

ESG Provides Tailwind for Mass Timber Buildings



Wealth Management Real Estate (formerly NREI)



Introduction

Stakeholders across the board, including developers, investors and tenants, are increasingly looking at buildings through an environmental, social and governance (ESG) lens. As ESG has moved more to the forefront in the commercial real estate industry it is bringing greater attention to the role that wood materials can play in achieving more environmentally sustainable building design and construction.

“There are a lot of practical reasons why timber is a great material to build with, including measurable aesthetic and structural benefits,” says Chester Weir, senior mass timber architect at Kattera, a construction company that is a leader in the mass timber market in North America. “It also has a strong sustainability story at a time when there is more awareness on the impact resource use has on global warming and climate change,” he says.

The commercial real estate industry’s growing attention to ESG is evident in the number of firms that now track and report on ESG performance. For example, participation in the GRESB Real Estate Assessment – the leading ESG benchmark for the real estate industry – jumped 22% in 2020.¹ Data on key environmental performance indicators was reported at asset-level for more than 96,000 assets in 64 countries totaling more than \$4.8 trillion in assets under management (AUM).² In the U.S., almost all publicly traded REITs,

including 98 of the largest 100 REITs, now report their ESG efforts publicly, according to Nareit. The top 100 equity REITs own roughly 4.7 billion square feet of real estate in the U.S.³ Measuring and reporting on environmental factors includes efforts to reduce consumption in the core areas of energy, water, waste and greenhouse (GHG) emissions. The focus on building robust ESG platforms also goes hand-in-hand with growing attention on reducing carbon footprints.

Building construction and operations account for a significant percentage of global carbon dioxide emissions: 39%.⁴ Specifically, 28% of global

carbon emissions are attributed to operational carbon from the energy used to power, heat and cool buildings, while 11% of total carbon emissions are generated from building materials themselves and the construction process, or embodied carbon.⁵ Real estate companies globally recognize the role buildings play in contributing to carbon emissions and are increasingly working to reduce carbon footprints. For example, CBRE Global Investors announced in February that it was working towards a goal of achieving net-zero carbon performance by 2040 for its directly managed, long-term core investments.⁶



Platte 15 | Photo credit: JC Buck | Oz Architecture

¹ Participation in the 2020 GRESB Real Estate Benchmark leaps 22% amid accelerating investor demand for ESG data

² Participation in the 2020 GRESB Real Estate Benchmark leaps 22% amid accelerating investor demand for ESG data

³ REIT ESG Dashboard | Nareit

⁴ UN Environment. Global Status Report 2017. https://www.worldgbc.org/sites/default/files/UNEP_188_GABC_en_%28web%29.pdf

⁵ UN Environment. Global Status Report 2017. https://www.worldgbc.org/sites/default/files/UNEP_188_GABC_en_%28web%29.pdf

⁶ Pathway to 204: Our Vision for a Sustainable Future. CBRE Global Investors. [Flipbook \(cbreglobalinvestors.com\)](https://www.cbreglobalinvestors.com)



T3 West Midtown Atlanta | Photo credit: Hines | Architecture: DLR Group

Mass Timber is a Low-Carbon Solution

Wood products have a number of characteristics that position the material as a climate smart building solution. During their growth phase, trees naturally absorb CO₂ from the atmosphere, locking in carbon.⁷ When wood products are used in building construction, they reduce carbon footprint in two ways: through storing carbon in the material itself throughout the lifecycle of a building and by avoiding greenhouse gas emissions in the manufacturing process.⁸ Generally, wood product manufacturing requires less total energy, and in particular less fossil fuel energy, than manufacturing other alternative materials, like steel or concrete.⁹ Of the many wood products available on the market, mass timber is gaining new ground for its structural strength combined with low-carbon attributes. “Mass timber is not a silver bullet, but it is a great step in the right direction, because it is a product that can substitute for steel and concrete in many components of traditional construction,

and it does so with embodied carbon as opposed to emitted carbon,” says Weir.

Katerra commissioned an independent life-cycle analysis report¹⁰ conducted by the University of Washington to analyze the firm’s flagship mass timber building, Catalyst in Spokane, Wash. The 130,000-square-foot office and classroom higher education building was designed extensively with wood, including the primary structure, envelope of the building and the shear walls.¹¹ Katerra’s study found that carbon sequestered in the wood building materials nearly offset all of the carbon that was emitted during construction. “For all intents and purposes, the building is close to net-zero in its carbon footprint,” says Weir. “When that type of building can be paired with renewable energy resources, such as solar or wind, you could conceive of a building that is both net-zero in its operational footprint, and net-zero in terms of its embodied carbon footprint,” he adds.

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– CARBON LEADERSHIP FORUM

⁷ [What is carbon sequestration? \(usgs.gov\)](https://www.usgs.gov/what-is-carbon-sequestration/)

⁸ ⁹ Dovetail Partners Inc., <https://www.woodworks.org/wp-content/uploads/15NC01-BOWYER-Carbon-implications-of-Material-Selection-WSF-160323.pdf>

⁹ [tr19-complete-pub-web.pdf \(canfor.com\)](#)

¹⁰ [LCA of Katerra’s CLT and Catalyst Building - Carbon Leadership Forum](#)

¹¹ [Catalyst: Inspiring the Future of Sustainable Building | Katerra](#)

"OUR CUSTOMERS ARE SEEKING DIFFERENTIATED OFFICE SPACE THAT CAN HELP THEM RECRUIT AND RETAIN THE BEST AND BRIGHTEST"

– STEVE LUTHMAN, SENIOR MANAGING DIRECTOR AT HINES

A Growing Pipeline of Projects



Catalyst | Photo credit: Ben Benschneider | Michael Green Architecture

Mass timber is continuing to move further into mainstream commercial and multifamily development with a growing number of successful builds. Since completing their first mass timber office building in 2015 with the T3 Minneapolis project, Hines has gone on to complete T3 West Midtown in Atlanta and currently has several other mass timber projects in various stages of development. Construction is underway on T3 Bayside in Toronto and two additional projects – T3 Sterling Road in Toronto and T3 Nashville are expected to break ground this summer. The company also has other projects in pre-development in Denver, Chicago, Vancouver and Australia.

For Hines, there have been a number of drivers behind the growth of its T3 (transportation, timber and technology) projects. One main driver is market differentiation and tenant appeal. "What many of our customers are seeking is differentiated office space that can help them to recruit and retain the best and brightest to drive their businesses forward," says

Steve Luthman, a senior managing director at Hines. A second driver is mass timber's sustainability attributes. Leasing commercial office space in a building constructed with mass timber allows tenants to demonstrate their corporate commitment to environmental sustainability and ESG goals to employees, as well as other stakeholders, he says. According to Luthman, the T3 buildings also can be constructed more quickly as compared to a steel and concrete building, which provides added financial benefits.

Another factor driving the growing marketplace for climate smart buildings is legislation at the city and state level that is taking aim at reducing greenhouse gas emissions. The city of New York passed Local Law 97 in 2019 as a part of its Climate Mobilization Act. The law places carbon caps on most buildings larger than 25,000 square feet—roughly 50,000 residential and commercial properties across New York City. The caps start in 2024 and will

become more stringent over time with a goal of reducing emissions 80% by 2050.¹² Several other cities are addressing steps to reduce emissions in climate action plans, including Los Angeles, Washington, D.C., Denver and Portland among others.¹³ Such legislative changes will continue to keep low carbon building solutions top of mind for developers now and in the future.

Design professionals across the country and around the world are increasingly constructing buildings using wood, both time-tested light-frame construction and emerging mass timber technologies, in a commitment to combat climate change. Whether for its sustainability benefits or tenant appeal, mass timber buildings are helping today's developers innovate and respond to ESG goals.

Additional questions about mass timber? Learn more at [thinkwood.com](https://www.thinkwood.com).

¹² <https://www1.nyc.gov/site/buildings/business/greenhouse-gas-emission-reporting.page>

¹³ Understanding the Role of Embodied Carbon in Climate Smart Buildings. February 2021. Think Wood. <https://info.thinkwood.com/understanding-the-role-of-embodied-carbon-in-climate-smart-buildings-report-on-carbon-reduction-policy-and-design-best-practices>