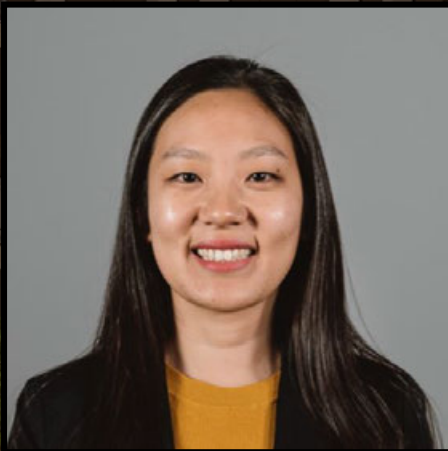


NYC Mass Timber Studio: Advancing Sustainable Development

SPEAKERS



Momo Sun, PE
Regional Director
WoodWorks



Nicole Spina
VP Climate Innovation
& Industry Development
NYC EDC



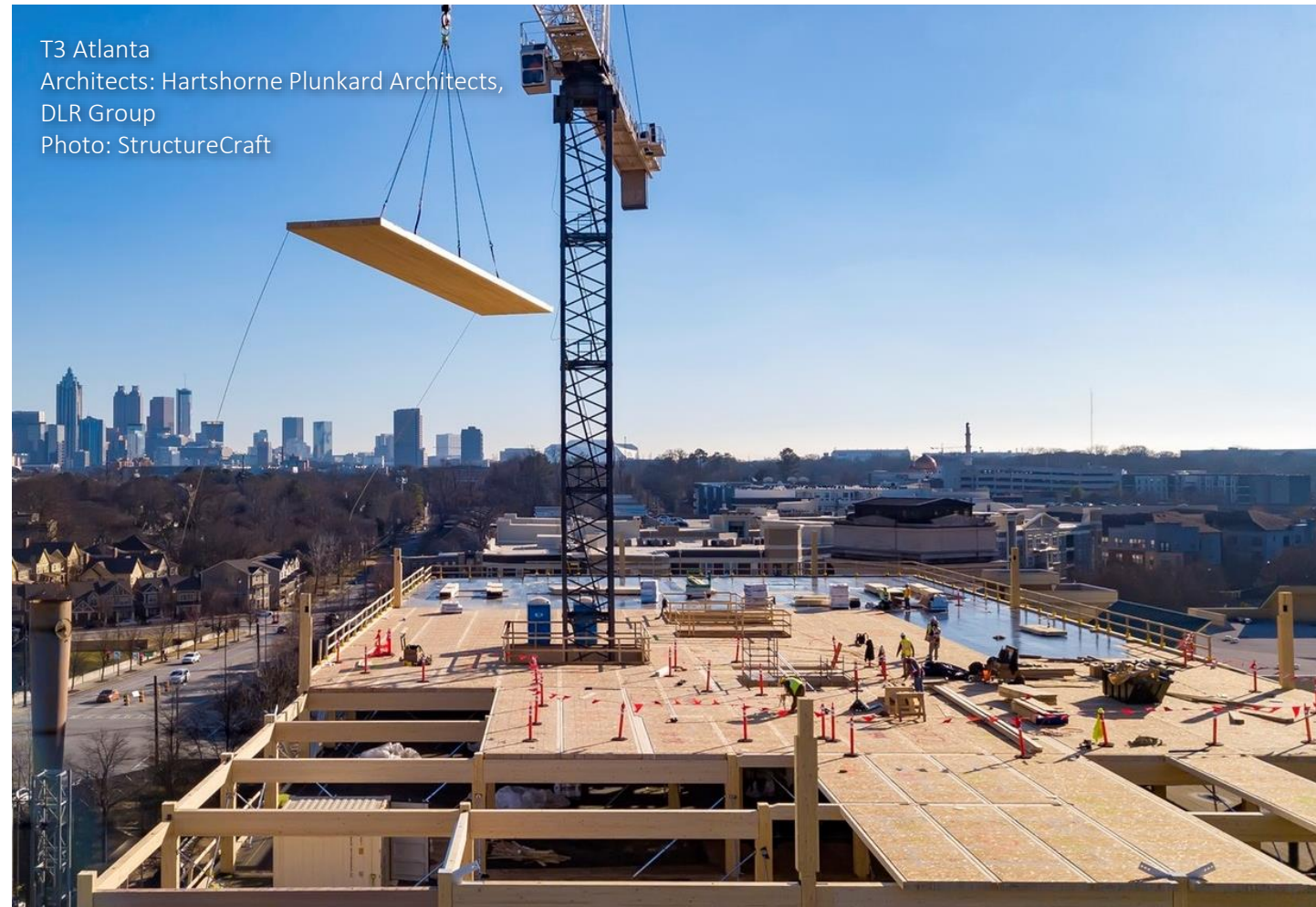
Gizem Karagoz
Senior Project Manager
NYC EDC | Green Economy

April 10th, 2024 @ 11:30AM EST

Free Assistance for Developers & Design Teams

- Innovative mass timber applications
- New tall wood code provisions
- Maximizing heights and areas
- Finding experienced designers and builders
- Environmental performance
- Structural and other systems

help@woodworks.org



Resources for Developers/Owners

Scan for website



WoodWorks has developed the following checklists to assist in the design and cost optimization of mass timber projects. The design optimization checklists are intended for building designers (architects and engineers), but many of the topics should also be discussed with the fabricators and builders. The cost optimization checklists will help guide coordination between designers and builders (general contractors, construction managers, estimators, fabricators, installers, etc.) as they are estimating and making cost-related decisions on a mass timber project. The pre-design checklist should be reviewed by the developer/owner.

1 De Haan
San Francisco, CA
ARCHITECT
PERKINS+WILL
ENGINEERS
DCI Engineers
CONTRACTOR
Halfway Dwellable

WOODWORKS INNOVATION NETWORK
WOODWORKS INNOVATION NETWORK.ORG

Find projects & team members

- Genentech Child Care Center
Mass Timber
- CIT Tall Timber Student Housing
Mass Timber
- Crosswood Apartments
Mass Timber
- Wingspan Event and Conference Center
Mass Timber
- Kresge College Renewal at UC Santa Cruz
Mass Timber
- Knight Campus for Accelerating Scientific Impact at the University of Oregon
Mass Timber



Mass Timber: The Optimal Solution for Multi-Family High-Rise Construction

An urbanization and rising land costs drive greater densification, the need for efficient and sustainable construction methods becomes increasingly crucial. Mass timber is an innovative solution that can meet housing needs while addressing environmental concerns, and has the potential to revolutionize the way we build in urban cores.

The Urban Densification Imperative
According to the United Nations, 68% of the world's population is expected to live in urban centers by 2050. These areas are constrained by limited available land, while increased demand has resulted in soaring land costs. Both add pressure to maximize buildable space, which requires efficient construction methods that minimize a building's footprint and allow vertical expansion. None of this is specific to mass timber. These constraints apply to high-rise projects across the board, and of course many successful non-mass timber high-rises continue to be completed. Which begs the question: Why mass timber, why now?

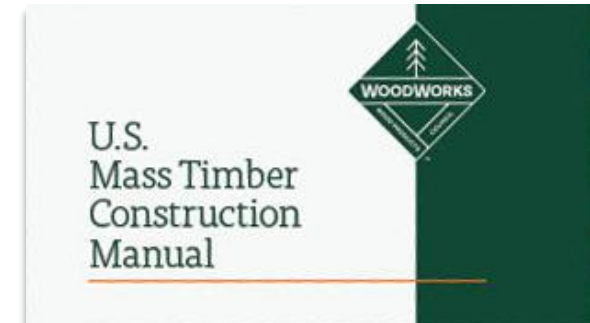
Mass Timber's Value Proposition

As multi-family developments proliferate, forward thinking developers see not only the need to provide sustainable, cost-conscious projects, but to hedge against future downturns caused by economic recessions, job losses, an over-saturated housing market, or other factors. What then is mass timber's value proposition? Member publications

Differentiation can also top of mind for the developer of Ascend, a 25-story mass timber housing project and currently the world's tallest cross timber building.

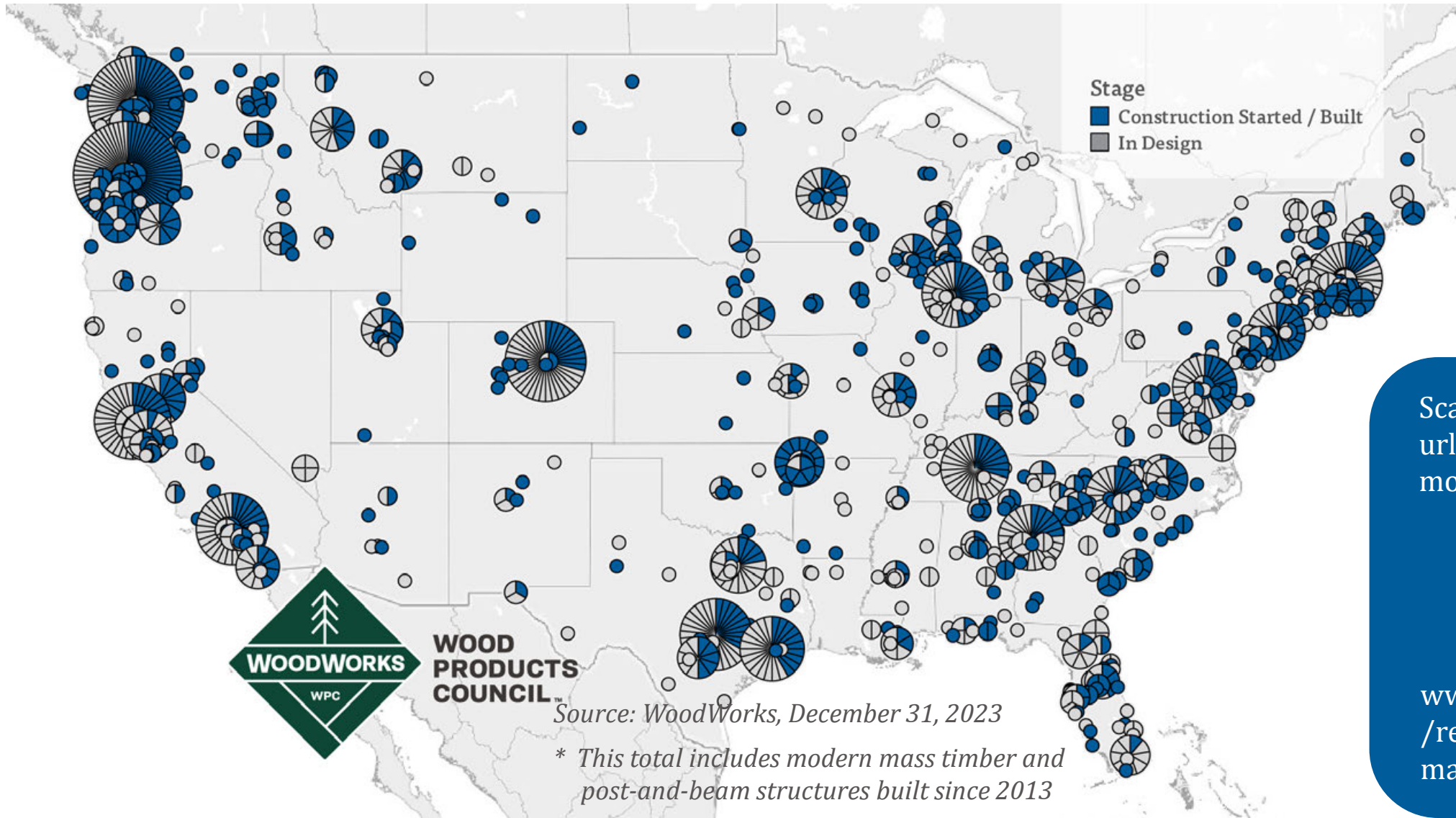
"The primary driver for us was aesthetics. We were looking for a differentiator, and in 2017 I saw the renderings for River Birch Tower [a study on a potential 80-story mass timber tower in Chicago]. It was a revelation to see that not only is it possible to build a high rise out of wood, but you can also expose that structure, make, and the aesthetics are incomparable. It was this moment of, 'Wow, can we do this?'"

Tim Goldman,
New Land Strategist
Developer of Ascend
25 stories / Milwaukee, WI



Current State of Mass Timber Projects

As of year-end 2023, in the US, **935** multi-family, commercial, or institutional projects have been constructed with mass timber. Including those in design, the total is **2,035**.



Scan this code or use the url to find the map and more details online.



www.woodworks.org/resources/mapping-mass-timber/

Glue Laminated Timber (Glulam) Beams & columns



Cross-Laminated Timber (CLT) Solid sawn laminations



Photo: StructureCraft



Photo: LendLease

Office



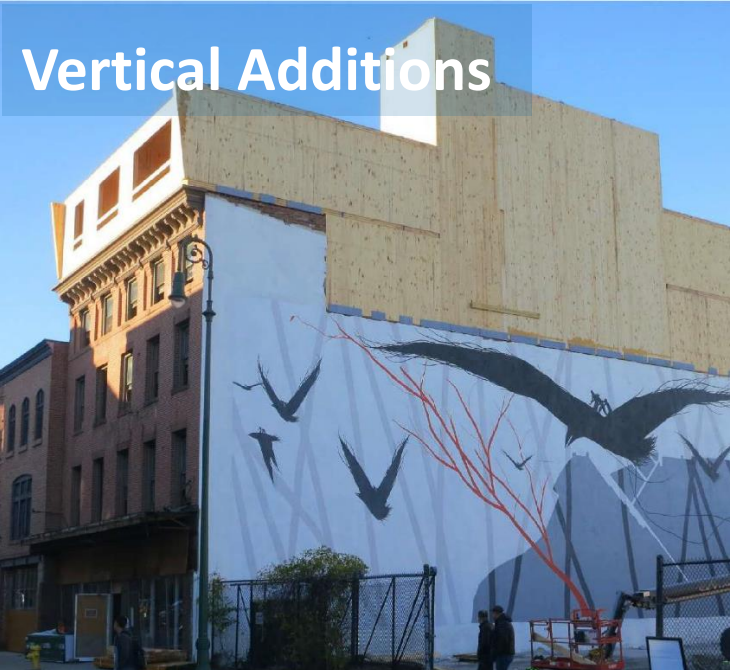
District Office, Portland | Urban Development + Partners | Hacker Architects

Multifamily



Timber House, Brooklyn | Brooklyn Home Company | Mesh Architectures | Photo: Travis Mark

Vertical Additions



ACME Timber Lofts, New Haven | Spiritos Properties



Gray Organschi Architecture

Warehouses



Southfield Park 35 Warehouse, Dallas | Affinius Capital | Image: Mark Humphries Photography

Sustainability Brief

- » High level overview of sustainability benefits of mass timber
 - » Carbon benefits
 - » Forest health & wildfire resilience
 - » Healthy buildings & biophilia
 - » Energy efficiency & insulation
 - » Circular economy
- » Short read - great for developers, their capital partners, and anyone who just needs a brief intro to topic

<https://www.woodworks.org/resources/meeting-sustainability-objectives-with-wood-buildings/>

Meeting Sustainability Objectives with Wood Buildings

Healthy Buildings, Carbon Impact, Resilience, Circularity



Mass timber structural systems help meet several development objectives that fall under the broad sustainability umbrella, including healthy buildings, reduced carbon impact, resilience, and circularity. Developers and owners can take advantage of wood's benefits to create buildings that contribute value by attracting tenants, align with evolving policy requirements, and appeal to investors who are increasingly seeking sustainable investments.

Carbon Benefits of Wood Buildings

Less Embodied Carbon + Stored Carbon = Lower Carbon Impact

Low embodied carbon: Wood products have low embodied carbon compared to steel and concrete.^{1,2} Embodied carbon is a measure of the greenhouse gas (GHG) emissions associated with materials and construction processes throughout the lifetime of a structure. Embodied carbon, especially upfront emissions associated with producing materials and constructing a building, can be significant.³

Biogenic carbon: As trees grow, they absorb carbon dioxide (CO₂) from the atmosphere, release the oxygen (O₂), and store the carbon in their wood, leaves or needles, and roots. Wood elements used in a building continue to store this carbon for the building's lifetime—longer if the wood is reclaimed and reused or recycled.

Developer Crescent Real Estate chose mass timber for Platte Fifteen, a speculative office development in Denver, for aesthetic differentiation and alignment of sustainability goals. They found that the authentic aesthetic of timber appeals to both technology companies as well as more traditional tenants.⁴

"Mass timber is great environmentally and creates warm, natural, biophilic spaces that enrich human experiences. It is a viable, sustainable structural option that drove leasing and the ultimate economic success of Platte Fifteen. The differentiated authentic timber interiors proved to be exceptionally attractive to quality, sustainability-minded tenants and investors. It is fundamentally what makes this building special."

— Conrad Suszynski, Co-CEO
Crescent Real Estate



Photo: JC Buck

Platte Fifteen — Denver, CO
Crescent Real Estate

New York City Mass Timber Studio



About NYCEDC Green Economy + Climate Innovation

Building Our Future Economy

Ensure businesses, investors, and employees have confidence in NYC

Enable equitable growth and development of priority industries

Deliver future-forward infrastructure

Shape the growth of and strengthen neighborhoods where New Yorkers live, learn, and work



About NYCEDC Green Economy + Climate Innovation

Building Our Future Economy

225 managed properties

64M square feet of real estate

170 capital projects

\$9B capital budget

435 initiatives

\$1B life sciences investment

\$200M offshore wind investment



About NYCEDC Green Economy + Climate Innovation

New York City’s vision for the Green Economy

New York City’s green economy will host 400,000 jobs by 2040, becoming the anchor of a prosperous, equitable, and just future for New Yorkers, while delivering the bold solutions needed to address climate change

New York City’s green economy is the **ecosystem of activities that directly contribute to achieving our carbon neutrality goals and bolstering climate adaptation** across 8 sectors and 21 sub-sectors.

Building decarbonization is the largest driver of green economy jobs today, followed by resilience infrastructure, finance and energy

Green Economy Sector	Sub-sector
Energy	Solar
	Offshore Wind
	Onshore Wind
	Hydropower
	Other
	Clean fuels
	Smart grid
Buildings	Building decarbonization
	Sustainable building materials
Transportation	Electric vehicles
	Micro-mobility
	Green freight and logistics
Waste	Recycling
Consumer products	Sustainable food
	Sustainable fashion
Finance and Consulting	Green finance
	Climate consulting and accounting
Resilience Infrastructure	Coastal adaptation
	Inland adaptation
Policy & Advocacy	Sustainability policy, planning and advocacy

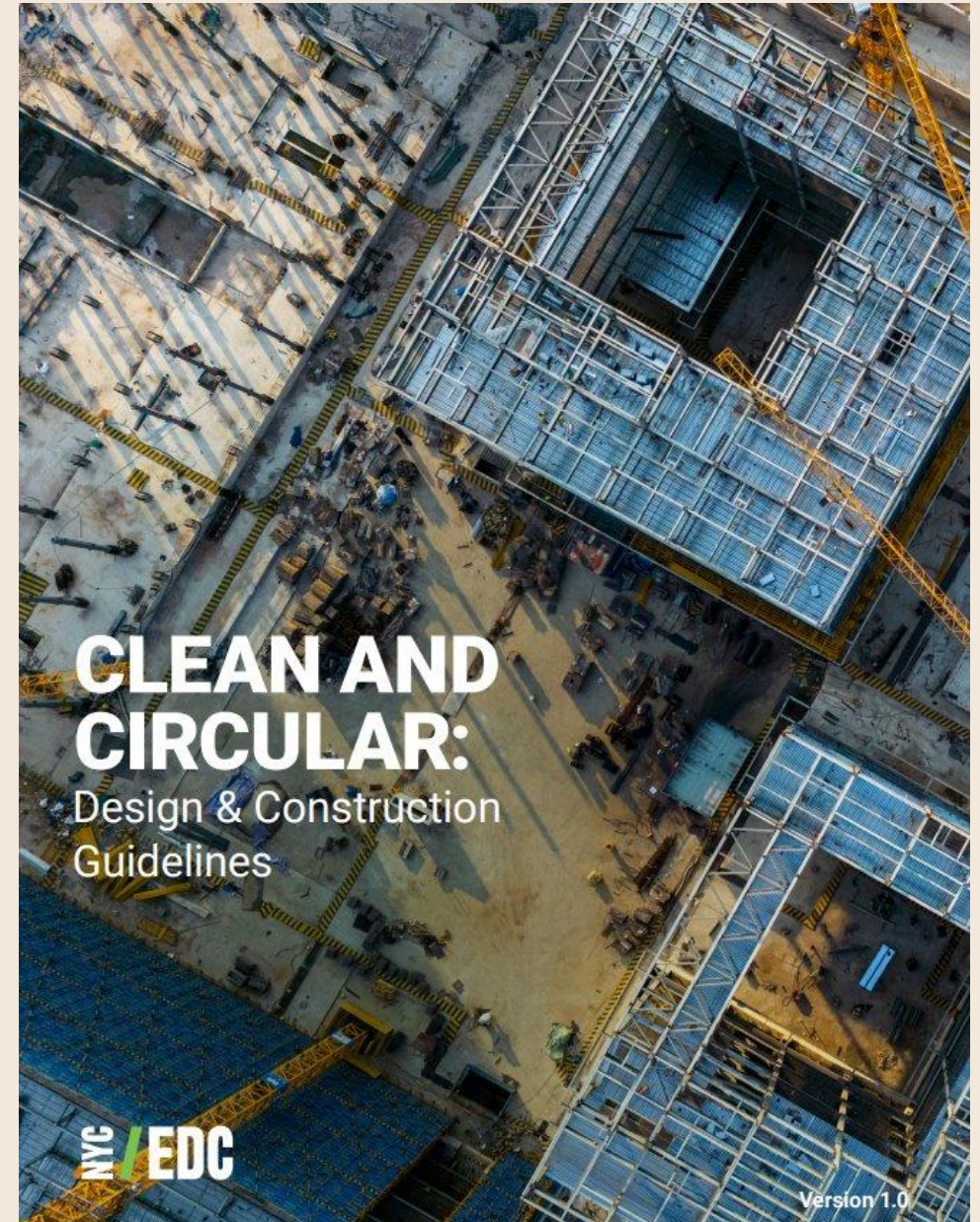
About NYCEDC Innovation in the Built Environment

NYCEDC Climate Innovation portfolio collaborates with industry stakeholders to **de-risk emerging technologies, support regulatory wayfinding and scale across use cases**

In March 2024, NYCEDC launched the **Circular Design and Construction Guidelines**: an operational guide to scale materials reuse and **sustainable material alternatives**

NYC Context: NYC's mass timber related commitments

- Mayor's Clean Construction Executive Order 23
- PlaNYC 2023: 50% embodied carbon reduction target for City's (public) construction projects by 2033
- NYCEDC and NYC Talent's Green Economy Action Plan



Mass Timber Studio

Overview

A **Climate Innovation Program** to provide **grants and technical assistance** to design and development teams working on NYC based projects

- Guide practitioners through design, engineering & feasibility analysis
- Support carbon and cost assessments for mass timber application
- Facilitate access to regulatory support
- Support construction of new building projects with mass timber
- Create partnerships to drive industry adoption



Mass Timber Studio Partners

Operators



Advisors



Funding Supporters



Mass Timber Studio Projects

- 1** **Walter Gladwin Recreation Center / Tremont, Bronx**
Program Public / Recreation Center
Project Size 40,800 sf / Building Height 36'
- 2** **Brooklyn Public Library / New Lots Branch**
Program Library
Project Size 25,000 sf / Building Height 40'
- 3** **Mass Timber in Harlem / 15-21 124th W Street, NYC**
Program Residential 33-Unit Apartment Building
Project Size 50,000 sf / Building Height 65-75'
- 4** **Hillside Avenue / 161-10 Hillside Avenue, Queens**
Program Mixed-Use
Project Size 102,000 sf / Building Height 75'
- 5** **Hoek Place / 418 Van Brunt St, Brooklyn**
Program Residential/commercial mixed use
Project Size 11,000 gross sf / Building Height 60'
- 6** **Metropolitan Studios / 1160 Flushing Ave, Brooklyn**
Program Mixed-Use
Project Size 40,000-100,000 sf
- 7** **The Grafted Home / 746 Prospect Place, Brooklyn**
Program Multi-family residential
Project Size 10,000 sf / Building Height 70'

The New York City **Mass Timber Studio's** first cohort features projects in **Community Space**, **Residential Development** and **Adaptive Reuse**



Mass Timber Studio Projects

- 1 Walter Gladwin Recreation Center / Tremont, Bronx**
Public project to replace the existing New Lots branch with a new library intending to use mass timber construction. The facility will include an educational and communal program to host classes, gatherings, and events.



- 4 Hillside Avenue / 161-10 Hillside Avenue, Queens**
A proposed 100 percent mixed-income affordable housing project with approximately 136 apartment unit and ground floor retail, studying the use mass timber and its integration with the development, design, and construction of high-quality affordable housing.



Mass Timber Studio Focus Areas

Building Code

Navigating regulatory frameworks

Innovative Project Delivery

Integrating design, digital fabrication and building technology

Technical Feasibility

Analyzing structural, logistical, cost feasibility

Sustainability & Resiliency

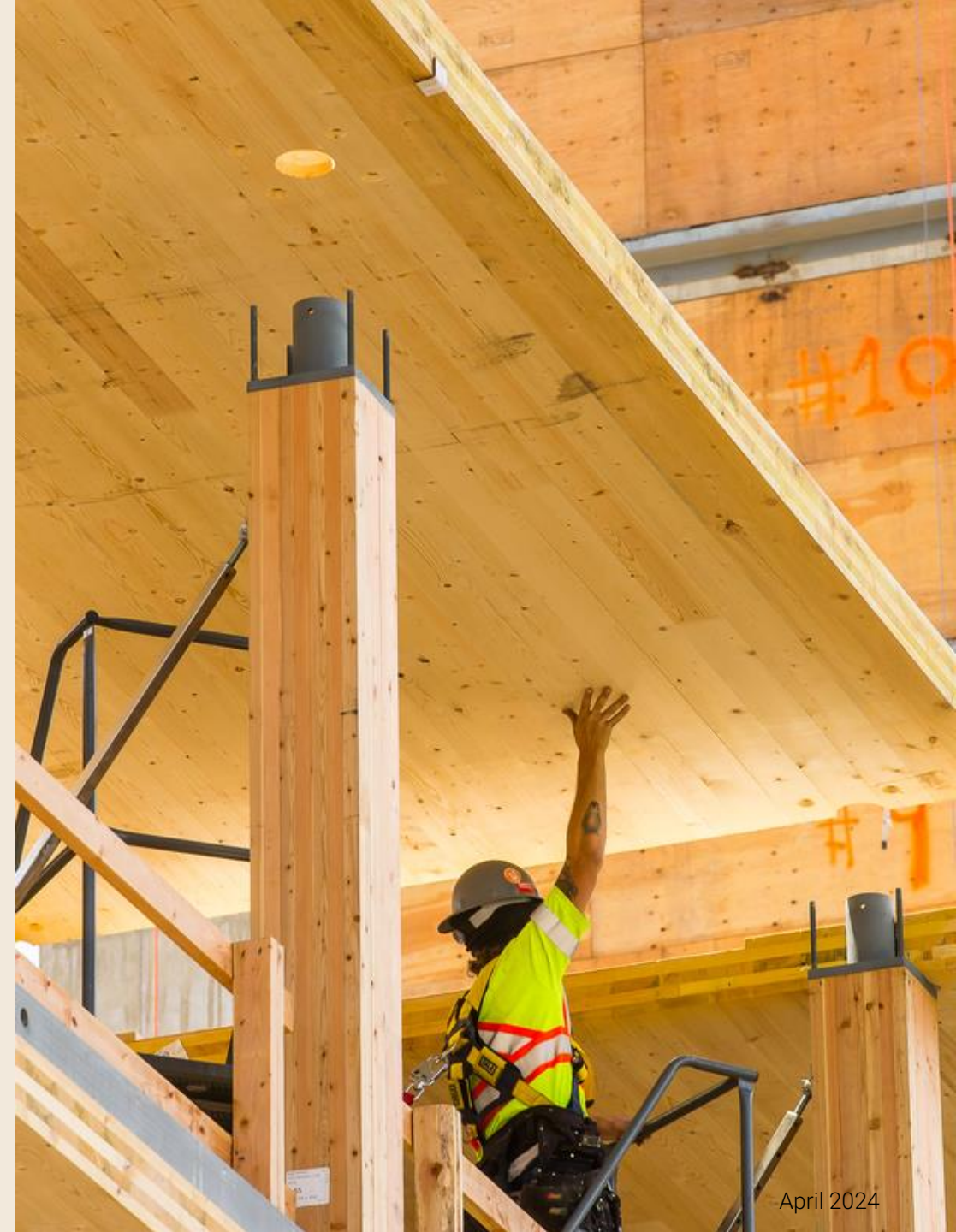
Quantifying carbon reduction/sequestration
Designing within environmentally vulnerable site conditions

Community & Equity

Designing for biophilic health, safety and wellness benefits

NYC / EDC

ULI Spring Meeting



Mass Timber Studio Technical & Regulatory Assistance

WoodWorks providing Technical Assistance Sessions

to discuss technical questions and review:

- Project overview and updates
- Grids and spans
- Acoustics
- Fire design
- Moisture protection
- Connecting the team with other mass timber experts
- Share lessons-learned

NYCDOB holding monthly office hours for teams seeking responses to regulatory questions as they advance towards or work through permitting, including clarification on:

- Use of Structural CLT
- Concealed Spaces
- Lateral Systems and Structural Diaphragms
- Shafts
- Connections
- Penetrations

New Stapleton Waterfront Residential Development RFP

Site

Staten Island – North Shore
New Stapleton Waterfront Neighborhood

Opportunity

Long-term ground lease & development of two parcels

Project Goals

Create a **financially feasible, vibrant, mixed use, mixed-income development** that:

- Addresses the housing needs of the community and the City more broadly
- Includes active ground floor uses that encourage pedestrian activity

Promote sustainability, energy efficiency, carbon neutrality, resiliency, and **serves as a show case of mass timber construction**

Submission Deadline

Proposals are due by June 20, 2024, at 11:59 PM



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Scan for more information or visit edc.nyc/new-stapleton-waterfront-residential-development-rfp

Questions?

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