MGA

OREGON STATE UNIVERSITY
PEAVY HALL + ADVANCED WOOD PRODUCTS LABORATORY | PRESS KIT

OREGON STATE UNIVERSITY
COLLEGE OF FORESTRY
PEAVY HALL + AWP LABORATORY

PRESS KIT

In 2020 we completed two new mass timber buildings for the internationally recognized College of Forestry at Oregon State University. Located on campus within the Forest Science Complex (FSC), the new Peavy Hall and the AA "Red Emmerson Advanced Wood Products Laboratory (AWP) upholds the College's vision to create a dynamic learning, collaboration, and research environment for managing and sustaining working forest ecosystems in the 21st Century.

The project design approach was created in collaboration with multiple College departments and user groups across various functions, including resource management, ecosystems and society, and science and engineering. Engagement with these unique and diverse groups meant that the buildings themselves were designed to be teachers and a living laboratory – something to interact with and to learn from.

These two new buildings extend beyond forestry to include the entire ecosystem, the industries that engage it, and more importantly, the wide variety of people who will be environmental stewards of our future: the students.

PEAVY HALL

The new Peavy Hall (83,000 sq.ft.) is connected to the complex natural layers, systems, and networks of a forest, from soil to sky. The many unique characteristics of a forest ecosystem play into the character of the building, giving the design deeper meaning. The building is designed as two intersecting bars, connected to the existing Richardson Hall. A simple academic bar features 20 classrooms, computer rooms, and laboratories. Classroom and lab spaces range from small to large, interior and exterior, facilitating a range of teaching styles in an inspiring environment for students to study all aspects of the forest landscape. Timber stairwells filled with natural light flank both ends of the academic corridor to connect the landscape and enhance intuitive wayfinding.

At the heart of Peavy Hall is the Roseburg Forest Products Atrium. Shaped by towering two-storey Douglas fir columns, this expansive space captures the feeling of being in the forest. The Atrium is directly connected to the Peavy Arboretum, a curated collection of local plant species that acts as a living classroom for forestry students, community, and industry. The edge between the building and the adjacent arboretum is blurred to remind students and faculty of their unique and critical role as environmental stewards. Amenities and social spaces are positioned along this edge so that students and faculty are continuously inspired by that which they must help protect.

Peavy Hall includes several informal learning spaces, including the third-floor area located outside of The Wollenberg Foundation Dean's Suite. This space provides opportunities for students, faculty, and staff to collaborate, study, and teach in a relaxed setting among the treetops, with inspiring views looking down over the Atrium space below.

The wood structure design is innovative in its response to the high seismic requirements of the site. A CLT rocking wall system was developed, the first of its kind in North America, with shear walls composed of separate sections connected vertically by a post-tension system. This allows the walls to move and self-center during an event, and for components to be selectively replaced on an as-needed basis after the event occurs.

As part of the building as a teacher concept, the wood structure is monitored by over 200 sensors that have been installed throughout the structure to gather data on vertical and horizontal structural movement as well as moisture. This data will be used for research into the performance of mass timber structures for the life of the building and will inform the future of good practice in building with mass timber.

ADVANCED WOOD PRODUCTS LABORATORY (AWP)

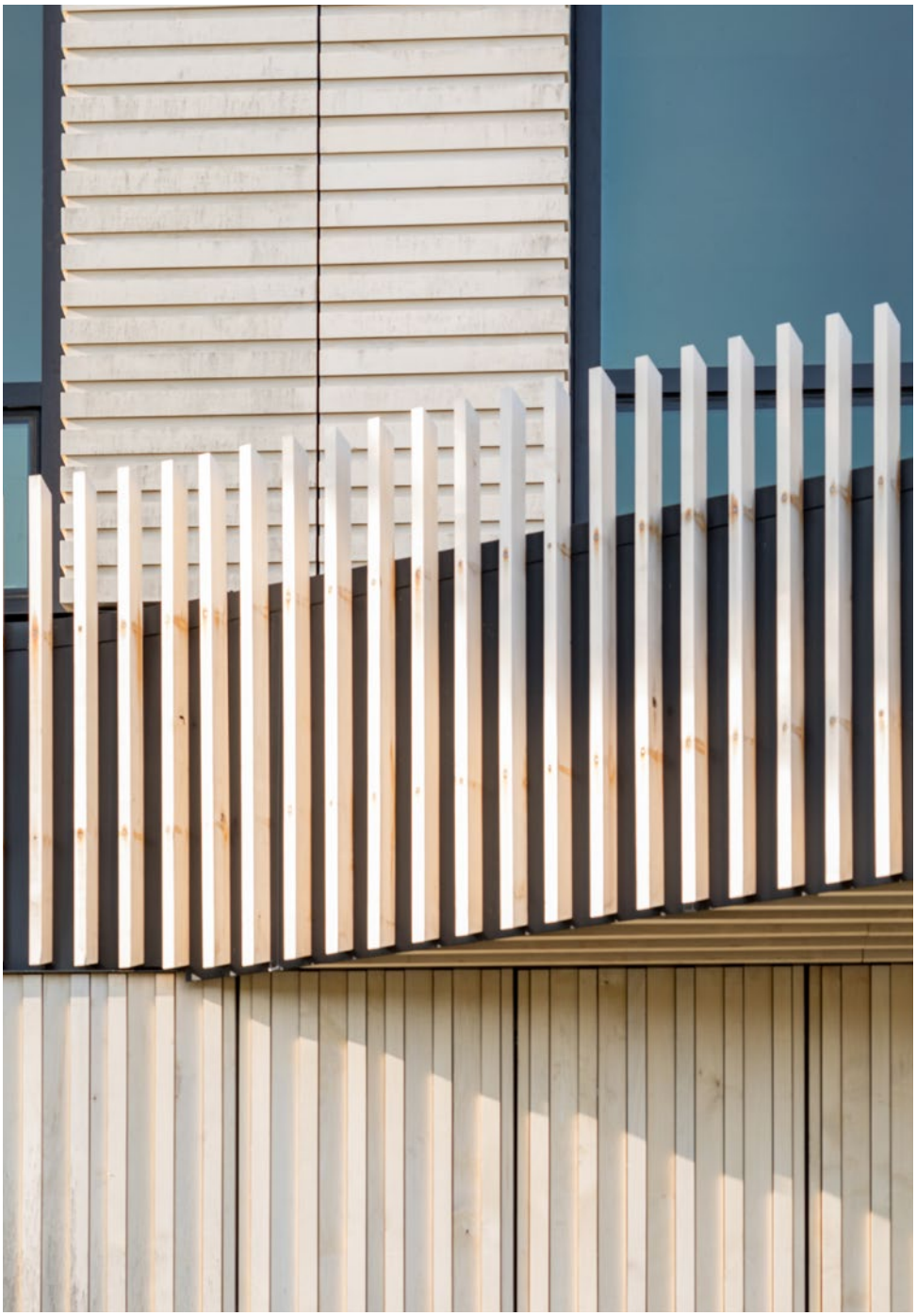
The AA "Red" Emmerson Advanced Wood Products Laboratory (18,000 sq.ft.) is home to the TallWood Design Institute, which brings together industry and academia to advance knowledge about the use of wood products in buildings through applied research, product development, testing, and professional education. The building provides dedicated research spaces for developing and testing innovative wood products and technologies while producing data that can be applied in research and industry.

The AWP program required an expansive space to allow for the flexibility to test and adapt to technologies as they emerged. The building structure is a simple and elegant glulam and MPP system that works together to achieve the long span required. The unique design of the AWP building enclosure includes an integration of translucent panels and structural wood panels, creating a beautiful daylit high bay lab space that becomes the backdrop for innovation. The lab space is broken into two bays:

- the structural testing bay includes a reaction wall and strong floor to support the heavy structural work and testing of structures up to three-storeys high
- the manufacturing bay is equipped with advanced robotics and fabrication equipment.

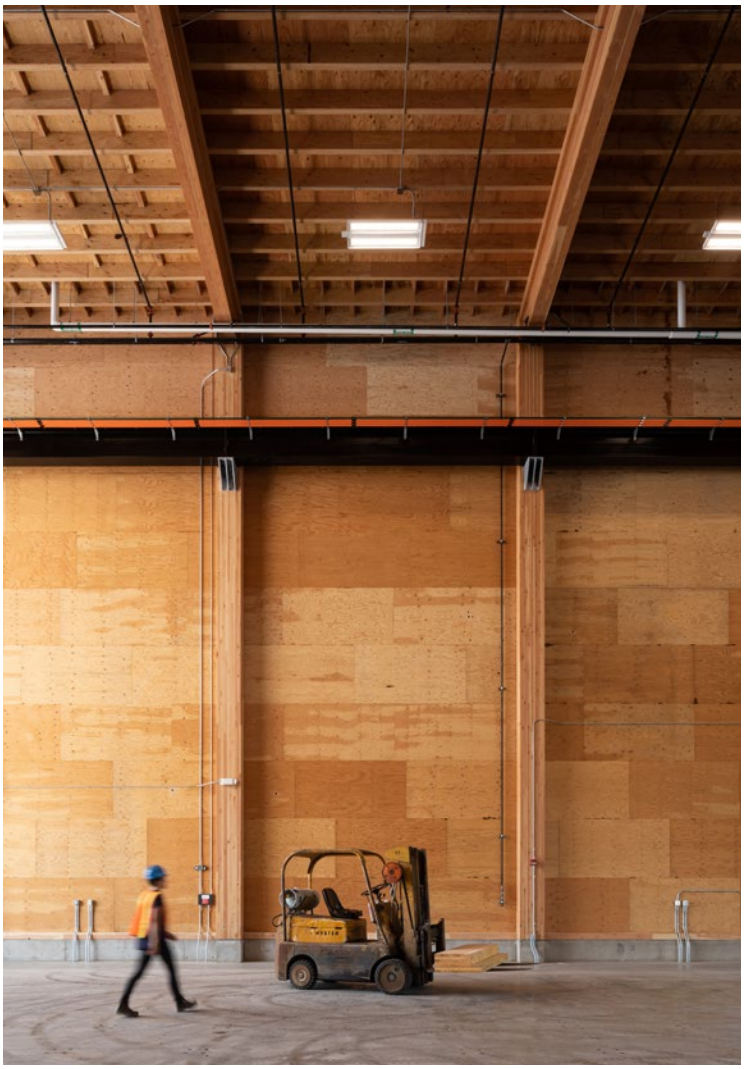
TIMBER FACTS

- The use of wood as the primary material was a major driver during the design of Peavy Hall, and it is evident on both the inside and outside of the building. The structure is built from Douglas fir sourced locally and fabricated less than 500 miles from the site.
- The exterior of Peavy Hall is clad in Oregon Red Alder which has been modified through a process called acetylation to increase dimensional stability and resist rot, reducing maintenance and increasing service life.
- These thoughtful design choices will significantly reduce embodied carbon impacts over the building's life cycle.



SUSTAINABILITY FACTS

- The buildings' mass timber structures are composed of 2,130 cubic meters of wood, storing 1,884 metric tons of carbon dioxide.
- The academic and office spaces in Peavy Hall enjoy views of the arboretum and adjacent greenspace and water feature, providing occupants with the benefits of direct access to nature. Indoor air quality has been prioritized through the specification of low-VOC interior materials, operable windows, and dedicated exhaust systems for laboratory environments.
- Peavy Hall's unique CLT rocking wall system will increase material efficiency over the building's life. A conventional wall system would typically require full replacement after an event, but with a rocking wall system, components can be selectively replaced, reducing the quantity of materials needed for replacements should damage occur.
- Both Peavy Hall and AWP have used energy modeling throughout the design process to inform design decisions related to energy efficiency. The upgraded glazing to View Glass in Peavy Hall means that a balance can be struck between daylighting and solar heat gain, improving the overall energy efficiency of the building. Radiant flooring was used at perimeter areas to efficiently provide comfortable indoor temperatures. The buildings were also designed to be PV-ready, with conduit and infrastructure in place to easily adapt to the use of solar photovoltaic panels in the future.
- The featuring of local vegetation is a significant aspect of the project's educational story-telling. All vegetation on-site and in the arboretum are native to Oregon. The existing arboretum was cordoned off and protected throughout construction to maintain plant and habitat health. Stormwater is collected on-site and retained in a water feature adjacent to the arboretum and the buildings. The pond is populated with grasses and other plants, which filter the water sufficiently so that it can be slowly released into the ground to recharge the local aquifer, rather than being discharged to a stormwater system and wastewater treatment facility elsewhere.



PROJECT INFORMATION

LOCATION	Corvallis, Oregon
SIZE	**Total: 101,000 sq.ft.** Peavy Hall: 83,000 sq.ft. AWP: 18,000 sq.ft.
SCHEDULE	Completion: March 2020
MAJOR FUNCTIONS	Education Laboratory
CONSTRUCTION	Core and shell Mass timber construction
STRUCTURAL FRAME	Douglas fir glulam beams and columns
STRUCTURAL SYSTEM	Glulam post + beam 5-ply CLT panel + glulam rib floor 30x30 grid
FLOORS	Peavy Hall: CLT floor system with glulam beams and concrete composite topping AWP: Concrete slab on grade
SKIN	Peavy Hall: Locally sourced red alder processed into Accoya AWP: Accoya

PROJECT CREDITS

MGA | MICHAEL GREEN ARCHITECTURE

Michael Green (Principal in Charge), Natalie Telewiak (Project Manager + Design Lead), Amanda Reed (Peavy Hall Project Architect), Candice Nichol (AWP Project Architect + Construction Administrator), Mingyuk Chen (Technical + Specifications Lead), Maria Mora (Designer), Kyle Elderhorst (Designer), Aleksandra Adamczewska (Designer), Anne Sewell (Construction Admin Support)

Former MGA Staff: Asher DeGroot (Designer), Shea Treacy (Designer), Kelsey Reddekopp (Interior Designer), Whitney Robinson (Interior Design, Signage + Wayfinding), Sindhu Mahadevan (Designer), Jacqueline Green (Designer)

Architect	**MGA** | MICHAEL GREEN ARCHITECTURE
Owner	Oregon State University
Structural Consultant	Equilibrium Consulting Inc.
Mechanical	PAE Consulting Engineers
Electrical	AEI Affiliated Engineers
Civil Engineer	KPFF Consulting Engineers
Contractor	Andersen Construction
Laboratory Consultant	The Estimé Group
Building Envelope	RDH Building Science Inc.
Elevator	Lerch Bates
Geotechnical	Foundation Engineering
Specifications	m.thrailkill.architect.llc
Costing	JMB Consulting Group
Timber Installer	StructureCraft
Acoustic Consultant	BRC Acoustics
Code	Code Unlimited
Photography	Ema Peter (AWP), Josh Partee (Peavy Hall)

AWP PHOTOGRAPHY

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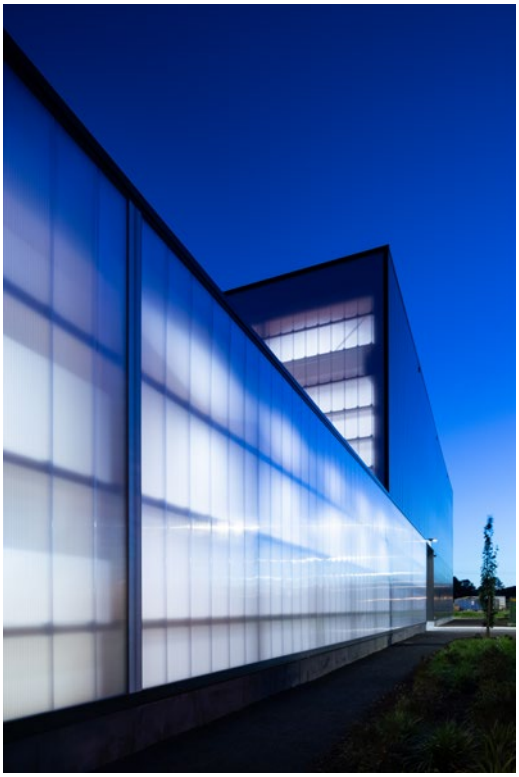

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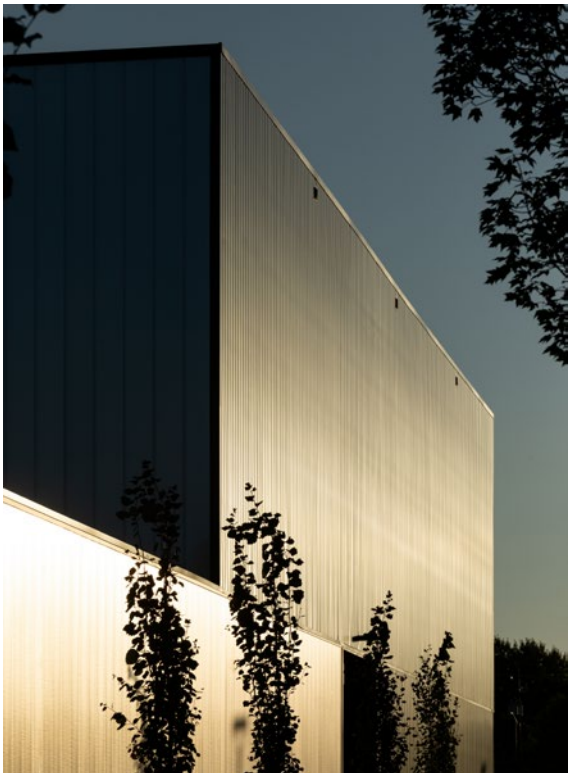

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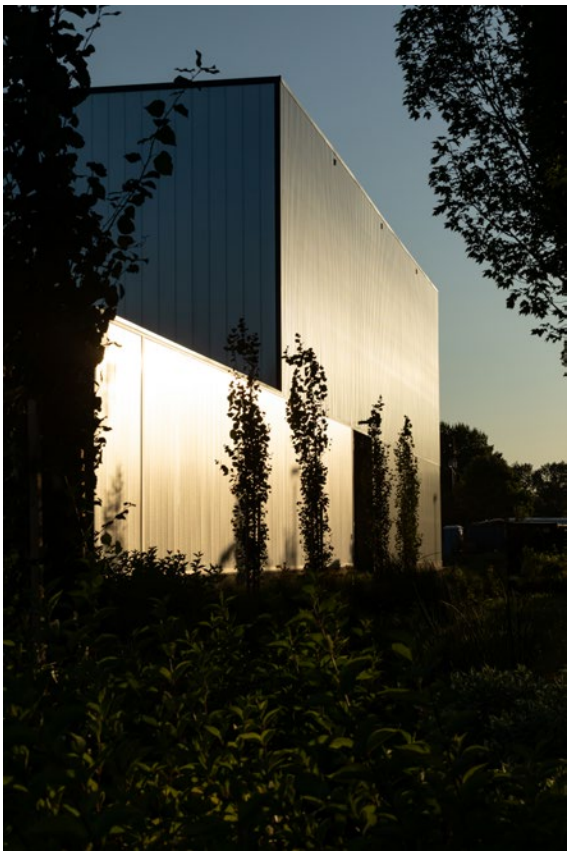

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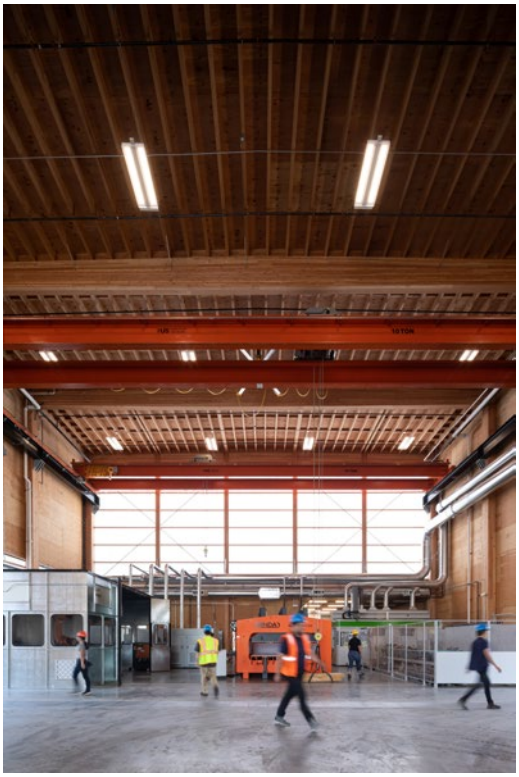

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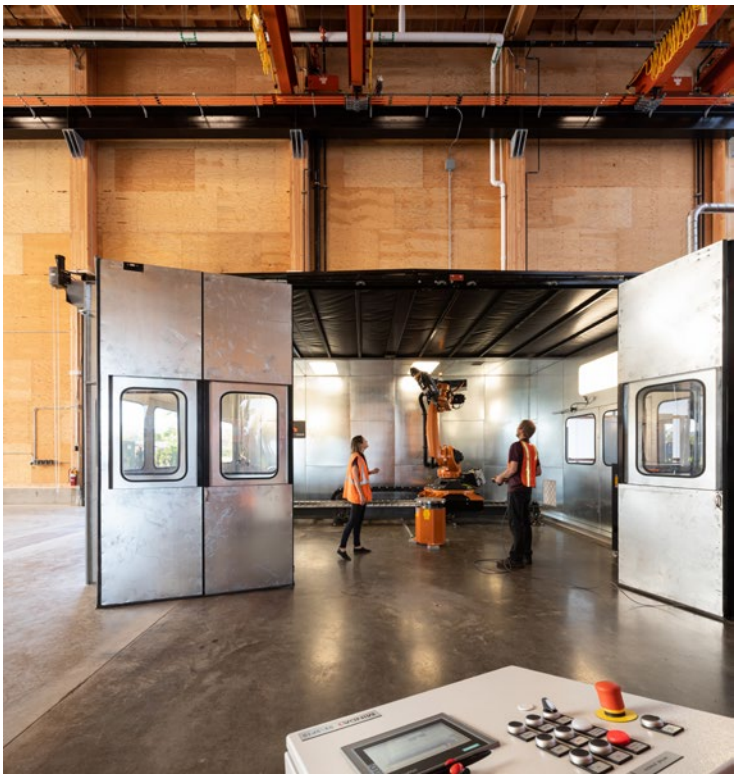

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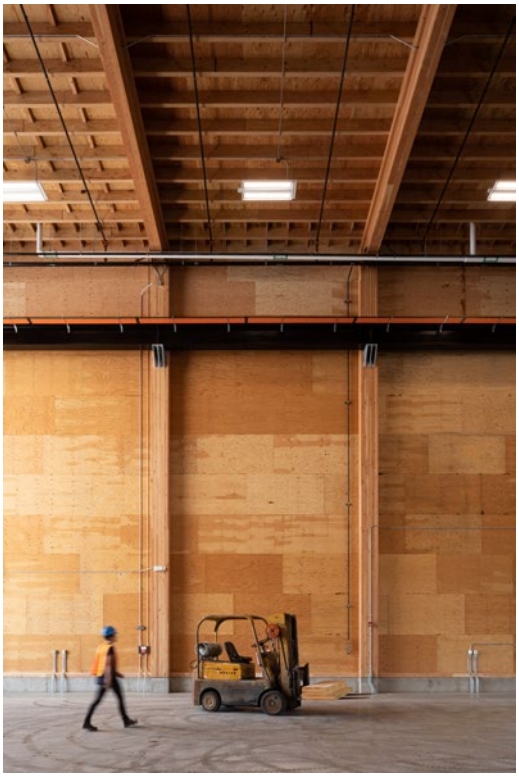

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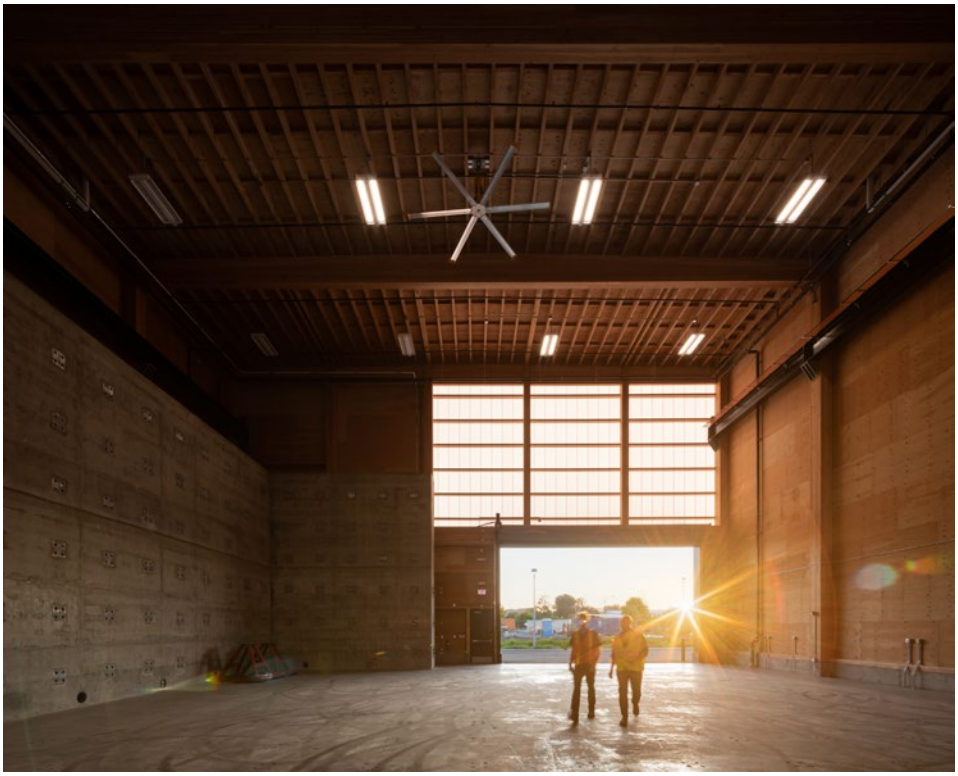

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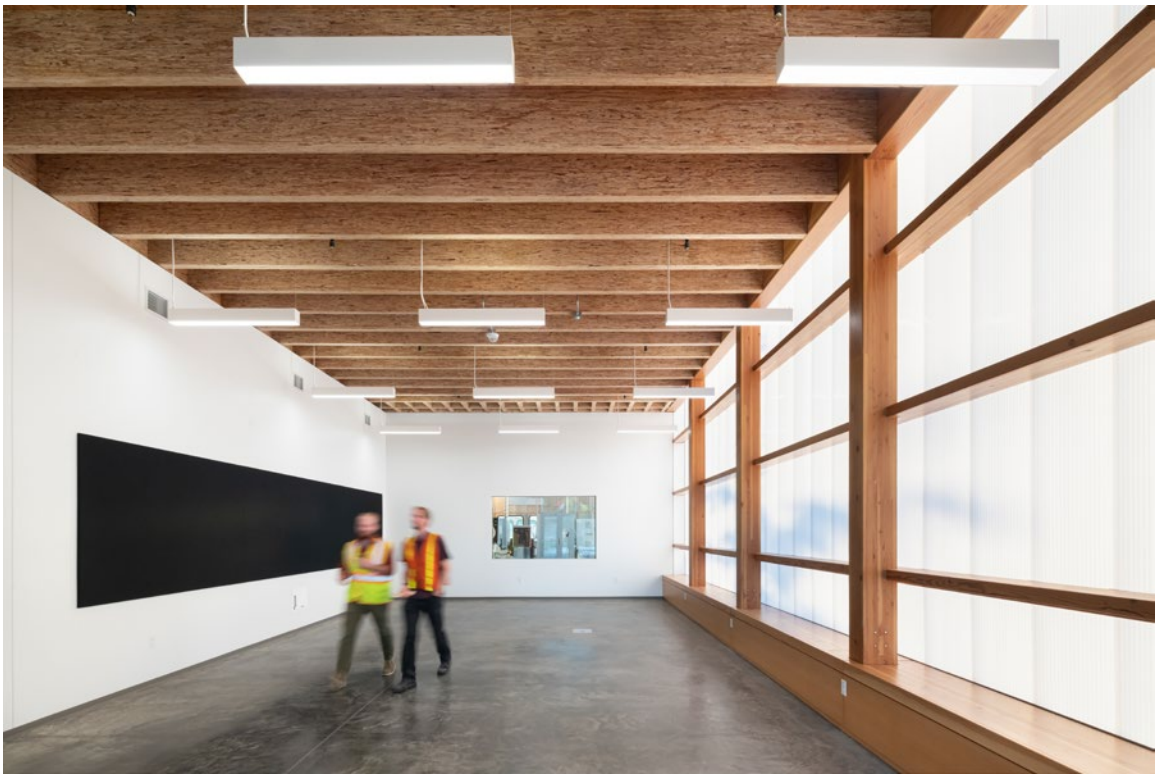

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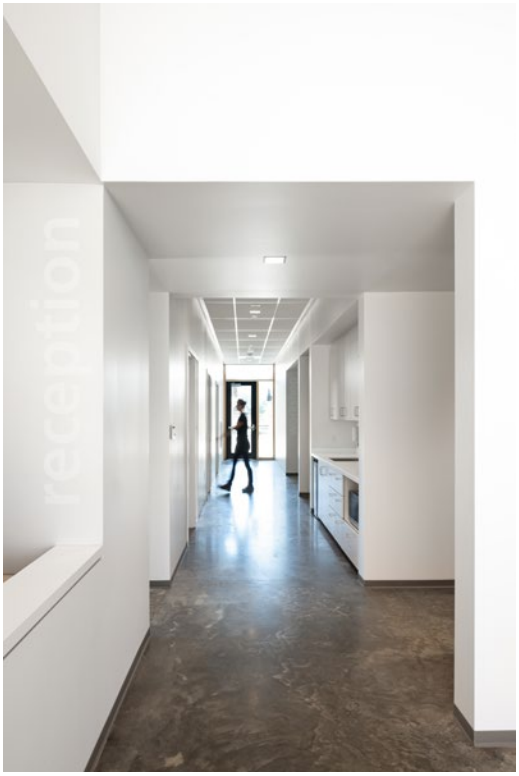

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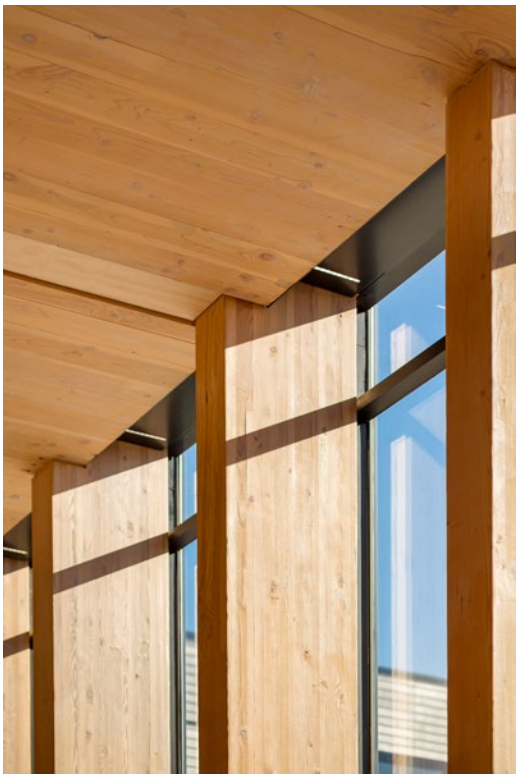

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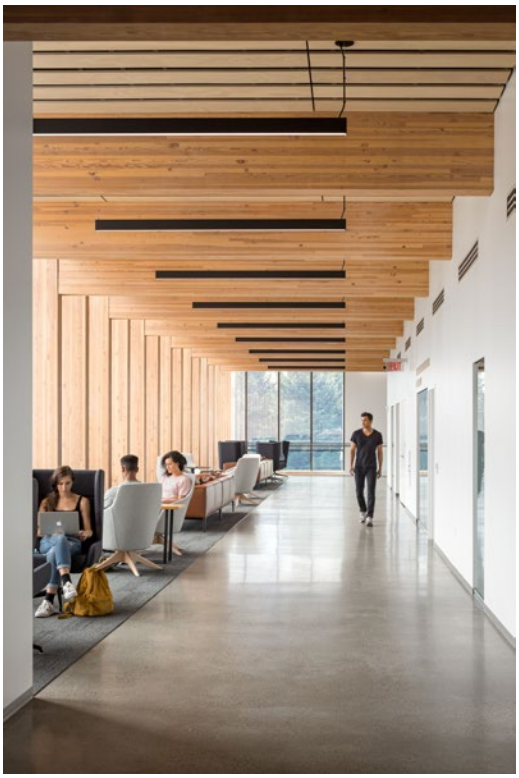

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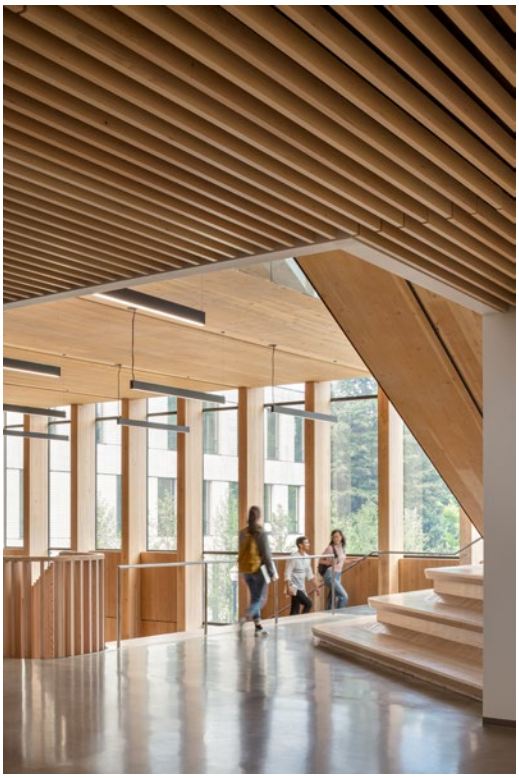

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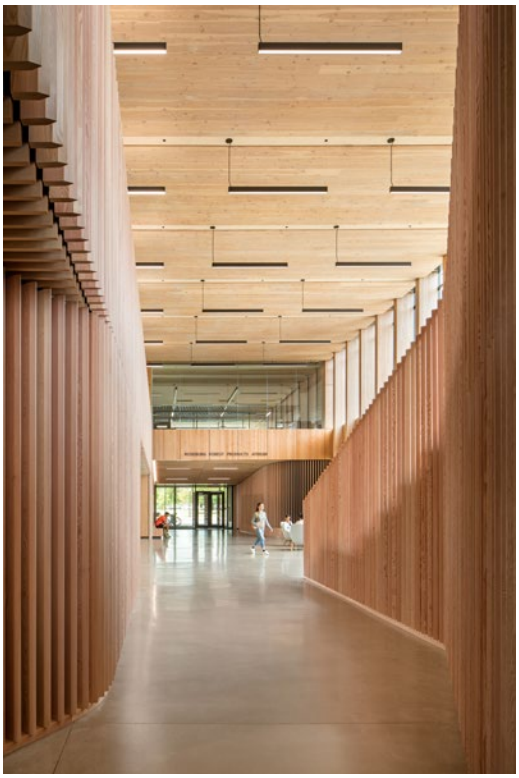

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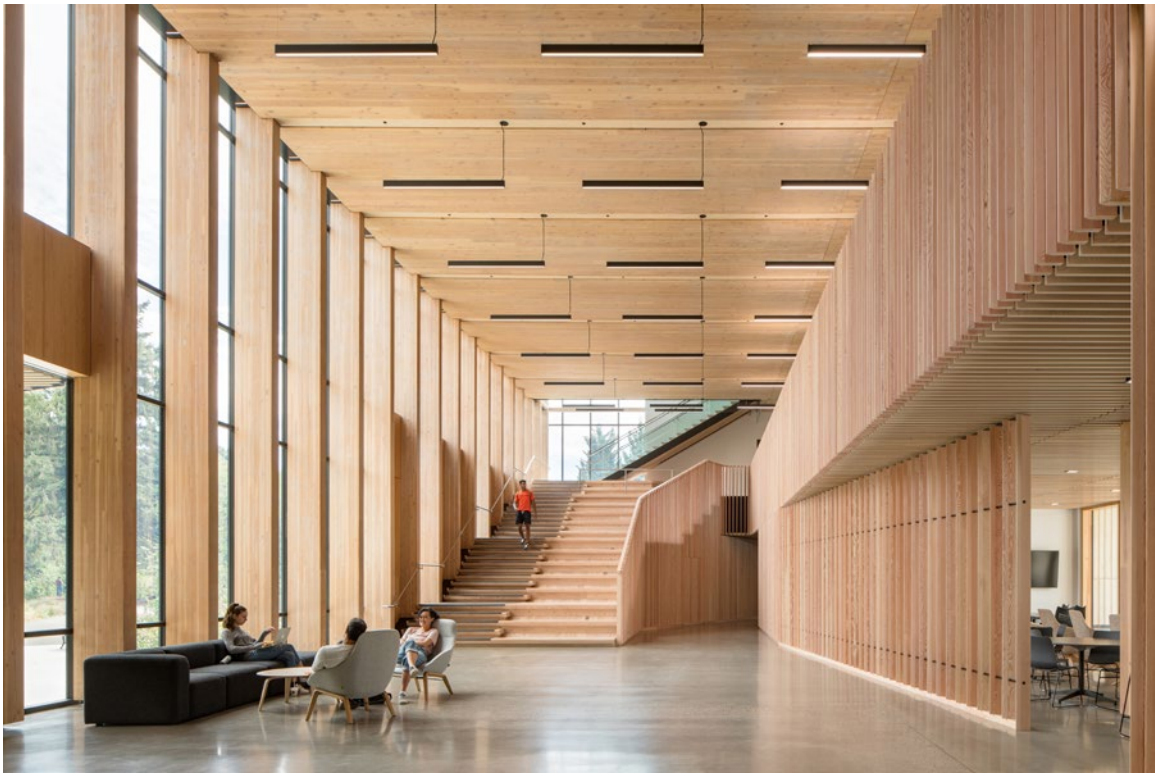

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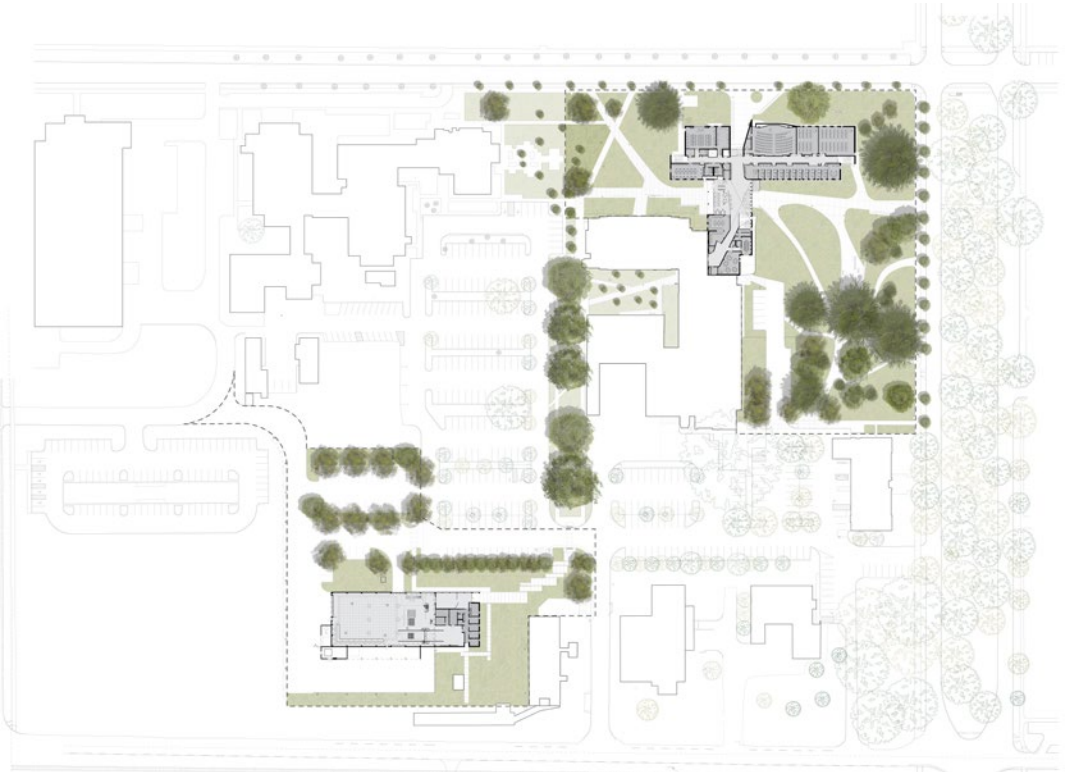

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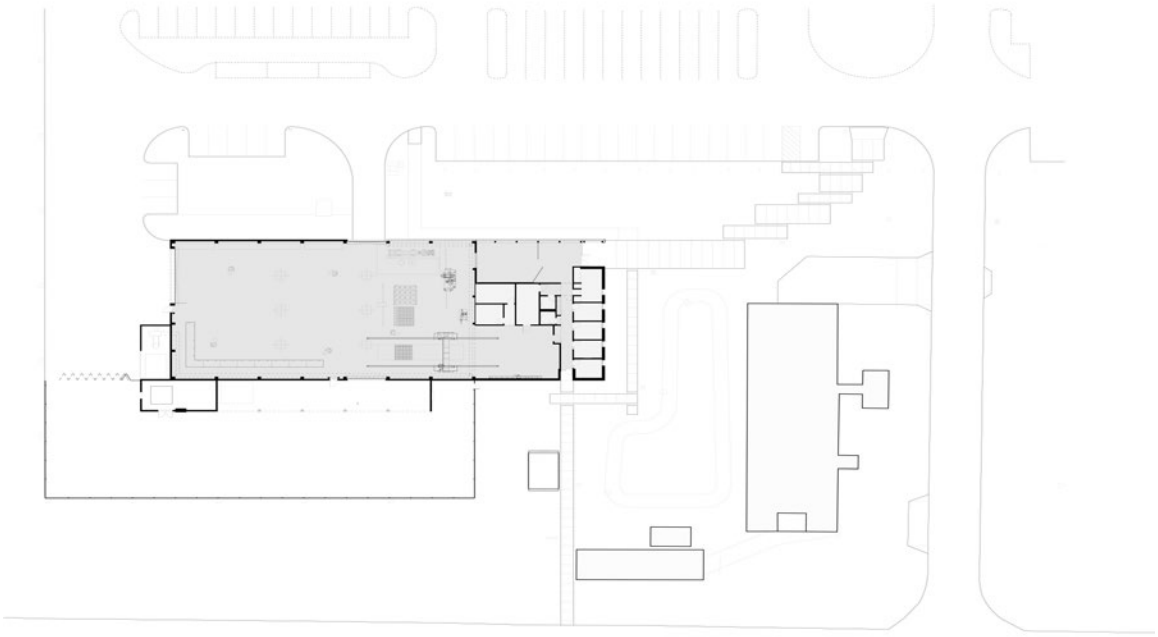

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PEAVY L1

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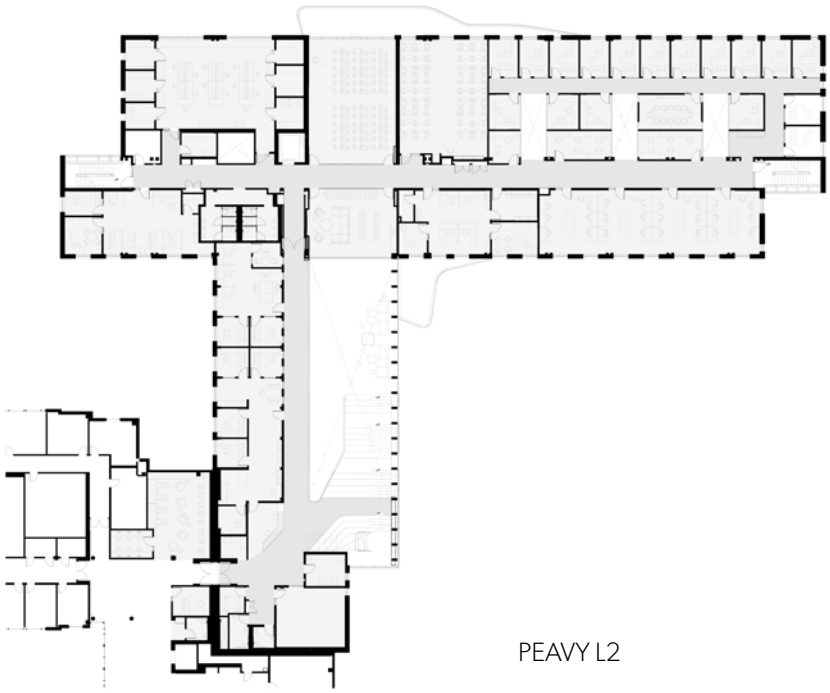

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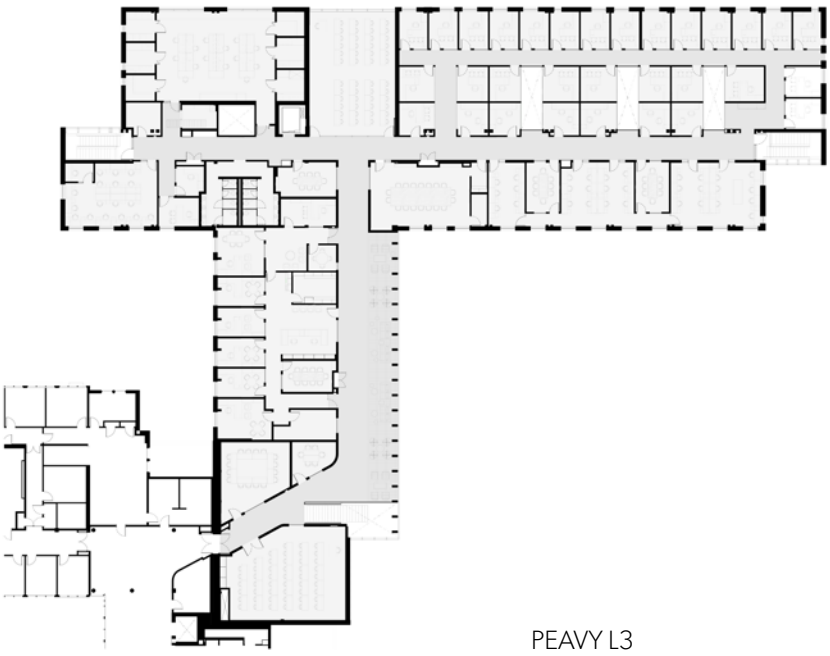

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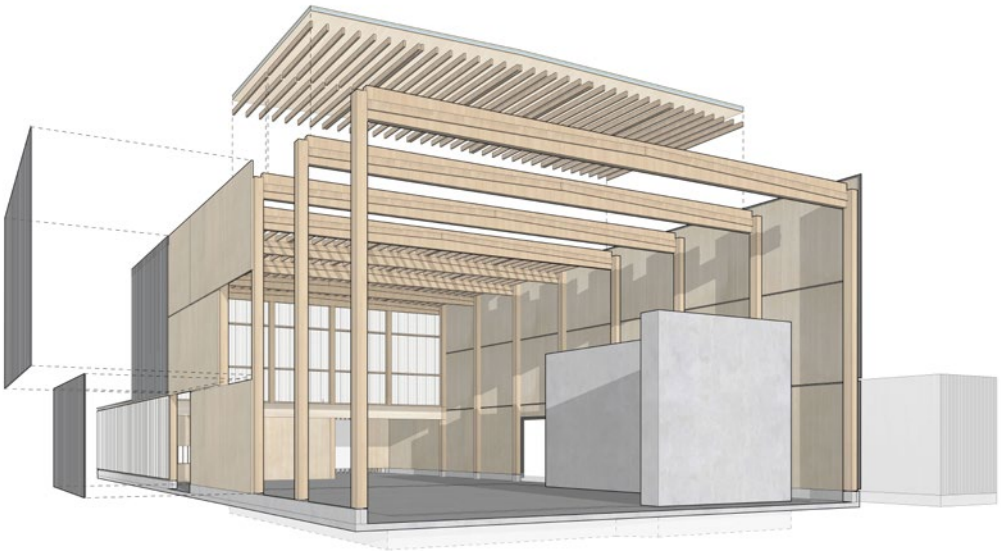

ABOUT MGA

MGA is a mid-sized architecture and interior design firm founded to pursue unique projects around the globe that spark our curiosity and fuel our passions for meaning in architecture. Our projects engage their community with elegance and simplicity with a singular purpose to meet our clients' goals and shape a positive, healthy experience for our projects' inhabitants. We believe in infusing design projects with rich stories, and extending that narrative from the interior to the landscape. We are a multi- discipline practice with a strong interiors team, landscape designers, graphics and wayfinding designers and of course architects.

Our goal is to deliver inviting buildings that are a pleasure to learn, work, live or play in. Our projects engage their community with elegance and simplicity with a singular purpose to meet our clients' goals.

Michael Green and the MGA team have won national and international design awards for our work in a range of scales - from small retail interiors to multi-phased airport complexes. These awards include four Governor General's Medals for Architecture and two Royal Architectural Institute of Canada Awards for Architectural Innovation.

Our team members are exceptionally talented, passionate and as diverse as our projects. Our collective experience shows we are capable of delivering practical yet unique design solutions for complex building types that integrate seamlessly within existing buildings, urban settings, and landscapes.

We are best known for our innovation in sustainable architecture and developing carbon-neutral buildings with advanced wood construction. Wood is a renewable, carbon sequestering product that is grown naturally. It provides a healthy indoor environment to work and live in that other building materials can't. It is a durable and enduring material that has exceptional life cycle benefits. As a designer, wood offers an evolving medium that is both complex and a new frontier for design. In many respects, we are taking knowledge that disappeared a century ago and revitalizing the next century of building more sustainably. No two pieces of wood can ever be the same. Wood is nature's fingerprints in a building. People are naturally drawn to surround themselves with the feeling and qualities of nature. We believe these characteristics positively impact our communities and our environment.

Michael Green's advocacy work on mass timber and tall wood has included groundbreaking publications and international lectures. For more information:

Michael's presentation at TED2013:
Why We Should Build Wooden Skyscrapers

The Case for Tall Wood Buildings (2012)

Technical Guide for the Design and Construction
of Tall Wood Buildings in Canada (2014)

Tall Wood Buildings (2017)

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