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Celebrating Excellence in Wood Architecture

2019–20 Wood Design Award Winners

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The publishing team would like to thank all the individuals who contributed to the book including: Marianne Berube, Mitchell Brown, Charlene Everest, Crystal Himes, Ioana Lazea, Barbara Murray, David Porter, Natalie Tarini, and Roxane Ward.

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Cover: Long Beach Civic Center - Billie Jean King Main Library

Photo: Fotoworks/Benny Chan

Inspiring Excellence in

WOOD ARCHITECTURE & DESIGN

Submissions to the Wood Design & Building Awards program were thoughtful in design and execution, weaving wood architecture into the surrounding landscape in a complementary and often symbiotic way. The awards program is a unique opportunity to pay homage to design and construction teams that are embracing wood architecture as a solution to the many challenges that they are faced with – from environmental to urban densification.

The Wood Design & Building Awards program provides a platform to acknowledge the strides that have been made for wood architecture over the years, as well as an opportunity to celebrate the omnipresence of wood in architecture around the world. The range of submissions, from the smallest wood installation to the largest building, displayed a sophistication and innovation that should be celebrated.

Wood Design & Building magazine, in partnership with the Canadian Wood Council, extends its appreciation to all participants of the 2019 awards program and congratulates the winners featured in this book.

An immense thank you to this year's sponsors – Sustainable Forestry Initiative, Real Cedar and Sansin – for their ongoing support of this prestigious awards program. We also would like to acknowledge and thank our prestigious jury: Russell Acton, Laura Hartman and Samuel Lasky.

Quotes from the jury:

- "Impressed with the high quality of entries. The future looks extraordinary for wood."
- Russell Acton, Principal at Acton Ostry Architects
- "The caliber of entries in this awards program is unusually high. This is high-level architecture demonstrating elegant uses of wood."
- Laura Hartman, Principal at Fernau + Hartman Architects
- "Great to see a variety of building types in the submissions. People respond to wood buildings because of their warmth and connection."
 - Samuel Lasky, Principal at William Rawn Associates, Architects, Inc.

Etienne Lalonde

Publisher

Wood Design & Building magazine

Ioana Lazea & Natalie Tarini

Coordinators

Wood Design & Building

Awards



HONOR AWARDS

2019 North America

WOOD DESIGN & BUILDING AWARDS



Mirror Point Cottage



Prospect/Refuge 3



Adohi Hall, University of Arkansas



Trades Training Centre, Northern Lights College

HONOR AWARDS

2019 International



The Modular Unit (MU50)



Wooden Roof

MERIT AWARDS

2019 North America



Sagg Farm



Wilson School of Design, Kwantlen Polytechnic University

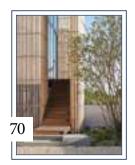


MERIT AWARDS

2019 North America



Wuehrer House



Kiht'han

2019 International



Trumpf Day-Care Center

WOOD DESIGN & BUILDING AWARDS

CITATION AWARDS

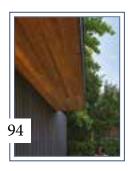
2019 North America



Alexander Court



Lewis & Clark College Pedestrian Bridge



Forest Hill Pavilion

2019 International



Woody – Office building for Santé publique France

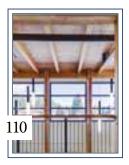
SPECIAL AWARDS

Canadian Wood Council Awards

WOOD DESIGN & BUILDING AWARDS



Bigwin Island Club Cabins



Banff Elementary School



North Surrey Sports & Ice Complex



Boundary Bay Fire Hall & Training Centre

SPONSOR AWARDS

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Tsleil-Waututh Administration & Health Centre

Sustainable Forestry Initiative



Upper Skeena Recreation Centre

Western Red Cedar



ADK Camp

2019 PRAIRIE

CANADIAN WOOD *WORKS!* AWARDS



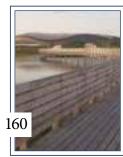
Courtyard House



Lake Louise Visitor Centre Interior Renovation



Mountain Equipment Co-op, Brewery District



Rocky Ridge Boardwalk



2019 PRAIRIE



Capilano Library



C-Square



Red Deer College Student Residence



Sidewalk Citizen

CANADIAN WOOD WORKS! AWARDS

2019 ONTARIO



80 Atlantic Avenue



King Township Municipal Administration Centre



720 Yonge Mass Timber Building (Shoppers Drug Mart)

2019 ATLANTIC



Kenora Airport



(

Deerhurst Lakeside Lodge Resort Homes

2019 ONTARIO





Théâtre Gilles-Vigneault

Temagami First Nation Multi-Use Facility

208



Usva Nordik Spa



Lightfoot & Wolfville Winery



Indian River Festival Pavilion

7

2019 ATLANTIC

CANADIAN WOOD *WORKS!* AWARDS



St. Thomas Community Centre



Anne of Green Gables Visitor Centre



Stanley Street Homes

2020 UNITED STATES

U.S. WOODWORKS WOOD DESIGN AWARDS



First Tech Federal Credit Union



111 East Grand



Redfox Commons



Long Beach Civic Center

– Billie Jean King
Main Library

2020 UNITED STATES



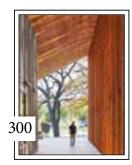
Arts and Technology Academy



Oregon Conservation Center



Oregon Zoo Education Center



Trailhead Building at Theodore Wirth Park

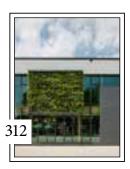
2020 UNITED STATES







901 East Sixth



ColLab



DPR Office

2020 UNITED STATES



Sarah Campbell Blaffer Foundation Center for Conservation



Pike Place MarketFront



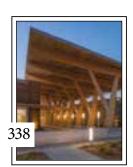
Rhode Island School of Design – North Hall

2019-20 OTHER



Sideyard

2020 UNITED STATES



The Continuum



Tre Søstre

348

Atlantic





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Wood Design & Building Awards Program

Celebrating the Versatility & Beauty of Wood

When the jury was selecting the award winners of 2019, we sat in a room together for a full day, reviewing those projects that received the highest ratings among a total of almost 150 submissions. As the list was whittled down, the conversation became more intense. In some ways, choosing the winners can be like comparing apples and oranges, even if the common element is wood – from Adohi Hall, the largest mass timber project in the U.S., to a sublime student project in Nova Scotia, two structures named Prospect and Refuge that were built in only two weeks.

While reviewing the projects, a large part of each discussion focused on technique, execution and innovation. Practicality and aesthetics often tipped the scale, although sometimes at the expense of the other. The final selections represent what the jurors could agree are examples of excellence in every way, while showcasing the versatility and beauty of wood. With the project teams anonymous during the judging process, one of the most anticipated parts of the day is revealing who designed the winning projects – many of whom are familiar names.

Among the winners, school buildings and community projects consistently displayed design mastery and innovation, claiming half of the awards, while innovative designs such as The Modular Unit (MU50) provided an element of surprise. The wide range of applications shown in these projects really does prove that the possibilities of wood are endless.

Popi Bowman

Editor

Wood Design & Building magazine



"This simple and straightforward, yet unusual, structure masterfully contrasts contemporary and historical design elements."

Jury

Inspired by Nova Scotia's rich fishing heritage, this vacation home is truly committed to its place

North America

Mirror Point Cottage

ocated on a lake near Nova Scotia's Annapolis Royal, this project is a vacation home for a local fisherman's daughter, her husband and their two young children. It is formally expressed as an elevated, 80-ft.-long extruded "fish shed" supported by a steel aedicule and a board-formed concrete entry core. The clients wanted their life in their lake home to be based

on two important elements: time spent with their favorite people and enjoyment of the natural surroundings. For the design team, those two ideas are very much related.

Fishing is one of Nova Scotia's oldest industries, as demonstrated by the weathered fishing shacks lining its coast. Mirror Point Cottage demonstrates the frugality of the Nova Scotian

vernacular in an elegant manner, starting with the rusted steel aedicule that contains a sunken outdoor summer kitchen. This terrace built from hemlock decking offers a sheltered place at grade for the grandparents to watch their grandchildren playing on the beach. The garage/bunkie (sleeping quarters) acts as a miniature version of the main house.



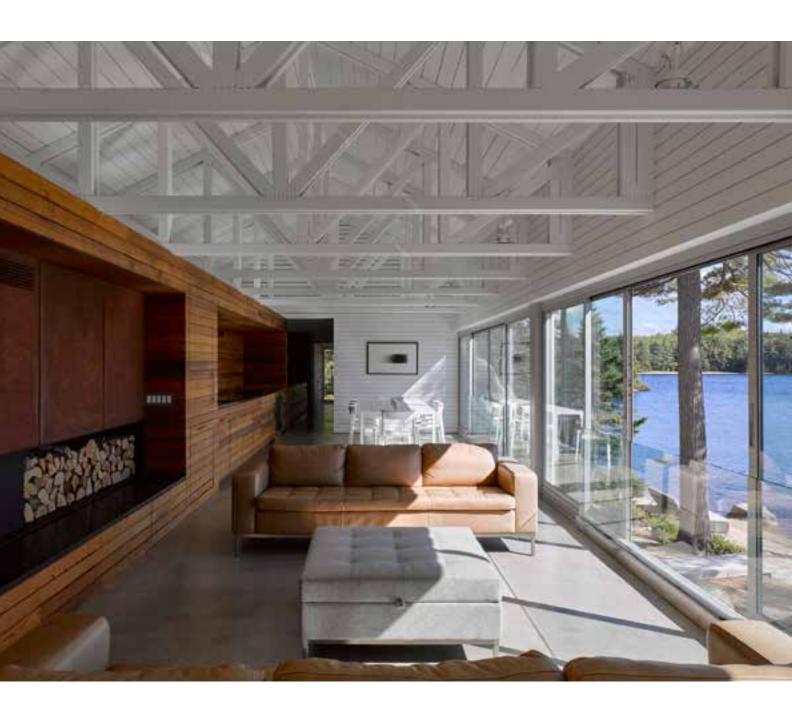


The 2,450-sq.ft. building is precisely sited using existing topography to maximize passive solar energy and southern views to the lake, and to minimize the removal of existing hardwood trees. This hovering building forms a gate which frames the view to the lake on arrival to the site. The southern facade is entirely operable, with large sliding glass panels. When opened, the facade allows for the elevated volume to act as a giant porch open to the environment and intimately connected to the lake shore.

Mirror Point Cottage is committed to place. It is designed with a respect of traditional coastal language and employs a formal inventiveness with common local materials. Materially, this is a "sweet and sour" building, combining highly crafted Western red cedar millwork with economical SPF gang-nail trusses, which are common in contemporary North American house construction. Gang-nail wood structural components were used extensively to reduce the amount of structural steel and cost. Normally covered up, these ordinary materials are celebrated in the living and dining space by juxtaposing them against natural cedar millwork and pine shiplap painted white.









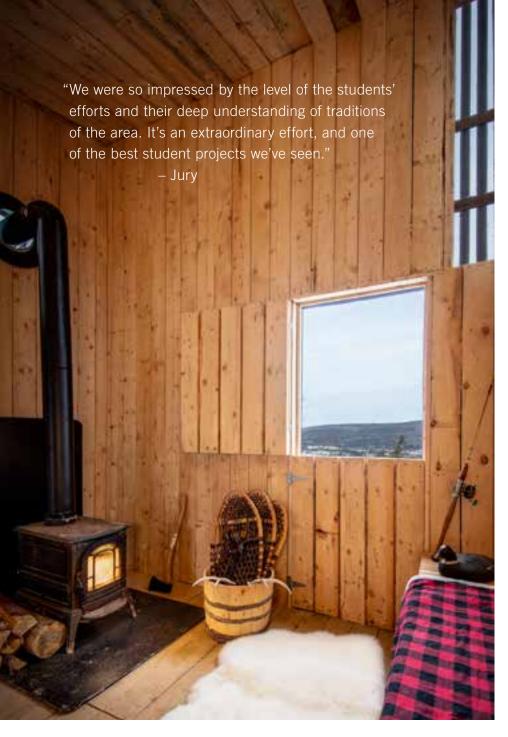
The exterior is clad in local Eastern white cedar shingles and a standing seam metal roof. Building on a traditional understanding of local wood construction, different wood species were used based on their natural properties and historical application. The cedar shingles contain natural preservatives and are better suited to the local climate, while the hemlock terrace is naturally rot-resistant. With its inherent high level of environmental sustainability, affordability and a subtly refined aesthetic, this cottage builds upon an understated, everyday language of construction.

ARCHITECT MacKay-Lyons Sweetapple Architects Ltd. Halifax. NS

STRUCTURAL ENGINEER Campbell Comeau Engineering Ltd. Halifax, NS

GENERAL CONTRACTOR Scott Shearer Contracting Ltd. Windsor, NS

PHOTOGRAPHY James Brittain Montreal, QC







Open to all who brave Cape Breton Island's rugged wilderness, these structures offer shelter with style

North America

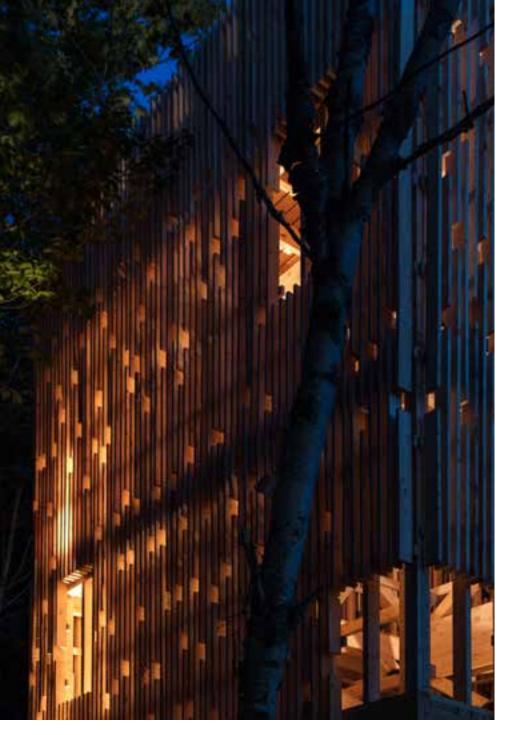
Prospect/Refuge 3

multipurpose structure and a warming hut prototype, the Prospect and Refuge structures are situated on a mountain near Margaree Forks, Nova Scotia. Both are designed to shelter hikers and skiers from *les suêtes*, the fierce winds that blow across the west coast of Cape Breton Island.

The architects led groups of students at Dalhousie University's Faculty of Architecture and Planning in the design and build of these structures. The design conversations focused on form, materiality and construction sequencing. Research themes of wood construction, material culture and prefab versus shop fabrication framed the design discussions and direction.

These projects were each designed and built in a two-week period as part of the students' free-lab studio. Prospect is situated at the top of a trail (at a 1,000-ft. elevation) to overlook the valley below, while Refuge is nestled in its surroundings on the side of the mountain (located at 300 ft.), each one complementing and referencing the nature surrounding it. To achieve this, the architects and students studied the natural properties of various wood species as they are used in agricultural and shipbuilding constructions to determine which ones to use for each structure.

Prospect is made from a mix of hemlock and naturally preserved cedar. It resembles a forest of birch trees, with naturally aged and grayed wood providing cladding for the structure's exterior. Together with the architects, the students studied various configurations for the cladding and developed a design for prefabricated wood cladding panels that emulates the mottling of the existing birch trees on the site. Cedar boards stand on edge in a seemingly random but very intentional pattern to achieve this.





Refuge is made of rough-sawn spruce timber. To protect the spruce from the elements, a bitumen waterproofing was placed on the reverse board and batten wall, and on the roof envelope. The structure has a very taut skin with no overhangs and a skirt that is scribed to the ground; this is done to minimize the effects of extreme uplift from the prevailing *suêtes*. Openings in the hut are small, creating a dimly lit space.

A bench and table focus on the front-loading woodstove, the fire giving light and warmth in contrast to the extreme elements. The processional sequence starts on the trail – visitors are greeted by the firewood piles that guide them to the bridge, and then into the recessed covered entry. The door is made of larch wood recycled from a local larch wood business. The handle in the door was made of lathed larch wood with a simple sliding block of wood recessed into the door frame – it is always unlocked, welcoming all who drop by.



ARCHITECT

Students from Dalhousie University. Faculty of Architecture and Planning (Madsen Canitz, Michael Castracane, Meghan Chadwick, Travis Cook-Young, Gabriel Coughlan, Hande Esroy, Maria Fillatre, Jen Frail, Shane Hauser, Tyler Jansen, Larissa Korol, Leanna Letterio, Jen MacCoul, Caitlin Stairs, Andrew Tomchyshyn, Brayden Wesley, Alicia Bardos, Andrea Zittlau, Kamille Manoy, Lewis Canning, Morgan Kerber, Nick Glover, Paryse Beatty, Ryan Dewolde, Thomas Perl, Travis Cook Young) led by Talbot Sweetapple of MacKay-Lyons Sweetapple Architects Ltd. Halifax, NS

STRUCTURAL ENGINEER Andrea Doncaster (Structural Consultant) Dartmouth, NS

GENERAL CONTRACTOR Project Team and Architecture Students Halifax, NS

PHOTOGRAPHY Matt MacKay-Lyons (MacKay-Lyons Sweetapple Architects Ltd.) Halifax, NS



"Understanding the challenges of this scale and site plan, we were struck by how masterfully the design uses wood to create welcoming, intimate spaces with a constant connection to nature."

Jury

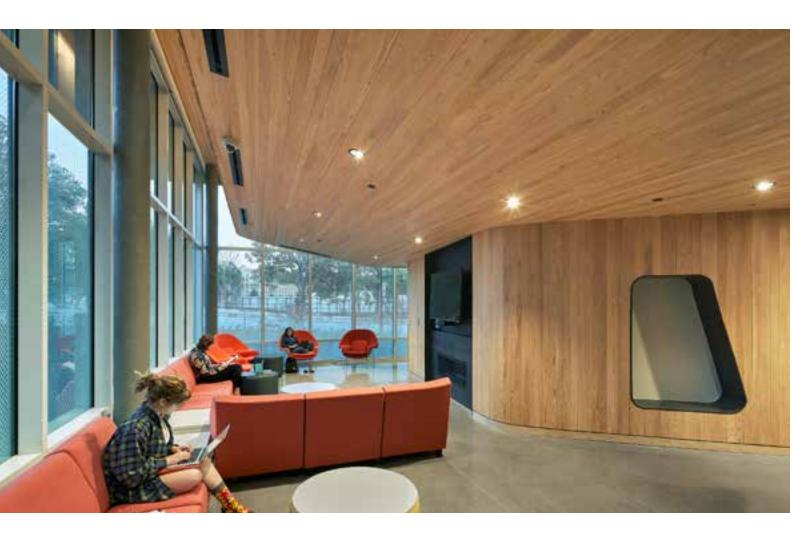
A student hall's commitment to next-level sustainability provides a welcoming space for all who "come into the forest"

North America

Adohi Hall, University of Arkansas







he largest mass timber project in the U.S., Adohi Hall – which opened to students at the University of Arkansas in late 2019 – represents a pioneering use of mass timber for student residential use. The 708-bed complex demonstrates an innovative approach to live/learn communities, with embedded arts and academic spaces fostering student collaboration and interactive learning.

An emphasis on nature resonates throughout the project. The housing group is a serpentine band of student rooms that defines three interconnected courtyard spaces, each with a distinctive character. Undulating landforms, rock outcroppings and drifts of native planting extend the vernacular of the Oak Ridge Trail down into the project area, creating comfortable places for people and a landscape ecology reminiscent of the native Ozark Plateau of Northwest Arkansas.







Each residential floor is identified by a vibrant leaf icon wall mural, celebrating the native tree species of the region, and offers students the choice of semi-suite (double rooms with private bath) or pod (six to eight double rooms clustered around a shared bath and common area) rooms. The typical room modules were developed to allow for cost-effective layout of modular CLT panels and glulam framework, and the five stories abovegrade/podium of the Adohi Hall complex maximize the building height and envelope permitted by Type IIIB construction.

The significant use of wood as the main structural material advances sustainable design by taking advantage of its inherent "green" properties as a renewable building material and its low embodied energy and carbon footprint. The warmth of the project's exposed structural wood ceilings is apparent in each student room, the study rooms, floor lounges and ground

floor common spaces. The "cabin" – a one-story volume linking the two main residential buildings – also includes a wood ceiling and trusses that span the full width of the lounge spaces.

Throughout the project, concrete cores are used to provide rigid shear walls. The primary glulam structural frame is supplemented with steel in targeted locations to support cantilevers and transfer loads at long spans.

Maintaining acoustical separation between student rooms on adjacent





floors was a significant issue at Adohi Hall. To expose the natural wood of the CLT slabs at the ceiling face in each student room, all acoustical treatment was concentrated on top of the CLT slab, on the floor face. To minimize the depth of the slab topping (and thus the floor-to-floor heights), this project used an ultra-thin sound attenuation mat (USG's Levelrock SAM N-25, STC tested in a CLT application specifically for this project), topped by less than 2 in. of heavyweight gypcrete and LVT

planks. This low-profile floor topping assembly surpassed the required STC rating of 50 between sleeping quarters.

A bold demonstration of sustainability, Adohi Hall signifies potential economic development for Arkansas' burgeoning timber industry. Indeed, the name of the complex itself – "Adohi" being a Cherokee phrase meaning "coming into the forest" – recognizes the enduring importance of wood and sustainable forestry to the region.

CLIENT University of Arkansas Fayetteville, AR

ARCHITECT Leers Weinzapfel Associates Boston, MA

STRUCTURAL ENGINEER Equilibrium Consulting Inc. Vancouver, BC

GENERAL CONTRACTOR Nabholz Construction Rogers, AR

PHOTOGRAPHY Timothy Hursley New York, NY A unique approach emphasizing energy efficiency provides a model for trades college design in cold climates



"This remarkable project invokes and takes advantage of the northern condition, with excellent use of daylighting and color. Mixed with natural wood, the design elevates the student experience in almost a spiritual way."

Jury

ocated at the start of the Alaska Highway in Northeastern British Columbia, Dawson Creek is a town of 13,000 residents who mostly depend on the oil and gas industry for their livelihoods. Summers are brief and dry while winters are severe, with long nights and temperatures that regularly dip to -40°C.

The high ventilation demands of shops in trades buildings mean the energy requirements of these types of buildings in northern climates can be extreme. The Trades Training Centre at Northern Lights College mitigates this by integrating architecture and structure with its lighting and mechanical systems. Heat is supplied by a biomass-fueled boiler that burns waste wood. To achieve optimal performance, the oversize boiler was installed in advance to supply hydronic heat to two additional buildings as a campus energy system. In addition, a solar wall forms the entire south elevation of the trades building and preheats supply air (drawn in behind the metal cladding). Heat recovery ventilators extract air exhausted from the shops, which is then used to temper

the enclosed work yard at the south end of the building. Lighting energy use is optimized with dimmable LED fixtures that supplement the ambient natural light derived from north-facing roof monitors, clerestory windows and a light scoop.

Water management also was carefully considered. Runoff from the

main roof is harvested to serve toilets and provide systems water for pump training work in the millwright shop. A green roof mitigates storm runoff above the single-story student commons and provides an outlook for second-floor rooms. Low-flow fixtures are used throughout, and surface runoff is treated on-site with bioswales.

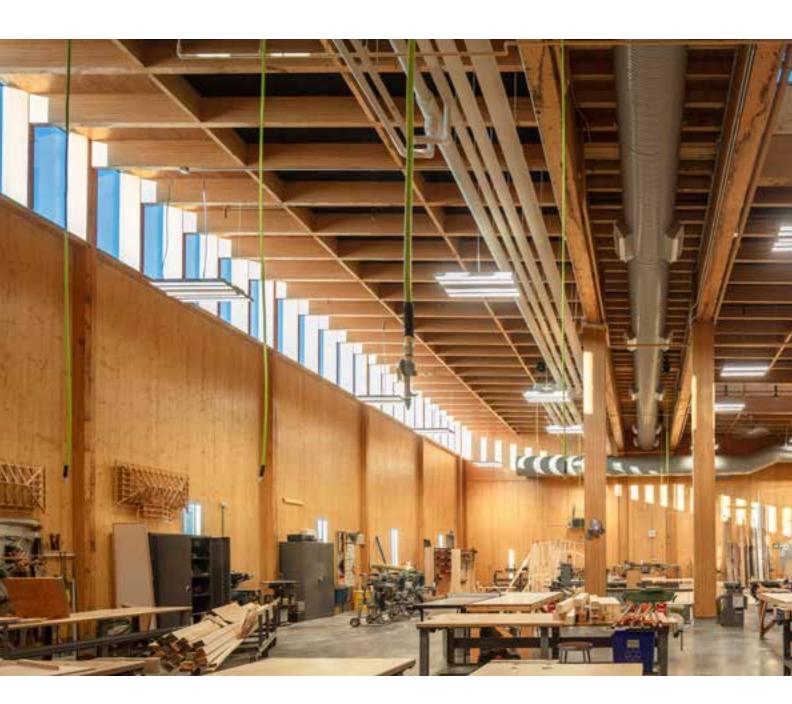






Wood construction presented several opportunities for integrating structure, architecture and building systems. In this project, constructability was enhanced by prefabrication of roof panels and CLT wall panels, which shortened the framing schedule to suit the cold climate. The wood structure reduced the required size of foundations, as well as improving both the energy footprint and carbon sequestration. Notably, the exposed mass timber provides a ready surface for fastening building systems, which must remain exposed for access and alteration to suit changes



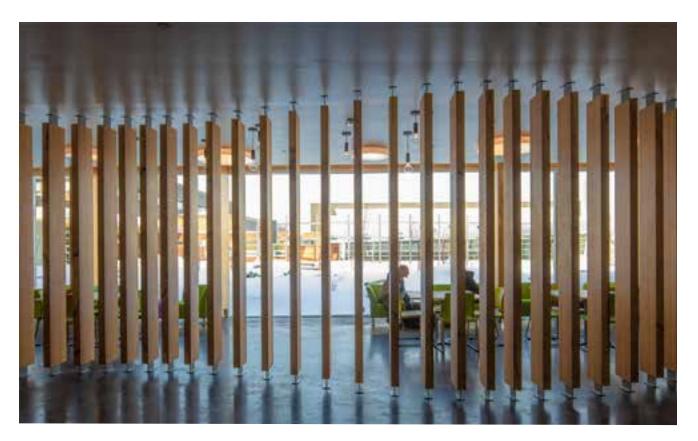


in shop equipment. Along the perimeter wall, wood columns act as lateral support for the glazing and as vertical fins to mitigate the glare of direct sunlight at the clerestories. Finally, the wood interior, integrated with acoustic surface treatment, provides exceptional acoustic performance to

temper the noise of shop tools, allowing conversation and interaction. This project provides a model for trades college design in a cold climate, working from first principles and relying upon the integral properties of mass timber construction to create a sustainable, collaborative

and people-oriented environment – in addition to handling the complex technical requirements of the extensive shop equipment and teaching program. The use of exposed mass timber in an industrial setting has proven to be both highly practical and uniquely pleasing for the occupants.





ARCHITECT McFarland Marceau Architects Ltd. Vancouver, BC

STRUCTURAL ENGINEER Equilibrium Consulting Vancouver, BC

GENERAL CONTRACTOR Ledcor Construction Ltd. Kelowna, BC

PHOTOGRAPHY Michael Elkan Vancouver, BC







This off-grid structure demonstrates elegant efficiency and ingenuity

International

The Modular Unit (MU50)

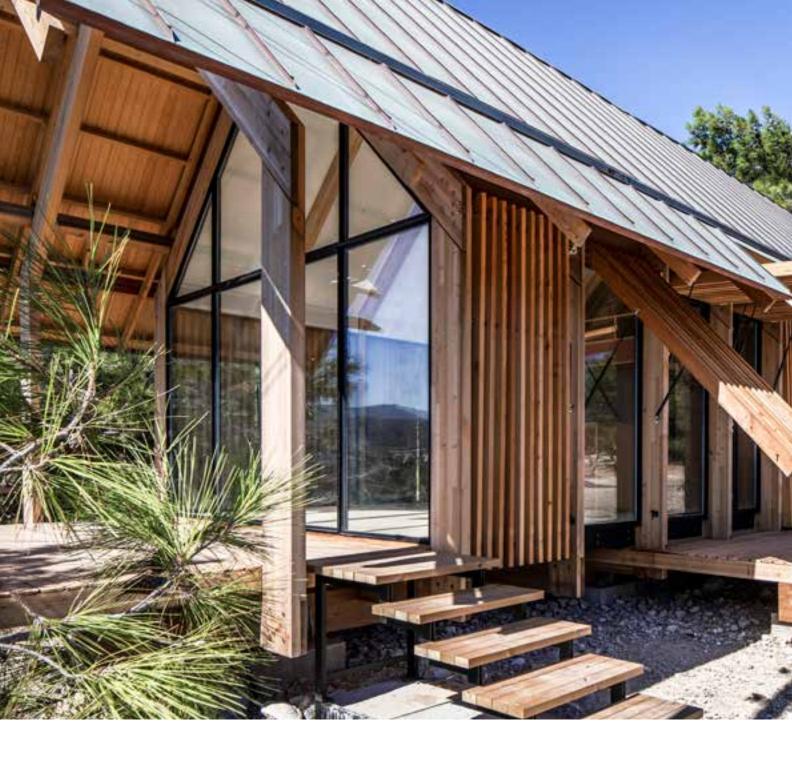


he Modular Unit (MU50) is an off-grid structure, designed to be recyclable and adaptable to a wide variety of sites. Through its simplicity, flexibility and choice of materials, this structure is intended to bring beauty to the users' lives by allowing them to incorporate it into their everyday landscape and to connect with the surrounding nature.

A single module consists of two untreated larch timber frames and the enclosure between them. The structural frames and the enclosure define the shell of the project, while its interior core consists of a separately constructed service pod with amenities and storage space; the pod includes the bathroom and kitchen, as well as necessary storage space. Glazing on all sides of the building allows visual transparency and creates a sense of openness and continuity between the interior and the surrounding landscape. The exterior decks, which are protected at different times of the day by manually

operated timber shades, offer a variety of microclimatic outdoor experiences generated by the sun and wind conditions that change as one moves around the unit.

The structural larch frames and the enclosure panels were prefabricated and then easily mounted on-site, reducing the installation time. Details of the steep gable-roof cover were developed for three possible building materials: wood, aluminum and copper – with copper used on the MU50. This is a









multilayered, passive climatic control surface; while the thermal insulation and waterproofed panel finish above the laminated wood roof structure provide the function of a conventional system, the copper surface mounted above the actual roof surface provides an efficient passive control and reduction of heat gain by creating continuous air movement and shading above the unit. The high-pitched roof also houses the photovoltaic panels, making them an integrated component of the design language while providing electricity and hot water.

The enclosure is double glazing on all building sides, except for an enclosed structural bay on the south facade that contains all mechanical and electrical equipment. This includes a ground source heat pump for the custom-designed, high-efficiency underfloor heating and cooling system integrated into the timber frame. The glass enclosure helps establish a feeling of openness and connection to the surroundings; however, other materials

could be chosen as the building skin to match different spatial functions or climatic conditions.

A simple, open plan allows natural lighting and facilitates cross-ventilation. The transparent surfaces transfer maximum daylight into the interior spaces, minimizing the necessity for artificial lighting, while natural cooling is provided by air circulation under the raised floor. Building orientation, custom-made double-pane glazing and pine sunshades all protect the interior from direct sunlight, keeping this hilltop home in Turkey perfectly comfortable in all seasons.

ARCHITECT Teke Architects Office Genoa, Italy

STRUCTURAL ENGINEER Deniz Aydin Antalya, Turkey

PHOTOGRAPHY
ALTKAT Architectural Photography
Istanbul, Turkey







his London conservatory was designed to be an integral part of both the adjacent garden and the Grade II-listed heritage building that is in one of the city's conservation areas. Wood was the most appropriate material in such a context, where the traditional style is respected and yet a contemporary approach is encouraged.

The roof profile needed to be a shallow pitch over a deep span so that it sits below the existing adjacent wall that is shared with the neighboring house.

Also, a well-drained glass roof is essential for any conservatory. Within the given constraints, this design arrived at a combination of short and steep falls with long and shallow falls in a complex diagrid frame. It is easy to make complex joints with wood, which led to the frame and structure being assembled in smaller elements.

All pieces are light enough to be carried manually and fixed with traditional carpentry skills on-site in a short timeframe. This was only possible with the help of a simple digital fabrication method. The design team's 3D model was directly sent to the CNC milling workshop and processed exactly as planned, forming the correct sizes and angles to achieve the required roof falls. Any discrepancy was rectified easily on-site using a conventional woodwork method. In addition, all cross junctions of the beams were structurally designed with no requirement of glue or any mechanical fixings.









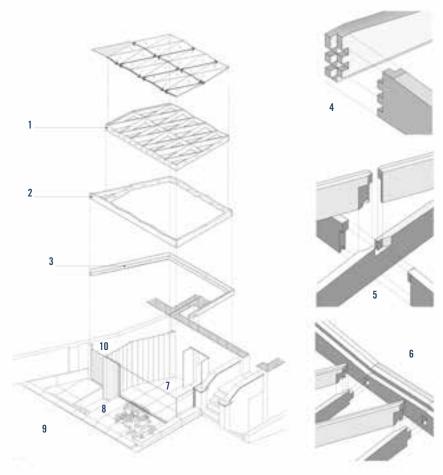
The design also benefits from the natural structural capacity and low thermal conductivity of wood. The design team simplified a conventional layered arrangement of a building envelope (structure, insulation, cladding) into one solid wood piece to form the entire structure and enclosure, with glazing units in four-seasons glass. Although each section needed to be wide and deep, they contribute to establish the character of the space

when they cast palpable shadows and emphasize the presence of natural light.

The wood used is Accoya, known for its dimension stability and durability from water decay over a long lifespan. This acetylated wood was used for most of the components, even as a roof coping. Using the same species also enabled the team to share off-cut pieces between components.

Externally, the wood components were charred, a traditional Japanese

way to carbonize the wood surface, protecting it against fungus and rot from water decay while giving it an aesthetic advantage. Wood tends to discolor inconsistently, particularly in the rainy London weather; the darkness of the charred finish keeps the appearance of the roof consistent over a long period of time. Internally, the wood surface is oiled so that it breathes, and damaged surfaces are easily repaired locally, extending overall longevity.



- 1. roof frame
- 2. ring beam
- 3. perimeter drainage
- 4. perimeter Accoya ring beam finger joint connection
- 5. pitch node connection

- 6. ring beam end connection
- 7. dining area
- 8. empty stage
- 9. garden
- 10. shed

ARCHITECT Tsuruta Architects London, UK

STRUCTURAL ENGINEER Webb Yates Engineers London, UK GENERAL CONTRACTOR JK Construction Ltd.
Northolt, UK

PHOTOGRAPHY Ståle Eriksen London, UK





Capilano Library Edmonton, AB Please see page 162

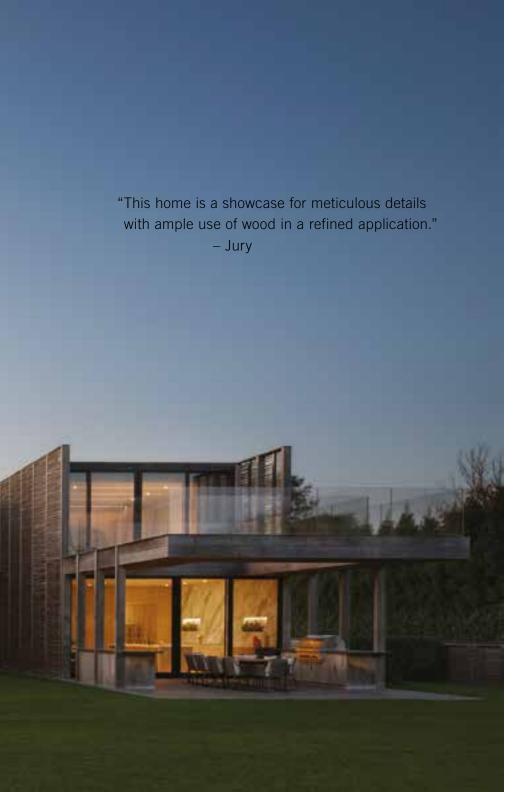


Upper Skeena Recreation Centre Terrace, BC Please see page 132

A Long Island home celebrates the region's agricultural heritage by applying the principles of farming to architecture

North America





with its flat terrain and fertile soil, Sagaponack began as a farming community set within the resort enclaves on the eastern end of Long Island. In recent years, fueled by its proximity to the ocean, the tide of development in Sagaponack has been steady and inevitable, with farm fields giving way to residential subdivisions. This single-family residence seeks to honor the agricultural traditions of the area by applying the fundamental principles of agriculture to architecture, placing order on nature and maximizing access to light and air.

Most crops grown in Sagaponack were row crops as opposed to field crops, spaced apart in ordered lines to maximize each plant's exposure to sunlight. In this region, acres of rows were oriented north/south in alignment with the prevailing southerly wind. These principles are applied to the form of the house, which is separated into parallel bars spaced equidistant apart to admit sunlight and fresh air. Breezeways of operable glazing connect the more solid bar forms, while allowing the passage of light and wind. The plantings, trees and paving of the landscape design - all similarly organized into parallel rows - extend between the bars of the house into the courtyards, intertwining the house and the land. Breaking the home into multiple volumes has the added benefits of reducing its apparent mass and enhancing the privacy between spaces.





Agriculture juxtaposes organic plant forms with meticulously cultivated straight rows, and this contrast inspired the treatment of materials in the architecture. The dimensions of the house are broken down to a 4-ft. module in both plan and section. This 3D grid governs the placement of everything from walls to light fixtures. Materials are selected and manipulated to defy



the strict order. The rainscreen siding of thin cedar strips was installed green and fastened with only two screws at the center. The unfastened ends of each board are free to warp according to their grain direction, creating an organic pattern within the rigid framework. The pattern will further change over time depending on exposure to the sun and rain.





1. road

2. tennis court

3. driveway

4. driveway to garage

5. main house

6. deck

7. courtyard

8. pool

9. pool house

N⊕ SITE PLAN







Inside, stone with prominent veining was selected to contrast with the otherwise crisp lines. At the stairs, rows of wood balusters are free to rotate around their supports; felt louvers serve as acoustic absorbers and catch the wind or a passing hand to rotate the balusters, continually changing the pattern.

What is good for crops is also good for people. By applying the principles of farming to architecture, the house is made more comfortable and more beautiful – while respecting the disappearing historic character of its place.

ARCHITECT
Bates Masi + Architects
East Hampton, NY

STRUCTURAL ENGINEER Steven L Maresca Hampton Bays, NY

GENERAL CONTRACTOR Lettieri Construction Westhampton Beach, NY

PHOTOGRAPHY
Bates Masi + Architects
East Hampton, NY



"The seamless integration of wood into the building's overall design creates a modern aesthetic, using classic materials."

Jury

The versatile post-andbeam timber frame of this academic building is just one of its fashionable designs



Wilson School of Design, Kwantlen Polytechnic University





ith more than 300 apparel companies, British Columbia's Lower Mainland is a center of excellence for technical fashion design. The vision for the new Wilson School of Design at Surrey's Kwantlen Polytechnic University (KPU) is to be the pre-eminent school for this industry on the West Coast, while also bolstering the local economy with a steady pool of talent in the fields of graphic design, interior design, fashion marketing and fashion technology.

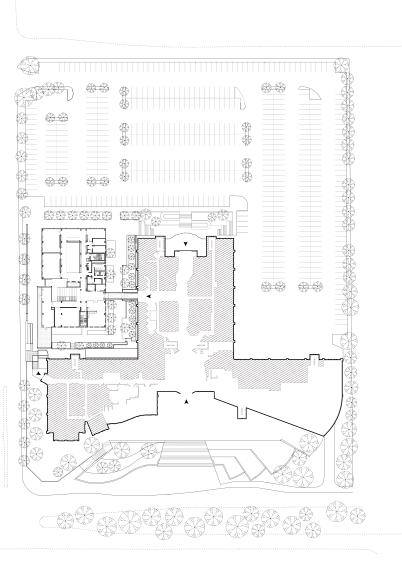
Before the project's construction, design students were mostly confined to the few isolated classrooms in the campus's Richmond Main building, where they didn't have much collaborative design space. The new building – centering on a large atrium with a built landscape for lounging and for project exhibitions – actively inspires collaboration. Every floor is designed to facilitate collaboration, with large whiteboards, couches and plenty of glazing offering impressive views of the mountains.

A series of flexible design studios, labs, open offices and shared collaboration spaces are strategically organized on five interconnected levels into three main zones of programming activity. Zone One (ground floor) includes testing labs and an incubator for BC Technical Fashion, Zone Two (levels two to four) includes teaching/studios to accommodate the Fashion, Interior Design and Graphics programs, and Zone Three (upper level) includes flexible, multipurpose event/conference space for donor events and industry functions. The space between all program elements creates continuous "collision space" for circulation and breakout.

The same rational, robust plan grid that gives traditional warehouses their exceptional versatility is inherent in the CNC-milled postand-beam timber frame of the new building. A glass curtain wall wraps the advanced wood structure. Varying degrees of reflectivity and

transparency allow natural light into most spaces while providing a responsible level of thermal resistance and mitigating glare and solar heat gain. Operable windows bring in fresh air while the central atrium acts as an exhaust plenum. Concrete floors provide radiant heating and cooling. High ceilings, ample natural light and fresh air provide student designers the headspace to dream, test and create.

The industrial timber loft is the embodiment of low-tech, highly flexible architecture to allow for abundant daylighting, flexibility and durability. A rigid raft slab was designed to mitigate the site's high water table, infirm soils and seismic conditions. A contemporary structural framing system – an advanced wood and composite concrete assembly spanning 32 ft. – was then added to create an open, expansive and flexible floorplate. The composite slab integrated a low-maintenance radiant capability for energy-efficient heating and cooling.



SITE PLAN

Over the years, KPU has performed extensive product design research within its School of Design. The school has worked with the City of Surrey, local companies and non-profits, all of which bring diverse project challenges to KPU for student research. At the school, students come to a stage where they can commercialize, seek patents and move toward careers in design. The new building is already achieving the school's diverse goals, by representing a visible statement of KPU's commitment to sustainable, ethical and user-centered design.

CLIENT Kwantlen Polytechnic University Surrey, BC

ARCHITECTS KPMB Architects Toronto, ON

Public Vancouver, BC

STRUCTURAL ENGINEER Fast + Epp Vancouver, BC

GENERAL CONTRACTOR D.G.S. Construction Company Ltd. Surrey, BC

PHOTOGRAPHY Adrien Williams Montreal, QC





With its simple geometry and minimal use of materials, this house adds to the tradition of modernism in the Hamptons

Wuehrer House

ocated on an expansive and secluded site in Amagansett, N.Y., Wuehrer House is surrounded by nature preserves and accessed by a private gravel path. The site is gently sloped, covered almost exclusively with white oaks, a few Eastern red cedars

and an occasional pitch pine. To celebrate this serene location, the design of the house tries to mute architectural metaphors and conceives of a contemplative structure that is simple, rational and generously open to the surrounding landscape.





The house is made from a unique, repetitive module. This module is itself dematerialized, reduced down to its outer frame. This subtractive strategy highlights the tactile qualities of the carefully curated palette of materials: unadorned wood, glass and concrete. The design of the house balances the use of modular fabrication and the craft of traditional construction methods. With its simple geometry and minimal use of materials, natural light becomes the prominent element defining the space, celebrating the ever-changing seasons and the remarkable wooded vistas.

The structure is made of a high-quality, high-strength Southern yellow pine, laminated and milled into beams and columns with highly precise profiles. Canadian manufacturer IC2 was one of the few companies able to combine facade mullions with the columns of the house into one slender glulam element. The choice of timber also solves the question of interior finishes, letting the structural material speak for itself. The textured wood surface eliminated the need for drywall, paint and ceiling elements, with the materiality providing a warm counterpoint to the minimal design.









Passive environmental strategies were employed to create a low-energy house, including a heated floor system and exterior automated wood blinds on the west facade. Natural air ventilation in every room and cross-ventilation between opposite facades keeps the need for air conditioning to a minimum. The Wuehrer House draws on and extends the tradition of modernism in the Hamptons with a contemporary design vocabulary that frames and celebrates its surroundings.

ARCHITECT Jerome Engelking New York, NY

STRUCTURAL ENGINEER Stutzki Engineering Milwaukee, WI

GENERAL CONTRACTORS IC2 Technologies Portneuf, QC

Art Massif Saint-Jean-Port-Joli, QC

Les Constructions FGP Saint-Basile-le-Grand, QC

FACADE MANUFACTURER IC2 Technologies
Portneuf, QC

PHOTOGRAPHY Nic Lehoux Point Roberts, WA "Wood softens the angularity of this structure and integrates the home with its environment, which influences many of the design features."

– Jury





A house on a flood-prone site embraces the duality of its changing landscape to bring together nature and the built form

North America

Kiht'han

oo often, the architectural response to flood-prone sites is to distort conventional designs and methods to meet the flood protection requirements, masking the issue at best. In contrast, the design for this Long Island property, overlooking a coastal pond and the ocean beyond, celebrates the periodically rising water levels. Rather than hiding the flood damage prevention measures, the design takes advantage of them, embracing the duality of the wetland landscape to intertwine nature and the built form.

The house, pool, decks and sanitary field are elevated and broken apart to let floodwaters flow around and between them, reducing the potentially damaging hydrodynamic pressure of coastal flooding. The house thus becomes a series of vertical volumes from which to observe the ocean view. the landward view and the dynamic ground plane itself. Perched safely above, flooding becomes an unthreatening event, a periodic change in the home's relationship with the ground. From the glass-enclosed bridges that connect the volumes, one can appreciate the dramatic spaces between them, whether flooded in wet periods or interconnected by flows of native plantings in the drier periods.







The composition of the volumes in the landscape is guided by program and the surrounding context. The orientations of each volume are determined by use and the desired views. Pulling apart the spaces allows for maximum privacy, separating the four guest bedrooms from the living areas and master suite. Communal spaces have flexibility to flow to the outdoors and extend onto elevated

decks by means of full-height sliding glass doors.

The building's location, straddling the agrarian and coastal landscapes, inspired the articulation of the wood siding. The board and batten design is reminiscent of nearby vernacular structures, while its two-layer composition allows for selective control over its opacity. At grade level, the boards are omitted and the battens form an open screen to let floodwater flow through per FEMA regulations. Above, overlapping boards and battens are opaque to mask neighboring houses from view. At the roof line, the battens are omitted to let light filter between the boards. The transitions between the varying opacities occur along horizontal datum lines that ring the towers, breaking up the verticality of



the facades and referencing tide lines left by fluctuating water levels.

The language expressed by the exterior siding translates to the design of the interior spaces as well. The horizontal datum lines are visually transcribed onto the interior walls by means of material transitions for interior finishes and wall claddings. Wood-clad walls at the first level transition into wainscoting and light

painted walls at the upper floors. This visual link expresses the seamless connection between interior and exterior as one travels throughout the house.

Through this homogenous relationship between architecture and nature, the occupants are constantly reminded of the place where they reside. Natural elements are invited into the home, becoming a part of everyday life.

ARCHITECT
Bates Masi + Architects
East Hampton, NY

STRUCTURAL ENGINEER Steven L Maresca Hampton Bays, NY

GENERAL CONTRACTOR K Romeo Inc.
East Hampton, NY

PHOTOGRAPHY
Bates Masi + Architects
East Hampton, NY



"A sense of exploration and play is enhanced with the warmth of wood."

– Jury



A German daycare blends seamlessly into its surroundings while minimizing its carbon footprint

Internationa

Trumpf Day-Care Center







achine-tool manufacturer Trumpf completed its first company daycare center in the northwest edge of its campus in Ditzingen, Germany. Providing daycare for both plant employees and others in the community, the one-story building was built using mass-timber elements prefabricated in a South Tyrolean factory and then assembled on-site.

The building is set back within the industrial context and, thanks to its low height, blends almost seamlessly into the topography. It is also linked to

the architecture of neighboring farms by way of its flat-pitched saddle roof, which has an overhang on all four sides that varies in depth, protecting the rooms and terraces from direct sunlight or rain. Generous skylights also are arranged at the side of the ridge line for natural lighting, ventilation and smoke extraction.

The interior is divided by eight cubes dedicated to group and employee rooms, a cloakroom and a kitchen. A meandering corridor connects all volumes and widens at three points within the building's perimeter, creating smaller gathering "squares." These three intermediate spaces are available for communal use and have a direct connection to the outside space through their extensive glazing. Pellet heating ensures an environmentally friendly form of heat production.

The building structure is made from prefabricated, unglued solid wood elements sourced from PEFC-certified forests. The base layer consists of two 2.4-in.-thick layers of solid structural timber (fir), joined by dovetail connectors; the outer cladding uses a 1.06-in. top layer of white fir, which is used everywhere in the visible area. The structure is insulated using wood fiber between the panels. The purlin roof is screwed on, as well; by using glue-free methods, the building can be recycled and reused at the end of its life cycle without any problems.

CLIENT
Trumpf
Ditzingen, Germany

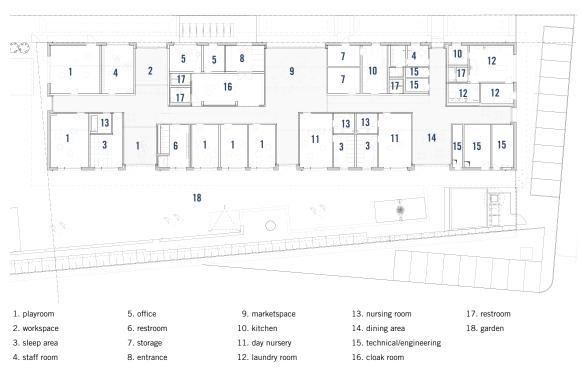
ARCHITECT Barkow Leibinger Berlin, Germany

STRUCTURAL ENGINEER Breinlinger Ingenieure Stuttgart, Germany

GENERAL CONTRACTOR holzius GmbH Prad am Stilfser Joch, Italy

PHOTOGRAPHY Stefan Müller Berlin, Germany





FLOOR PLAN



Rocky Ridge Boardwalk Calgary, AB Please see page 160



80 Atlantic Avenue Toronto, ON Please see page 184



Redfox Commons Portland, OR Please see page 272





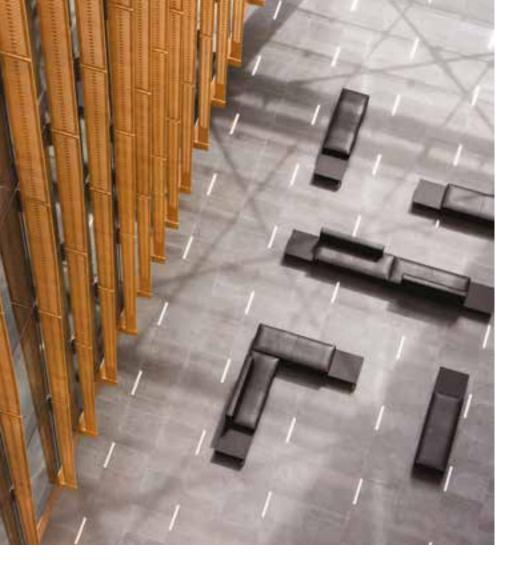
"An unexpected and unique use of wood unifies disparate elements in a surprisingly harmonious way."

— Jury

This revitalization of two adjacent buildings into a trophy-class office structure relies on wood to create a cohesive experience

North America

Alexander Court

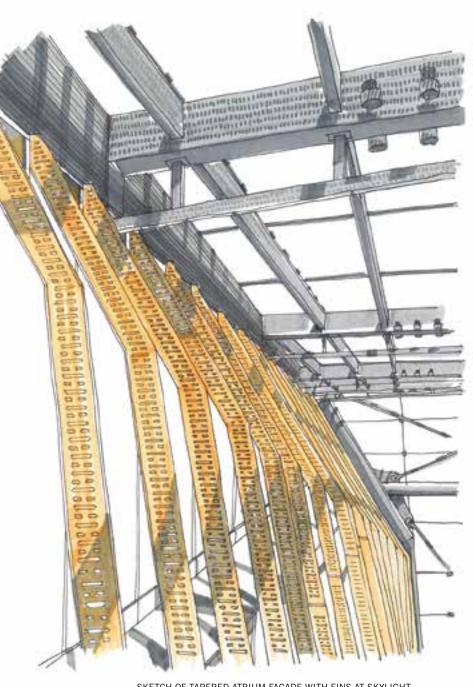


new Class-A commercial building located in the heart of the Golden Triangle District in Washington, D.C., Alexander Court merges two existing structures from different eras into one half-block-sized office.

On the exterior, the original 2000 L Street's 1960s pre-cast concrete facade was stripped and re-clad with a glass curtainwall system, providing a more energy-efficient enclosure while integrating it with 2001 K Street's late-'90s appearance. The focus of the interior is an expansive double-height main lobby leading into a 12-story atrium that once acted as the alleyway separating the two structures, which continues further to connect to the original K Street entrance.







SKETCH OF TAPERED ATRIUM FACADE WITH FINS AT SKYLIGHT





To merge the buildings into a cohesive experience, the team developed a veneered Anegre ceiling, wall and vertical fin expression that wraps down the atrium and into the two office lobbies. Due to the acoustical requirements, the team chose to use a veneered micro-perforated suspended panel system with fire-rated recycled MDF at the ceiling. Playing off the design of the exterior facade and interior stone walls, the random-matched veneered ceilings weave together within the lobbies to break down the expanse of the space. The folds incorporate light coves to further dramatize the movement of the ceiling.

As a unifying element for the different conditions and treatments of the atrium facades, the perforated vertical fin system allows views out while helping to provide privacy, also mitigating solar glare and noise pollution. The fins break down the scale of the space and create movement by shaping the outer profiles and shifting the spacing across the walls. The design team worked closely with the fabricator, installer and framer to create unique fin profiles, writing a Grasshopper script to improve the timeline of fabricating for the one-off profiles and perforations.

Beyond the fabrication, an additional challenge was how to attach the fins to the different facades and seamlessly transition into the flat wood

ceiling and wall surfaces. On the walls, the solution was to mount T-brackets at the back of the fins directly to the walls; as the facade tapers back at the skylight, the fins likewise follow the atrium profile. At the ceilings and lower lobby wall, the fin profiles taper and slide past the forms to create the illusion that they grow from the flat surfaces.

Beyond the acoustic and solar properties, the decision to use wood came down to its aesthetic quality. Juxtaposed against the adjacent materials of stone, steel and glass, the Anegre veneer provides an inviting warmth to the interior. When viewed at night, this quality is on full display as a welcoming hue that radiates to the exterior through the lobby and atrium's glass facade.

ARCHITECTS
Pelli Clarke Pelli Architects
New York, NY
FOX Architects
Washington, DC

STRUCTURAL ENGINEER Rathgeber/Goss Associates Rockville. MD

GENERAL CONTRACTOR
DAVIS Construction
Rockville, MD

PHOTOGRAPHY Jeff Goldberg/Esto New York, NY A new bridge reconnects students with the rest of the campus – and the beauty of its ravine

North America

Lewis & Clark College Pedestrian Bridge





t Portland's Lewis & Clark College, a densely wooded ravine separates residence halls from the undergraduate campus. In 2017, a structural review of the 50-year-old bridge spanning the ravine found it was unsafe because its primary structural supports were showing signs of rot; there also were several slip-related accidents from mildew on the bridge surface due to its inability to dry in the shady, open-air environment. As a result, the bridge was closed and students were rerouted around the ravine. This required an immediate design response that would restore the campus circulation.

The replacement bridge had to comply with current land-use regulations, which included the ravine being classified as an environmental zone, a restriction that was not in place when the original bridge was constructed; this prohibited temporary construction equipment or any new permanent structure within the ravine, thereby requiring the bridge to span across 188 ft. Adding to the installation complexity was the fact the original bridge deck supported the primary utility lines that serviced the residence halls - lines that had to remain uncompromised during construction.



The parallel chord wood trusses needed to span the ravine were about 12 ft. tall and spaced to straddle the existing bridge deck and utilities when craned into place. This allowed for a critical installation sequence that transferred the support of the utilities from the existing bridge deck to the new structure, keeping the utilities active and at the same elevation. The

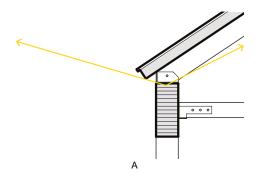
wood bridge deck and guardrails were designed to float within the structure, providing a scale transition from the larger wood structural components necessary to span the ravine, to the pedestrian experience of appreciating the ravine.

To mitigate slip hazards, a roof was added to keep the bridge deck dry and to extend the lifespan of the structure.

CLT panels were selected for the roof because of their thin profile and their ability to be craned easily into place as a system; their span capabilities reduced the need for additional structure. To avoid a dark ceiling, a 4-in. gap was created between the CLT roof and wood trusses, allowing reflected light to illuminate the natural wood surface of the CLT panels.









The selection of engineered wood as the primary structural material for the bridge was important to satisfy Lewis & Clark's commitment to sustainable building practices and regionally sourced materials. Although the new bridge had to be designed to accommodate the construction logistics and technical requirements, the use of wood as the primary structure was a natural fit for celebrating the forested ravine, a defining element of Lewis & Clark's campus. What was previously a path that took students to class now feels like a place to pause and appreciate the beauty of the ravine.

CLIENT Lewis & Clark College Portland, OR

ARCHITECT Minarik Architecture Portland, OR

STRUCTURAL ENGINEER Miller Consulting Engineers Portland, OR

GENERAL CONTRACTORS
Precision Construction Company
Portland, OR

Western Wood Structures Tualatin, OR

PHOTOGRAPHY Lincoln Barbour Portland, OR





"Clean lines, contrasting shades and varied use of wood enhance the structure's presence, transforming it from serving only a utilitarian purpose to becoming an inviting escape."

Jury

This stylish addition to a Toronto backyard seamlessly integrates into its surroundings, creating the illusion of limitless space

North America

Forest Hill Pavilion

esigned as part of a larger exterior project in Toronto's upscale Forest Hill neighborhood, this 500-sq.ft. cedar and glass pavilion sits lightly on the landscape, situated at the rear edge of a backyard enclosed by neighbors on three sides. Saddled into a grid of helical piles, the entire 45-ft.-long structural wood platform hovers just above native grade to limit its impact on the line of mature trees behind it. The linear form is configured both to preserve existing vegetation that gives the backyard its sense of leafy seclusion, and to serve as a backdrop for the backyard's other design elements. Clad in black to contrast with the surrounding foliage while visually receding into the background, the pavilion functions like a screen along the back of the yard, creating the illusion of limitless space beyond.

The pavilion is crafted almost exclusively in wood, with the material's versatility allowing the pavilion to be at once opaque and transparent, and at times luminous. On its long, house-facing elevation, the structure is veiled by a screen of black-stained cedar strips, a material and color choice that extends the design language used throughout the landscape. The assembly's vertical wood battens gradually transition from wide and shallow at the building's ends to narrower, deeper and more widely spaced at its center. The

resulting moiré-like effect is especially striking when the pavilion is illuminated at night, transforming it into a lantern as a warm glow filters through its screen and full-height glass walls.

Inside, these translucent glass panels admit ample daylight, limiting the need for artificial lighting while still providing a visual separation; after dark, daylight is supplemented by tunable strip LEDs integrated into the cedar ceiling. In contrast with the black facade, the interior is finished with a warm and natural palette of marinegrade plywood with quarter-sawn cedar veneer and oiled cedar boards. At its two ends, the pavilion holds enclosed storage and mechanical, while its core is turned





by an expansive planted roof that visually extends the lawn to the back-yard's perimeter vegetation when the pavilion is viewed from the residence's upper stories.

ARCHITECT Amantea Architects Toronto, ON

STRUCTURAL ENGINEER Blackwell Structural Engineers Toronto, ON

GENERAL CONTRACTOR Niet Outdoors Burlington, ON

PHOTOGRAPHY
Doublespace Photography
Toronto, ON

over to a washroom, a change room and a shower next to an opening in the roof that frames a birch tree and a view of the sky. In keeping with the overall strategy of open yet defined zones, the pavilion interior is deftly programmed with spaces that are partitioned and contained, yet open to the surrounding landscape and pool activity. The pavilion's ipe deck flows seamlessly from inside to out, linking the interior flooring to the surfaces framing the pool, and to a dining terrace off the main residence. The continuity of these walking surfaces throughout every zone of the backyard aesthetically unifies the pavilion with its setting.

The effect of integrating the structure with its site is further enhanced





"Natural wood details enhance the sense that this building came from the land that surrounds it."

— Jury

A new headquarters for a public health agency uses design to reinforce a sense of well-being

International

Woody – Office building for Santé publique France





he office building for Santé publique France, the French public healthcare agency, is located at the edge of the Bois de Vincennes, a sprawling public park just outside Paris. Inspired by the activities it houses, the project creates a pleasant space that takes its users' well-being fully into account.

For this project, the architect was also the interior designer, allowing the design team to have total control over every aspect. The building's shape is like a bundle of sticks placed on the ground, branching out like open, protective arms. This design symbolizes the mission of this institution, which oversees the health of everyone who lives in France. The aim is to be exemplary in terms of its impact on the environment and public health.

The project uses natural and recyclable construction procedures and materials, free of all solvents and plastics. The workspaces are luminous and well-cushioned in terms of sound, and they have ample views of the surrounding landscape.

The stairways have been generously sized and naturally lit to encourage people to walk from one floor to the next instead of taking the elevators. The common spaces were created to stimulate interaction and host informal gatherings and meetings. The restaurant and small cafés on the various floors are warm and intimate.











Large, furnished terraces are available to anyone who wants to eat outside and enjoy the beautiful view over the wooded park. The three gardens surrounding the building are each organized around the theme of beneficial, healing or harmful plants.

CLIENT
Santé publique France
Saint-Maurice, France

ARCHITECT Atelier du Pont Paris, France

STRUCTURAL ENGINEER Quadriplus Groupe (Cogeci)

Vaulx-en-Velin, France

GENERAL CONTRACTORS
Arbonis
Paris, France

C3B/Vinci

Dijon, France

PHOTOGRAPHY Takuji Shimmura Paris, France

Karel Balas Paris, France



Red Deer College Student Residence Red Deer, AB Please see page 172



Tsleil-Waututh Administration & Health Centre North Vancouver, BC Please see page 126

Situated on land steeped in history, these guest houses echo the voices of Muskoka's past

Canadian Wood Council Award

Bigwin Island Club Cabins

he design process for this project began by listening to the land – and on Bigwin Island, in Northern Ontario's Lake of Bays, there was a lot to hear. Named after Ojibway Chief John Bigwin, the island is a place of sacred significance for the region's Indigenous population. The first golf course on Bigwin Island was built in 1922, and for decades the island was the site of a glittering luxury resort, the summer home of Canadian industrial titans, Hollywood stars and even the Dutch royal family.

This development is part of a plan for

the island's revitalization. The property owner rejected a proposed 150-room hotel in favor of 40 guest houses, ranging from 1,230 to 1,350 sq.ft. each, and launched a design competition for the project, inviting proposals from six Canadian architectural firms. The vision, laid out in the competition's design brief, was a project that would respect the island's history, the environment and the Muskoka region's distinctive architectural aesthetic, while also employing practical construction techniques and maximizing energy efficiency and sustainability.















At once familiar and experimental, respectful and assertive, and durable enough to stand up to the demanding climate of their location while elegantly referencing its heritage and beauty, the Bigwin Island Club Cabins offer a balanced, inventive and sustainable response to a complex architectural challenge. An important principle in practice for both the client and the architect is to touch the land lightly - to minimize disruption of the landscape. The island's deer are the real architects of the project. The cabins' sheltering Muskoka shingled roofs appear to float on the grazing line that the deer have created in the forest, affording views from the center of the island to the lake. This architecture strives to evoke a timeless, archetypal experience of dwelling in the forest.

Crafted from natural materials with a quietly assertive design, the cabins reference the big, sheltering roofs of Muskoka's historic cottages and boathouses, while also evoking the interior of a canoe without veering into kitsch. Each cabin is assembled from a simple kit of parts: a screened-in porch, a deck, a hearth, a great room, a sleeping box and a roof. An extruded box, clad in shiplapped wood, adjoins a glass pavilion holding an open-plan living and dining space, which is topped by a deep hip roof clad with cedar shingles. The

exterior is understated, and the interior is sensuously dramatic, airy and gracious, with the main living space of the pavilion rising to a peak. Shiplapped wood also lines the interior of the bedroom and hearth, enhancing the seamlessness between indoors and out. The room is naturally lit from above via a periscope window in the gable.

The ambition of this project transcends the individual guest houses. The buildings engage not only with the landscape, but with each other; they are sited in clusters, where their transparency and openness put them in conversational relationships. The spaces between them are small enough to allow neighbors to wave each other over, and some will encircle meadows ideally sized for cookouts and games.

ARCHITECT MacKay-Lyons Sweetapple Architects Ltd. Halifax. NS

STRUCTURAL ENGINEER Blackwell Structural Engineers Toronto, ON

GENERAL CONTRACTOR Greystone Construction Huntsville, ON

PHOTOGRAPHY Doublespace Photography Toronto, ON An elementary school demonstrates a sense of place with a design reminiscent of traditional heavy timber construction



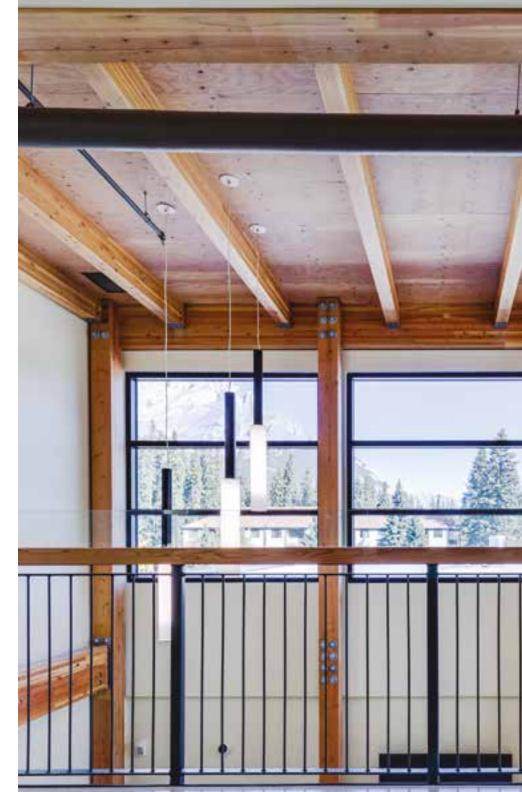


Canadian Wood Council Award

Banff Elementary School

uilt to replace an aging school from the 1950s, Banff Elementary School serves Alberta's Canadian Rockies School Division and the Town of Banff, creating a community hub of complementary services in a single location. Because the town is located within both a national park and a UNESCO World Heritage Site, new buildings are subject to stringent environmental, planning and architectural controls. The school board also wanted to make the new school a distinctive place for students, faculty and residents - a place that speaks to the unique setting of the town and reinforces a sense of community. Wood was selected as the obvious building material to achieve these goals.

The school was constructed in two phases to accommodate funding requirements. The roofs and floors are framed with Douglas fir glulam beams; columns exposed to the interior were sized to accommodate the required fire resistance ratings. The roof is extended past the walls with glulam purlins, reminiscent of traditional heavy timber construction that is evident throughout the town.







The gymnasium is constructed with glulam columns, beams and GLT panels providing lateral support to the framework. The roof is spanned with a diagonal lattice of glulam beams reinforced with a steel king post and tension rod substructure. The system forms an efficient and aesthetically pleasing roof and ceiling assembly that is remarkably thin and assists in reducing the overall height of the structure, which the town's planning bylaw required.

Exterior finishes, including cedar battens and bevelled siding, are largely wood. While the materials are traditional, the construction assembly is a thoroughly modern PERSIST rain screen wall that meets all contemporary Alberta Infrastructure, LEED and National Energy Code requirements.

Porches, canopies and entrances constructed of exposed glulam and wood decking mediate the larger masses of the building, while vertical stone elements anchor the building visually and reflect the mountain land-scape. The main entrance canopy was treated with fire-retardant varnish, removing the need for an exposed dry sprinkler system.

The interior finishes complement







the exposed wood structure. Baltic birch panels line the gymnasium and lower portion of the wall, and fir ceilings and paneling are used throughout corridors and assembly spaces to reinforce the material impact of the wood.

While this was an ambitious project constructed to Alberta Infrastructure's typical high standard, the budget was not in excess of any other similar school project constructed in a community outside Alberta's major cities. The building effectively demonstrates that wood structures are a viable and desirable alternative to traditional steel construction in the development of new schools.

ARCHITECT GEC Architecture Calgary, AB

STRUCTURAL ENGINEER ISL Engineering Canmore, AB

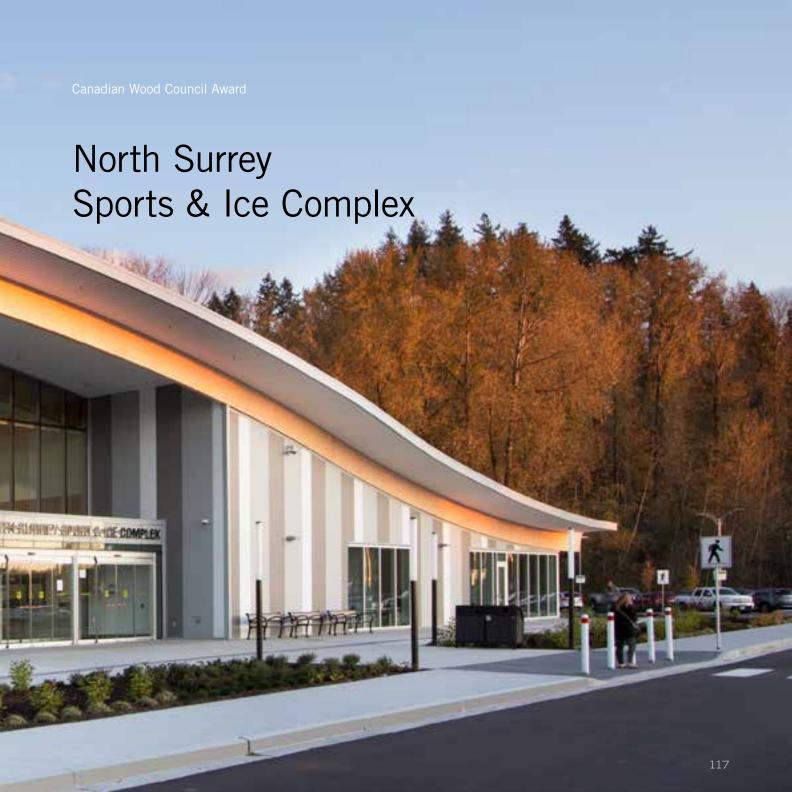
GENERAL CONTRACTOR Clark Builders Calgary, AB

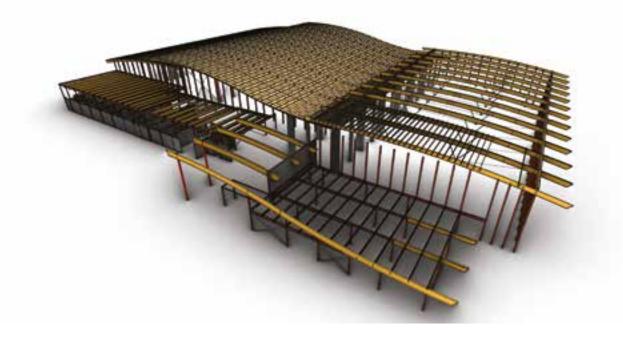
PHOTOGRAPHY Latitude Photography Calgary, AB

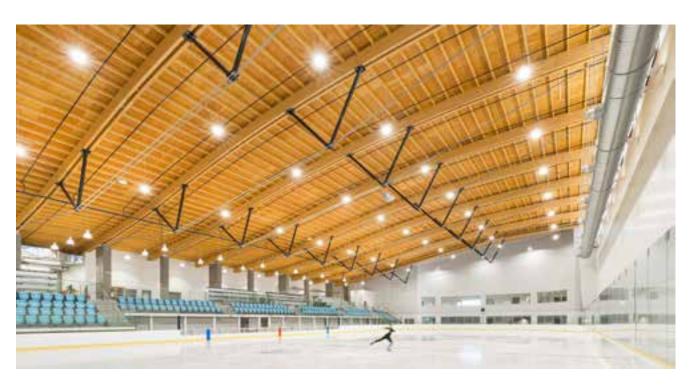
dsTroyer Photography Calgary, AB

Michael Wach Architectural Photography Calgary, AB









pened in the fall of 2019, this 130,000-sq.ft. complex supports the City of Surrey's goal of creating healthy communities where all people can be active and engaged. Centrally located near public transit, the project is part of an effort to rejuvenate this up-and-coming area of North Surrey. The complex features three ice arenas with curved, long-span timber roofs, as well as fitness gyms and other activity areas.

The large, undulating middle rink is the centerpiece, with clear spans of 140 ft. that showcase the hybrid timber/ steel trusses forming the main roof support. The king-posted trusses consist of glulam top chord, steel rod tension chord and HSS web members.

During the design stage, a prefabricated wood roof panel was proposed as an alternative to deep acoustic metal deck. These panels not only resulted in significant cost savings, but significant schedule savings as well. The warm wood aesthetic of the roof panels is accentuated by the clerestory windows that are carefully placed to bring daylight to each arena.

Early engineering efforts used parametric software to optimize the truss design while considering the various architectural, geometrical and fabrication constraints. This optimization significantly reduced truss weight, causing savings in material, labor and crane size. The approach was to design for manufacturing and erection from early in the process, linking the information to automatically update as the overall geometry of the roof changed.



The 33 trusses were prefabricated in halves at the engineer's shop to allow for efficient erection on-site. The double-span roof panels, composed of exposed timber purlins and plywood that meet heavy timber requirements, were also prefabricated quickly in the shop, in widths to suit the curvature of the roof. Spruce glulam was used, allowing the lighter tone of wood to create a beautiful contrast with the black-painted steel webs.

Another constraint considered in designing the trusses was the logistics of trucking these long, deep pieces to site. The roof panels were nested on the truck bed to maximize the number of assemblies shipped per load. On-site, the truss halves were erected and shored, supported on their ends by steel columns and concrete shear walls.

CLIENT
City of Surrey
Surrey, BC

ARCHITECT Francl Architecture Vancouver, BC

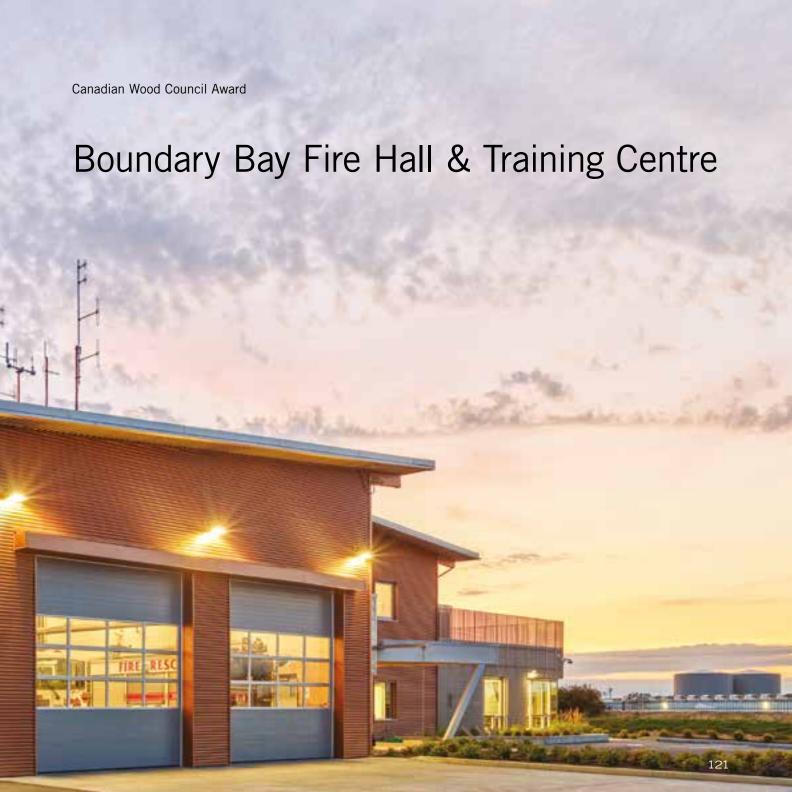
STRUCTURAL ENGINEER StructureCraft Builders Abbotsford, BC

GENERAL CONTRACTOR Lark Group Surrey, BC

PHOTOGRAPHY Calvin Owen Jones Vancouver, BC Nancy Silva Grife

Vancouver, BC





ocated about 40 miles south of Vancouver, this facility serves as both a satellite fire hall for Delta Fire & Emergency Services and as the department's Regional Training Facility. The main floor provides flexible workspaces that can be converted into a municipal Emergency Operations Centre when needed. Situated on a 1.9-acre site adjacent to the Boundary Bay Airport, the 14,350-sq.ft. building design consists of two tandem drive-through bays, conference rooms, gender-neutral washrooms and dorms, and three potential training rooms outfitted with the latest technology to allow various training scenarios for crews and emergency response teams.

This building is almost entirely constructed of wood above grade, including the use of exposed glulam beams, post-disaster wood frame and millwork throughout the interior. The strategy behind this is to integrate wood not only for its aesthetics but to capture the advantages of wood-to-wood connections and provide interesting, cost-effective seismic detailing required for a post-disaster fire hall. This also enabled the design team to reveal the structural system as the final finishes in many cases, bringing the impact of the wood structure into the overall theme of flexibility.

Key to the success of this system was to integrate the heavy timber with the

dimensional lumber through a collaborative shop drawing process that saw the framers, glulam suppliers, structural engineers, architects and construction managers work together to determine all aspects of the coordination before the wood elements arrived on-site. This was revolutionary for this type of building, and it enabled the erection of the superstructure to be installed at a fast, efficient pace.

This project integrates regional architecture into a challenging site design so that the building can operate in a multifunctional way under emergency conditions. As the new facility is designed to meet LEED Gold standards, the fire hall offers improved living conditions for suppression crews while maximizing energy efficiency, providing the department with a functional, durable fire hall for years to come.

ARCHITECT Johnston Davidson Architecture Vancouver, BC

STRUCTURAL ENGINEER Herold Engineering Nanaimo, BC

GENERAL CONTRACTOR Unitech Construction Management Delta, BC

PHOTOGRAPHY
Latreille Architectural Photography
Vancouver, BC





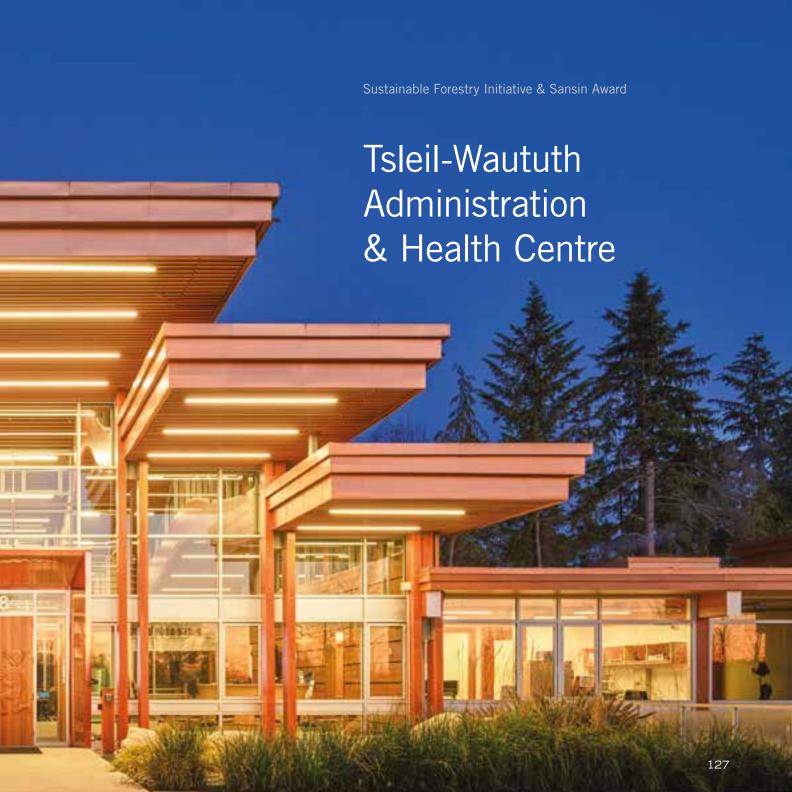








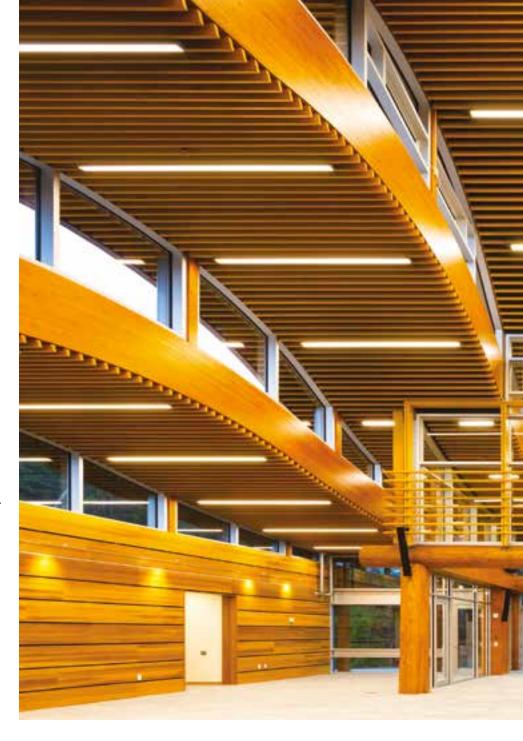




he successful use of wood by First Nations as their prime construction material dates back as far as 10,000 years ago. During their history, the Tsleil-Waututh Nation has developed sophisticated art, philosophy, social structure and building technology using the versatile properties of wood from the forests of the Pacific Northwest.

The new seat of the Tsleil-Waututh Nation's government, health, cultural and community services is the first phase of a campus-style village center located on a site overlooking the Burrard Inlet. Tsleil-Waututh means "People of the Inlet," and the symbiotic connection between Tsleil-Waututh culture and the sea is embodied in the wavy forms of the roof. The largest roof form is over a central, multipurpose gathering space that will be the heart of community events and a council chamber that provides the seat of government.

The importance of cultural heritage is embodied in the design solutions, which were developed through a collaborative design process with the entire Tsleil-Waututh community. The building is placed on a north-south axis and follows the course of a creek on the east side of the site; this strengthens the relationship between the water and forest such that the native forest and views of the ocean can be appreciated inside and out.















Cedar log columns and beams, symbolic of traditional structures, define the government chamber, which can be closed off easily for privacy or opened up to provide an addition to the main gathering space. The cedarclad walls surrounding the chamber provide a background for displays of traditional and contemporary art created by Tsleil-Waututh artists.

The quality and clarity of the interiors are created by exposing every structural building element without the need for additional artificial interior finishes. Utilizing engineered wood products and natural lumber, the structure is a combination of post and beam frames infilled with glazing and a limited amount of strategically placed shear walls. This structure required precision premanufacturing off-site. The design exposes every element of the structure as an architectural feature and demands skillful concealment of the dense network of building services.

Extensive fenestration allows for plenty of natural light while minimizing

the need for electrical lighting. Mechanical units provide heating and cooling to each office and are individually controlled. Green roofs are planted with Indigenous plant species to help regulate the indoor temperature, save energy and encourage biodiversity.

CLIENT
Tsleil-Waututh Nation
North Vancouver, BC

ARCHITECT Lubor Trubka Associates Architects Vancouver, BC

STRUCTURAL ENGINEER Fast + Epp Vancouver, BC

GENERAL CONTRACTOR Syncra Construction Corp. Burnaby, BC

PHOTOGRAPHY Ema Peter Photography Vancouver, BC

Latreille Architectural Photography Vancouver, BC

City Spatial Consulting Ltd. Vancouver, BC



An innovative wood-centered approach results in a building that's on schedule, on budget and on track to be a longtime source of local pride

Sustainable Forestry Initiative

Upper Skeena Recreation Centre

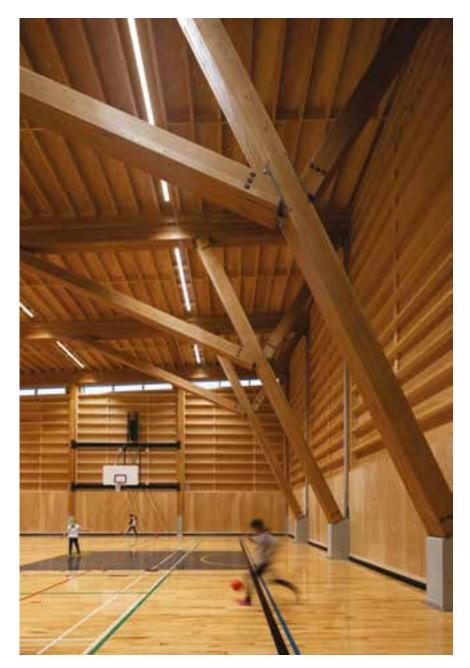


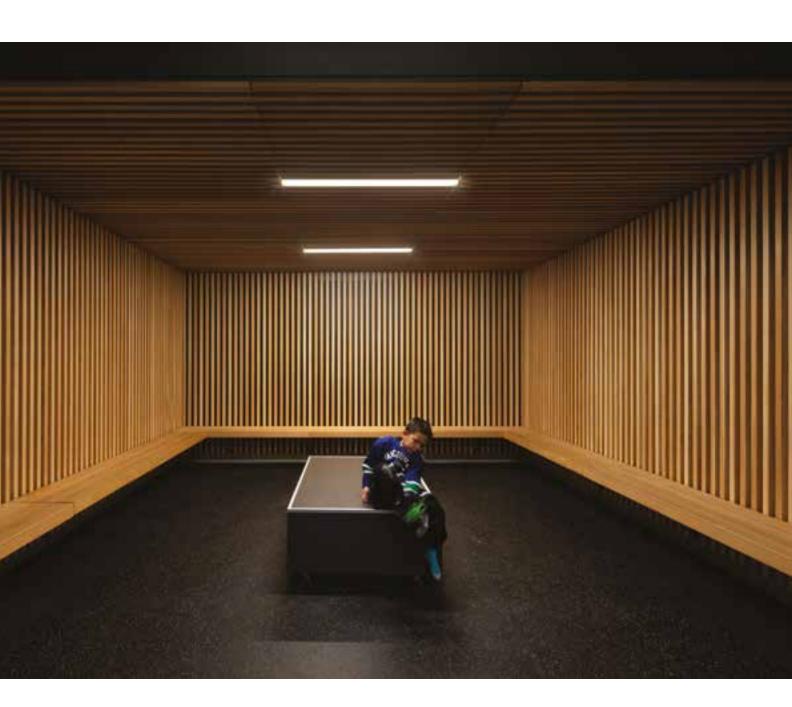


ocated between the Skeena River and the Roche de Boule mountain range in northwest British Columbia, Hazelton is the social center for several smaller communities between Terrace and Smithers. In a region with long winters, high unemployment and few amenities, the existing 40-year-old Ken Trombley Memorial Arena was an important part of the cultural fabric. It served as a source of local pride, binding the disparate communities and cultures together, and provided an opportunity for local youths to participate in winter sports.

In 2015, the arena was condemned when a structural review found the building was close to collapse. The Owner's Partnership Committee, which consisted of local mayors and elected and hereditary representatives from the surrounding First Nations and the Regional District, engaged the design team to produce an innovative and prototypical wood arena.

To use glulam as efficiently as possible, this project arranges relatively small glulam members to create a simple arch. The advantage of this geometry is that the flow of forces changes from bending into compression, which is ideally suited to a wood structure. By using this structural system, the bending moment is three to four times less than a simple post-and-beam structure, resulting in a wood structure that is cost-comparable to steel.

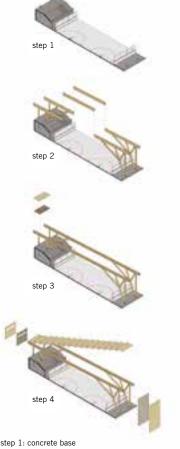












step 2: erection of glulam structure

step 3: prefabrication of roof panels

step 4: installation of prefabricated roof and wall panels

CONSTRUCTION SEQUENCE

The innovative glulam structure was complemented by prefabricated panels using readily available 2 x 8-in. joists and plywood sheathing, used throughout the project for both the roof and exterior walls. The use of prefabricated panels using dimensional lumber allowed them to be built on-site.

engaging local labor at the same time the glulam structure was being fabricated. While being a cost-effective way to support the local economy and provide trades training, this system dramatically reduced the construction schedule.

In addition to using wood for the glulam structure and prefabricated panels, the project makes use of both interior framing and finishes throughout. Douglas fir slats are used in the entry and public areas to bring warmth and a finer scale into the building. Plywood panels are used in both the gymnasium and around the rink, and a wood floor is used in the gym. The exterior of the building is clad with cedar, treated to withstand the harsh environment with minimal maintenance. All wood products, including the glulam structure, were produced and manufactured in B.C.

CLIENT Regional District of Kitimat-Stikine Terrace, BC

ARCHITECT Hemsworth Architecture Vancouver, BC

STRUCTURAL ENGINEER Equilibrium Consulting Vancouver, BC

GENERAL CONTRACTOR Yellowridge Construction Port Moody, BC

PHOTOGRAPHY Ema Peter Photography Vancouver, BC







A private lake residence in the Adirondacks evokes the spirit of the region's Great Camps of the past

Western Red Cedar Award

ADK Camp



ocated in New York's Adirondack Park, ADK Camp is a private residence on Brant Lake that has been owned by the same family for four generations. The five-acre site is defined by two existing boathouses, a tree-lined carriage road and a vintage waterfront cabin. The new residence replaces a dilapidated and structurally unsound building. In the spirit of the region's Great Camp buildings, the minimalist structure anchors the historic buildings of the site to create a new central hub for the residents. The inspired architectural language of the camp integrates the building into the landscape, allowing the boathouses to remain visually strong.

The plan is organized around an eastern arrival sequence that enters a central living space flanked by two private family wings. An exterior deck wraps the residence and culminates in a stone terrace, allowing for additional outdoor private and common seating arrangements.







Driven by the client's desire for all family members to enjoy the site, the house and grounds are fully accessible; thresholds, exterior decks and terraces are flush with grade, and wheelchair-accessible paths to the boathouses integrate the form into the landscape.

In concept, the ADK Camp represents a contemporary reflection of the utility, structural expression and contextual relationships of the Great Camp typology. The Swiss chalet roof defines the familiar language of the building form. The materiality of the project reflects a refined juxtaposition to the typical rugged elements and details of the historic style. These contemporary elements are reflected in the exterior and interior.

ARCHITECT Birdseye Richmond, VT

STRUCTURAL ENGINEER Engineering Ventures Burlington, VT

GENERAL CONTRACTOR Hilltop Construction Company Hudson Falls, NY

PHOTOGRAPHY Jim Westhalen Shelburne, VT



Jurors



CAROL BELANGER, AAA, FRAIC, LEED AP City Architect
CITY OF EDMONTON
edmonton.ca



SHAFRAAZ KABA Principal ASK* afab.world



STEPHAN PASCHE, P. ENG. Associate Principal FAST + EPP fastepp.com

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KEYNOTE



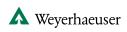




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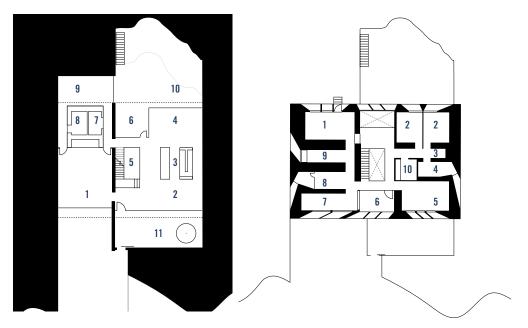




esigned for a couple in Calgary, this home caters to the clients' need for privacy and provides integrated living space for their two tortoises. From the front and back, the house presents itself as a floating box; its monolithic being is defined both geometrically and by way of material application, via a wooden mass hovering above a concrete frame. While the upper volume displays a syncopated fenestration, the lower section offers only a sliver of light emanating from above the

front courtyard's 7-ft. retaining wall. The calibrated openings participate in the orchestrated omission of visual information.

Looking over the backyard, the bedrooms lining the northern half of the upper volume enjoy an enhanced degree of privacy. The office and children's social space lining the southern front of the upstairs look out onto the street with an intermediate degree of privacy, a space once again mitigated by varied openings to allow for natural lighting.



1. garage

2. dining area

3. kitchen

4. living area

5. tortoise court

6. exterior dining

7. washroom

8. mechanical

9. entertainment

10. garden courtyard

11. front patio

1. master bedroom

2. bedroom

3. closet

4. washroom

5. social space

6. exterior deck

7. office

8. master washroom

9. walk-in closet

10. laundry

FIRST FLOOR PLAN

SECOND FLOOR PLAN









The courtyards create a field of landscapes, both natural and psychological. And while their perimeters are defined relative to one another in plan, the tortoise court – the linchpin of the two halves – serves as the vertical connection between the private realm of the floating box above and the sweeping landscape that slides underneath.

As the tortoises are left to occupy this resulting negative space, the final courtyard serves as a counterpoint for reflection in understanding the house's existence in the broader community: assuredly introverted, content and contributing to the broader communal courtyard from its position on the periphery.

ARCHITECTS the marc boutin architectural collaborative inc. Calgary, AB

Scatliff+Miller+Murray Winnipeg, MB

STRUCTURAL ENGINEER Entuitive Engineering Calgary, AB

GENERAL CONTRACTOR Meadow Sage Builders Calgary, AB

PHOTOGRAPHY Bruce Edward, Yellow Camera Photography Calgary, AB

Excellence in Interior

A renovation with a focus on sight lines showcases the beauty and usefulness of wood

Lake Louise Visitor Centre Interior Renovation

onstructed in 1990, the Lake Louise Visitor Centre serves nearly 500,000 visitors annually in Alberta's Banff National Park. Parks Canada recently decided to revitalize the center to accommodate changing tourist needs and better reflect institutional priorities.

The existing building was constructed robustly and featured exposed concrete floors, walls, ceilings and millwork. Although of sound material quality, the predominance of concrete led to poor acoustics and a somewhat dark, austere interior. The building also suffered from clutter and was filled with decades of interpretive displays and other

naturalistic paraphernalia, blocking views from its feature window overlooking the Bow River. Finally, the visitor center had become a victim of its own success, proving inadequate to deal with the increasing number of tourists using the building.

A notable feature of the existing building is a dramatic top-lit replica of a rock wall. This became the locus of the revitalized space and the site of a new, enlarged information desk that provides visitors and staff with ample access to daylight. The desk, in combination with a new retail space, helped accommodate the clutter that had accrued in the original space.









Wood was the ideal choice to reenergize the interior, and it became the principal material for the new information desk, a long window ledge and an acoustic ceiling. Douglas fir with sturdy proportions was selected to complement the existing raw concrete.

Originally conceived as a stack of curved, large-scale timbers, the 60-ft. information desk is a tour de force of woodworking craft. Because of the technical challenges associated with large-scale lumber, the millworker elected to construct the desk out of plywood and 9-mm veneer, while retaining the original intent of the design. The challenging curved geometry was accommodated through multiple laminated layers of milled veneer adhered to a plywood form. The result is a warm, inviting space that exemplifies the power of wood design and craft to transform a space.

CLIENT
Parks Canada
Calgary, AB

ARCHITECT
Patkau Architects
Vancouver, BC

STRUCTURAL ENGINEER AECOM Calgary, AB

GENERAL CONTRACTOR Russpet Construction Ltd. Calgary, AB

PHOTOGRAPHY Patkau Architects Vancouver, BC







ocated in Edmonton's Brewery
District, this Mountain Equipment
Co-op (MEC) location is a two-level,
41,000-sq.ft. retail building with abundant natural light and wood-infused interiors. The structure consists of reinforced concrete up to the second floor, with an exposed CLT roof on steel that frames a welcoming timber canopy. Steel trusses span 105 ft. across the width of the

building to support the saw-tooth roof system and provide a large, column-free area on the second floor.

This store was created for more than just retail, offering a variety of community functions as well. Along with a larger full-service bike repair shop, the store provides a DIY outdoor bike repair kiosk, kitted out with tools and a bike pump. For the community, a meeting room is available for local outdoor clubs and environmental organizations to use. Equipment rentals are available, just as they were at the store's old location, along with additional services such as a ski tech shop, a bike fitting room and new assessment tools to properly fit running shoes. The second level is almost entirely devoted to men's and women's apparel and



footwear for a range of activities, as well as clothing for youths, kids and infants.

From climbing and canoeing to biking and camping, this expansive retail space provides greater breadth and depth to MEC's carefully curated activity assortments, while upholding the company's commitment to sustainable design.

CLIENT Mountain Equipment Co-op Vancouver, BC

ARCHITECTS Aedifica Montreal, QC

Proscenium Architecture + Interiors Vancouver, BC

STRUCTURAL ENGINEER Fast+Epp Edmonton, AB

GENERAL CONTRACTOR Ventana Construction Ltd. Vancouver, BC

PHOTOGRAPHY Stephan Pasche Edmonton, AB



Excellence in Wooden Bridge Design

A walkway designed for sustainability proves a natural fit for this wetland setting

Rocky Ridge Boardwalk



ompleted in May 2017, the Rocky Ridge Boardwalk weaves its way through revitalized wetlands, acting as a passageway that connects Calgary's Shane Homes YMCA with the nearby Rocky Ridge and Royal Oak communities, while providing a unique way for all passersby to immerse themselves in nature.

Sustainability was a key driver for the project, as the wetlands were reconstructed to offset the environmental impacts of nearby developments. Alaskan yellow cedar was the material of choice because of its natural durability. The boardwalk features the cedar in its natural form, free of any chemical treatment and coatings; the result is a low-maintenance, eco-friendly structure that can be properly repurposed at the end of its long life cycle. Over time, the yellow cedar will weather to a subtle silver, camouflaging itself into the galvanized piles on which it sits.

The boardwalk's curves echo the familiar shape of nearby foothills, which also inspired the Shane Homes

YMCA roofline. While serving a new community destination, the wooden walkway enhances and pays tribute to its surroundings.

ARCHITECT GEC Architecture Calgary, AB

STRUCTURAL ENGINEER
ISL Engineering and Land Services
Canmore, AB

PHOTOGRAPHY
ISL Engineering and Land Services
Canmore, AB

Excellence in Institutional Wood Design

Inspired by an adjacent ravine, this suburban library makes a strong argument for urban reforestation

Capilano Library











he design for the Capilano branch of the Edmonton Public Library was inspired by a ravine hidden within the dense foliage at the edge of the suburban site. Orphaned from the North Saskatchewan River by intense urbanization in the 1960s, the ravine is a remnant of a riparian prairie ecosystem that once characterized the Edmonton area. The site, flanked by a residential street to the west and the ravine to the east, is ideal for a library, both accessible and connected to nature.

The 11,840-sq.ft. program is organized into three parallel zones oriented along the north-south axis of the site. A continuous folded wood roof runs the 253-ft. length of the library, its three peaks corresponding to the three zones below. The upper and lower planes of the roof are optimized for daylight, acoustics, structure and technical services, striking an irregular profile at each end of the building.

Each of the three zones responds to scale, function, natural light and view. The western zone reflects the scale of the neighborhood, with a quiet edge of support spaces along the street. The eastern zone is intimately scaled, with varied seating along a serene 180-ft.-long window overlooking the ravine. The lofty middle zone contains flexible areas for stacks, community and staff. To complement the shady deciduous backdrop, the library is clad in black aluminum and natural wood, while a double row of elms and an entry plaza tie the building to the adjacent street.

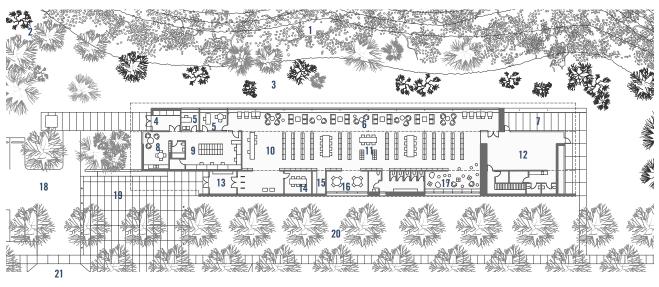
Wood-screened clerestories on the west face of the library fill the interior with daylight. As the sun passes over the building, sunlight filters through the screens, projecting gentle patterns of light and shadow on the interior surfaces. Views of the verdant landscape combined with continually changing interior light create a natural oasis in the heart of a suburban neighborhood.

The Capilano Library makes use of wood in two key ways. First, structural GLT timber panels provided a quick, efficient way to frame the ambitious roof shape; selected for versatility and speed of construction, the 32-ft. panels span multiple bays and, together with plywood, form an effective structural diaphragm. Second, the folding wood ceiling comprises modular wood panels, each of which is constructed of three Douglas fir slats measuring 5.5 x 0.7 in. Besides creating a warm and humane interior, the panels help create a soft acoustical environment and also hide the practical elements that often clutter a ceiling. At the clerestory windows, wood grilles maintain continuity of the wood finish and diffuse the prairie sunlight as it streams into the interior.

The library makes a strong argument for urban reforestation. During the siting process, the design team advocated for landscape restoration to reconnect the orphaned ravine to its larger riparian ecosystem. The City of Edmonton embraced this initiative, and the Capilano Library has become a catalyst for a city-scale change to its suburban site.







11. stacks

13. entrance

14. study

15. printing

16. makerspace

18. parking

17. children's area

19. plaza

20. elms

21. 67 Street NW

10. information desk

12. multipurpose room

1. Fulton ravine

2. restoration

3. clearing

4. delivery

5. office

6. seating

7. terrace

8. staff room

9. work area





CLIENT Edmonton Public Library Edmonton, AB

ARCHITECTS
Patkau Architects
Vancouver, BC

Group2 Edmonton, AB

STRUCTURAL ENGINEER Fast + Epp Vancouver, BC

GENERAL CONTRACTOR PCL Construction Edmonton, AB

PHOTOGRAPHY James Dow/Patkau Architects Vancouver, BC







ocated in Calgary's new East Village development, C-Square reconceptualizes infrastructure as an opportunity to build a sense of place, by sharing the function of transit as a utility for movement and transforming it into a mode of social exchange. Infrastructure defines the existing site condition, which is challenged by the presence of the C-Train (Calgary's Light Rail Transit) running north to southwest through the site.

The edge of the C-Train line is recalibrated into a "social spine," where a

topography of angular wooden benches follows the edge of the tracks with a mix of hard- and softscaped zones, creating gathering spaces at various scales to anticipate both day-to-day use and planned events. To the south, the plaza is anchored by a stage, where people can gather for performances.

The reconditioning of the urban experience is catalyzed through the engaging spectacle next to the C-Train tracks. The canopy acts as a dynamic shutter between the train and the plaza; it works in unison to hide the existing infrastructural poles,



and it animates the space by creating an experiential relationship between people in two different positions: the passengers looking out the window of their trains into the plaza, and visitors in the plaza watching the trains pass by. The transparent and ephemeral materiality of the canopy produces a quality of light and shade that streams through the plaza. To withstand the test of time, C-Square is a landmark for wayfinding, while also redefining the experience of public space through a synergy of infrastructure and architecture.

ARCHITECT the marc boutin architectural collaborative inc. Calgary, AB

STRUCTURAL ENGINEER Entuitive Engineering Calgary, AB

GENERAL CONTRACTOR CANA Construction Calgary, AB

PHOTOGRAPHY Yellow Camera Photography Calgary, AB



environment that helps everyone think – and feel – better



Red Deer College Student Residence



he 60,000-sq.ft. Red Deer College Student Residence was designed and completed to meet the needs of athletes participating in the 2019 Canada Winter Games; the wooden structure was opened to students for the winter 2019 semester.

The college envisioned a building that could provide students with both shelter and fun, rather than having them take every opportunity to leave the premises. This student residence also functions as a hotel, providing accommodation for short- and long-term stay of students, faculty and external users.



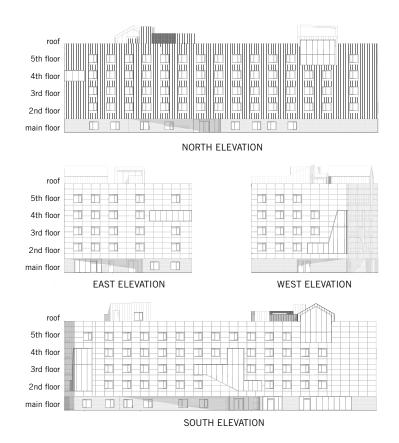
A key driver in the design process was the college's belief that isolation and lack of community support for students can have a negative impact on their mental, physical and emotional well-being. To that end, the design team proposed a hybrid between a student residence and a set of seven distinct public gathering spaces scattered around the perimeter of all five stories of the building. The team focused on supporting the mental health of students, increasing the conventional amount of social space by a factor of 10.

To create opportunities for more natural light, air volume and interaction between students, the design team eliminated the need for double-loaded corridors and negotiated the size of the standard student unit with the college. This new design thinking dramatically increased the quality of inner life of the building by creating a meaningful relationship between the building and the surrounding landscape, while maintaining the budget and overall square footage of the project. In fact, the seven gathering spaces are simply "pauses" in the system of student units.

Helping the design team achieve its well-being goals is a hybrid structure composed of GLT posts and lintels, GLT floor panels, dimensional lumber and a steel skeleton supporting the GLT transfer slab. A 153 kW photovoltaic array is integrated into three sides of the facade, offsetting 40 percent of energy demand.

Although the Red Deer College Student Residence did not have a mandate to meet any green building certification, it was designed to a LEED Gold standard. With its R35 walls, R45 roof, R7 windows and Passive House Certified fiberglass curtain wall, the structure exceeds NECB requirements. The building also maximizes solar heat gain in the winter and features

low-VOC materials, 100 percent LED lighting and a reduced parking stall count. The interior atmosphere is enhanced by operable windows for natural ventilation, indoor plants, ample daylight and well-framed views. Special attention was given to encourage walking and minimize use of the elevator, promoting interaction and a sense of community.





CLIENT Red Deer College Red Deer, AB ARCHITECT
Manasc Isaac Architects
Edmonton, AB

STRUCTURAL ENGINEER RJC Engineers Edmonton, AB



GENERAL CONTRACTOR Clark Builders Edmonton, AB

PHOTOGRAPHY Cooper & O'Hara Edmonton, AB

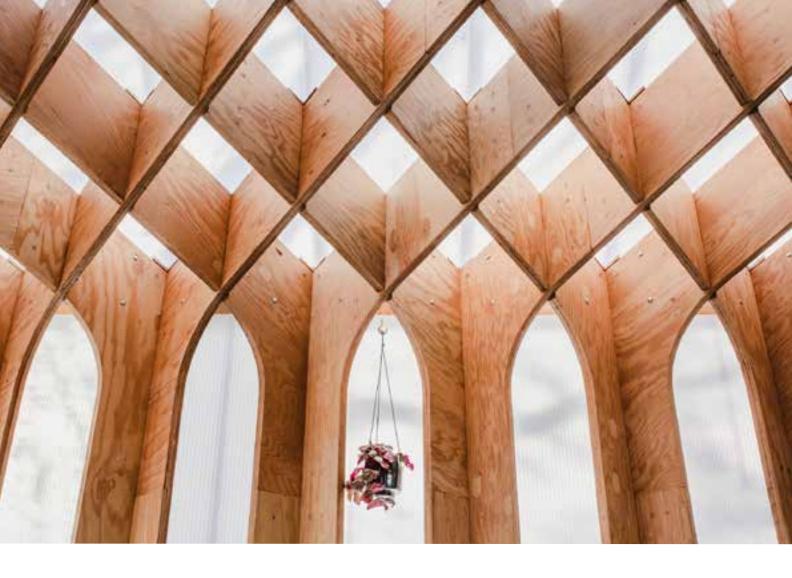




Excellence in Wood Innovation in Engineering

This ingenious, modern-day restaurant celebrates its "garden room" heritage

Sidewalk Citizen



ocated at the geographical and cultural center of Calgary, Sidewalk Citizen's new solarium in its Central Memorial Park location is a space filled with light and life. As a four-season greenhouse, the solarium is a space for people and plants alike, bringing the park inside and extending its use deep into the winter months.

Early in the process, the design team discovered that Central Memorial Park formerly featured "garden rooms," semi-enclosed spaces designated for picnicking among the greenery. While few photos remain of the spaces, these garden rooms formed the basis of the program and an inspiration for the design.



By creating an oasis in the winter, the solarium extends the restaurant's patio season beyond the short summer months, while the dramatic vaulted wooden lattice lets the light shine through. During winter, the space evokes the feeling of being inside an inverted snow globe, contrasting the snowy and white exterior and lush sub-tropical interior.

The polycarbonate cladding also has a high level of UV transmission, fostering the growth of indoor fig and lemon trees and the numerous plants dispersed throughout the restaurant. The space is passively heated by translucent cladding during the day, and two fireplaces radiate heat throughout the evening, making for a cozy and ambient atmosphere.

During warm weather, a large garage door offers views out to the park while blending indoor and outdoor event space. When opened, the garage door allows for passive ventilation by bringing fresh air into the solarium, which vents through the two large, operable thermally and moisture-controlled skylights.

The timber lattice structure, which forms the roof and walls of the solarium, is made entirely of 34-in. fir plywood. Exposed laminated veneer lumber supplements the canopy structure over large spans such as the garage door and entryway. Once cut, the ¾-in. plywood pieces were laminated together with glue and dowels to form continuous members. The robust frames of laminated plywood function as both columns for the wall structure and as rafters for the roof structure. Upon assembly, the sinuous structural lines invite the eye to wander from one side of the space to the other, creating a dynamic and intriguing space.

The parametric design and modeling process allowed for a very fluid workflow across disciplines, while the malleable characteristics of wood allowed for adjustments to be made on-site. Parametric design drawings

were seamlessly translated to cut files for the CNC machine. Being able to parametrically adjust the tolerances for each of the connections meant that the structure could be assembled with the highest degree of accuracy, while the parametric nesting capabilities allowed for maximum material efficiency.

CLIENT Sidewalk Citizen Calgary, AB

ARCHITECT Studio North Calgary, AB

STRUCTURAL ENGINEER RJC Engineers Calgary, AB

GENERAL CONTRACTOR Studio North Calgary, AB

PHOTOGRAPHY Hayden Pattullo Calgary, AB





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Mass Timber

A modern version of the century-old brick and beam warehouse building

80 Atlantic Avenue

ntario's first mass timber commercial building in over 100 years, 80 Atlantic pioneers a new urban office typology for potentially many more timber-frame projects across the province, and the country. Comprising four stories of mass timber above a one-story concrete podium, the 95,000-sq.ft. building completes a courtyard with 60 Atlantic to create a paired commercial development.

80 Atlantic is a modern take on the iconic, century-old brick and beam warehouse buildings that are being adapted for reuse as offices, condos

and studio lofts in major cities everywhere. These renovated old buildings are highly valued for their character and versatility, and they command a premium in the marketplace; however, while the structures are as robust as ever, they require extensive upgrades to overcome building envelope performance issues (they were built without insulation) and other challenges. 80 Atlantic delivers all the desirable attributes of these old buildings – an exposed timber structure, tall ceilings, heaps of character and versatile spaces – with none of the problems.

80 Atlantic completely reinvents the construction method by employing the newest materials, latest sustainable design strategies and innovative construction processes to deliver a modern, high-performance structure that is built to last. For example, the project has raised access floors and engineered plenums to house mechanical, electrical and telecommunications services. This design enables workspaces to be reconfigured easily as required, and housing these services in the floor results in an exposed wood ceiling uncluttered by services. The HVAC ducts, also in the engineered plenum, will provide an effective, locally customizable and healthier distribution of air.

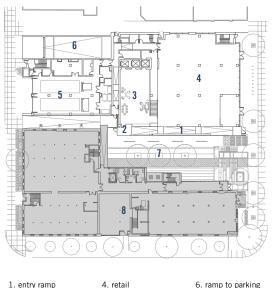
Interestingly, the floor plate construction harks back to the original warehouse flooring method – where solid sawn lumber was ganged up on edge and nailed together on-site – but with a significant upgrade. Instead of being built on-site, the NLT in this project has been panelized and machine fabricated off-site in an indoor facility, a process that minimizes waste, improves both quality and efficiency, and shortens the construction schedule.





Revisions to the Ontario Building Code in 2015 made it possible to build commercial wood buildings up to six stories high. The developer and architect saw this as an opportunity to demonstrate leadership in the rapidly developing field of mass timber, and to attract tenants seeking a premium workplace environment associated with innovation and sustainability. The client requested that the building harmonize with the Liberty Village neighborhood, noted for its wealth of converted factories and warehouses, which attract high-caliber, creative tenants in this section of downtown Toronto.

The design team took a chance with this unusual development by adopting a construction methodology still in its infancy, but owing to the quality, uniqueness and appeal of the final product, the developer was able to attract lead tenant Universal Music Canada, and other prime tenants, paying premium rents. The interiors were left raw for fit-out, exposing long expanses of the NLT and columns, and empowering the tenants to make the space their own while still celebrating the nature of this 21st century wood building.



2 3

- 1. entry ramp
- 2. main entry 3. office lobby/ lounge
- 5. shared storage between 80 and 60 Atlantic
- 7. courtyard
- 8 60 Atlantic

GROUND FLOOR PLAN

FLOOR PLAN

2. courtyard

80 Atlantic sheds a more sustainable light on warehouse-style commercial buildings, by reinterpreting a classic typology in an innovative and unconventional way. The use of wood offers more than aesthetic appeal; whereas building materials such as concrete and steel generate high levels of emissions, carbon sequestered in the wood remains in the product for the life of the building. Also, prefabricated mass timber panels can be manufactured off-site, thereby improving construction safety, reducing waste and decreasing overall construction time.

As an example of what can be accomplished within current code requirements, 80 Atlantic proves that mass timber can have a dramatic effect on the overall project, not only by increasing efficiencies but also through its inherent appeal and biophilic qualities.

1. office space

ARCHITECT Quadrangle Architects Ltd. Toronto, ON

STRUCTURAL ENGINEER **RJC Engineers** Toronto, ON

GENERAL CONTRACTOR Eastern Construction Co. Ltd. Toronto, ON

3, 60 Atlantic

TIMBER SUPPLIERS Timmerman Timberworks Inc. (NLT fabricator) New Lowell, ON

Nordic Structures (glulam fabricator) Montreal, QC

PHOTOGRAPHY Bob Gundu Toronto, ON

Doublespace Photography Toronto, ON



Institutional

A contextual approach to this municipal building helps ground it within a unique rural setting

King Township Municipal Administration Centre





ocated north of Toronto, King Township has a rich rural and agricultural past. It also lies within the province's environmentally protected Green Belt surrounding Southern Ontario's Golden Horseshoe. The community is proud of this rural history and its natural environs, and the township's Steering Committee asked the design team to ensure these values were expressed in the architecture of its new Municipal Administration Centre.

Developed on the site of a former school, the new structure is surrounded by a natural woodland and wetland preserve. The site concept protects and enhances this natural setting, allowing the building to offer ample views of these woods and wetlands. The school backed onto an elevated playfield surrounded by the woodlot, and the building takes advantage of this by creating direct access to the green space from the second-floor level.

Visitors are greeted with a cantilevered wood beam and deck structure stretching out over the entry plaza. These beams extend past a large glass wall and are supported by a line of wood columns on the inside of the glass. This wood canopy extends across most of the front facade and – combined with the large glass wall – is a welcoming and transparent entry to the building.

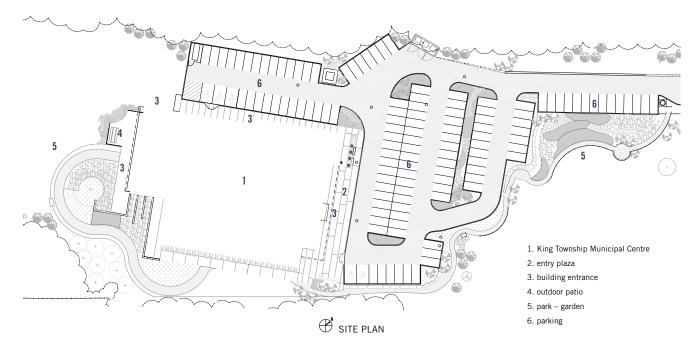


After entering through the main doors, guests are welcomed by a large two-story room containing the main lobby, reception counter and main stair, topped by a wood ceiling. The lobby opens to the council chamber, which also uses wood beams and decking but in a different configuration. Here, the wood roof is supported by steel extending up from the brick masonry piers. Between the brick walls and wood roof is a band of windows extending views to the surrounding trees.

From early in the design process, it was the team's intention to use materials inspired by original structures within the township, which would have used locally sourced brick and wood. To this end, the wood structure of the municipal center consists of glulam heavy timber beams and columns supporting spruce-pine-fir structural wood decking. This contextual approach helps to ground the building and establish it as being truly of this place.

The building's exterior uses a language of brick planes adjacent to planes of wood veneer panels and glass. The brick is brought into the interior of the building as brick piers, which clad the council chamber and gymnasium on both the interior and exterior. Between these piers are wood and glass panels mirroring the exterior facade of the building.

The interplay of the wood structure creates a visually interesting ceiling for the citizens of King Township sitting underneath it. This architectural structure and form allude to civic buildings



going back in history. The result is a new town hall that reflects its citizens' ties to the natural environment, their rural building traditions and the democratic values that extend past this time and place.

CLIENT Township of King King, ON

ARCHITECT +VG Architects Toronto, ON

STRUCTURAL ENGINEER Stephenson Engineering Toronto, ON

GENERAL CONTRACTOR Aquicon Construction Company Ltd. Toronto, ON

PHOTOGRAPHY Ben Rahn Toronto, ON





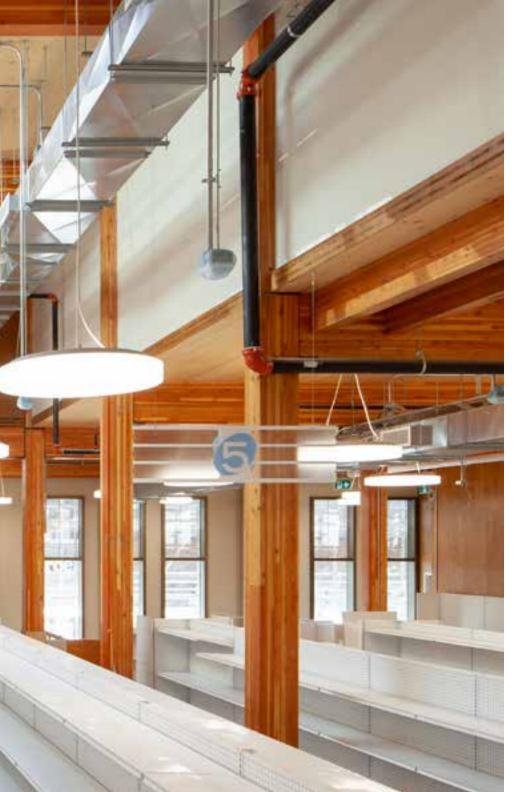


Innovation

A groundbreaking project introduces the beauty and benefits of mass timber construction to Canada's largest city

720 Yonge Mass Timber Building (Shoppers Drug Mart)





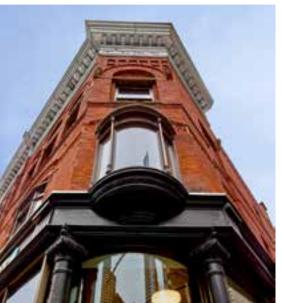
he first commercial mass timber project to be built in Toronto, 720 Yonge Mass Timber Building (Shoppers Drug Mart) restores an 1889 heritage facade located at a key Yonge Street intersection as part of a new mixed-use development. The building in the heart of the city's downtown integrates the rich character of the original heritage structure with new contemporary wings sensitive to the proportions and scale of the retained facade.

The three-story building features a sophisticated system of Douglas fir/ larch glulam columns and beams, in combination with spruce-pine-fir CLT floors, roof, core partitions, guard walls and shaft assemblies. Due to the inherent fire-resistive qualities of mass timber, these elements can be left exposed and showcased as part of the finished building. Juxtaposed wood finishes highlight a diversity of wood species while the vertical glulam structure contrasts the lighter planes of the CLT floors and ceilings. The overall effect is a warm and inviting environment, including a feature CLT staircase and an open, double-height second floor flooded with natural light by a central skylight.

The project incorporates facades from an existing heritage-designated building, preserving what has been identified as an important view terminus with a thoughtful restoration complemented by contemporary, historically sensitive infill. A detailed metal cornice and intricate heritage bay window have been reinstated at the prominent northeast







corner of the intersection. The exterior wooden sign band of the original "R. Barron Groceries" storefront has been fully restored, linking the new retail experience with the site's past. The project features two floors of retail use occupied by Shoppers Drug Mart, and a third floor of office and amenity space. The building also features two exterior terraces and a green roof.

As with any new technology, there were many challenges in obtaining the appropriate approvals. Numerous alternative code solutions were

required, as mass timber construction has not been fully incorporated into the Ontario Building Code. The all-wood CLT elevator and exit shafts are particularly groundbreaking as they challenge long-held industry standards. The successful final product establishes mass timber as a proven fire-safe building material with the structural integrity and flame resistance to replace concrete construction in many applications.

Alongside its many innovations in technology and life safety, perhaps the biggest impact of the project is its location just steps from one of the country's busiest intersections. Combined with its open and inviting nature as a retail space, this building fosters public engagement with mass timber in a way not yet seen in Toronto.

ARCHITECTS
Brook McIlroy (base building)
Petroff Architects (interior retail)
ERA Architects (heritage)
Toronto, ON

STRUCTURAL ENGINEER Blackwell Toronto. ON

GENERAL CONTRACTOR JMC Building Developments Vaughan, ON

TIMBER SUPPLIER Timber Systems Markham, ON

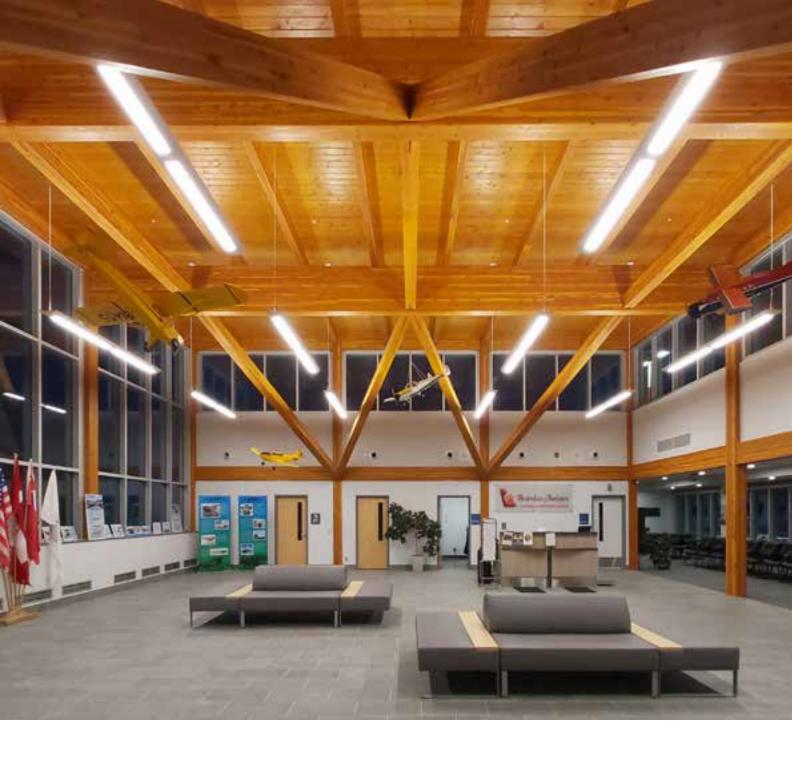
PHOTOGRAPHY Scott Norsworthy Toronto, ON



Low-Rise Commercial

This airport in Ontario's rugged north was designed with the future in mind, while also honoring the region's forestry heritage

Kenora Airport





amous for Lake of the Woods and numerous smaller lakes, Kenora attracts visitors from around the world. And for more than 80 years, the Kenora Airport has served those visitors, the Kenora community and the surrounding region.

The new air terminal replaces aging and undersized facilities. It efficiently combines passenger terminal functions, flight service operations and customs under one roof, providing passengers with modern amenities. Its larger size (10,915 sq.ft.) also allows for additional air carriers to serve the airport in the future.

The check-in and baggage claim concourse, the functional focus of the terminal building, is a warm and inviting public area, with ample natural light filtering through the curtain wall and clerestory windows. In a nod to the region's forestry heritage, it features an expressive raised roof glulam structural frame (with concealed connections) spanning the entire space. The concourse provides a visual link between landside and airside areas. The passenger lounge provides a panoramic view of the airport apron and beyond towards the airport runway.

In addition to the regular air



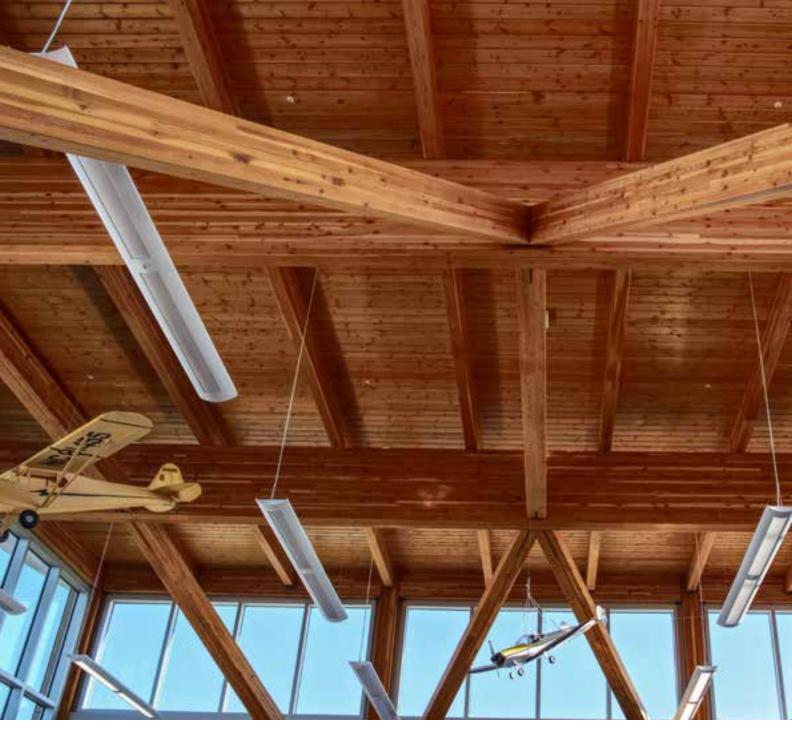




carrier operations, Kenora Airport provides services to general aviation. The simple, functional waiting lounge and the associated program areas are designed to accommodate general aviation passengers, pilots and supporting staff. Back-of-house areas including mechanical, electrical, IT facilities and storage areas are located in the partial basement level.

The new terminal introduces the use of local wood products as a primary structural element. The client required the new facility to reflect Kenora's natural resources down to its bones, and the design team complied by designing a hybrid structural frame maximizing local materials and labor.

The structural frame includes timber posts and beams, glulam columns and beams and LSL wood joists. The glulam product was sourced in Ontario, while LSL product used for the floor above the partial basement and roof joists was manufactured locally in a Kenora mill. It was very important to the client to maximize the use of local wood products, both as structural components and as interior finishes, thereby reducing delivery impacts and contributing to local employment, as well as providing a sense of place representing Kenora's long logging history.







Thanks to Kenora's challenging winter climate, base building systems such as mechanical equipment are designed for ease of maintenance and located within the interior partial basement rather than at the exterior. The building was sized to reduce the requirement for sprinklers and standpipe to reduce client costs.

State-of-the-art integrated security, surveillance and IT systems were designed to meet the stringent requirements of the Canadian Air Transport Security Authority and deployed to blend in unobtrusively with the unique wood architecture. The system preserves the integrity of the primary security line and ensures security and safety throughout the facility. Finally, the exterior canopies, featuring glulam framing and supported by columns cladded with locally sourced granite, provide passenger protection against the elements.

Flexibility of the functional building layout was one of the key design requirements. The design team made provisions that allow for relocating most of the interior partitions to accommodate a terminal building expansion, as spatial needs may change in the future.

CLIENT Kenora Airport Authority Kenora, ON

ARCHITECT Architecture49 Inc. Toronto, ON

STRUCTURAL ENGINEER WSP Canada Ltd.
Markham, ON

GENERAL CONTRACTOR Jarnel Contracting Ltd. Keewatin, ON

PHOTOGRAPHY Architecture49 Inc. Toronto, ON





Mid-Rise Residential

Commanding scenic views of the water, this resort showcases traditional cottage-inspired architecture

Deerhurst Lakeside Lodge Resort Homes

he 155,000-sq.ft. Lakeside Lodge is the newest addition on Peninsula Lake, at an iconic Muskoka resort. Commanding scenic views of the water, the building's architecture reflects traditional design features, showcasing a cottage-inspired interior design theme in its suites. This is the first waterfront hotel to open in Muskoka in over a decade and stands majestically on the site of the original lodge built in 1896 by Charles Waterhouse.

The \$60-million, five-story Lakeside Lodge is made up of 150 suites, comprised of one-, two- and three-bedroom models. Early in the design, the development design team chose to incorporate prefabricated factory-built wall panels and a light-frame roof truss system as the method of construction. This was not only a cost-driven decision, but it gave the design team some flexibility with the layout of the building; it also helped

because of the project location, and limited accessibility to skilled trades and materials. The structural design used a combination of materials, utilizing dimensional lumber, engineered wood and beam products and panel sheathing. The sheer size, and scale of the project meant the build cycle encompassed two full winters, so optimizing a workable schedule was a key factor in this ambitious project being realized.







CLIENT Deerhurst Resort, Muskoka Huntsville, ON

ARCHITECT Richard Wengle Architect Inc. Toronto, ON

STRUCTURAL ENGINEER Gamaley & Associates Engineering Toronto, ON

GENERAL CONTRACTOR Skyline Investments Toronto, ON

TIMBER SUPPLIER Tampa Hall Ltd. Ayr, ON

PHOTOGRAPHY Deerhurst Resort, Muskoka Huntsville, ON





Northern Ontario

The time-honored techniques used to build their birch bark canoes influenced this First Nation's wood project

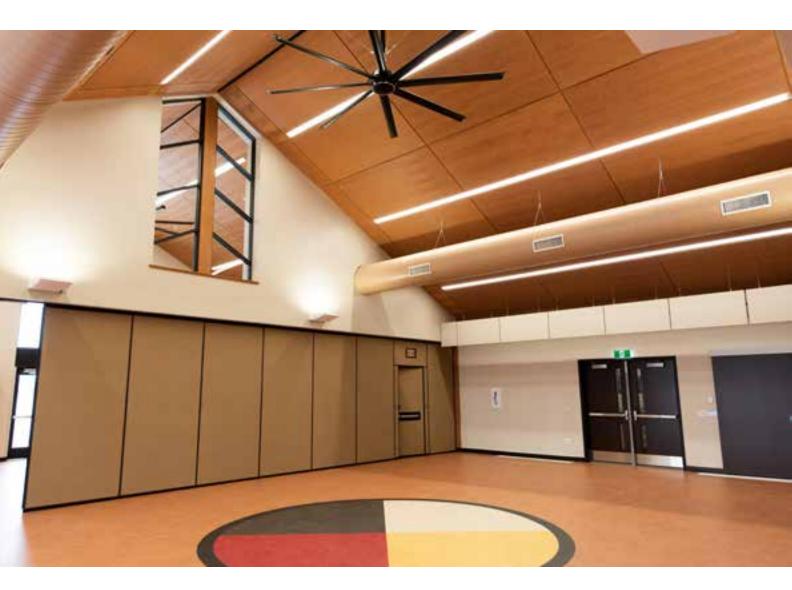
Temagami First Nation Multi-Use Facility

or thousands of years, the lands and waters of northern Ontario's Temagami region have been home to families of the Teme-Augama Anishnabai (The Deep Water People). Located in the heart of Lake Temagami, Bear Island is home to 250 people who preserve the integrity of the Teme-Augama Anishnabai as the stewards of n'Daki Menan (homeland). Situated

proudly on the shores of their homeland, the Minowaabandan-gamiing Maawanjihidiwining (Lakeview Gathering Place) epitomizes the values, beliefs and traditions of the Temagami First Nation.

Warm, renewable and representative of the land and all its generous offerings, wood was the clear material of choice for the project. Situated on the former site of an 1872 Hudson's Bay Company trading post, the 16,470-sq.ft. gathering place roots itself on the shores of Lake Temagami. More than just a functional building for the different government departments of the Temagami First Nation, the building is a place for ideas, reflection, celebration and rituals that recognize the importance of sustainability.

Influenced by the Temagami First Nation's techniques and materials



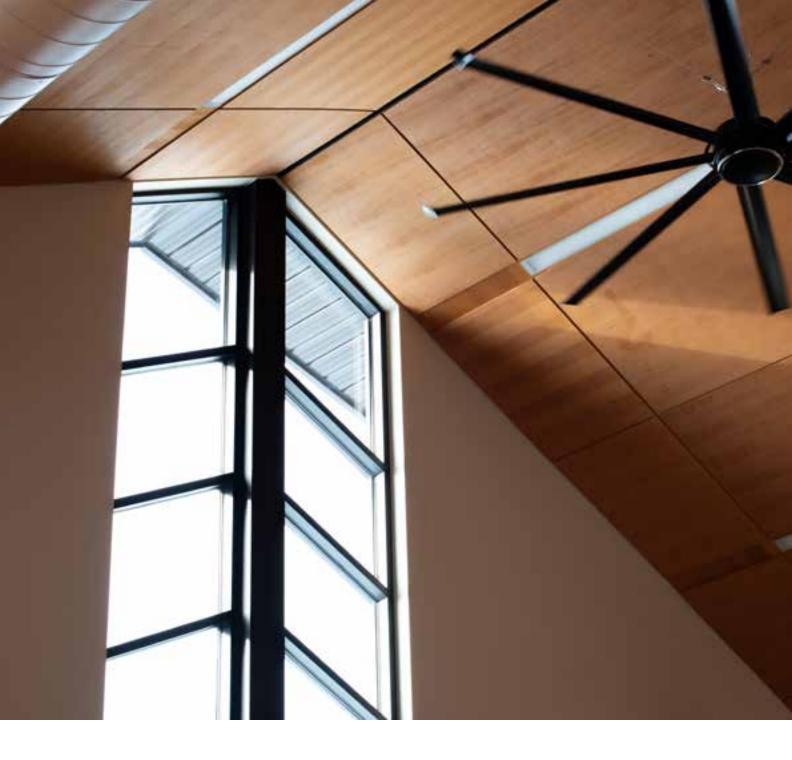
used to create their birch bark canoes, the building boasts extensive use of wood throughout. Its superstructure is almost exclusively wood, consisting of wood-stud framing, engineered wood, glulam columns and beams, wood I-joists and an elaborate wood truss system designed to support a large cathedral ceiling in the Gathering Room. Wood products also sheath

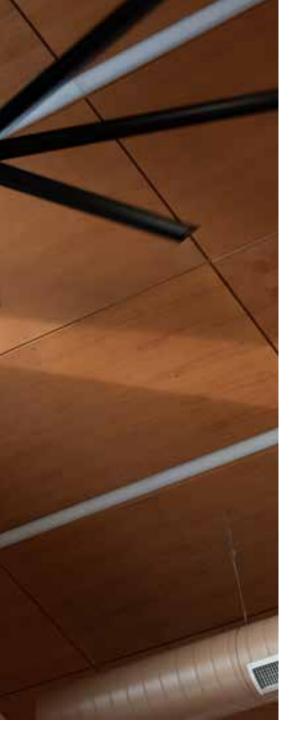
the exterior wood-framed walls as well as the roof structure, allowing local trades and the First Nation workforce to participate in the creation of this unique community project.



The building's wood skeleton is tastefully dressed with numerous wood finishes and furnishings. Horizontal and vertical wood siding and wood composite panels offer

durability to a facade that will be exposed to the harsh environment, while details such as the stone cladding ground the building to the earth and are reminiscent of the stones used to stretch and flatten the birch lining of a canoe. Inside, wood window units, exposed wood glulam columns and beams in the central "tower" portion of the foyer, wood slat ceilings,







Douglas fir plywood panels and extensive wood millwork and furnishings offer warmth to the building's occupants and serve as a reminder of the interconnection between the building's interior and the natural world.

The choice of wood facilitated lighter material loads while still requiring more than 1,400 barge shipments and numerous deliveries navigated to Bear Island over the Temagami First Nation's ice road infrastructure. The knowledge and resources of the Temagami First Nation were essential to overcome the logistical challenges associated with the project's remote location. Embracing the vision of the community, all those participating in the project worked collectively to bring the Minowaabandan-gamiing Maawanjihidiwining to fruition, evoking a sense of place and establishing a unique landmark that is guided by the social, economic and environmental fabric of the community.

CLIENT Temagami First Nation Bear Island, ON

ARCHITECT Larocque Elder Architects, Architectes Inc. North Bay, ON

STRUCTURAL ENGINEER A2S Consulting Engineers Sudbury, ON

GENERAL CONTRACTOR Quinan Construction Ltd. Orillia, ON

PHOTOGRAPHY Larocque Elder Architects, Architectes Inc. North Bay, ON

Jurors



SYLVAIN GAGNON Engineer, Associate Research Leader **FPINNOVATIONS** fpinnovations.ca



DAVID MOSES Engineer, President MOSES STRUCTURAL **ENGINEERS** mosesstructures.com



VÉRONIQUE KLIMINE Architect, Senior Associate R2K ACHITECTE r2k-architecte.com



JACQUES WHITE Architect, Director LAVAL UNIVERSITY'S SCHOOL OF **ARCHITECTURE** arc.ulaval.ca



CAROLINE **FRENETTE** Engineer, Technical Advisor **CECOBOIS** cecobois.com

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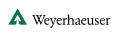


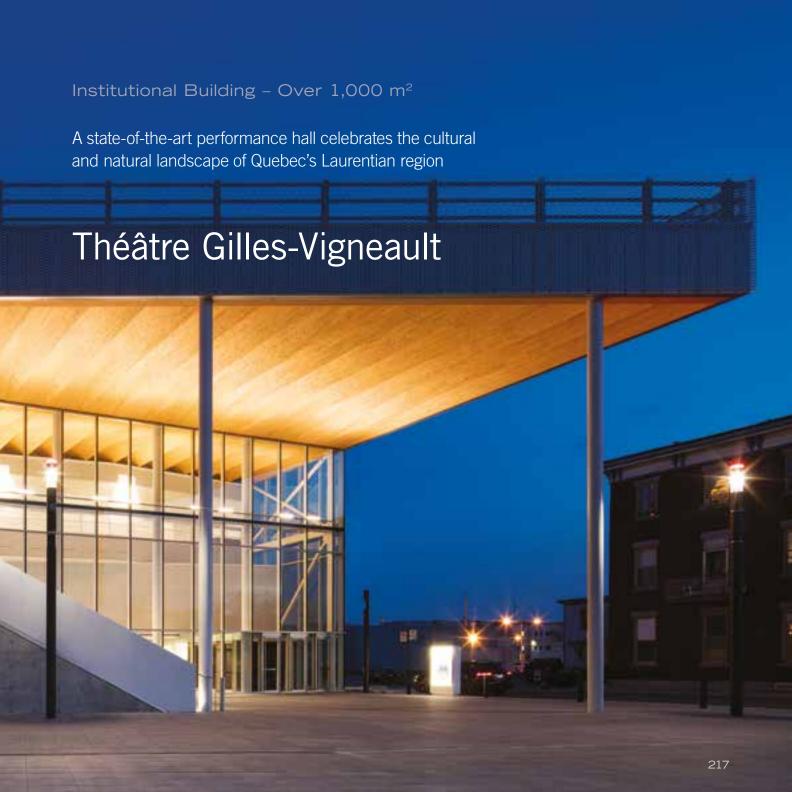


















héâtre Gilles-Vigneault in Saint-Jérôme, Quebec, sits on the town's main public square, where it functions as a focal point among existing civic and cultural buildings. This new performance space aims to create a renewed theater-going experience in a city just north of Montreal that is positioning itself as an important eco-recreational and cultural centre.

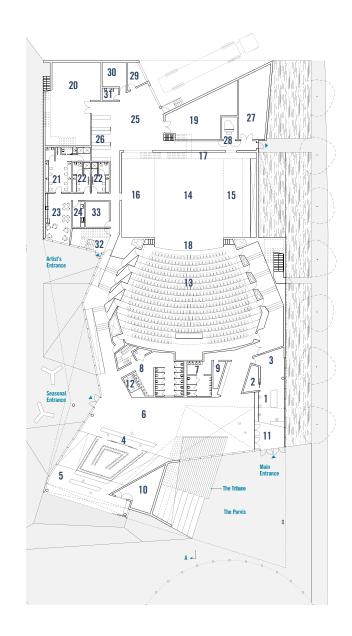
The 860-seat hall is conceived simultaneously as a social catalyst for the local community and an iconic cultural and economic driver for the region. Through its architecture, it celebrates both the growing cultural landscape of Saint-Jérôme and its local timber industry. From a cultural standpoint, wood constitutes an indisputable asset to the project in its ability to reference Quebec's material culture, inviting visi-

tors to rediscover the distinct character of the Laurentian region and the links between its natural resources, technical know-how and built heritage.

Visible from the city's main public axis, the theater's majestic wood canopy, the dominant feature of the project, lights up at dusk to form a festive meeting point for the community. Glulam beams are used as ribbing, with each individual element arranged to optimize resistance in tension, compression, torsion and bending. Between the beams, CLT panels ensure the canopy's dimensional stability, due to their high resistance to unidirectional deflection. With striking, variable geometries, these panels make up the visible part of the canopy's structure, while on the upper part of the canopy they act as both decking and diaphragm.



- 2. ticket deposit
- 3. ticket offices
- 4. cloakroom
- 5. shop
- 6. ground floor foyer
- 7. men's restroom
- 8. woman's restroom
- 9. maintenance storage
- 10. furniture storage
- 11. vestibule
- 12. elevator
- 13. seating
- 14. acting area
- 15. court side clearance
- 16. garden side clearance
- 17. cross over
- 18. apron
- 19. depot 20. storage
- 21. 8 person dressing room
- 22. 2 person dressing room (2)
- 23. green room
- 24. utility room
- 25. landing stage
- 26. temporary storage
- 27. storage and repairs
- 28. piano room
- 29. technical director's office
- 30, technician's room
- 31. technical employee's restroom
- 32. artist's entrance
- 33. electrical room







The auditorium is composed of curved white oak surfaces, acting simultaneously as a poetic and performative device. These wooden ribbons, whose graceful geometry is sculpted by acoustic principles, are comprised of a permeable, double-layer assembly that allows for a

uniform architectural expression while ensuring exceptional acoustic performance. The surface layer of wood is carefully calibrated and oriented to reflect sound, while the textile backing layer accommodates the necessary absorption coefficient in a variety of conditions.

An integrated design process was implemented to ensure the uncompromised expression of the canopy as the project's defining architectural feature. As such, all disciplines meld into one; mechanical elements are fully concealed within the folded structure. The void space inside the canopy serves as a plenum, accommodating air return and curtain-wall convection, while sprinkler heads are distributed within the canopy's folds. Additionally, the canopy's exterior structure appears in perfect continuity with its interior through a series of architectural details that minimize thermal bridging.

ARCHITECTS
Atelier TAG and Jodoin Lamarre Pratte architectes in consortium
Montreal, QC

STRUCTURAL ENGINEER SDK et associés Montreal, QC

GENERAL CONTRACTOR Construction Demathieu & Bard Saint-Jérôme, QC

PHOTOGRAPHY James Brittain Montreal, QC Adrien Williams Montreal. QC

Jurors



WADE W. BOWERS, PHD PROFESSOR, ENVIRONMENTAL SCIENCE AT MEMORIAL UNIVERSITY



JOSHUA COLLINS Professional Engineer



KIM COOKE
DEPARTMENT OF
TRANSPORTATION AND
INFRASTRUCTURE RENEWAL,
PROVINCE OF NOVA SCOTIA



AMY POFFENROTH, MBA PROFESSIONAL ENGINEER AND LEVEL 3
CERTIFIED BUILDING OFFICIAL, PRESIDENT OF THE NEW BRUNSWICK BUILDING OFFICIALS ASSOCIATION

Sponsors















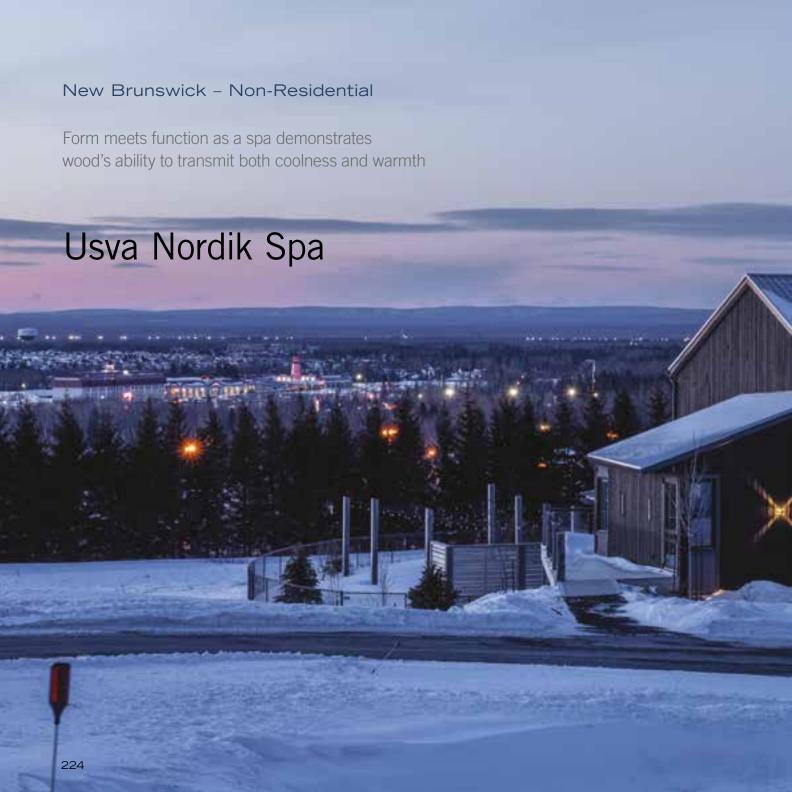






Mirror Point Cottage Halifax, NS Please see page 16

ATLANTIC







LOWER FLOOR PLAN

ocated 10 minutes outside downtown Moncton, Usva Nordik Spa offers weary New Brunswickers the benefits of thermotherapy, a spa therapy alternating between heat and cold that is widely practiced in Scandinavian countries.

The decision to favor wood in this design set the tone for the entire project.

While the project generally reads as visually cold, a result of the brand's muted palate, this feeling is offset by the tactile warmth of wood's materiality.

Using the qualities of wood as a general balancing element was intensified in the design for the entry canopy. The use of a natural-colored wood shingle contrasts with the other deep







MAIN FLOOR PLAN

black materials of the building. This brings softness to the entry facade, which juts out of the adjacent stone veneer and metal roof to greet the incoming clientele. There was an intentional play against the monochromatic winter backdrop, while the yellowish tones of the natural wood shingles offer a more welcoming feeling.

Exterior-grade wood is used extensively for the outdoor elements of the project – from pergola and wood deck to fences and screens – adding to the spa-goer's overall tactile experience.

Wood products include manufactured dimensioned lumber, engineered roof and floor trusses, OSB sheathing, wood strapping, vertical wood







siding, wood shingles for walls and roof, exterior wood decking, exterior wood columns and beams, pergola and wood soffits.

Wherever possible, wood elements were used as an interior finish, bringing a touch of biophilic design that plays into the branding of the project. Inside, wood is prominently featured in the sauna and rest area, and wood topping is used for the stair guardrail, baseboards and portions of the interior millwork.

Also of note is the use of wood as the main above-ground construction material. Using a typical wood frame construction was implicit in the conception of the design, which reduced overall costs by taking advantage of a local workforce well versed in wood construction.

The result is a building that is at once warm and cool, soft and robust,

contemporary yet timeless – all of which would not have been achievable were it not for the special qualities of wood and the design possibilities wood products offer.

CLIENT Usva Nordik Spa Moncton, NB

ARCHITECT
Design Plus Architecture
Moncton, NB

STRUCTURAL ENGINEER Ingénierie MATCH Engineering Moncton, NB

GENERAL CONTRACTOR
Bay Construction + Management Inc.
Moncton, NB

PHOTOGRAPHY
Bay Construction + Management Inc.
Moncton, NB

Nova Scotia – Non-Residential Project

Just as a good glass of wine can bring friends closer, this winery's space emphasizes the bonds between people and their place

Lightfoot & Wolfville Winery

Scotia's Minas Basin, the Lightfoot & Wolfville Winery is one of several wineries based in the Annapolis Valley, a long valley on the western edge of the province that runs between two parallel mountain ranges. Close proximity to the Bay of Fundy and the world's highest tides, coastal breezes and excellent temperature moderation help create wines with great distinction, with a focus on terroir-driven, cool-climate wines.







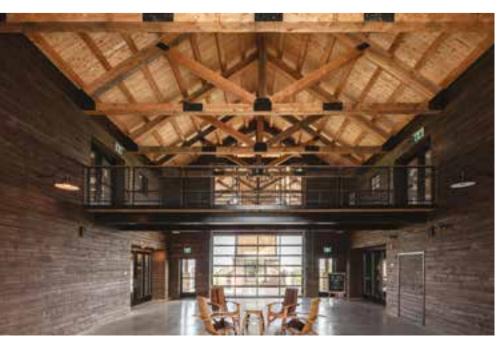


With 40 acres of vines planted on two sites, the Lightfoot & Wolfville Winery is run by the Lightfoots, a family that can trace its presence in this part of Nova Scotia back eight generations. The connection of people to the land is a key component to wine, so making a strong connection between the building and its place was an overarching philosophy during the design process for the winery's main building, a state-of-the-art facility that features modern barn architecture and a farm-to-table culinary program, while operating as a bespoke event venue.

Each space in the facility tells a story about the winery, its people and the land that supports them. The retail area subtly supports the feel of the Nova Scotia coastal vernacular while also telling the story of the family's history of emigrating to Canada before the formation of the country, as well as the patriarch's life as a barber. The Tidal Room envelops the guests in coastal hospitality and cheerful small village seaside charm. The Biodynamic Room sets a warm atmosphere for learning about the winery's approaches to terroir, biodynamic viticulture and efforts to preserve the ecology of the area. Finally, the cellar confidently supports the importance and strength of family and friends within a celebratory space that can easily expand or contract to provide great breadth or intimacy.

Wood was the natural material choice for structural systems and finishes to pay homage to the heritage of agricultural buildings of the













Annapolis Valley. Wood is featured in every capacity: structure, exterior and interior wall finishes, flooring, ceilings, furniture and even toilet stall partitions. Most of the materials were sourced and fabricated locally, fulfilling one of the key design goals that the building should provide visitors an experience of this place in the world. Many of the spaces in the winery are large to accommodate hundreds of people, but the warmth of the wood finishes makes them comfortable even when only a handful of people are present.

The result is an experience that flows with cohesion from one scene to the next. Through each environment, the audience gains a better understanding of the winery's approach to hospitality – as well as a greater sense of Nova Scotia's spirit.

CLIENT Lightfoot & Wolfville Winery Wolfville, NS

ARCHITECT Vincent den Hartog Wolfville, NS

STRUCTURAL ENGINEER Larry Honey Engineering Ltd. Kentville. NS

GENERAL CONTRACTOR Gaudet Building Contractors Ltd. Halifax, NS

PHOTOGRAPHY Julian Parkinson Halifax, NS



Prince Edward Island - Non-Residential

High clerestory windows and retractable glass doors help this dining pavilion light up P.E.I.'s summer evenings

Indian River Festival Pavilion



et in Prince Edward Island's historic St. Mary's Catholic Church, the Indian River Festival is an annual event featuring classical, maritime, jazz, folk and choral music. Proceeds from the festival are used to upgrade and maintain St. Mary's, a local landmark that was deconsecrated as a church in 2009 and purchased by the Indian River Festival.

Part of the festival's concert tradition involves the audience gathering before the concert or spilling out at the intermission on the adjacent west lawn. In previous years, a tent had been used to house tables serving fresh Malpeque oysters, wine, strawberry shortcake and ice cream, while also providing protection for the audience during inclement weather. In 2013, festival organizers decided to seek funding for a permanent outdoor pavilion to replace the tent, a journey that led to the pavilion's completion in the spring of 2015.







1. St. Mary's Church

2. pavilion

3. views to pasture land



The south wall of the 1,600-sq.ft. pavilion aligns with the south wall of the church annex, and the pavilion is connected to the church's west door by a walkway. The new pavilion is open to the south and west, with views and access points looking out over the nearby pastures and Malpeque Bay in the distance. A low roof with retractable glass doors and an outdoor wood deck engage the extensive lawn, while high clerestory windows above allow daylight into the center of the pavilion, which takes on the appearance of a large lantern as the sky darkens in the late summer evenings.

The butterfly roof – supported by a steel beam and glulam frame structure – slopes down to the northeast corner, creating a warm interior of natural wood and white painted wood walls. The glulam roof structure is sealed



spruce, prefabricated with pre-drilled holes for bolted connections.

The pavilion's exterior is largely composed of prefinished (white solid stain) Eastern white cedar shingles to tie in with the white shingles of the church. The interior is composed of painted, exterior-grade plywood and a roof made of glulam beams and structural wood deck. The natural wood roof provides a warm glow inside and resonates with the church's natural wood vaulted ceiling. The fact that the

system was prefabricated meant that the material could arrive on-site in a timely manner and be erected quickly – an important factor because of the limited spring construction window before festival performances began.

The pavilion was designed to look out over the landscape as opposed to the more introspective nature of the church. The pavilion also was designed to complement the church in color, material and scale rather than imitate its strong French Gothic architecture. ARCHITECTS
Montgomery Sisam Architects
Toronto, ON

Nine Yards Studio Charlottetown, PEI

STRUCTURAL ENGINEER SCL Engineering Inc.
Charlottetown, PEI

GENERAL CONTRACTOR Fitzgerald and Snow Ltd. Summerside, PEI

PHOTOGRAPHY Yvonne Duivenvoorden Toronto, ON







Newfoundland and Labrador – Non-Residential

This twist on traditional Newfoundland architecture celebrates the straightforward functionality of the East Coast Modern style

St. Thomas Community Centre



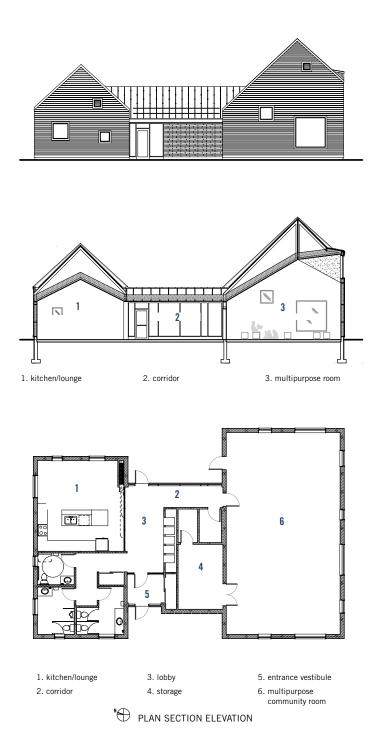
he St. Thomas Community Centre consists of a singlestory, 2,870-sq.ft. building in the community of Paradise, about 25 km east of downtown St. John's, the provincial capital. The structure is placed on the site of the town hall that served the former community of St. Thomas, its previous role as a locus of community activity.

The project illustrates how creativity does not have to be constrained by budget or geography. The building is made up of three distinct forms – two

rectangular shed forms connected by a vestibule – on a slab-on-grade concrete foundation. The building's primary programming is split between the two taller forms, with the multipurpose community room housed in the largest structure and the



community kitchen and washrooms in the other. While its form and scale are rooted in the traditional style of Newfoundland houses and outbuildings, they have been reinterpreted in a modern context.







The exterior wood wall structure allows for a seemingly random layout of windows in various sizes, adding a sense of fun to both the interior and exterior while framing views of the surrounding landscape. The interior of the building uses vaulted, asymmetrical, premanufactured roof trusses that span across the large public areas, creating a unique gathering place. These vaulted ceiling areas are finished in clear-coated plywood, adding warmth to the spaces while providing a contrast to the rough wood outside. The peak of the roof trusses over the multipurpose community room is biased to one side, giving the building an uncommon form without increasing its complexity or budget. Upon entry to the community room, visitors are greeted with a large roof dormer that aligns with the main door, adding a grand sense of scale and importance to such a relatively small space.

The exterior painted pine cladding is not only durable and economical but is also beautiful with a bright, vibrant color and warm texture. The somewhat rough and varied texture of the wood cladding is warm and welcoming, which is important as the building is approached from all four sides. To better express the building form, exterior detailing was kept visually simple. This is achieved through constrained

use of flashing and trim, concealed gutters, mitered corner cladding and large black aluminum window openings with thin profiles.

Despite the building's unique appearance, it was created with materials and systems found in any single-family home construction in Newfoundland, highlighting the versatility of some of the most commonly available local building products. It captures the unique improvisational quality of traditional Newfoundland vernacular while maintaining the crisp lines, sharp details and straightforward functionality of the contemporary East Coast Modern style – providing a bright and welcoming hub for the community.

ARCHITECT Woodford Sheppard Architecture St. John's, NL

STRUCTURAL ENGINEER
Sound Engineering
St. John's, NL

GENERAL CONTRACTOR
J&T Construction Ltd.
Mount Pearl, NL

PHOTOGRAPHY Julian Parkinson Halifax, NS

Chad Sharpe St. John's, NL

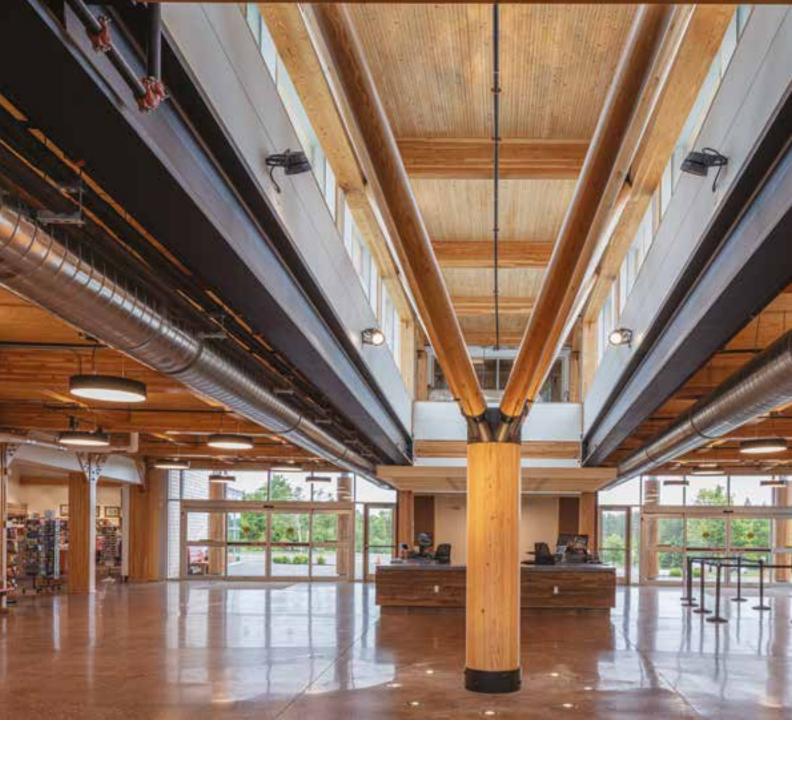
Chris Woodford St. John's, NL

Atlantic - Hybrid Award

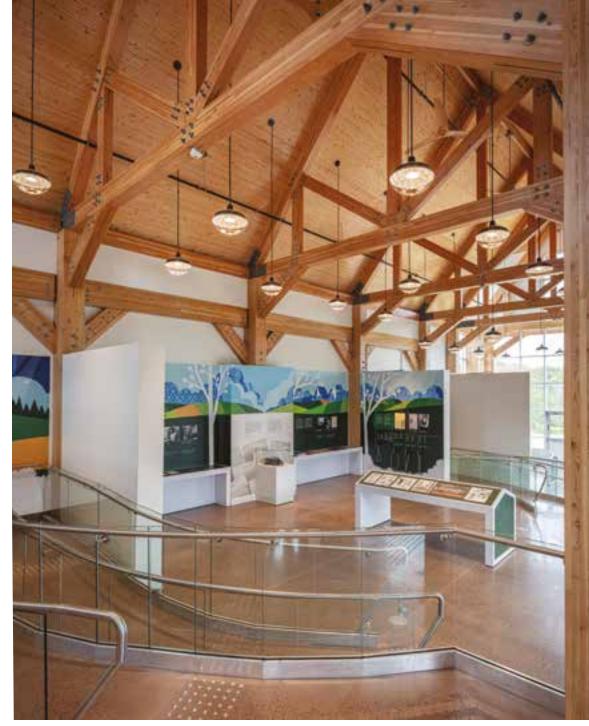
"It's delightful when your imaginations come true," said the young heroine of *Anne of Green Gables* – and the team behind this project couldn't agree more











he Green Gables Visitor Centre in Cavendish, P.E.I., is located on the property that serves as the setting for Lucy Maud Montgomery's Anne of Green Gables. Designed to accommodate a growing number of guests to one of the most visited federal parks in Canada, the project adds much-needed exhibition and gathering spaces by acting as the main arrival point for visitors and framing the view of the original farmhouse.

The architecture takes its cue from its rural context through vernacular barn forms, connected by a single-story lobby space, all employing a mass timber structural frame. Being the largest building on the site, it

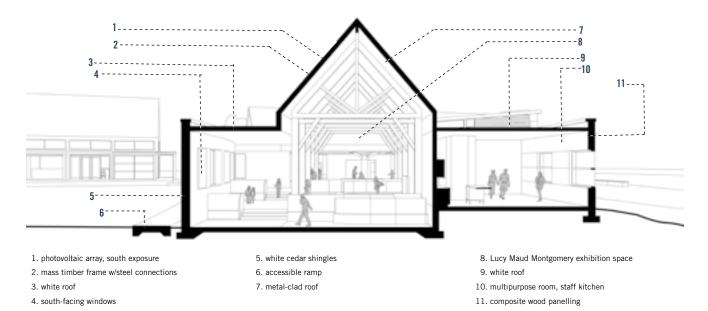
creates a relationship of scale and age as guests move through to the south end of the property. Two circulation paths create organizing axes that converge on the Green Gables farmhouse, guiding visitors and setting up a clear organization of the site. The building materials within are contemporary, but the overall building form is complementary with the surrounding property while not overpowering its historic focal point.

Designed to achieve LEED Gold certification, the center features locally sourced wood through exposed mass timber frames, Eastern white cedar shingles, local pine and thermal wood and maple for interior spaces. The idea

was to promote natural mass timber construction, stimulate the local economy and minimize emissions – all while presenting a building structure that educates visitors and showcases warm, open interior spaces.

The main public space is organized around the lobby atrium, the Lucy Maud Montgomery exhibition room, a gift shop and public washrooms. The main aspects of this design are the visual and physical connection to the exterior and the use of locally sourced exposed wood products.

Being a seasonal tourist destination, summer weather had a large influence on the design. The lobby is flooded with natural light from



EXHIBITION SECTION



clerestory windows, glazed entryways and adjacent spaces. In the warmest months, entryways can be opened to the exterior, extending the public space and allowing summer breezes to naturally cool the interiors. In the exhibition space, extensive eastern glazing provides ample daylight and reduces the need for artificial lighting. Each public space is flooded with natural light that reflects the warm tones of the wood, contrasted only by the P.E.I.-

sand-colored concrete floors and white painted walls.

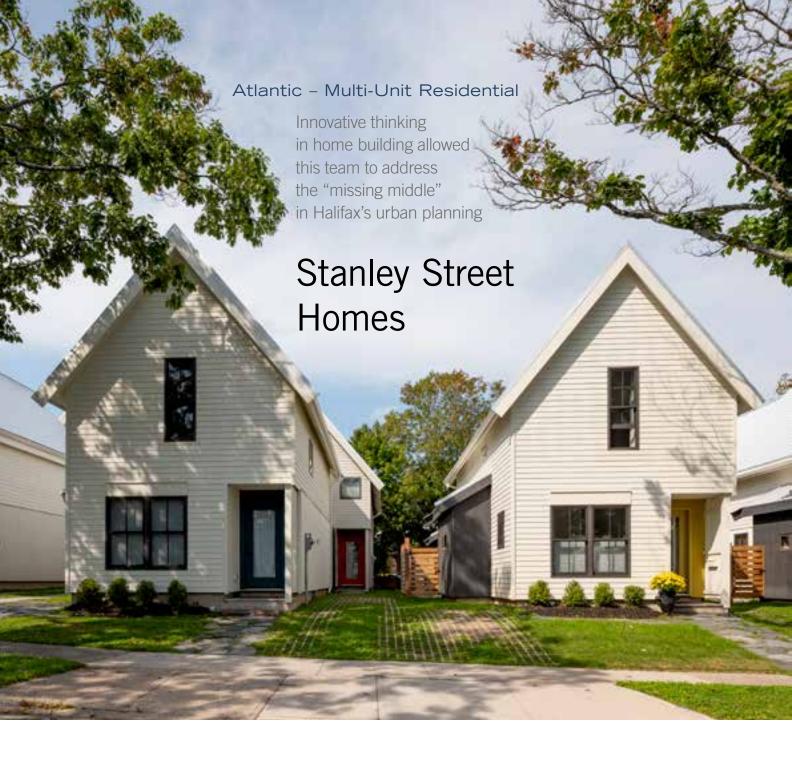
Overall, the building has not only enhanced the story about *Anne of Green Gables* and Lucy Maud Montgomery, but it also has used some of the most innovative mass timber systems in the local marketplace. The forestry sector is an important part of the economy in Atlantic Canada, and this building will continue to offer a glimpse into what is possible in the region.

CLIENT
Public Services and Procurement
Canada/Parks Canada
Gatineau, QC

ARCHITECT
Root Architecture Inc.
Dartmouth. NS

STRUCTURAL ENGINEER CBCL Ltd. Halifax, NS

PHOTOGRAPHY Julian Parkinson Halifax, NS







his project recognizes that current planning practices often inhibit the real possibility of building appropriately scaled and sufficiently dense buildings in many R-1 and R-2 neighborhoods in Halifax, Nova Scotia. These sites all constitute what some refer to as the "missing middle."

In order to test these limits, the owner engaged municipal planning and development staff and sought a development agreement to modify certain existing R-2 zoning regulations, accomplishing what the team has termed "gentle density." The ultimate goal was to design and construct eight two-story, single-family residences on four vacant lots – demonstrating how increased density can be introduced "gently" into an existing neighborhood at an appropriate scale and without sacrificing

the neighborhood's character. The design and construction process demonstrates innovative thinking and building at a variety of scales – urban and architectural. Whenever possible, only materials and systems that contribute to efficient, durable and beautiful buildings were selected. This includes the specification and use of insulating sheathing, which minimizes thermal bridging and collapses several construction sequences and trades into one process and product.

Structural Insulated Panels (SIPs) were used for their excellent R-value, airtightness and for their spanning capacity. The collapsing of several trades into one product saved time and labor, allowing for the buildings to be made weathertight much more quickly. LSL rim joists allowed for the utilization of resource-efficient construction methods, eliminating

the need for window and door headers and allowing for greater stud spacing. The phasing of the construction of the eight houses allowed for the design and construction team to continuously improve the process as work progressed – essentially making each building a "prototype."

ARCHITECT Eric Stotts + Andy Lynch Halifax, NS

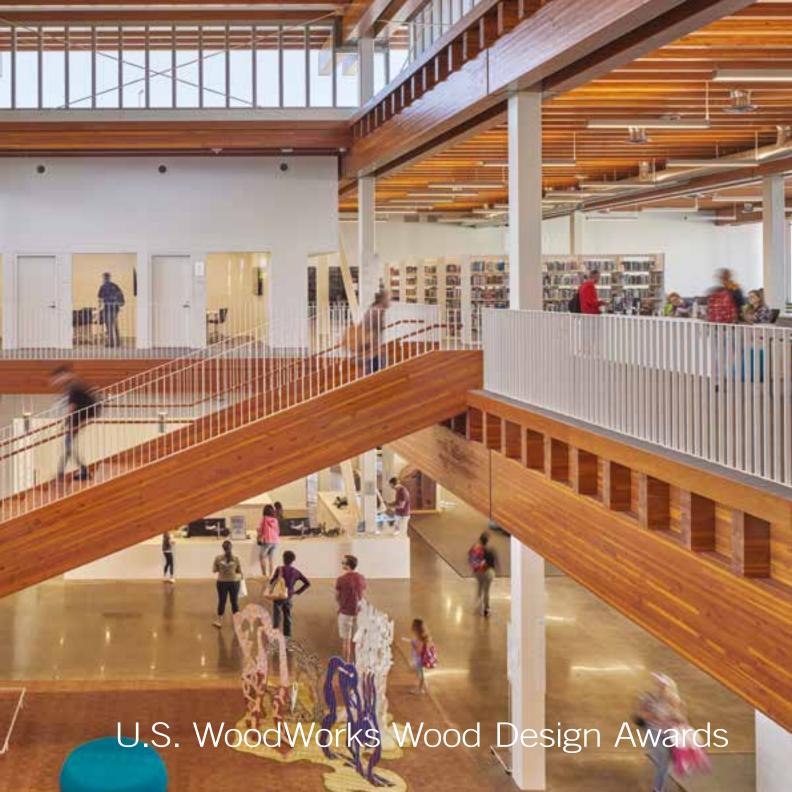
STRUCTURAL ENGINEER Andrea Doncaster Dartmouth, NS

GENERAL CONTRACTOR Whitewood Carpentry & Contracting Ltd. Halifax. NS

PHOTOGRAPHY Janet Kimber Halifax, NS







U.S. WoodWorks Wood Design Awards

The Wood Design Award program celebrates excellence in wood building design, and excellent projects are often conceived and realized by people with a passion, not only for quality, but innovation. As a result, the winning projects are a kind of bellwether for market trends – such as growing interest in mass timber, hybrid projects that combine mass timber with light wood framing or other materials, panelization and greater focus on sustainability, carbon footprint and resiliency. These are all things we've seen in the market that are also reflected in the projects shown in these pages.

As always, the U.S. WoodWorks program is honored to recognize building designers across the country who express wood structure in new and elegant ways. I extend my sincere thanks to everyone who submitted a nomination, and to our 2020 jury of design professionals who selected this year's winning projects.

Jennifer Cover, PEPresident and CEO

U.S. WoodWorks

Jurors



DANNY ADAMS Principal and Design Lead LS3P ASSOCIATES LTD. Is3p.com



MARSHA MAYTUM Principal LEDDY MAYTUM STACY ARCHITECTS Imsarch.com



ERIC McDONNELL Principal HOLMES STRUCTURES holmesstructures.com



MATT SHAW Executive Editor THE ARCHITECT'S NEWSPAPER archpaper.com

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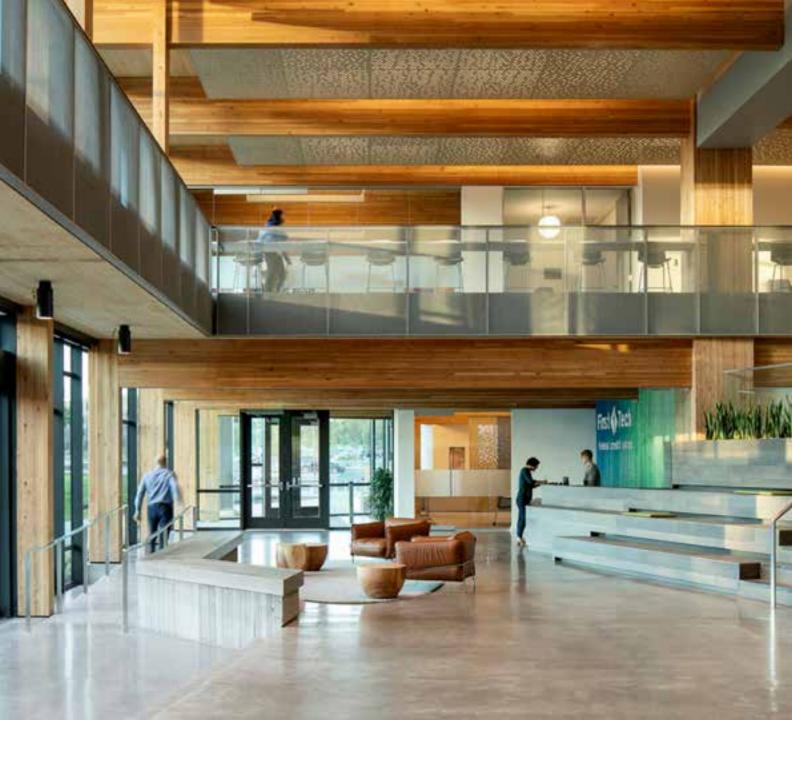






Adohi Hall, University of Arkansas Fayetteville, AR Please see page 26

UNITED STATES





Jury's Choice

This open office that puts "people first" focuses on ensuring all of its employees can see the light

First Tech Federal Credit Union

he open office for this Portland, Ore.-based credit union is designed with an emphasis on equitable access to natural light, with workstations on each floor arranged to ensure all employees can benefit from the view of the park-like setting outside.

Much of the building's design draws on the beauty of wood and the CLT structural system. The elegant timber structure is visible throughout the building, complemented by a warm, natural material palette. The glulam beams frame floor-to-ceiling views to the park and the creek that surrounds three sides of the site.

The ground floor is focused around communal spaces for small and large groups. A distinctive central commons with stadium-style seating on the ground floor ascends into a double-height atrium capable of accommodating large gatherings and presentations. The timber structure and CLT decking are supported by a steel brace frame for lateral stability. To stay within the maximum span distance of 35 ft. from the lateral supports, the building is a rectangle kinked in the middle with open office space surrounding the central core. Raised

access floors conceal HVAC, electrical and low-voltage systems, contributing to the uncluttered spaces that showcase the simple beauty of the CLT.

Creating equitable access to views and daylight for all employees was a central commitment for the client. Removing the exterior beam from the structural timber layup created the opportunity to maximize window heights from floor to ceiling. Column spacing became 12 ft. on center at the perimeter and core of the building, with beams spanning 32 ft.

First Tech Federal Credit Union's corporate motto is "People First," and its new Oregon campus is designed to support and promote the health and happiness of its employees. After a thorough investigation of all options, wood was selected as the structure type for its biophilic quality. The building blurs the line between inside and out by taking advantage of its setting within a park, and by framing space and views with an elegant timber frame. The facade is a random pattern intended to integrate the large building form into the surrounding park. At five stories and 156,000 sq.ft., it is currently the largest glulam and CLT building in the U.S. by area.



















ARCHITECT Hacker Portland, OR

STRUCTURAL ENGINEER Kramer Gehlen & Associates Inc. Vancouver, WA GENERAL CONTRACTOR Swinerton Portland, OR TIMBER SUPPLIER Structurlam Mass Timber Corp. Portland, OR

PHOTOGRAPHY Jeremy Bittermann Portland, OR



Commercial Wood Design - Mid-Rise

A mixed-use mass timber building pays homage to the early 20th-century factories and warehouses that once thrived in its neighborhood

111 East Grand



n the East Village of Des Moines, Iowa, 111 East Grand is situated in one of the city's original industrial areas. Factories and warehouses that once thrived there are now being repurposed into restaurants, businesses and housing after an era of decline. To complement the aged fabric of the neighborhood and provide a nod to its turn-of-the-

century wood and masonry elders, this mass timber office structure is fully exposed on the interior while utilizing DLT for the floor and roof assemblies.



A four-story, mixed-use mass timber building with both retail and office space, its columns and beams are of glulam construction. The height and construction type (III-B) enable all levels to be of mass timber construction with a one-hour fire rating separating the first and second levels. Precast concrete panels compose the south portion of the building where the service core is located, creating a

hybrid system. Due to close proximity to an adjacent parking ramp, this precast wall carries a two-hour rating.

The project is the first multi-story office building in North America to employ DLT, a mass timber system relying on a friction-fit bond between softwood dimension lumber and hardwood dowels. The 65,000-sq.ft. building anchors a high-visibility 265 x 65-ft. site two blocks from the river. Spruce

glulam beams and columns frame the 40-ft.-long DLT panels that serve as floor and roof decks. The system facilitates quick erection time and a smaller site crew, minimizing neighborhood disturbance during construction. A precast concrete service core buttresses the south of the building functionally and structurally.

The wood construction's refined aesthetics allow the structure to

remain exposed as an interior finish. This minimizes tenant improvement work and the potential for chemically impregnated finishes while providing visual, tactile and olfactive stimulation to its occupants. Operable windows within each structural bay allow natural ventilation. Balconies on the west take advantage of downtown views. Natural Accoya wood soffits and columns complement the exposed wood interior. Black Zalmag panel rainscreens clad the east, north and west elevations.

ARCHITECT Neumann Monson Architects Des Moines, IA

STRUCTURAL ENGINEER Raker Rhodes Engineering Des Moines, IA

TIMBER ENGINEER/SUPPLIER StructureCraft Builders Abbotsford, BC

GENERAL CONTRACTOR Ryan Companies Des Moines, IA

PHOTOGRAPHY Mike Sinclair Kansas City, MO









Commercial Wood Design - Low-Rise

Historic warehouses are reborn with a complete makeover that preserves the original heavy timber frames

Redfox Commons

his 60,000-sq.ft. adaptive reuse project knits together two World War II-era warehouses to form one light-filled creative office campus. Designed to be a catalyst for rethinking how development can leverage underutilized structures and materials to add value to our cities, Redfox Commons is located at Guild's Lake Industrial Sanctuary, one of Portland's largest industrial areas.

The original heavy timber structures were built in the 1940s for J.A. Freeman & Sons, a manufacturer of hay baling and hay handling equipment. Recognizing the historic and

environmental significance of the old-growth wood structure, the renovation preserved and restored the original lumber. The existing trusses were sandblasted and remain exposed, highlighting the wood's natural beauty.

New 80-ft.-wide clerestory windows were added to each roof to bring light into the large open floor plates, which are distinguished by column-free spans of 100 ft. To uphold the project's heritage, both buildings were rebuilt completely using an industrial vernacular of ribbon windows and weathering steel cladding.





During demolition, wood from an overbuilt mezzanine was salvaged to create a new timber and glass entrance structure that connects the two historic buildings. Over 6,500 linear ft. of 4 x 12-in. boards were reclaimed, varying in length from 12 to 24 ft. The reclaimed boards were fastened around a new glulam member using large wood screws to create the entrance structure's distinctive columns and beams. This innovative use of salvaged wood creates a welcoming entry to the campus that is expressive of the project's heritage and its environmentally conscious design.

CLIENT Langley Investment Partners Portland, OR

ARCHITECT
LEVER Architecture
Portland, OR



STRUCTURAL ENGINEER KPFF Consulting Engineers Portland, OR

GENERAL CONTRACTOR R&H Construction
Portland, OR

TIMBER SUPPLIER Wood Mechanix Portland, OR

PHOTOGRAPHY Jeremy Bittermann Portland, OR

Lara Swimmer Seattle, WA





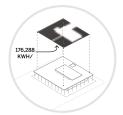






ENERGY & CARBON

176,288 kWh/year of Solar PV array, natural daylighting & efficient HVAC equipment reduce energy use by 63%*



*below the ASHRAE 90.1-2007 baseline



MATERIALS & RESOURCES

Durable materials & mass customization of components result in 35 PSF of CO2EQa total 61% reduction in embodied carbon compared to typical new construction





WASTE

The reuse of **85%** of the existing garage reduces material waste by 65%. 80% of the building is wood which can be upcycled post building-life



RESILIENCY

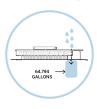
With its heavy timber construction, the library provides amplified resiliency in a seismically active zone





WATER

An integrated rain water storage system, drip irrigation & low flow fixtures saves 138,909 gallons of water, resulting in a 42% reduction of total water consumption



Pedestrian friendly sidewalks, accessibility to public transit & bicycle parking, awards the project a Walk Score of 96, a Transit Score of 81 & Bike



MOBILITY

LIVABILITY & WELLBEING

Exterior curtain wall design maximizes daylight & views while mitigating glare



(\$)

ECONOMY & EQUITY

The development & construction of the library provided 30% of local jobs while attracting over 1,000 visitors daily



HERITAGE & IDENTITY

The development respects the 1901 dated deed to develop a library as a "Pavilion in the Park" & reflects the history & diversity of the City & Port of Long Beach

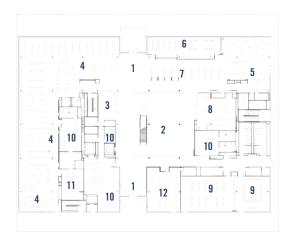


ECOLOGY

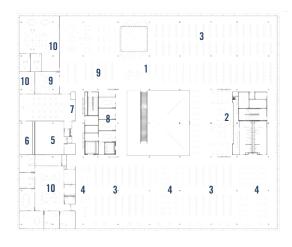
The site consists of 47% native planting & 53% drought tolerent planting & is developed on a Brownfield site



Metrics are an approximation and TBD



- 1. entrance and lobby
- 2. atrium/gallery
- 3. circulation desk
- 4. children's area
- 5. library store
- 6. family learning center
- 7. multimedia collection
- 8. special collections room
- 9. meeting rooms
- 10. administrative offices and workrooms
- 11. art studio
- 12. information center for people with disabilities
- LEVEL 1 FLOOR PLAN



- 1. information desk/ commons
- 2. periodicals display/seating
- 3. collections
- 4. reading room 8. study rooms
- 5. media production
- 6. 3D printing lab 7. makerspace studio
- 9. teen area and collaboration space
- 10. administrative offices and workrooms

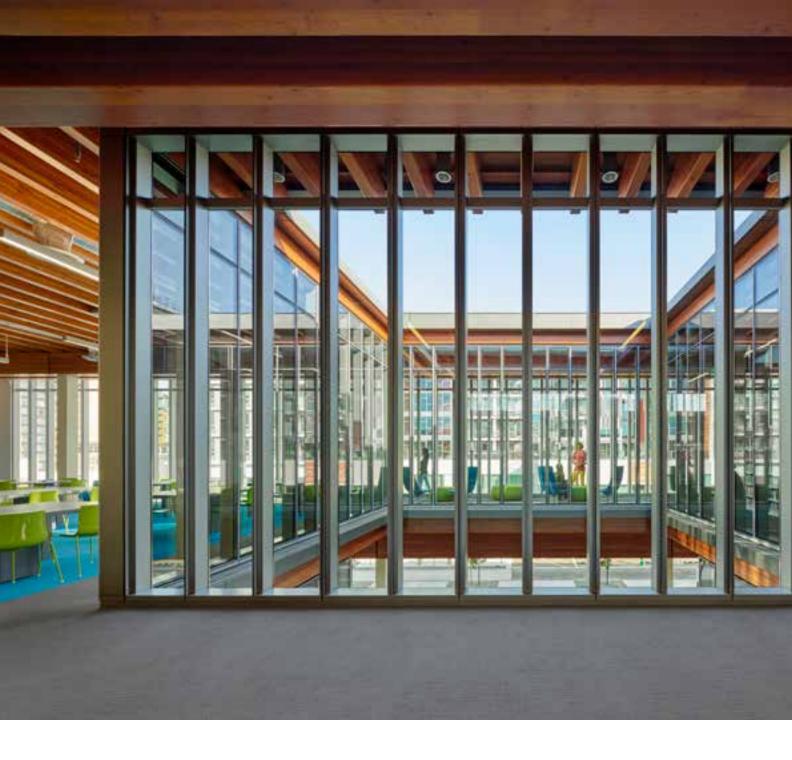




n California, the Billie Jean King Main Library is positioned at the northeast corner of Long Beach's new Civic Center. Adjacent to historic Lincoln Park, the library connects the city's past and present while providing valuable municipal and community services.

Named for the legendary tennis player who was born and grew up in Long Beach, the building provides a welcoming and flexible environment, with interior space organized into

discrete and identifiable areas that maximize the use of square footage while enhancing user accessibility and staff efficiency. The library offers a variety of spaces to serve the diverse population of Long Beach, including group study rooms, independent study areas and a technology-driven "makerspace" that features a learning lab and 3D printers. Additionally, an independently operated community center with meeting rooms and programs is available for public use.







A large central atrium provides abundant natural light throughout the library's interiors. Targeting LEED certification, the building employs timber construction and features rooftop photovoltaic cells, daylighting strategies, controlled air ventilation systems and extensive glazing with architectural overhangs for solar protection.

Along with a new City Hall and Port of Long Beach headquarters, the 93,500-sq.ft. library – the first-ever heavy timber building in the city – is part of the Long Beach Civic Center Master Plan. The design team developed the master plan to revitalize 22 acres of downtown by creating a vibrant, mixed-use district and reactivating Lincoln Park.

CLIENT
City of Long Beach
Long Beach, CA

ARCHITECT/ STRUCTURAL ENGINEER Skidmore, Owings & Merrill Los Angeles, CA

GENERAL CONTRACTOR Clark Construction Group Irvine, CA

TIMBER INSTALLER
WS Klem Contractor
El Segundo, CA

TIMBER SUPPLIERS
DR Johnson Wood Innovations
Riddle. OR

Cudahy Lumber Hillsboro, OR

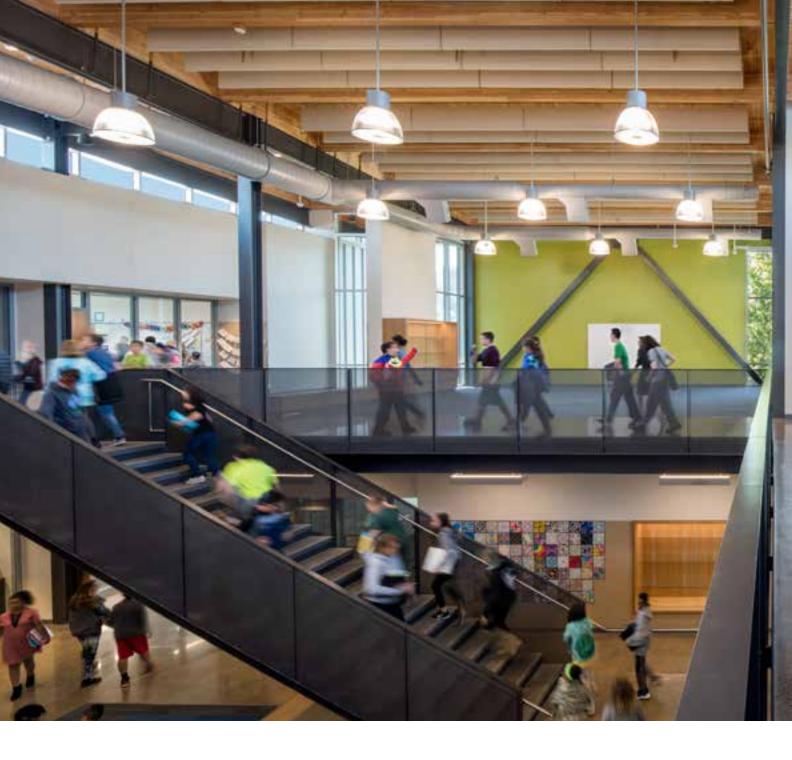
PHOTOGRAPHY Fotoworks/Benny Chan Los Angeles, CA



A STE(A)M-centric school embraces architecture as a tool for teaching students about the interaction between the natural and built worlds











s a STE(A)M-centric (Science, Technology, Engineering, Arts and Math) learning environment, the Jefferson Middle School Arts and Technology Academy (ATA) in Eugene, Ore., is designed to support a variety of student-centered, hands-on learning styles through engaging and inspiring exploration for students, teachers and the community.

A teaching tool for learning about the interaction between the natural and built worlds, ATA's honest tectonic expression of structure, exposed building systems and natural interior wood finishes and casework create an environment that's conducive to a STE(A)M-centric curriculum. An umbrella-like folding roof made of exposed steel frames, wood glulam beams and wood decking is visible

from all public spaces in the building; stretching across the structure's length, it cantilevers in various locations to provide protection from the elements while creating a warm and inviting interior environment.

Various sloped roof profiles pay homage to the wood construction of the surrounding residential vernacular, while visually bridging the scale of ATA's two-story massing and surrounding one-story homes. An expansive photovoltaic array visible from the park adorns ATA's south-facing one-story roof section. Ample exterior glazing throughout maximizes daylight and views while serving as a warmly lit community beacon at night, highlighted by the soaring, exposed wood roof.



ATA is organized around a two-story daylit community living room that addresses parking and drop-off to the north and a community park and foothills to the south. A two-story core of flexible STE(A)M lab, art studio and project-based learning commons is surrounded by classrooms, extending vertically above the flanking classroom bars to allow continuous north- and south-facing clerestories to bring daylight into the core. The

STE(A)M lab anchors the building and is visible to and accessible from the living room and outdoor park through ample glazing and glass roll-up doors, allowing students and visitors to engage the energy, activity and creativity that is central to ATA's identity.

ATA's east wing maximizes community engagement flexibility with communal spaces (gymnasiums, theater, music room, cafeteria,

media center) adjacent to the living room. The integration of three renovated gymnasiums allowed the district to maximize its budget on new construction. The two-story west wing organizes learning spaces into three parallel, east/west oriented bars with flexible and adaptable classrooms organized along the north and south, allowing for both efficient control of daylighting and an expansive view of the students' community beyond.



CLIENT Eugene School District Eugene, OR

ARCHITECTS
Opsis Architecture
Portland, OR

Rowell Brokaw Architects (AOR) Eugene, OR

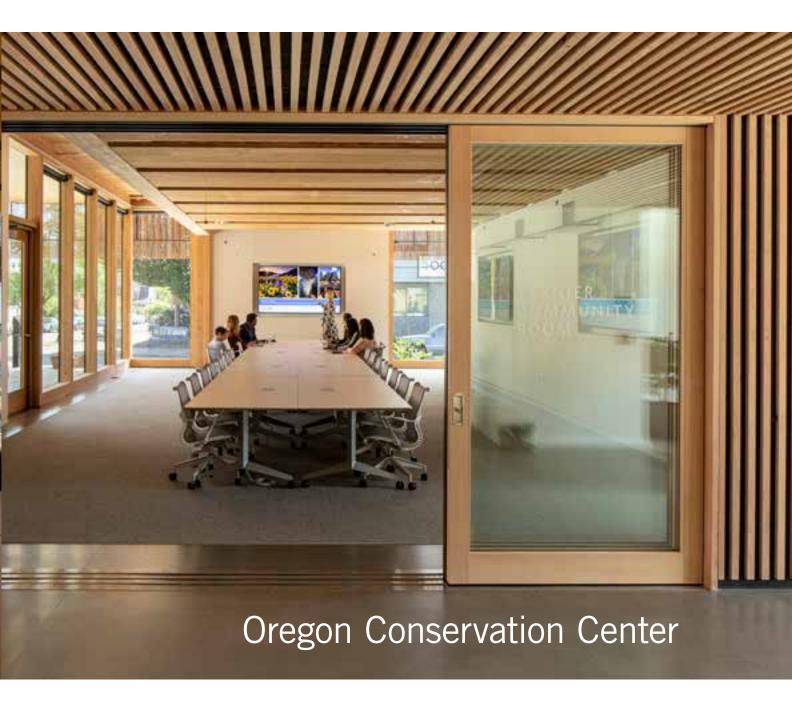
STRUCTURAL ENGINEER catena consulting engineers
Portland, OR

GENERAL CONTRACTOR Hyland Construction Springfield, OR

PHOTOGRAPHY Christian Columbres Portland, OR









Built in the 1970s, the original Oregon headquarters for The Nature Conservancy did little to promote the visibility and identity of this global non-profit organization. Its prosaic exterior and landscaping, siloed office layouts and lack of sizable meeting or event space posed challenges for this collaborative organization. A renovation and expansion transformed a dated office building into a collaborative hub that better reflects its environmental mission.

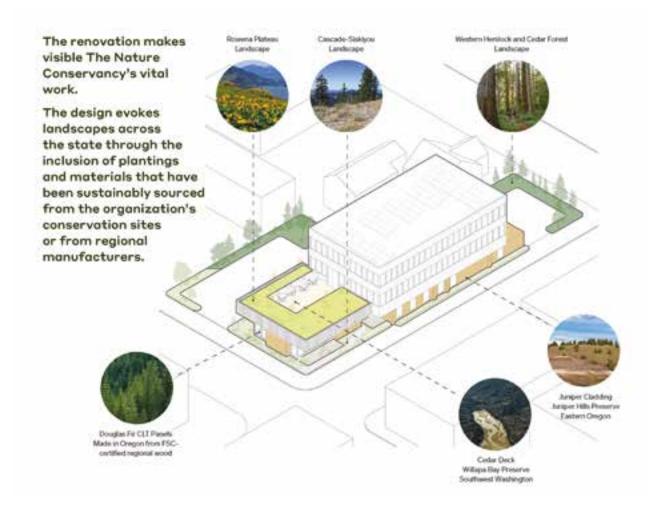
Designed to create an outward expression of The Nature Conservancy's work in Oregon, the project integrates materials and plantings specific to their priority projects around the state. New landscaping evokes three of the organization's protected habitats:

the Rowena Plateau, Cascade-Siskiyou and the state's Western hemlock and cedar forests. The building exterior is completely reimagined with steel cladding that weathers over time, as well as juniper siding and cedar decking that were sustainably harvested from The Nature Conservancy's conservation sites.

Central to the upgrade is a new building addition containing a community room and roof garden terrace. The addition provides a highly visible gathering space for public events and collaborations with partner organizations. In line with The Nature Conservancy's commitment to innovative solutions, this was one of the first projects in the U.S. built with domestically fabricated CLT panels that are certified by







the Forest Stewardship Council. Other elements of the renovation designed to empower the organization's collaborative culture include new open-plan layouts, meeting rooms of varying sizes, a staff café/lounge, and dedicated storage space for field equipment.

Sustainability drove the decision to maintain and renovate the original building. A blend of high tech and common-sense solutions was









deployed to achieve LEED Gold certification. The building's new rooftop photovoltaics produce 25 percent of its electrical supply, and efficient building systems and fixtures reduce electric and water consumption by 54 percent and 44 percent, respectively. The new landscaping and subsurface filtration system manage all stormwater on-site. Practical strategies such as abundant daylighting, operable windows and the use of local materials enhance comfort and connect occupants to the neighborhood and the greater region.

CLIENT
The Nature Conservancy
Arlington, VA

ARCHITECT LEVER Architecture Portland, OR

STRUCTURAL ENGINEER KPFF Consulting Engineers Portland, OR

GENERAL CONTRACTOR Lease Crutcher Lewis Portland, OR

TIMBER SUPPLIER
DR Johnson Wood Innovations
Riddle. OR

PHOTOGRAPHY Jeremy Bittermann Portland, OR

Lara Swimmer Seattle, WA

Shawn Records
Portland, OR

LEVER Architecture Portland, OR



Green Building with Wood

This education center is built on the idea that "small things matter" in nature





Oregon Zoo Education Center

his regional hub for environmental learning and activity is designed to inspire visitors to create a diverse and resilient world. The central theme of "Small Things Matter" guides the zoo's yearly 1.6 million visitors through interactive exhibits that

demonstrate how our daily actions can make a difference in creating a healthy planet. The project includes interactive exhibit space, an insect zoo, café, multipurpose meeting space, classrooms, environmental science lab and a new zoo railway station.



- 1. circulation
- 2. animal habitat
- 3. animal habitat support
- 4. office/administration
- 5. teen program
- 6. cafe
- 7. classroom
- 8. flex/event

- 9. train
- 10. support
- 11. tiger exhibit





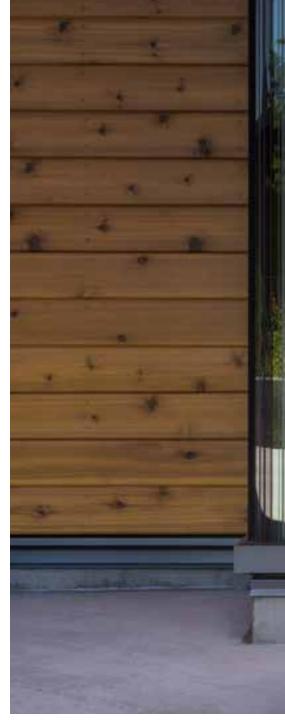
The education center's design creates a beautiful place to rest, eat and play while learning about our relationship to the natural world. Set as a major orientation plaza at the west end of the zoo, the irregular site is formed by curving boundaries of exhibits, the zoo railway, the pedestrian path and a steep south hillside. Two single-story

buildings arc around a central circular plaza, and a series of learning landscapes are woven throughout. Both buildings have sweeping curved wood roofs that take their cue from nature.

The NESt (Nature Exploration Station) interpretive space structure of "woven" wood and steel members is inspired by the nests that small animals make to create shelter. Here, visitors can learn the stories of local conservation "heroes," see the turtle conservation lab in action and access the insect zoo – featuring the smallest of animals that have some of the largest ecosystem impacts.

Located in a separate building, the zoo camp classrooms open through glass









garage doors to a curved south-facing deck that overlooks the zoo and hillsides beyond. The exposed wood structure reinforces the connection to the immediate wooded landscape and provides a welcoming learning environment. A campfire circle and two tent platforms at the east end provide a full nature immersion for overnight zoo campers. Both buildings are designed to achieve net zero energy and use an extensive rooftop solar array, bird-friendly glazing and a grey water system to create teachable moments.

The project was designed through a continuous dialogue of the built and natural environment. It is centered on the idea that we must connect to nature with both our minds and hearts. Each interior space with exposed wood structure has a corresponding visible and connected outside space for learning, interaction, imagination and play.

CLIENT Oregon Zoo Portland, OR

ARCHITECT
Opsis Architecture
Portland, OR

STRUCTURAL ENGINEER catena consulting engineers
Portland, OR

GENERAL CONTRACTOR Fortis Construction Inc. Portland, OR

TIMBER SUPPLIER Redbuilt Hillsboro, OR

PHOTOGRAPHY Christian Columbres West Linn, OR





Beauty of Wood

This building's mass timber frame construction reflects its forested surroundings

Trailhead Building at Theodore Wirth Park

ocated in Minnesota's Theodore Wirth Park, the Trailhead Building is a new mass timber-framed, 14,200-sq.ft. structure that serves as a gateway to the ski and mountain bike trails within the Minneapolis Parks System. It was built as a collaborative venture between the Minneapolis Park and Recreation Board and the Loppet

Foundation, a non-profit organization founded in 2002 to create a shared passion for year-round outdoor adventure in the Minneapolis area.

The project began when the Loppet Foundation wanted to create a building that would be a hub for programs centered around the trail system, while also acting as a headquarters for the foundation. The one-story building with assembly and business occupancies houses a large gathering area, an exercise space, a bike and ski rental shop, lockers, food service and offices. This structure serves as the "trailhead" for the park's system of ski trails used by the public and local high schools for training and competitive

meets. The building also supports a nearby tubing and snowboarding hill.

Support for the roof consists of a combination of glulam columns, light wood-frame walls and concrete masonry walls at select areas. The roof is framed with glulam purlins and girders that support a wood deck roof. Wood framing was used primarily for its aesthetics and sustainability – a natural choice for its location within the park.

Although the facility is used yearround, its primary purpose centers around winter activities. Mass timber provides warmth and a connection to the outdoors, which defines the building and its use. As a natural material, the use of exposed wood roof framing and wood columns is especially inviting on cold winter days. The wood colonnade that assists in supporting the cantilevered roof provides an intimate connection with and mirrors the surrounding wooded areas.

The use of mass timber offered opportunities to design a wood-framed building with an open exterior, allowing a connection between the inside spaces and outdoor activities. Ultimately, the choice and use of wood in its varied forms was one of the most important design decisions to create a beautifully warm and immersive environment that allows the building to blend seamlessly with the outdoor trails, and everything else the park system has to offer. Since opening in

July 2018, this building has become a place that embraces – and is embraced by – its surroundings, thanks to the use of mass timber construction.

ARCHITECT/ STRUCTURAL ENGINEER HGA

Minneapolis, MN

GENERAL CONTRACTOR Kalcon LLC Minnetonka, MN

TIMBER SUPPLIER
Structural Wood Corporation
St. Paul. MN

PHOTOGRAPHY
Peter Vondelinde
Minneapolis, MN



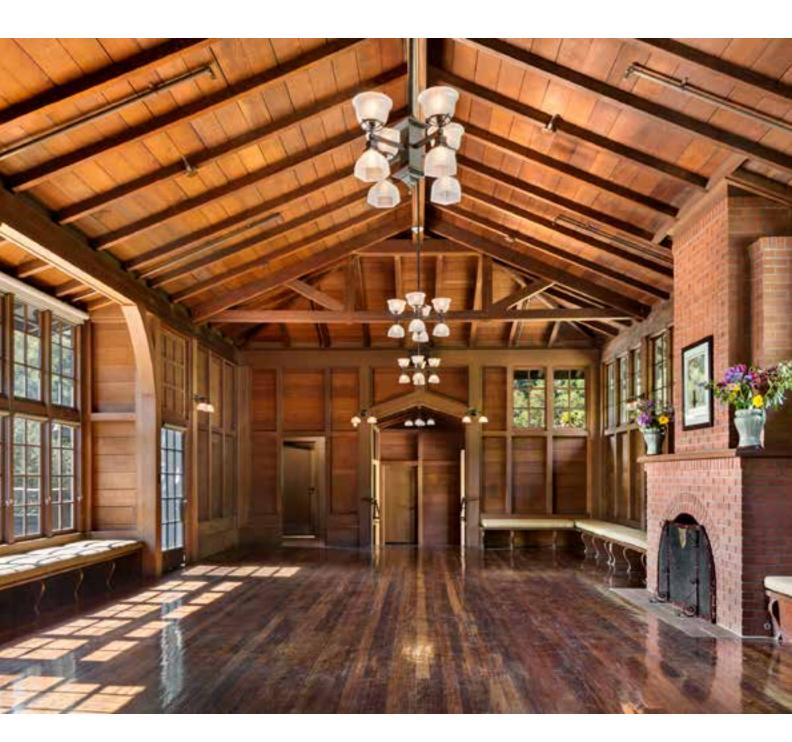




Durable and Adaptable Wood Structures

A redwood bungalow rises to the challenges posed by a delicate relocation and renovation

Julia Morgan Hall







ulia Morgan Hall at University of California (UC), Berkeley, is an elegant redwood bungalow with natural-finish redwood interior and exposed structural wall and roof framing. The interior relies on the simple but beautiful exposed wood framing and wood detailing to create a warm and inviting space.

The building served as a gathering place for women students until 1969, when it was converted into a childcare center. It has since been relocated to UC

Berkeley Botanical Garden, a setting similar to its original canyon location. This project repurposed the building back to an assembly use, allowing it to serve as an event space for both public and private functions held at the garden. The main hall remains unchanged as the primary event space, while the east wing now serves as the primary accessible entrance and the west wing continues to house the original entry, as well as two restrooms and a small kitchen.

To remove the building from its

former site and negotiate the winding canyon road, the structure was divided into four segments, reassembled at the garden and subtly upgraded to meet current accessibility standards. The work required a combination of protective measures, including removal and reinstallation and protection in place.

The exposed structural members and natural finished redwood interior are significant character-defining features. All work – cutting, installation and subsequent removal of temporary shoring and protection, and reassembly – had to be very carefully executed to avoid marring the soft redwood finishes and significant character-defining features. The relatively simple wood structural system allowed for the building to be dismantled partially and reassembled with minimal impact.

The exposed interior wood components required only minimal staining to conceal wear and tear, while the rich wood floors were refinished. At the exterior, the redwood siding

was replaced in kind as required and painted. A new wood porch was designed to the south to accommodate larger parties and employs redwood siding at the perimeter and ipe floorboards.

Ultimately, this complicated relocation and renovation was hugely successful. The structure's ability to accommodate multiple moves with little harm and fit into multiple sites successfully is proof of the adaptability and durability of this timeless wood structure.

ARCHITECT
Siegel & Strain Architects
Emeryville, CA

STRUCTURAL ENGINEER Bluestone Engineering Walnut Creek, CA

GENERAL CONTRACTOR
James R. Griffin Inc.
Fremont, CA

PHOTOGRAPHY David Wakely San Francisco, CA

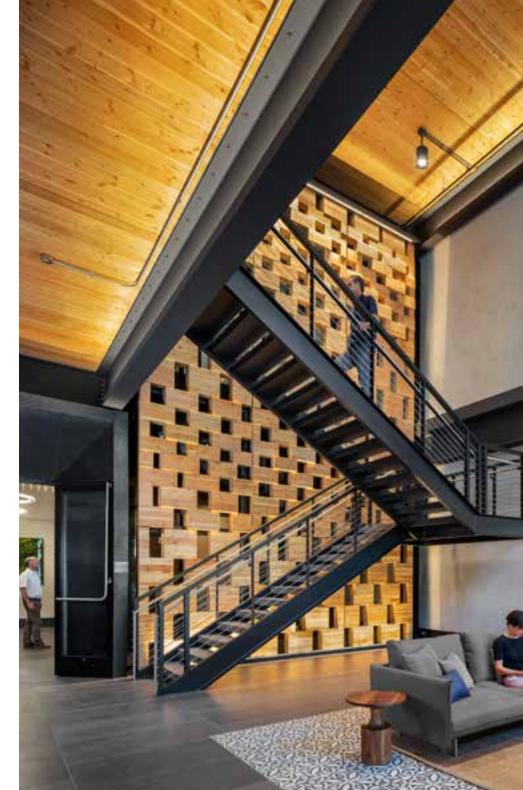


Regional Excellence

This office building – the first in Texas to use CLT as part of a composite structural system – reflects the creative vibe of its neighborhood

901 East Sixth

125,000-sq.ft. office building on the east side of Austin, Texas, 901 East Sixth was designed to feel at home in its eclectic neighborhood, which is creative, multicultural and light-industrial. Rather than conceptualize the development as an extension of downtown, the design team looked to the qualities that make warehouses vibrant contemporary workspaces: high ceilings, large operable windows, exposed structure and utilitarian material palettes that patina well over time.









The building is the first in Texas to use CLT as part of a composite structural system. At the double-height entry lobby, a 25-ft. bi-fold door allows the space to be opened dramatically to the street during special events while serving as a showcase window for the CLT, which is visible at the ceiling and in a full-height "feature wall" assembled from waste off-cuts.

The steel columns and beams span 45 ft. – allowing for large, flexible column-free floor plates – while the mass timber floor decks add visual warmth and function as a finished ceiling. Seven-in.-thick CLT floor decks span between the steel beams and function as the finished ceiling in the main work and common spaces. A 3-in. concrete topping slab with an acoustic mat underlayment completes the structural system. The building also includes a four-story subterranean cast-in-place concrete garage.



In the elevator cabs, the design team licensed woodcut relief prints from the estate of artist Bryan Nash Gill, which were installed as dramatic backlit panels on the rear walls. The building is clad in a distinctive tapered Corten panel, while a wraparound balcony at the second level gives added depth to the street-facing facade.





The building has received LEED Gold certification. In addition to the environmental credentials of wood, this was achieved through a highly efficient VRF mechanical system, HVAC condensate collection for irrigation, below-grade parking, bike storage, electric vehicle charging stations and tenant sub-metering systems. Smart passive design strategies include limiting full-height glass to recessed facades. The building was fully leased prior to completion of construction, underlining its success as a unique offering in the Austin market.

CLIENT Endeavor Real Estate Group Austin, TX

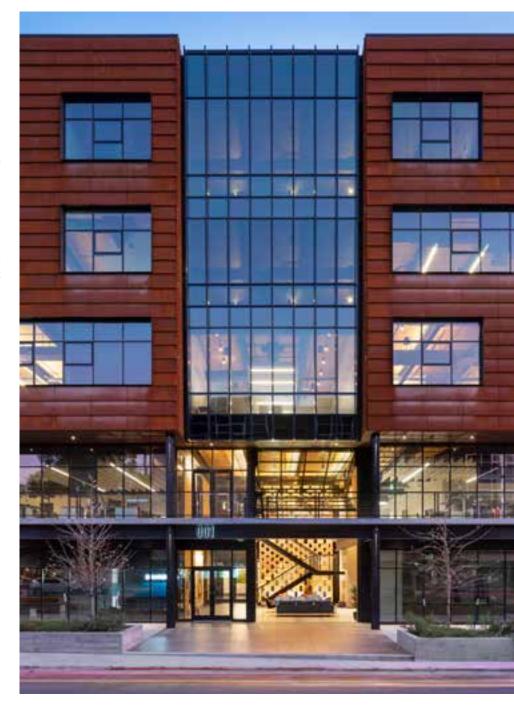
ARCHITECT Thoughtbarn | Delineate Studio (TB|DS) Austin, TX

STRUCTURAL ENGINEER Leap! Structures Austin, TX

GENERAL CONTRACTOR DCA Construction Austin, TX

TIMBER SUPPLIER Structurlam Mass Timber Corp. Granite Bay, CA

PHOTOGRAPHY Casey Dunn Austin, TX







Regional Excellence

This high-performance laboratory for a national construction company aims to inspire collaborative thinking

ColLab





esigned as a flexible and adaptable high-performance building for HITT Contracting, a national construction company, Co|Lab promotes engagement with clients and team members through hands-on experiences and direct observation. The stand-alone structure offers designated spaces to construct full-scale spatial and building mock-ups, test products and experimental approaches, and to demonstrate new and innovative technologies for the construction industry.

The project is integrated within a semi-industrial and commercial neighborhood close to HITT's headquarters in northern Virginia. It was envisioned as a showcase for building innovation in the 21st century that would be net-positive energy, utilize as many healthy materials as possible and exhibit smart emerging design and construction technologies. In building this cutting-edge space, HITT hoped to inspire collaborators to think differently about the way we design and construct spaces.

Mass timber was quickly identified as a perfect foundation for the project, with the structure providing an aesthetic, multisensory benefit while allowing for rapid installation of the structural frame and envelope. In addition to using CLT from sustainably managed forests, Co|Lab utilizes reclaimed maple and cherry harvested on-site. This timber was milled in place to rough-sawn planks and provided an environmentally friendly opportunity to incorporate unique design elements

that cannot be replicated in other manufactured buildings.

To achieve the project's target of Zero Energy Certification, a roof-mounted photovoltaic solar array canopy is designed to offset 100 percent of the building's energy consumption. Co|Lab's high-performance envelope and high-efficiency MEP systems also are coupled with a mass timber structure, providing an interior tactile benefit while allowing rapid installation of the structural frame and envelope, and decreasing the building's carbon footprint.

Co|Lab aims to bring HITT clients and collaborators together in abundantly daylit, flexible meeting and conference spaces which overlook the double-height lab workspace. HITT plans for the Co|Lab to serve as its center for new technologies while also focusing on environmental health and occupant well-being.

CLIENT/GENERAL CONTRACTOR HITT Contracting Falls Church, VA

ARCHITECT
William McDonough + Partners
Charlottesville, VA

STRUCTURAL ENGINEER Staengl Engineering Crozet, VA

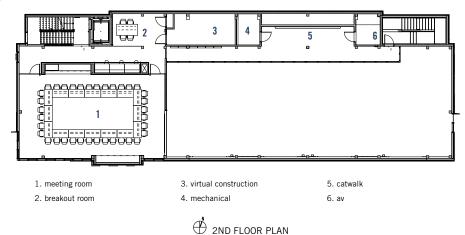
TIMBER SUPPLIER Nordic Structures Montreal, QC

PHOTOGRAPHY

John Cole

Silver Spring, MD









Regional Excellence

A renovation aims to show "The City of Trees" the beauty and benefit of mass timber structures

DPR Office

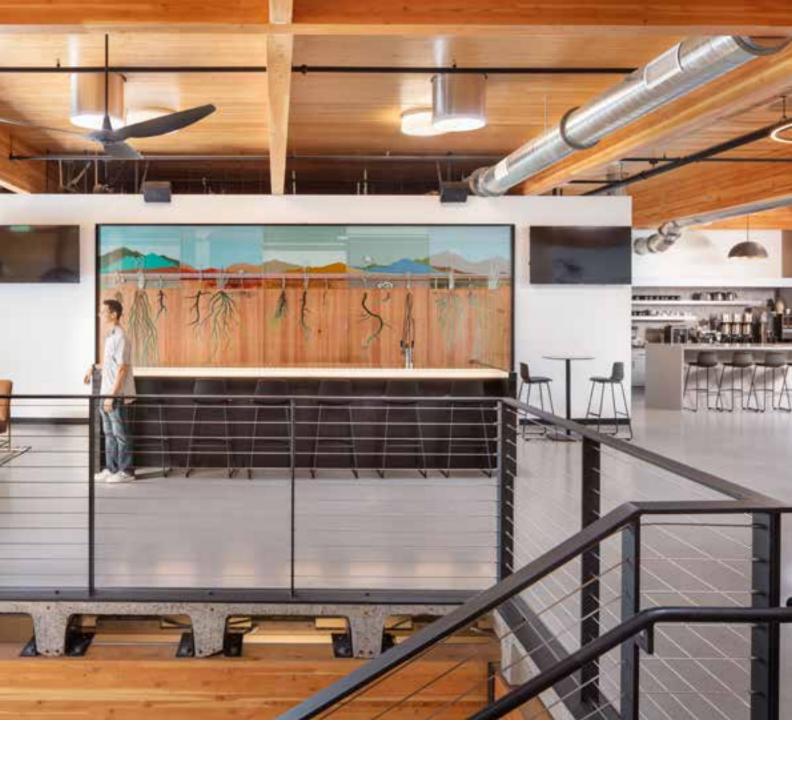


s the saying goes, "The most sustainable building is the one that already exists." This is even more true with adaptive reuse projects that minimize the use of new building materials, divert excessive debris from piling up in landfills and preserve an established urban fabric. When it came time to choose a new office for its Sacramento location, DPR Construction partnered with SmithGroup to reimagine an existing structure in Midtown.

The two companies have a long history of partnering to deliver

successful net zero energy (NZE) projects. When this opportunity presented itself, California's stringent NZE requirements energized the team to push the boundaries with the design of this space. In addition to purchasing and renovating an existing structure that had previously served as a vehicle testing center and office, the team added a 5,692-sq.ft. addition of mass timber construction. In place of concrete or steel, load-bearing and structural elements were constructed from CLT.









The facade of the building addition is open, transparent and urbane, melding with a resurgent Midtown Sacramento. Its most striking feature is a long central terrace with a solar canopy, accessible to all DPR employees. A variety of mature trees shield and shade the terrace, emphasizing a design concept befitting Sacramento's reputation as "The City of Trees." A new communicating stair was cut into the existing structure to create a secondary entrance at the corner of J and 18th Streets, which further activates the block. Operable windows and large sliding glass walls



CLIENT/GENERAL CONTRACTOR DPR Construction
Sacramento, CA

ARCHITECT SmithGroup San Francisco, CA

STRUCTURAL ENGINEER Buehler Engineering Sacramento, CA

TIMBER SUPPLIER Structurlam Mass Timber Corp. Penticton, BC

PHOTOGRAPHY Chad Davies Los Angeles, CA

allow the building to take advantage of Sacramento's Delta Breeze.

The interior configuration creates another advantage of wood construction, by reducing the need for interior finish materials like drywall. Occupants receive a better sense of the inner structural workings of the building, in addition to enjoying the warm and inviting properties of wood. The interior also features flexible spaces needed by a construction company: large meeting rooms, lots of huddle spaces and open collaboration areas. A seed wall creates a low-water,

energy-efficient solution rivaling a vertical garden. The design team also selected seven local artists to design custom art installations for the space.

As an adaptive retrofit, this project highlights how mass timber is suitable for a wide variety of applications, not just new construction. The City of Sacramento's receptiveness to the use of CLT structural systems speaks directly to the viability of mass timber. This example of a multi-story CLT structure in California's capital city will serve as an example of what is achievable to a broad audience.



Innovative use of DLT is just one aspect of this facility dedicated to the conservation of works of art

Sarah Campbell
Blaffer Foundation
Center for
Conservation







state-of-the-art facility designed to house the conservation department of the Museum of Fine Arts, Houston, the Sarah Campbell Blaffer Foundation Center for Conservation brings the museum's conservation teams together on the main campus for the first time, in one of the largest continuous spaces of its kind anywhere.

The center was built on top of an existing museum structure that includes a parking garage, secondary museum lobby/entrance, support facilities and central plant. The wood-and-steel addition perches lightly on the existing multi-story concrete building. In addition to other advantages, the use of wood provided a lighter structure that reduced the overall load.

Access to daylight was the primary organizing gesture. The building was designed to maximize daylight while protecting the artwork inside, and to

celebrate the conservation work that is typically hidden from view. Four studio bays oriented on an east/west axis are cantilevered from the building's north and west facades and topped with shaped roofs and clerestory windows to flood the studios with indirect natural light. A central corridor divides the daylit studios from the spaces requiring darkness, such as imaging and X-ray rooms.

An interstitial mechanical space was created between the existing roof/parking deck and the center's finished floor. By locating the mechanical support below the conservation level, the rooftop was free of mechanical equipment and the ceiling space free of ductwork and piping, allowing a soaring, lightfilled room that accentuates the wood structure.

The building uses an innovative structural strategy that utilizes both









mass timber and steel, and was the first structure in North America to include DLT. The panels were prefabricated and lifted into place on-site, resulting in quicker construction. Left exposed as a finish material, the wood structure, which is whitewashed to reflect daylight into the building, lends warmth and texture to the studio spaces.

Given the nature of their work, art conservation facilities tend to be thought of as sterile laboratory spaces. From the outset, the design team wanted to incorporate natural biophilic materials, specifically wood, to provide an appropriate warmth and texture to the laboratory environment. The result blends the science and art of conservation to create spaces that perform superbly to their technical requirements, while creating a warm and welcoming work environment for art conservators.

CLIENT
The Museum of Fine Arts, Houston
Houston, TX

ARCHITECTS
LakelFlato Architects
San Antonio, TX
Kendall/Heaton Architects (AOR)
Houston, TX

STRUCTURAL ENGINEER Cardno Haynes Whaley Houston, TX

GENERAL CONTRACTOR W.S. Bellows Construction Corp. Houston, TX

TIMBER SUPPLIER StructureCraft Abbotsford, BC

PHOTOGRAPHY Richard Barnes New York, NY

Peter Molick Houston, TX



The newest addition to Seattle's iconic Pike Place Market draws heavily from the landmark's simple utilitarian character

Pike Place MarketFront

s the first addition to Seattle's iconic Pike Place Market in more than 40 years, Pike Place MarketFront replaces an existing surface parking lot left vacant since a building burned down decades ago. New elements in the 210,000-sq.ft. project include a mix of low-income and senior residential, commercial/retail, office space and underground parking carved into the hillside on the west side of Western Avenue directly below the Market.





Understandably, the opportunity to design an addition to the oldest continuously operated public market in the country - and one of the city's most treasured landmarks - brought intense scrutiny. The client's main goal was to meet the needs of the Market's many vendors, residents and social service recipients, and to work collaboratively to integrate the addition with pedestrian connections to the soon-to-be-revitalized waterfront. There were also significant technical challenges, as the site is located above an active railroad line and a century-old train tunnel.

The project draws contextual inspiration from the simple utilitarian

character of the existing market, and the heavy timber elements and castin-place structure found throughout. This historic precedent, combined with timber's light carbon footprint, abundant local sourcing and speed of erection made it an easy choice for the project team.

While timber is typically used to support gravity loads of the building, the structural engineer designed composite timber and steel framing members to manage portions of the building's lateral loads.

The monumental structure, enclosed by a timber-framed glazing system, creates a vibrant Producers Hall – which houses a brewery, chocolatier, biscuit shops, and future tapas bar – while preserving historic views of Puget Sound through the building from Western Avenue. Naturally beautiful, exposed timber columns, beams and decking constitute the primary material finishes in the space.

The responsibility of creating a prominently placed mixed-use building that respects the unique history and character of one of Seattle's most familiar and beloved city icons was both daunting and exhilarating for the design team. Completed in 2017, this long-time-coming addition links tradition and modernity to provide both locals and visitors with more of the culture and spirit of the Market they know and love.



CLIENT
Pike Place Market Preservation
and Development Authority
Seattle, WA

ARCHITECT Miller Hull Seattle, WA

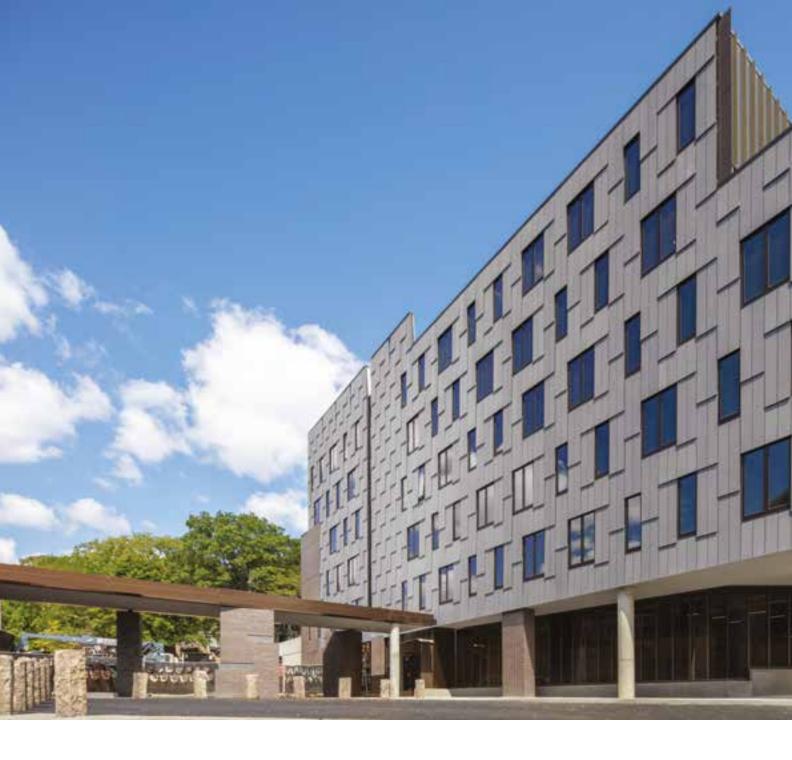
STRUCTURAL ENGINEER Magnusson Klemencic Associates Seattle, WA

GENERAL CONTRACTOR Sellen Construction Seattle, WA

TIMBER SUPPLIER Bojarsky Inc. Portland, OR

PHOTOGRAPHY Lara Swimmer Seattle, WA







Aesthetics, sustainability and speed were the main goals of this project, the first hybrid CLT-steel residence hall in New England

Rhode Island School of Design – North Hall







he new six-story residence hall for the Rhode Island School of Design (RISD) incorporates CLT panels supported by steel framing. By using this structural system in a dormitory, the project team achieved the client's goals of beautiful design, environmental sustainability and an aggressive construction schedule.

Although presented with multiple design options to meet the client's goals, the team selected the CLT-steel hybrid system despite a slightly higher cost premium (approximately 10 percent) for several reasons:

Sustainability. CLT is made from lumber that can be harvested sustainably. Timber framing also sequesters carbon from the atmosphere since trees consume carbon dioxide as part of the photosynthesis process.

Aesthetics. Exposed CLT panels can achieve a fire-resistance rating without the need for applied ceilings due to the charring effect recognized by the International Building Code. This allowed for savings in drywall for the ceilings and a highly desirable aesthetic look for the building interiors. The architect and owner felt that the exposed wood interiors also echoed themes of sustainability that the students study as a part of RISD's curriculum.

Speed. The CLT-steel hybrid system provided a schedule advantage. Working closely with the selected fabricator, the team optimized the layout of CLT panels to minimize erection time. The fabricator manufactured the five-ply panels in 8 x 50-ft. dimensions. Thus, each slab spans the entire width of the

building. Due to the lightweight nature of the material, the erector could use a smaller crane compared to precast concrete slabs. Furthermore, since the contractor could field core most of the plumbing penetrations in the panels without reinforcement, the fabricator could significantly reduce shop drawing preparation and review time when compared to a precast concrete plank system.

The RISD project team succeeded in bringing the first hybrid CLT-steel residence hall to life in New England by prioritizing innovation and working together to achieve a shared vision. Future residence hall projects in the region and beyond may consider this option as a viable alternative when the speed of construction and sustainability are key considerations of the team. For RISD, combining mass timber and steel construction exceeded the client's goals for a sustainably designed new home for the next generation of students.

ARCHITECT NADAAA Boston, MA

STRUCTURAL ENGINEER Odeh Engineers, Inc. North Providence, RI

GENERAL CONTRACTOR
Shawmut Design & Construction
Providence, RI

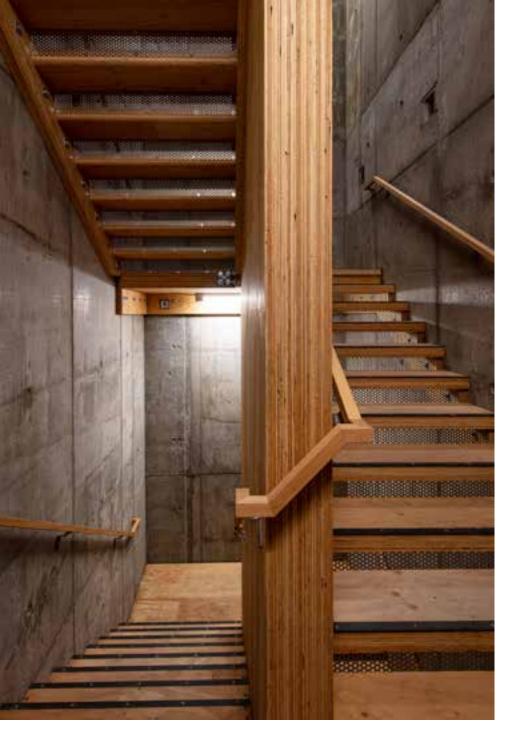
TIMBER SUPPLIER Nordic Structures Montreal. QC

PHOTOGRAPHY John Horner Somerville, MA









ith a brick masonry envelope that highlights and exposes the warm wood structure inside, Sideyard is a 20,000-sq.ft. building with retail uses designed to activate the ground floors and office spaces above. The building is situated on a leftover berm site, an artifact of a street realignment project by the City of Portland. Designed as a working-class building aimed at public transportation connectivity, pedestrian openness and bicycle priority access, it is positioned centrally in the new Eastside community and helps strengthen the connection between that community, and the downtown urban core.

This wedge building features a fivestory CLT structural floor and roof system supported with a mass timber column and beam frame and concrete lateral cores. The building meets grade at both Levels One and Two. The CLT floor at Level Two was given a 4-in. concrete topping to satisfy structural stability requirements. The upper CLT





decks receive a gypcrete topping and finish flooring of the future tenants' choosing. The ground floor will be activated by storefront along Third Avenue, with workspace above.

CLT panels were fabricated to size at the DR Johnson facility in Riddle, Ore. Glulam beams and columns were laminated to size and fabricated with CNC machinery at Portland's CutMyTimber. The light wood-frame exterior walls were prefabricated offsite and placed with a mobile crane for on-site labor savings.

Sideyard includes Oregon-sourced and manufactured Douglas fir CLT for the gravity system, and a supporting concrete core for the lateral system. Structural wood elements – including columns, ceilings and floors – are left exposed, eliminating the need for additional finishes. CLT panels were also used as form liners for the concrete cores. This resulted in a beautifully subtle board-formed finish that reflects the exposed CLT structure. Exterior canopies have a Douglas fir tongueand-groove soffit cladding, creating a seamless materials palette from inside to out.

Brick was a conscious material for the exterior to contrast the surrounding volumes of metal panels and glass in the area. The consistent use of Douglas fir CLT, glulam beams and columns, concrete formwork panels, soffit cladding, mass plywood stair treads, landings, demising walls and handrails showcases beautiful Oregon wood species in a truly unique fashion. CLIENT
Key Development
Portland, OR

ARCHITECT Skylab Architecture Portland, OR

STRUCTURAL ENGINEER catena consulting engineers
Portland, OR

GENERAL CONTRACTOR
Andersen Construction
Portland. OR

TIMBER SUPPLIERS DR Johnson Wood Innovations Riddle, OR

Freres Lumber Co, Inc. Lyons, OR

PHOTOGRAPHY Stephen Miller Portland, OR









partnership between the Darla Moore Foundation, Florence-Darlington Technical College and Francis Marion University, the Continuum is located in Lake City, S.C., roughly a two-hour drive north of Charleston. The structure was originally built as a Walmart in 1969, but it had been abandoned for some time when the design team converted this big-box store into a state-of-theart educational facility.

Designing the building based on public feedback for local curriculum needs, the Continuum provides a variety of workforce education-focused courses including HVAC, welding, manufacturing and industrial maintenance. Additionally, the campus will offer distance learning, biology and chemistry courses.

The designers renovated and repurposed the building by strategically dividing the existing steel structure,











then selectively removing portions of the old structure and replacing them with large glulam members to create a main circulation spine with clerestory windows. Areas off the main spine are equipped with flexible, functional furniture that encourages students and faculty to gather and interact. Linked by these open spaces, the building incorporates multiple educational functions into one cohesive floor plan, including classrooms, computer labs, science labs and workforce development spaces.

The roof of the central corridor was elevated by means of a large-scale glulam structure with exposed NLT deck that allows natural daylight to penetrate to the center of the former retail floor. The massive wood structure and exposed bolted connections give the space both an industrial feel and sense of rootedness in the natural world. Large windows and projecting glass boxes around the

entire building perimeter introduce significant amounts of daylight into the classrooms, meeting spaces and offices. By using traditional building materials like brick, copper and wood, the design achieves a modern solution while complementing the surrounding downtown structures.

ARCHITECT McMillan Pazdan Smith Architecture Charleston, SC

STRUCTURAL ENGINEER Britt Peters & Associates Greenville, SC

GENERAL CONTRACTOR Thompson Turner Construction Sumter, SC

TIMBER SUPPLIER Apache Forest Products Midlothian, VA

PHOTOGRAPHY Kristopher Decker Greenville, SC









A bold modern statement that departs from the traditional architecture of the region rises from the forests of northern Minnesota



Tre Søstre

ocated in the northern Minnesota village of Grand Marais, a remote outpost defined by its proximity to Lake Superior and the vast Superior National Forest, Tre Søstre is a private development situated in a mixeduse neighborhood a half block from the shore.

Two decades ago, the clients purchased the abandoned property and converted three severely damaged buildings into vacation rental units, while constructing a heavy timber "boathouse" as a live/work space for themselves. More recently, they purchased the adjacent vacant lot and





hired Salmela Architect to design three additional units. The goal was to prioritize views while remaining sensitive to the scale and materials of the neighborhood. They also wanted a bold modern statement that departed from the traditional rustic architecture of the region.

Tre Søstre is Danish for "Three Sisters," an homage to the client's Danish father. In addition to describing the familial grouping of structures



stepping up the hill, it also references a tight grouping of three rogue waves, a phenomenon unique to Lake Superior.

The three units are located up-slope from the existing structures. Modest 16 x 22-ft. footprints support multiple cantilevered volumes and decks above, a strategy inspired by Scandinavian "stabbur" farm buildings. The remaining landscape is defined by a series of dry-laid stone retaining walls

that articulate a dynamic sequence of paths, patios and softscapes for stormwater retention.

Each unit has a covered entry deck located a half-story above grade. Interior stairs lead down to ground level and up to second-floor bedrooms. The top floors cantilever to the east, creating an open living space with unobstructed views of the lake, harbor and village while providing

overhead cover for the private patios and decks off each bedroom below. A south-facing deck extends the living space to the exterior, providing a dramatic perch reminiscent of a crow's nest. Spatial adjacencies were carefully considered to provide areas of protected privacy and open gathering within a relatively dense cluster of rooms and units.

The entire structure was built from prefabricated structural insulated panels. This construction method was selected due to a very tight schedule (around 100 days from start to finish), constrained budget and limited amount of labor available in this relatively remote town. The cantilevered decks and floors on the upper levels allowed for a reduced building footprint, lower excavation and foundation costs, and less disruption to the surrounding landscape.

ARCHITECT Salmela Architect Duluth, MN

STRUCTURAL ENGINEER Meyer Borgman Johnson Duluth, MN

GENERAL CONTRACTOR Taiga Design + Build Grand Marais, MN

TIMBER SUPPLIER EPS Buildings Graettinger, IA

PHOTOGRAPHY Corey Gaffer St. Paul, MN





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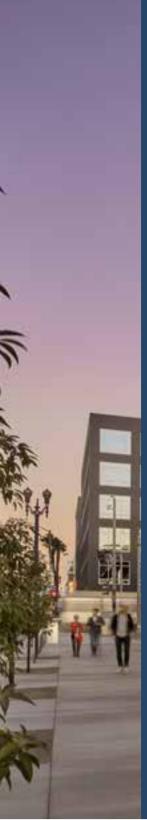












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