number of public housing units from their 1999 number. The Faircloth Amendment was a part of the country's larger "welfare reform" movement that sought to slash federal funding for social safety nets, including public housing.

Due to decades of federal disinvestment, the existing public housing stock is in serious disrepair, and HUD estimates that 10,000 public affordable properties are lost each year. According to Ethan Handelman, HUD's deputy assistant secretary for multifamily housing programs, federal public housing needs $58 to $114 billion in improvements.

Rather than providing direct funding for capital and operational improvements in public housing, the bulk of HUD's budget is now allocated to project- and tenant-based rental-assistance programs. And in 2012, HUD launched the project-based Rental Assistance Demonstration (RAD) program, which allows for the conversion of public housing units to project-based Section 8 assistance, to encourage private investment in the rehabilitation of public housing.

With each RAD conversion, a capital-needs assessment that includes green building performance components must be carried out, and the property must be brought up to current energy codes. The assessments, according to Handelman, often find that green improvements will pay back—particularly given

continued

perception of higher first costs for sustainability measures.

2. Increase public efficiency

In addition to federal funding, which we're seeing more of, said Bourland, we need the public sector at all levels to adopt a systems approach to housing administration and funding. She explained that housing administration is currently divided up across departments, which makes navigating the system very difficult. For instance, she elaborated, "you have rural housing that you go to the U.S. Department of Agriculture for. EPA touches houses. Depending on what you're trying to do, you have to cross a lot of sectors of government."

And, she continued, "it's obscene how many different kinds of funding [affordable housing developers] can need"—and each funding source costs money in interest. If we had one way of financing projects, she believes, we could reduce the cost of building.

3. Update zoning and land-use regulations

Local zoning policies and land-use regulations are among the most important drivers of building more—and more sustainable—affordable housing, said Bourland, explaining that updating zoning to allow for increased density must be coupled with land-use regulations that don't allow for continued (or new) environmental injustice in those same communities. "Fundamentally," she said, "we have to stop zoning poor people in the worst part of our communities or allowing really toxic things to come into places where they are already living."

"It's about these systems in which housing is a part," said Bourland. "And that's where we have to slow down enough," she added, "to not be just trying to provide units of housing" in a way that can "steamroll" sustainable, equitable design and construction. Rather, Bourland believes, we need to understand that housing is nestled in these systems, and we have to think differently about how it relates to energy, water, natural resources, production of materials, and land, she concluded.

Three things AEC can do right now

As this report has laid out, there are many complex systems driving—and hindering—the integration of sustainability into affordable housing. While the comprehensive change required may feel overwhelming, there are actions the AEC community can take now in their everyday work to move forward.

It starts with adopting systems thinking, centering justice in all decisions, and harnessing the ecological co-benefits of community design through open-mindedness, collaboration, and planning.

1. Center people

Health and environmental justice are essential to the mission of providing housing for all.

As Okezie of HomeSight explained, despite efforts to increase affordable housing production, there are still many people who can't access affordable housing. "A lot has to do with equity: income, opportunity, education," she continued, reflecting that a focus on equitable access requires a consideration of occupant health, which then brings in sustainability. To help ensure residents don't get sick, "you start thinking about materials, fixtures, lifespan," she said.

It's also important to look at how the master plan is going to affect people and communities, said Glenn.

He explained that 7 Directions has had the opportunity to work with multiple Tribes from states including Oklahoma, Washington, Montana, and Wyoming, and with "each one, we try to learn first

recent federal funding opportunities.

According to Handelman, the program has the potential to make a real dent in HUD's capital backlog, noting that "RAD investments have enabled more than $19 billion [in construction investment] to preserve public housing."

It should be noted that RAD is controversial, with many concerned it may lead to erosion of tenant rights and the loss of housing that extremely low-income households can afford, deepening their cost burdens.

from the Tribe and its original typologies, [then] try to apply those designs to the new design."

"In most housing developments," he continued, "nobody does that at all. Nobody sits down and asks people what they want. That's a huge issue. How do you get to culture?"

Culture, he elaborated, is not just about how something looks, which is one element of cultural expression, but about how people live—the layout of the living spaces, the community facilities, and how you get from one to the other.

"In North America," Glenn explained, there was an "extensive variety of building typologies that existed prior to [European] contact." He reflected upon "how dramatically distinct they were in each region, climate, culture," exemplifying how culture, climate, and materiality are integral to one another.

"What I think is important," Glenn concluded, "is that we all try to understand and learn from the people who have had success inhabiting this continent and world, in general, for millennia instead of centuries. How was that accomplished?" You can't replicate and redo it, he continued, because conditions are different, "but you can learn to design and build in a different way that at least tries to get at that level of sustainability."

2. Remove the barrier of perceived cost

The common perception that sustainability costs more, said Egger, can be an even bigger barrier than actual cost—an expectation that can prevent people from even evaluating all the possibilities.

"A lot of people look at 'affordable' separate from green. [They] look at green more like a Tesla," said Glenn, noting

Photo: Daniel Glenn/7 Directions Architects/Planners

Dancers celebrate the opening of the Plaza Roberto Maestas development in 2016 in Seattle's Beacon Hill neighborhood. Built and owned by a community-based nonprofit, the project is mixed used and transit oriented, with 110 affordable housing units. It is designed to integrate culture, economy, and sustainability at scale, celebrating Indigenous peoples and people of color who have historically been displaced and marginalized.

that many of his Tribal clients expect sustainability to be expensive.

In her article, Ackerly said the same about the nonprofit affordable housing developers she works with. "Our clients, almost without exception," she wrote, "generally presume that sustainable design 'costs more,' and if you say otherwise, [they think] you're probably not telling the whole truth."

To help dispel this misconception, Glenn explained, his firm spends time early on in client interactions explaining the difference between first- and long-term cost—primarily that overall life-cycle costs are much more expensive to owners and to clients in general than upfront building costs.

First costs also exclude the environmental and health impacts—or externalities—of a product or system throughout its supply chain.

"There's such an emphasis on what you spend on the first cost," Glenn said. "We try to encourage the idea that building green is an investment and not an expense." And it's not even necessarily a big investment, he emphasized. It can be a fraction of the overall cost of the building and can have a significant return on investment. For Tribal clients, said Glenn, his firm ties "green back to culture, philosophy, Indigenous ways to live and build over centuries, and connection to elders."

3. Reframe sustainable design as community design

Experts agree that there are many effective sustainability strategies that project teams can implement at no or low cost—especially if they're well planned for and align with other project and community design goals.

"Everyone thinks sustainability costs more, but it doesn't have to," said Eder. "That's one of the things I like about my job, that it's not easy," she went on, explaining that she enjoys showing clients who are skeptical of sustainability that it can benefit occupants, onsite construction workers, and the community.

"It really does not serve us" to see green building and community design as separate, said Ackerly. If you're a mission-driven company, she continued, and care about connecting people to nature, transit, jobs, and community services, chances are you're making design decisions that also benefit the community in terms of mobility and local ecology.

In Ackerly's view, because compliance and cost drive decisions in affordable housing, designers should lean into their job as vision-makers for clients. She explained that, in her experience, architects are hired to inspire clients with their vision, not to sell them on sustainability. So when designers can make the case for sustainability "from a community transformation standpoint," then sustainability strategies "can be carried along with it." She provided a few examples:

- **Mobility:** Understanding—and responding to—residents' specific mobility needs can enable them to get around town without using fossil fuels.
- **Biophilic design:** Designing indoor and outdoor spaces for moments of interest and rich experiences for residents can improve environmental quality.
- **Internet connectivity:** Providing residents with free wireless internet helps them access information and services and may reduce their need to drive.

Most people, Ackerly pointed out, wouldn't immediately think of free wireless internet as a sustainability measure. But from her perspective, when sustainable design centers the purpose of housing and community-based projects, teams are less likely to overlook such opportunities.

Conversely, she added, if teams are narrowly focused on developing a net-zero-energy building, free wireless internet may not be a part of their strategy—or ever come up as a possibility.

Community First = Sustainability First

To identify and achieve cost-effective alignments between community and sustainable design, experts say, requires thoughtful planning and effective community engagement during a project's pre-development phase. This is why, explained Egger, the first step for a project using the Green Communities criteria is to administer a project priorities survey, which is part of the standard's integrative design category. Through the survey, project teams solicit information from residents, such as their high-level energy and health goals or environmental stressors they may face, a practice "which help guide strategy," Egger said. The most successful projects, she noted, spend a lot of time in this design phase.

Taking the time to develop housing *with a* community rather than *for* a community, experts explain, is one of the keys to sustainable development.

Thoughtfully designed communities can enable people to safely walk, bike, or take public transit to work, the store, parks, and their friends' and families' houses. With community input, neighborhoods can meet residents' needs and represent and celebrate their diverse cultural identities and practices. In a perfect world, everyone could afford—in perpetuity—to live in a place like this.

In Part Two of this series, we'll look more closely at how practitioners can apply systems thinking and integrative, culturally responsive design to incorporate sustainability on projects. We'll share advice from experts on how to develop a firm-wide vision for sustainability and embed it in all areas of a project, including site design, healthy material selection, and energy efficiency and decarbonization.

For more information:

Enterprise Community Partners
enterprisecommunity.org

Affordable Housing Decarbonization Hub
enterprisecommunity.org/decarb-hub

National Low Income Housing Coalition
nlihc.org

Update: This article was edited on May 14, 2024 to reflect the correct name of the International Living Future Institute (ILFI) in one mention that had used its former name, the International Living Building Institute. Additionally, the caption for the photograph of the Cadence development was corrected. The photo is of the building's community room and kitchen, not an apartment.

Update: This article was edited on June 25, 2024 to reflect the correct spelling of Uche Okezie's surname.