THE GREEN CITIES COMPANY

Cleaning Our Air, One Building at a Time

A STRUCTURED APPROACH TO TRUE DECARBONIZATION IN MULTIFAMILY REAL ESTATE

THE CHALLENGE & THE OPPORTUNITY

It's difficult to open a media article, newsletter, blog, or conference agenda today without seeing some form of the words "net zero" or "decarbonization." Climate change – regardless of one's view of its severity – is one of the seminal and defining topics of our age. In the real estate sector, the relevance and imperative are even more heightened. Widely, our sector understands it is responsible for between 40-50% of global CO2 emissions [1], a figure made even more staggering when we add in the potential resulting impacts of climate change on cities by 2050 [2]:

- 1.6 billion people living in more than 970 cities regularly exposed to high temperatures
- 800 million vulnerable to coastal flooding
- 650 million, in over 500 cities, at risk of water shortages
- 2.5 billion people with threatened national food supplies
- 470 million people with power supply vulnerable to sea-level rise

As intense as these statistics are, the wave of market and investor pushback to prevent such dire ends is even more remarkable. In Europe, some predict that the difference in exit values for a sustainable building versus "brown buildings" in 10 years could be over 20%, with that regarded as "being towards the lower end of how large brown discounts could get."[3] In the U.S., it is estimated that LEED-certified office buildings have achieved consistently higher rents than non-LEED counterparts, averaging over 11%.[4] Specific to

the multifamily market, we see similar trends, with rent analyses showing a 9% premium for LEED-certified apartment buildings.[5]

At its root, this data is driven by an unstoppable shift in generational expectations. 61% of renters say they would pay more in monthly rent for an eco-friendly apartment.[6] And, tenant surveys have revealed renters willing to pay more for apartment buildings with energy-saving appliances and health and wellness-centered amenities, as well as in more sustainable neighborhoods with walkable access to goods and services.[7]

1 Global Alliance for Building and Construction / Architecture 2030, September 2019.
2 Urban Climate Change Research Network, 2018.
3 Fidelity International, "How big a threat is the 'brown discount'?," July 2021.
4 Cushman & Wakefield, "Green is Good: Sustainable Office Outperforms in Class A Urban Markets," 2021.
5 Bond, Shaun Alexander and Devine, Avis, "Certification Matters: Is Green Talk Cheap Talk?," August 2014.
6 Apartmentdata.com, February 2021.
7 National Multifamily Housing Council, February 2016.

ENTER THE "RACE TO ZERO"

In this environment, then – a confluence of investor demand, higher valuations, and greater rent premiums for sustainable real estate investment – it is no wonder that many real estate investment managers have shifted their focus so publicly to decarbonization. The terms and the frameworks are seemingly endless, with distinctions between "carbon neutral," "climate positive," "net zero carbon," "net zero energy" (ad infinitum) rarely made. Investors (and, frankly, the asset managers themselves) are drowning in the alphabet soup of acronyms like CRREM, SBTi, PCAF, and CDP, while promises of reaching Net Zero in 5, 10, 20 years are widely touted.

The mood is almost frenetic, and this author would observe that the "race to zero" has perhaps become more: "Can investment manager promises of real decarbonization catch up before they hit their target Net Zero timelines?"

The key is transparent action with a structured approach that focuses on real results rather than marketed hype.

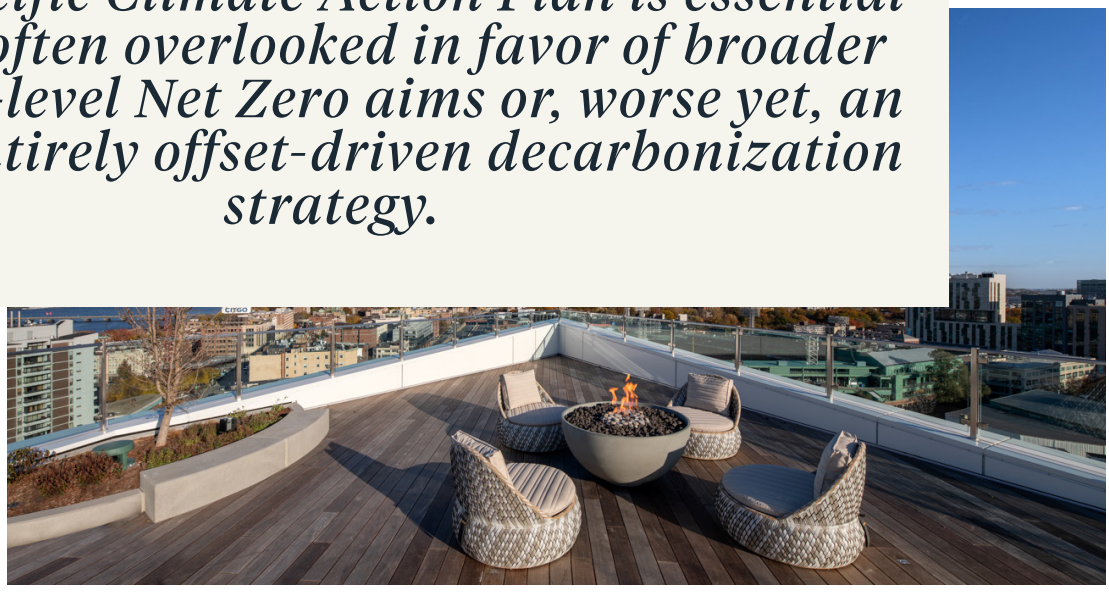
DECARBONIZATION IN THE BUILT ENVIRONMENT

Many would argue that the best way to decarbonize the real estate sector is to focus on the existing building stock and greenify existing properties in addition to constructing newer green buildings. For the value-add real estate investment manager with the in-house construction and design acumen to do so, this approach becomes a real differentiating advantage. Embedding the upgrade of building systems for energy efficiency, water reuse, and renewable alternatives in acquisition models not only enhances property NOIs through reduced operating costs, it also directly and financially aligns creating value for investors with active decarbonization.

Accomplishing these outcomes within the bounds of fiduciary obligation requires an approach that is at once methodical while also being flexible for the specific opportunities within each asset. Factors including geography (i.e., climate zone), equipment age, building system accessibility, and whether HVAC systems are centralized or decentralized, vary significantly from one property to another. In addition, owners and operators need to consider the current decarbonization status of the building. What efficiencies already have been achieved? What opportunity exists for potentially capital-intensive upgrades?

Pre-acquisition tools such as energy audits, property condition assessments, and retro-commissioning form the basis for an educated discussion of each property's decarbonization potential. These may include operational improvements focused on Scope 2 greenhouse gas (i.e., purchased electricity generating carbon offsite), such as efficiencies and mechanical, electrical, and/or plumbing fixture retrofits. Deeper decarbonization possibilities lie in the complete elimination of Scope 1 greenhouse gases (i.e., onsite fossil fuel consumption) ranging from electrification of HVAC systems, renewable power installations, and offsite renewable power purchase agreements.

Developing a detailed, forward-looking, and asset-specific Climate Action Plan is essential and too often overlooked in favor of broader manager-level Net Zero aims or, worse yet, an almost entirely offset-driven decarbonization strategy.



DECARBONIZATION IN MULTIFAMILY ENVIRONMENT

Of course, retrofit and management of existing multifamily properties cannot be the only focus for achieving Net Zero goals, as demand for new development, to meet future housing needs, continues to be strong. It is projected that some 3.7 million new apartment units will be needed by 2035 to meet demand on the back of growing populations and changing demographics.[8] This significant need in the multifamily sector only further underpins the necessity for comprehensive decarbonization strategies.

Unfortunately, to date, many owners and operators have solely focused on the types of reductions mentioned above which take aim at Scope 1 and Scope 2 greenhouse gas emissions. Scope 3 emissions, importantly including so-called "embodied carbon," represent a far greater share of the lifecycle of a building. (Embodied carbon is defined as the additional carbon generated by the processing, transporting, and ultimate end-life waste of each building material element and process.) In fact, Architecture 2030 estimates that 90% of the CO2 generated by new construction between 2015 and 2050 will be in embodied carbon, limiting the true decarbonization impact of an operations-only focus.

Multifamily developers need to take carbon responsibility for the lifecycle of the whole building (known as LCA, or lifecycle accounting) and ensure the asset-specific Climate Action Plans mentioned above account for materials, finishes, construction processes, and waste. To date, many in the multifamily space have chosen to be guided in this process by existing frameworks including LEED Zero, Passive House strategies, the Petals of the International Living Future Institute's Living Building challenge, or the World Green Building Council's Advancing Net Zero parameters. While these are outstanding frameworks for sustainability, a successful – and ultimately decarbonizing – approach needs to be holistic, deriving from a triangle of three core considerations:

- INTENTIONAL DESIGN: The strategic combination and interplay of each building's structure, envelope, mechanicals, and internal design should prioritize the optimization of carbon performance in lockstep with financial pro formas. In addition, climate risk evaluations (both physical and transitional) support site selection for each development that advances the project's carbon profile, long-term resilience, and ultimate value.
- MATERIALS: While construction materials and interior finishes – and in particular furnishings, fixtures, and equipment – continue to present a number of challenges in accurately measuring embodied carbon, they are mission-critical to reduced carbon development. In fact, concrete alone represents ~8% of the world's total CO2 emissions.[9] Note this focus on rigorously selected materials also lends to the favoring of healthy materials, which eliminate off-gassing and forever chemicals, aligning tenant and planetary health.
- OPERATIONAL EFFICIENCIES: With a whole building, life-long assessment of each property's carbon footprint, owners and operators can then turn their attention to some of the efficiencies mentioned in the Value-Add approach. Tightly managed construction processes set the stage for advanced asset and property management post construction completion. These measures not only reduce the energy profile of the property, but also provide opportunities for water reclamation and reuse – advancing another important facet of our ultimate survival.

8 Hoyt Advisory Services and Eigen10 Advisors, LLC, "U.S. Apartment Demand through 2035," published on behalf of the National Apartment Association (NAA) and the National Multifamily Housing Council (NMHC), July 2022.
9 BBC News, December 2018.

CONCLUSION - REAL DECARBONIZATION

Whether seeking decarbonization in the built environment or in new development, the possibility for real specificity and transparency is quite clear. In both cases, it is absolutely critical that investment managers take a "RECs-last" approach, where buying their way towards Net Zero through the purchase of carbon offsets is the very last element of any decarbonization plan. It also is critical that true pathways to portfolio decarbonization focus on the assets, where we have shown such intense amounts of greenhouse gas emissions are prevalent, above their own corporate offices or other non-property activities.

The road to real decarbonization is clear:

1/ Defined and specific parameters for the approach

2/ Evaluation with regularity and precision

3/ Cost-effective / returns-driven strategies

4/ Asset-specific Climate Action Plans

5/ Repeatable methodologies, and

6/ Bold, industry-advancing standards –

or, as an acronym, DECARB.[10]

By following this road, reporting regularly and with transparency to investors, and holding ourselves accountable for taking true action, the real estate investment management industry truly has the opportunity to change the world – one apartment building at a time.

10 Proprietary to The Green Cities Company, January 2023.

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