MASSTAC
Washington Mass Timber Accelerator

Mid-rise

MASS TIMBER HOUSING OPPORTUNITIES – UTILIZING LOCAL RESOURCES TO DELIVER HOUSING AT ALL SCALES

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This book series reflects the deep commitment and innovation of organizations dedicated to developing projects with mass timber across different typologies. We would like to thank the MASSTAC Housing Committee members and individuals for their participation and support.

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The Washington Mass Timber Accelerator would like to express its gratitude for the generous funding provided by the Washington State Department of Commerce, which has enabled Washington's design, construction, and manufacturing industries to show the nation how we might sustainably address our housing crisis, at all scales, and across rural and urban landscapes.

Washington State Department of Commerce

About the Washington Mass Timber Accelerator

The Washington Mass Timber Accelerator (MASSTAC) is a non-profit organization working to advance high quality, low-carbon construction through increased utilization of locally manufactured mass timber. With representation from Indigenous communities, government agencies, private industry, labor organizations, and forestry, we are the central hub of mass timber activity in the State of Washington.

Our Mission

To sustainably and equitably accelerate the adoption of mass timber in construction, in Washington and nationally.

Our Vision

Locally manufactured mass timber is driving cleaner, faster, safer construction and healthier, more beautiful buildings in Washington and beyond.

We envision a future where mass timber is not only a standard in construction but also a catalyst for economic growth, community development, and environmental stewardship. Where sustainable mass timber buildings provide healthy and inspired environments for living, working, learning, playing, and healing. Where reciprocal relationships between cities and forests, urban and rural communities, support social, environmental, and economic well-being for our region.

Our Funders

Seed funding for MASSTAC was provided by the City of Seattle Office of Economic Development, and the Washington State Department of Commerce.

Contents

Foreword

Rico Quirindongo

DIRECTOR, OFFICE OF PLANNING
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From Vancouver, British Columbia to Portland, Oregon, Seattle, Washington and the Olympic Peninsula, the Pacific Northwest has deep roots in the timber industry. Timber production in the state of Washington has not only shaped our cities but has also been pivotal in defining the region's economic trajectory. The state's forests, particularly in the Olympic Peninsula and the Cascade Range, have long been a rich source of timber, which fueled the state's development into one of the nation's most prosperous regions.

And so, the timber industry in Washington was not just about extracting resources, it was about transformation. The rise of the timber industry put Washington on the map and contributed significantly to the establishment of the Pacific Northwest as an industrial hub during the early 20th century. Cities like Seattle grew rapidly due to the vast timber resources of the region. The iconic sawmills and logging camps that dotted the Puget Sound provided raw materials for much of the nation's infrastructure and built the foundation of the Pacific Northwest economy. Washington's timber industry, along with its proximity to the Pacific Ocean, also played a key role in the development of ports and transportation networks, which allowed timber products to be exported globally. The growth of the railroads, shipyards, and other transportation networks followed in the wake of intensive timber harvesting, creating a powerful industrial economy. As Seattle and the surrounding areas became the epicenter of timber production, the state's economy flourished. For decades, timber was the cornerstone of the region's prosperity.

However, as the world has grown more environmentally conscious in the last several decades, the traditional timber industry has faced many challenges. Unsustainable logging practices and deforestation concerns prompted a call for a different approach to the work. Today, the demand for timber remains strong, and we are moving into a more sustainable relationship with the forests. Simultaneously, we are recognizing the power of wood to be used as a substitute for energy intensive and carbon-emitting structural materials.

This is where the new frontier of mass timber comes into play. Today, we find ourselves at a crossroads where the timber industry, once defined by traditional methods, is evolving into something even more revolutionary with the development of cross-laminated timber (CLT). Utilizing products such as CLT, mass timber construction is not just reshaping construction, but paving the way for a more sustainable, carbon-neutral future while creating jobs, spurring economic growth, and supporting the state's industrial and architectural innovations.

CLT is an engineered wood product that has been hailed as a breakthrough in sustainable building, offering a new way to utilize the region's rich forest resources while dramatically reducing carbon emissions from traditional construction. A shift to mass timber is critical for Washington's ambitious goals of achieving carbon neutrality in the coming decades.

Mass timber is not just a material; it represents a new vision for the state's future, combining the historical legacy of timber production with cutting-edge innovations in architecture and construction. As a renewable resource, mass timber is part of the solution to reducing the carbon footprint of our built environment. When sourced and produced sustainably, mass timber buildings can sequester carbon, locking away greenhouse gases that would otherwise contribute to climate change.

" Utilizing products such as CLT, mass timber construction is not just reshaping construction, but paving the way for a more sustainable, carbon-neutral future while creating jobs, spurring economic growth, and supporting the state's industrial and architectural innovations. "

The Canyons, LSW Architects
Photo: © Marcus Kaufmann Photography

The production of mass timber also uses far less energy than traditional construction materials like concrete and steel, making it a key component in Washington's transition to a carbon-neutral economy.

Beyond its environmental benefits, mass timber has the potential to invigorate the state's economy and provide a pathway to future job growth. From blue-collar construction industry jobs in the assembly and erection of mass timber buildings to white-collar jobs in architectural design and engineering of carbon-neutral buildings, the industry holds tremendous promise for diverse job creation. The growth of mass timber manufacturing could revitalize rural communities in the state's timber-producing regions, such as the Olympic Peninsula, creating opportunities for local manufacturing across the region. Investment in the development of mass timber production facilities and the necessary infrastructure to support the industry is critical to the state's economic future.

This investment will also help foster innovation in construction techniques. The ability to build mass timber skyscrapers, residential buildings, and even single-family homes represents a new era for the construction industry. For Seattle and its neighboring cities, mass timber offers a more efficient, sustainable way to build for the growing population. It opens new possibilities for housing production, from small accessory dwelling units (ADUs) to large-scale transit-oriented development (TOD) projects. Mass timber allows for faster construction timelines, which is essential in addressing the housing crisis that many cities across the U.S. are currently facing. Whether for mid-rise apartment buildings in Seattle or sustainable affordable housing projects in rural communities, mass timber provides a scalable solution that can meet the housing demands for urban and rural communities across the region.

What's more, the integration of mass timber into the design and construction of tall buildings, including mass timber towers, is breaking new ground in architectural design. Washington, a region known for its innovative architectural firms and design-driven approach to construction, is poised to lead this charge.

Mass timber provides a unique material aesthetic, warmth, and versatility that cannot be replicated with traditional construction materials. As architects and builders increasingly turn to mass timber, Washington could position itself at the forefront of a global movement toward sustainable building practices.

Investing in mass timber represents a chance to honor the region's timber roots while propelling the state toward a more sustainable, carbon-neutral future. Washington's timber industry has always been a powerful economic engine, and the mass timber sector offers the potential to continue that legacy while aligning with a green energy and materials strategy and a carbon neutral future. Supporting the emerging mass timber industry will strengthen our economy, reduce global carbon emissions, create green jobs, and improve the quality of life for residents in both urban and rural communities. Mass timber is part of the sustainable future that I want to see for myself, my family, and the diverse communities of which we are all a part.

This book outlines a vision for how we can invest in and see a sustainable vision forward, one that leans into our housing needs for the state and the region.

I am grateful to the leadership and investments of Washington Governor Bob Ferguson, Policy Director Sahar Fathi, Housing Senior Policy Advisor Nicholas Carr, City of Seattle Mayor Bruce Harrell, Office of Economic Development Director Markham McIntyre, Manufacturing and Maritime Strategic Advisor John Persak, and Washington Mass Timber Accelerator Executive Director Erica Spiritos. Their vision, their efforts, and their commitment in partnership with state, city, and industry leadership makes me hopeful for our collective future.

The Canyons, LSW Architects
Photo: © Jeremy Bitterman Photography

Introduction

Stronger, Faster, Greener: Mass Timber Housing in Action

The mass timber industry is evolving rapidly, reshaping the way we think about building design and construction. Once a niche material, mass timber has rapidly gained acceptance across the architectural and construction industries, thanks to its remarkable versatility, sustainability, and economic advantages. With advancements in technology and updates to the International Building Code (IBC), including allowances for taller structures currently up to 18 stories, mass timber is poised to transform skylines and communities alike.

Mass timber offers a compelling suite of benefits that make it a smart choice for developers, institutions, and private clients alike:

- **Revenue Generation:** Mass timber buildings offer opportunities for increased density, faster speed to market, and enhanced leasing velocity due to the beauty of exposed wood.
- **Streamlined Construction:** Harnessing the potential of prefabrication to reduce construction timelines, mass timber buildings are erected quickly, quietly, and with minimal waste generated on-site.
- **Carbon Reduction:** A renewable material sourced from sustainably managed forests, mass timber reduces reliance on high-carbon materials and stores carbon throughout its lifecycle.
- **Building Performance:** Mass timber buildings offer durability, thermal comfort with energy efficiency, fire-resistance, and higher indoor air quality due to a reduced reliance on finish materials.
- **Health and Wellness:** Mass timber buildings enhance occupant well-being by fostering connections to natural materials. Research links such environments to improved cognitive function, reduced stress levels, and overall psychological benefits.

The state of Washington has emerged as a leader in this movement, with forward-thinking policies that enable mass timber's use in taller buildings. However, broader adoption will require continued collaboration among architects, developers, policymakers, and builders as we co-create a better way to build.

This Mass Timber Housing look book celebrates the vast potential of mass timber in housing projects throughout the Pacific Northwest, showcasing examples across categories such as modular and custom single-family homes, accessory dwelling units (ADUs), cluster housing, townhome, low- rise and mid-rise developments, tall timber housing, and skyscrapers. These projects — both built and unbuilt — demonstrate the material's adaptability and its ability to meet diverse housing needs. While the focus is on Washington State, the lessons and inspiration drawn from these projects resonate across North America and beyond. The projects in this look book demonstrate what is possible.

The next step is yours.

CLT Townhome Building Kit, Green Canopy Node
Photo: © Inside Spokane Photography

Meet Washington's Mass Timber Manufacturers

Cascade Joinery • Bellingham, WA

FABRICATOR

For 33 years, Cascade Joinery has been crafting timberwork for high-end, commercial, residential, and municipal buildings, in a vast range of architectural styles. Today, we're one of the Northwest's leading producers of structural and decorative crafted timberwork, providing creative solutions to complex structural challenges. We believe in Mass Timber, and we're devoted to, and passionate about, delivering on it. From design-phase consultation to fabrication and on-site installation, we're by your side to manifest the most ambitious Mass Timber projects.
For more information, contact: Allen Stoltzfus, Sales Engineer
allen@cascadejoinery.com • *cascadejoinery.com*

Composite Recycling Technology Center (CRTC)

MASS TIMBER PANELS (CLT)

The CRTC Building Innovation Center was established to provide mass timber-based housing solutions to rapidly deployable military housing, emphasizing durability and protection. With access to vast stands of rapidly growing coastal western hemlock on the Olympic Peninsula, CRTC-BIC is the first entity worldwide to utilize thermal modification to stabilize and enable this underutilized species in CLT. ACLT - Advanced Cross Laminated Timber, is a CLT product that uses thermal modification (TM) of the lamstock in place of kiln-dried lumber. The TM process imparts improved dimensional stability as well as increased resistance to mold and mildew attack. Sourcing our primary lumber supply from the Makah Tribe, we have expanded to provide tribal and other affordable single-family modular detached homes.
For more information, contact: Glenn Ellis Jr, Housing Business Manager
(505) 274-9198 • gellis@crtc-wa.org • *compositerecycling.org*

Green Canopy Node • Seattle, WA

PREFABRICATED MASS TIMBER HOUSING

Green Canopy NODE builds sustainable housing using offsite and traditional methods. We service developers in Washington and Oregon to acquire, plan, and construct their low rise multifamily and multi-unit projects. We innovate construction methods and components to increase cost control, reduce timelines, and improve sustainability. Green Canopy NODE offers a catalog of mass timber modular houses, townhomes, and apartments that are pre-designed and customizable to deliver carbon negative housing for developers and neighborhoods.
For more information, visit: *greencanopynode.com*

Mercer Mass Timber • Spokane Valley, WA

COMPLETE MASS TIMBER STRUCTURES

As a global mass timber manufacturer with operations in Washington, we provide high-performance prefabricated solutions for residential construction at all scales. Our vertically integrated approach—combining digital design, off-site manufacturing, and construction services—reduces project risk, accelerates schedules, minimizes site disruption, and enhances energy performance. From modular homes to mid- and high-rise developments, we enable sustainable, innovative, and resilient housing solutions.
For more information, contact: clt@mercerint.com • *mercermasstimber.com*

Tieton Cabin Co. • Tieton, WA

PREFABRICATED MASS TIMBER HOUSING

Tieton Cabin Company, located in Tieton, WA, builds ready-made, thoughtfully designed one and two bedroom small homes optimized for versatile functionality as guest accommodations, income properties, or personal retreats. Robustly built with Cross Laminated Timber, Rockwool installation, steel frames and premium fixtures for energy efficiency, durability and performance, their elegant simplicity offers modern, timeless warmth with essential features. IBC compliant and WA State L&I certified, these homes arrive complete and install in one day with minimal disruption, ready for immediate use.
For more information, contact: Alex Mondau, Director of Strategy • 509-673-1030
alex@tietoncabinco.com • *tietoncabinco.com*

Vaagen Timbers • Colville, WA

COMPLETE MASS TIMBER STRUCTURES

Vaagen Timbers is a leader in sustainable mass timber manufacturing, transforming small-diameter logs from forest restoration into premium glulam and cross-laminated timber (CLT) products. By sourcing wood from within 100 miles of their Colville, WA (USA) facility, they reduce emissions and support local economies. Their precision-engineered glulam beams offer exceptional strength and beauty, meeting stringent ANSI/APA standards. Choosing Vaagen Timbers means investing in resilient, low-carbon buildings while actively contributing to healthier forests and wildfire pcrevention. From Forest to Frame — with purpose.
For more information, contact: Joel D. Rohrs, Executive Vice President
(206) 708-3260 • *vaagentimbers.com*

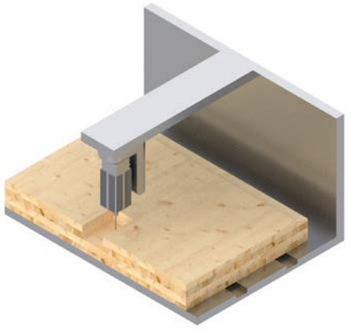
Mass Timber in Washington

Manufacturers Map

Mass Timber Products

Glue Laminated Timber (Glulam)

Fabrication



Mass Timber Panels (CLT, DLT, MPP)

Prefab Mass Timber Housing

Connectors and Hardware

Complete Mass Timber Structures

Typology 6
Mid-rise

What is mid-rise?

Residential buildings taller than low-rise yet shorter than high-rise, ranging from four to seven stories, often wood construction above a concrete podium, offering moderate urban density with elevators, shared amenities, and opportunities for mixed uses such as ground floor retail.

Photo: Crosswood Apartments, Rowell Brokaw Architects

Why mass timber for this typology?

Podium construction in multi-family and mixed-use developments typically feature lower levels of concrete or steel with light-wood framing above. This approach balances density, ground-floor retail, and parking while remaining cost-effective by adhering to the height limits of Type-V or Type-III construction.

Mass timber offers a compelling alternative for floor structures in this typology. By replacing wood framing with mass timber floor decks, projects gain multiple benefits: streamlined construction with faster assembly and fewer onsite modifications, reduced reliance on finish materials, and the warmth of exposed wood ceilings. Combining mass timber floors with light-wood framed walls maximizes construction and cost efficiencies while meeting fire-rating requirements with fewer materials and less error.

Beyond construction advantages, mass timber enhances the tenant experience with natural wood interiors that support health and well-being. This higher value product enhances leasing velocity, making mass timber a smart, forward-thinking choice for podium construction.

What are the opportunities to scale?

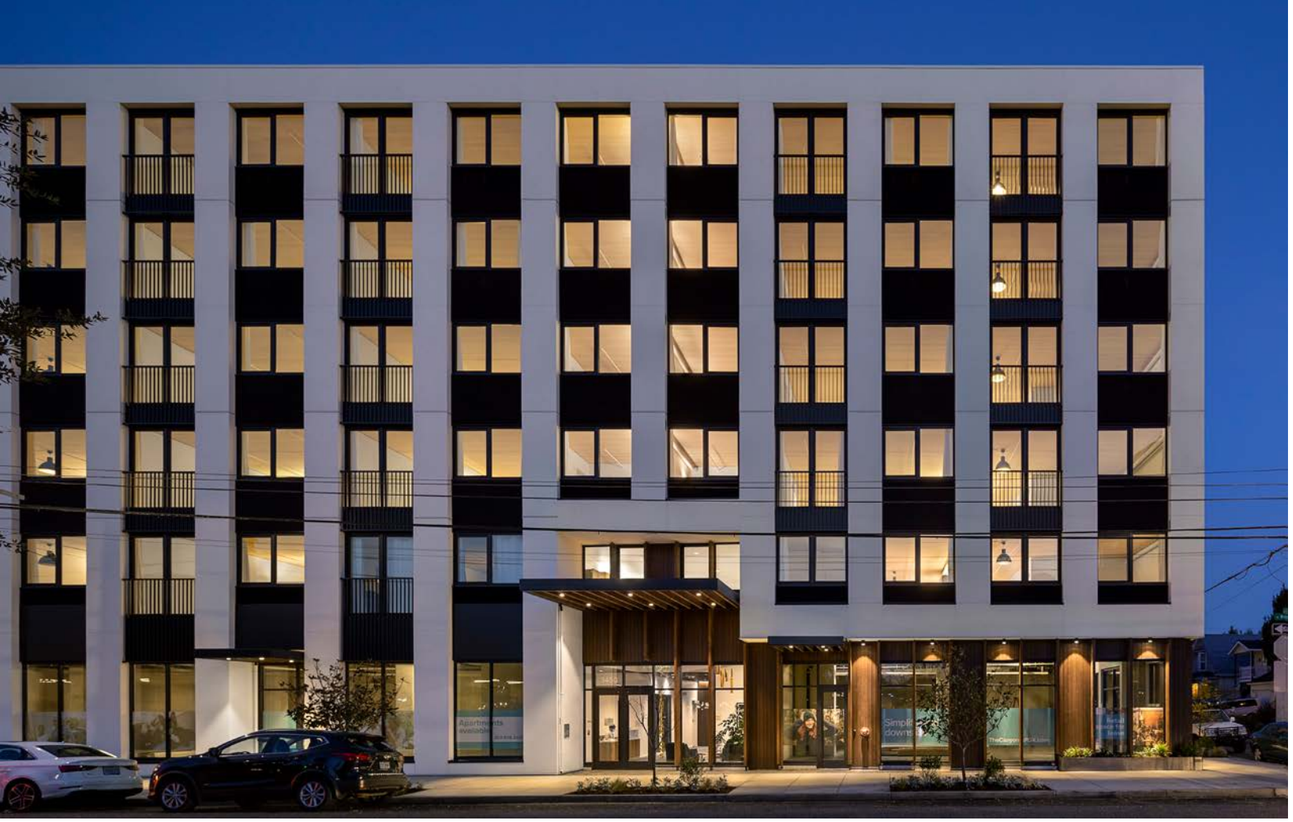
Mass timber in podium construction presents multiple opportunities for scaling.

One area already advancing is the increased use of prefabricated mass timber components for specific building areas, further accelerating construction. This includes prefab mass timber elevator shafts, stairways, and stair towers, streamlining assembly and compressing construction schedules.

Another opportunity lies in replacing concrete with post-and-beam mass timber construction for ground-floor podiums, while staying within Type-V and Type-III construction limits. As parking requirements decrease and ground-floor programming becomes more flexible, this approach enables faster build times and creates high-value commercial spaces, while reducing the embodied carbon footprint of the building.

A third area for scaling is integrating mass timber volumetric modular systems above the podium, unlocking even greater efficiencies in speed and quality.

Leveraging mass timber, we can enhance the value of mid-rise construction.



The Canyons

Portland, OR

The Canyons delivers on a promise of accessible living for residents of all ages and abilities. The environmentally-advanced building was constructed using CLT panels and light-frame wood walls, atop a single-story concrete podium. Comprising 70 living units, the building features open-air zig-zagging corridors and the Alleywalk marketplace which adds vibrancy and welcomes the community to engage with the development.

PROJECT TEAM

Kaiser Group, Inc.
DEVELOPER

Hoosiers Corporation, Japan
DEVELOPER

LSW Architects PC
ARCHITECT

R&H Construction
CONTRACTOR

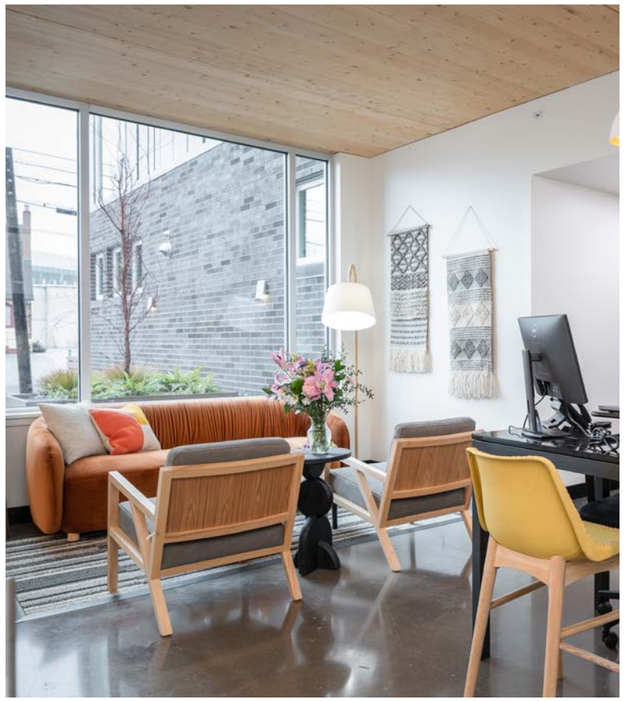
Catena Consulting Engineers
STRUCTURAL ENGINEER

Structurlam
CLT

The Canyons building stands at 65 feet tall, six stories high, and provides 70 apartments along the North Williams corridor in Portland. The Canyons features light-filled units with open floor plans, a modern design, and a 24/7 onsite trained paramedic. It offers more freedom and flexibility than found in an independent living facility, with health and safety features you won't find in a typical apartment building.

Website: Adding Warmth and a Modern Feel to Senior Housing

Photos: © Jeremy Bittermann Photography



Crosswood Apartments

Eugene, OR

Skirting the Willamette River, Crosswood constitutes a new six-story, mixed-use residential complex steps from the University of Oregon campus. With 127 units, the H-shaped development consists of hybrid CLT and wood-framed construction over a post-tensioned concrete podium with tuck-under parking.

The apartment levels include CLT floor and roof panels over prefabricated light-framed bearing walls. The CLT floor system allows for nearly 10ft-tall exposed wood ceilings for all units. The windows stretch to the ceilings and provide monumental views and natural light. The project was funded by HUD, through the 221(d)(4) program for market-rate housing.

Website: Crosswood Eugene

Exterior and Interior Photos: © Taylour White
Construction Photo: © John Hyland Construction

PROJECT TEAM

deChase Miksis Development
DEVELOPER

Rowell Brokaw Architects
ARCHITECT

John Hyland Construction
CONTRACTOR

Holmes US
STRUCTURAL ENGINEER

Postmark Apartments

Shoreline, WA

The Postmark, former site of Shoreline's post office, finished in 2020, situated just east of Interstate 5, brings 243 apartment units in two L-shaped 5-story buildings on top of two levels of below grade post-tensioned concrete parking levels. Wood frame levels consist of exposed 5-ply CLT floor and roof panels supported by stud framed walls. Use of glulam post and beam transfer framing create large open spaces for a generous lobby, lounge and fitness area at the grade level of the east building.

PROJECT TEAM

The Wolff Company
DEVELOPER

VIA - A Perkins Eastman Studio
ARCHITECT

Coughlin Porter Lundeen
STRUCTURAL

Katerra
PRE-FABRICATION

KLH
CLT

Western Wood Structures
GLULAM

A standalone resident amenity space is situated in the courtyard between the two buildings showcasing a glulam post and beam structure supporting CLT roof panels.

Website: The Postmark Apartments

Photos: © Aaron Locke Photography

MASSTAC

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visit us at wamasstimber.org