CELEBRATING EXCELLENCE IN WOOD ARCHITECTURE

2020-21 WOOD DESIGN AWARD WINNERS

Canadian Wood Council
Conseil canadien du bois

Canadian Wood Council
99 Bank Street, Suite 400, Ottawa, Ontario K1P 6B9
Tel: (613) 747-5544   Fax: (613) 747-6264
www.cwc.ca

Celebrating Excellence in Wood Architecture
2020–21 Wood Design Award Winners

Editor: Brooke Smith, Dovetail Communications Inc.
Design: Sharon MacIntosh, Dovetail Communications Inc.

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Photo: Tom Arban

CELEBRATING EXCELLENCE IN WOOD ARCHITECTURE

2020–21 WOOD DESIGN AWARD WINNERS

Inspiring Excellence in

WOOD ARCHITECTURE

The Wood Design & Building Awards program celebrates the best of wood design and architecture in commercial, institutional, and residential construction. The awards program is an opportunity to honor talented teams from around the world pursuing excellence in wood. The delightful array of winning projects this year showcases the functionality and beauty of wood, and calls particular attention to its rich diversity of form. A library built against a rock wall, a reconstructed heritage horse barn, and a clear-span bridge are among the mix of eclectic structures featured in this year's book.

The resilience and creativity of these teams have not wavered during these unprecedented times and the ensuing mandates for physical distancing, lockdowns, and masks did not hamper their achievements. In fact, despite the pandemic, we had a record-breaking 178 submissions for our 2020–21 awards.

Even our jury, previously accustomed to gathering in person at our offices in Ottawa, forged ahead in a virtual judging environment to determine the best and the brightest from an exemplary field of competitors. We gratefully acknowledge and thank our esteemed jurors for their time and expertise: David Edmunds, Partner at GEC Architecture; John Newman, Director and Senior Architect at Snøhetta; and Anne Schopf, Partner at Mahlum.

We also offer our deep appreciation to our sponsors – Sansin, the Sustainable Forestry Initiative, and Western Red Cedar – for their support and ongoing commitment to this influential awards program.

Finally, on behalf of the entire team at *Wood Design & Building* magazine and the Canadian Wood Council, we extend our sincere appreciation to all participants of the 2020–21 awards program, and our congratulations to the winners featured in these pages. Thank you for giving us something to celebrate!

Andrew Bowerbank
Publisher
Wood Design & Building
magazine

Ioana Lazea
Senior Manager, Special Projects
Wood Design & Building Awards


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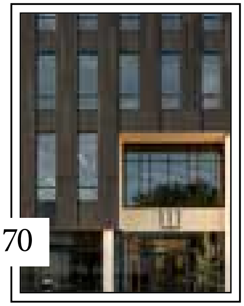

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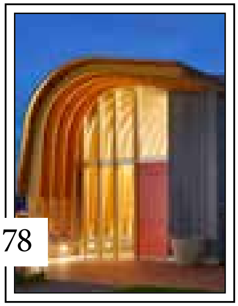

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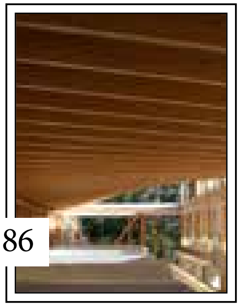

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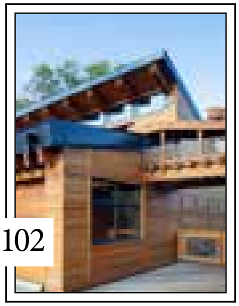
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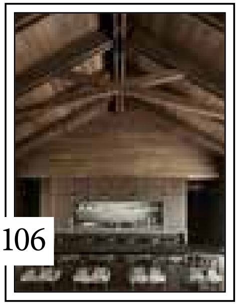
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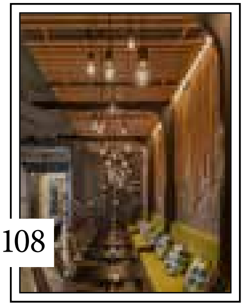
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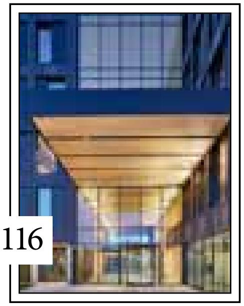
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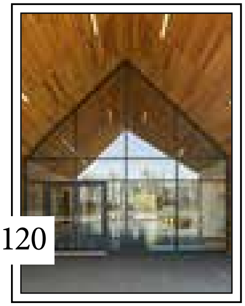
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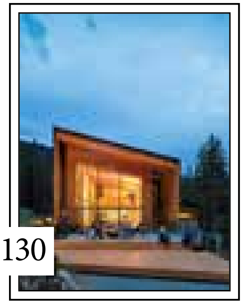

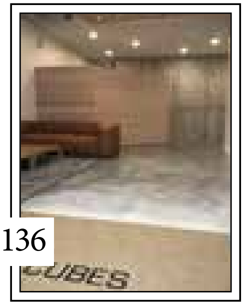

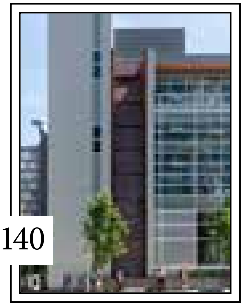

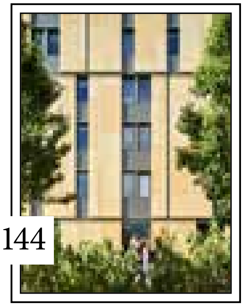

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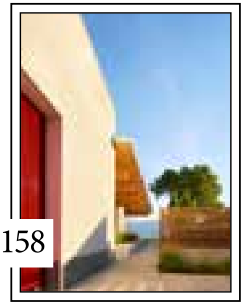

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2021 PRAIRIE


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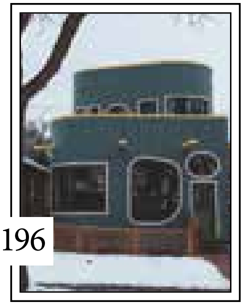
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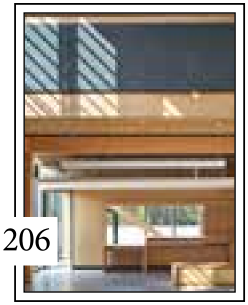
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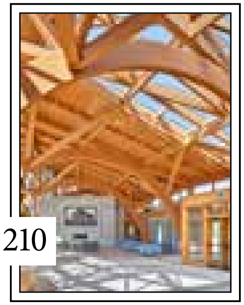
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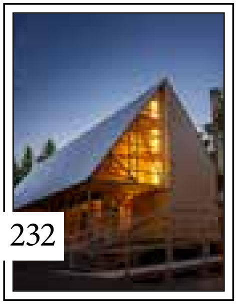
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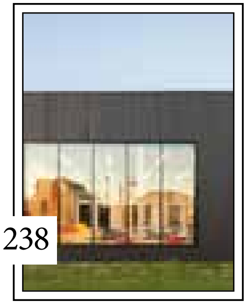
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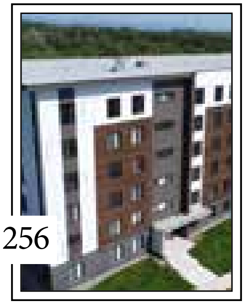
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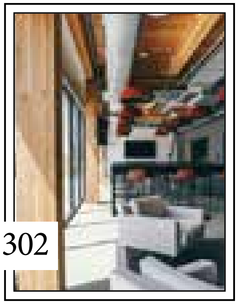
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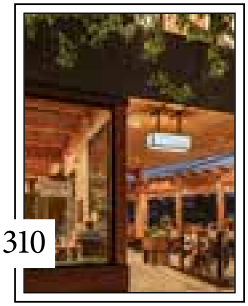
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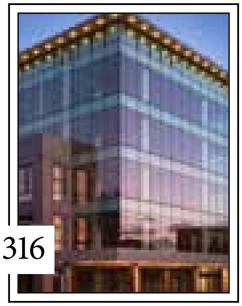
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Jurors

ANNE SCHOPF
Partner
MAHLUM
mahlum.com

JOHN NEWMAN
Director
SNØHETTA
snohetta.com

DAVID EDMUNDS
Partner
GEC ARCHITECTURE
gecarchitecture.com

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Sustainability in Wood

Last January, I was not present at the online judging of the 2020–21 Wood Design & Building Awards. The reason for going virtual, of course, was safety around the pandemic, but it also meant when I came on board as editor of the magazine toward the end of last year, I was able to settle in to watch the Awards via a Zoom recording. And I have to say, all of the projects must be commended for their superlative execution, creativity, and aesthetics.

Observing and listening to the jurors comment on the shortlisted entries, I realized just how trained their eyes truly are. They expertly explained why a given project, while well designed and executed, warranted a Merit or a Citation Award instead of an Honor Award. It was fascinating to listen to their discussions.

They considered the intersection of architecture and nature, too, which was present in many of the submissions but prominently showcased in the Natural Library in Zheshu Village, Shanxi Province, China. This project captivated the jurors. As one commented, "There's nothing superfluous. It grows out of the mountainside."

The sustainability of wood was another point of discussion. The Roger Bacon Bridge in Nappan, NS, was particularly meaningful to one juror who felt the structure was a way to help bring transportation back into a world of sustainability.

This year's projects skilfully display the beauty and endless possibilities of wood, and also herald a more sustainable future.

Brooke Smith

Brooke Smith
Editor
Wood Design & Building

Patinoire du Parc des Saphirs
Boischatel, QC
Please see page 246

"When you're inside, the balanced daylight comes through the apertures. You get this laciness, which is very much like a barn. You can almost smell the wood."
– Jury

A school that emphasizes “learning by doing” is doing a lot to show how innovative design can nurture both mind and body.

North America

Thaden School Bike Barn

Located in Bentonville, AR, the Thaden School is an independent middle and high school that combines academic excellence with "learning by doing" via three signature programs: Wheels, Meals, and Reels. Through its partnerships with nearby community organizations, the school provides students with learning opportunities on and off campus, allowing for learning opportunities both indoors and out.

Sitting atop a berm on the eastern edge of the campus, the Bike Barn transfigures the vernacular of the region into an athletic facility housing a multiuse activity space, bike storage, and support facilities. The 6,700-sq.ft. structure starts with the profile and space of a gambrel barn (made prolific in the region for its increased vertical storage capacity) and reconfigures it to create maximum flexibility for volleyball, basketball, cycling, and more with the spring point of the gable set to provide the most vertical clearance before the trusses begin.

Working with a local truss manufacturer, the truss was examined at an elemental level and its logic rethought in the creation of a bold figure attuned to its new purpose. In instances where structural steel was needed, light gauge flitch plates were used as a continuation of regional building practices as opposed to introducing other structural profiles foreign to the local timber construction culture.

Akin to a barn raising, 12 trusses were hoisted into place above dimensional wood columns with steel flitch plates, revealing the profile of a modified gambrel barn carved into the space of the interior. Set over a copper insect screen, the entire exterior is clad in a combination of red-painted and clear finish open joint cypress, articulating the body of the barn and where it is carved away on the west, forming a porch. Oriented toward the soccer field, this west porch provides an elevated and sheltered area for spectators.

With the exception of the storage and locker room volume, the entire space is naturally ventilated through open joint cypress board siding, vented skylights, and a series of roller doors that can open up the barn to the surrounding landscape.

The Bike Barn taps into an expanding cycling culture in the region and is integrated into a network of pedestrian pathways and a larger system of trails that extend throughout northwestern Arkansas. As the largest producer of timber in the American South, Arkansas has historically been an extractive state where its timber is harvested and then brought and used elsewhere. In contrast to the idea of extraction, the Bike Barn explores the specificities of locality and the material culture of timber in the state.

ARCHITECT
Marlon Blackwell Architects
Fayetteville, AR

STRUCTURAL ENGINEER
Engineering Consultants Inc.
Lowell, AR

GENERAL CONTRACTOR
Crossland Construction Company, Inc.
Columbus, KS

PHOTOGRAPHY
Timothy Hursley
Little Rock, AR

The Zheshui Natural Library is truly a master class in incorporating the natural environment into designs, rather than modifying or working around it.

International

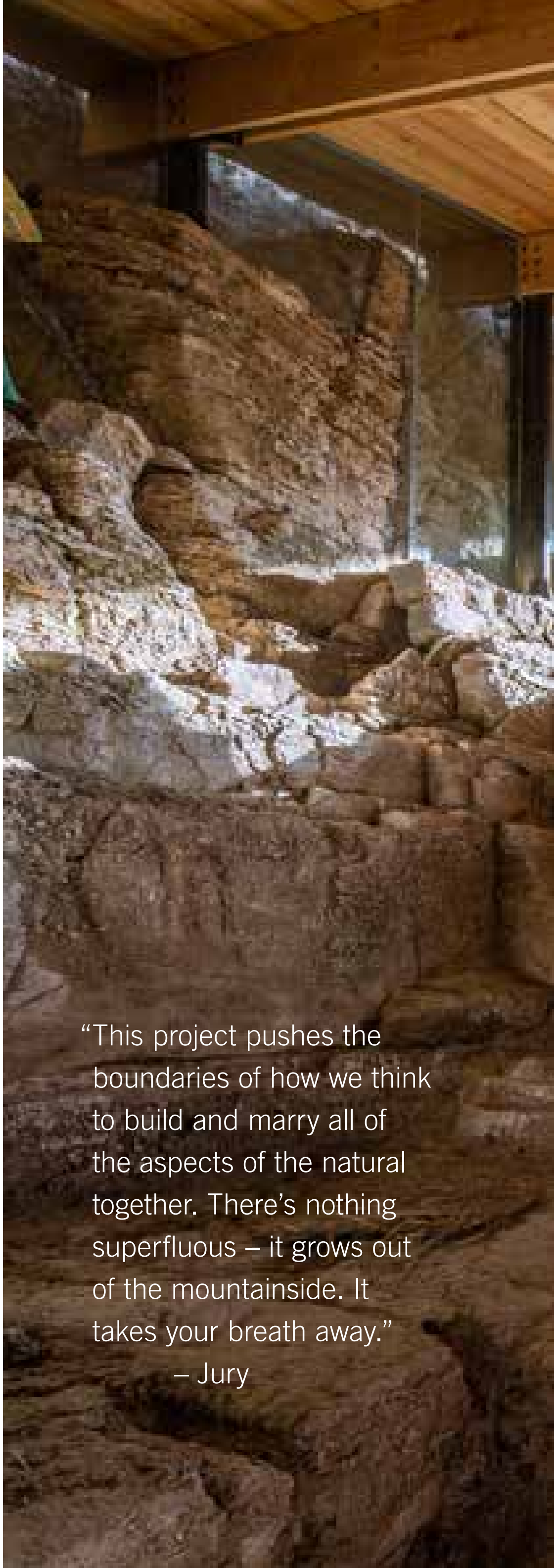
Natural Library, Zheshui Village

Located in Zheshui Village in northern China's Shanxi Province, the Zheshui Natural Library gets its name from the way it is integrated into its site between a rock cliff and a canal. The 160-sq.m. library is nestled next to the rocks, using them for two sides of the library and for seating. The wood shelves opposite the rocks hold books while also supporting the sloping, wood-framed roof.

All of the timber is lightweight, minimizing the foundations and disruptions to the landscape. The library is enclosed by glass, with windows on the short ends and glass bricks across the long elevation facing the canal. The "naturalness" of the library is punctuated by the large tree that literally punctures the roof by the entrance.

The library reflects the village, which is closely articulated with the topography; many houses there are built by leaning on the mountain. The Natural Library is inspired by this traditional construction method, with the "bookshelf" providing three functions in the structure: column-grid structure, a place to sit, and, of course, shelves for the books. All foundations are light foundations with minimal natural damage to the land.

Each structural component is connected to one another to form a stable structural system. The gap between the columns is filled with glass bricks, which is both an internal and external partition, at the same time supporting building units. The roof is assembled with two layers of panels; one layer laid horizontally and the other laid longitudinally. All the components work together to form the structural system.



"This project pushes the boundaries of how we think to build and marry all of the aspects of the natural together. There's nothing superfluous – it grows out of the mountainside. It takes your breath away."
– Jury

ARCHITECT
LUO Studio
Beijing, China

STRUCTURAL ENGINEER
Yuejie Luo
Beijing, China

GENERAL CONTRACTOR
Shangmuzao Building Technique Co., Ltd.
Beijing, China

PHOTOGRAPHY
Weiqi Jin
Beijing, China

Bar U Ranch Work Horse Barn
Longview, AB,
Please see page 184

Oregon State University Forest Science Complex
Corvallis, OR
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SoLo
Soo Valley, BC
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"The best part is some of the detailing where there's no attempt to deny the structure; it's a really pure expression."
– Jury

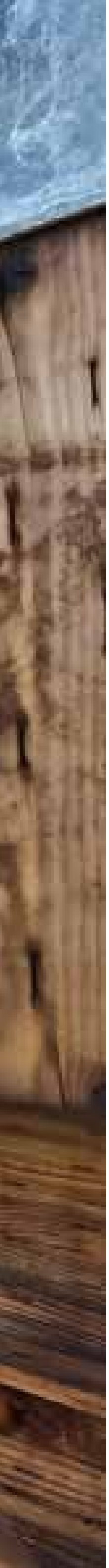
Spanning the Nappan River near Amherst, NS, the Roger Bacon Bridge was designed by Wood Research and Development for Nova Scotia's Transportation and Infrastructure Renewal Department, using treated engineered glulam to replace a steel structure with a similar arch profile.

North America

Roger Bacon Bridge

The local community referred to the previous bridge as the "Rainbow Bridge" for obvious reasons. Timber Restoration Services (TRS) joined with Wood Research and Development to construct the new bridge with a similarity to the Rainbow Bridge to provide the community with the same shaped structure they once knew. The location of the bridge caused Nova Scotia Department of Transportation and Infrastructure Renewal to consider a timber structure, with the region being known as a high corrosion zone. The coastal Douglas fir elements were treated with copper naphthenate, as pentachlorophenol is prohibited in Nova Scotia. The selection of the treated engineered glulam also allowed the client to have the project completed earlier and with a smaller site footprint than could have been achieved with either a concrete or steel replacement structure.

The engineered timber was used for all the primary elements of the substructure, the arch compression chords, tension chords, deck, curbs, and barrier rail system. The large arch is visually appealing and provides significant strength to bridge the 40 m gap while supporting traffic loadings equal to three B-Double transports on the bridge in three lanes.



The project was advertised as design and construct with no specified material option. TRS in collaboration with WRD submitted a proposal for a glulam option to replace the previous bridge with a solution that resembled the former Rainbow Bridge. WRD supplied the engineered timber specifications together with the detailed construction drawings so that the correct products would be supplied to the contractor. There was no requirement from the tender to design a replacement bridge that was of similar design to the previous bridge. The option was well received by NSTIR and preliminary discussions ensued on the material choice for the Roger Bacon Bridge. An independent consultant determined that the structure was best suited as timber due to the lower economic impact, longevity, aesthetics, and lightweight nature of the material. With the steel superstructure removed, the timber pile substructure could be revitalized and used in the new bridge design.

The Roger Bacon Bridge is an exceptional timber structure that utilizes the existing substructure piles in addition to the new superstructure. With some minor retrofit works to the piles, the system contained sufficient capacity to support the loads for the design life of the new bridge. It was also significantly widened in comparison to the original layout, from two lanes to three.

CLIENT
Nova Scotia Department of Transportation and Infrastructure Renewal
Halifax, NS

STRUCTURAL ENGINEER
Wood Research and Development
Hillsborough, NB

GENERAL CONTRACTOR/ WOOD SUPPLIER
Timber Restoration Services
Hillsborough, NB

PHOTOGRAPHY
Mark Baladad,
Wood Research and Development
Hillsborough, NB

CO-OP Ramen is a new fast casual ramen restaurant in the 8th Street Market in Bentonville, AR, a community-focused food hub that pairs culinary excellence and experiences with support for small and mid-size local farmers.

North America

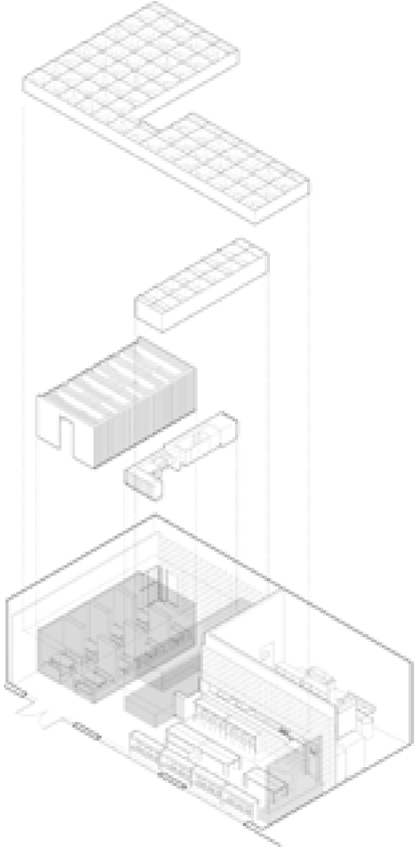
CO-OP Ramen

Set within a former food processing plant, CO-OP Ramen is a moment of quiet inside the bustling market, constructed from primarily unrefined plywood that creates a productive dissonance between new and old. Accented with concrete masonry units, the plywood is handled with care and elevated to create a carefully composed and richly textured interiority.

Visitors enter beneath an articulated plywood ceiling with diffuse lighting that expands throughout the restaurant. Made from simple construction-quality plywood, the ceiling, seating, and booths are elevated through careful joinery and detailing of the edges, then illuminated by concealed light fixtures. The material and fabrication constraints of a standard sheet of AC Douglas fir plywood are the point of departure for the organizing cells of the ceiling. The sheets are subdivided and optimized to create multiple cells per sheet.

The space of the restaurant is then organized by a rectangular grid of 2'-10" by 3'-10" modules that introduce a consistent rhythm throughout the space, textured by the addition of diagonals that cross the individual cells in a seemingly random pattern within which light and shadow become caught up in the interstitial depth. Finished in a clear matte sealant, the edges of the plywood are then painted, with black reserved for the ceiling and white for “The Cave,” providing a finer grain of detail to the articulation of the restaurant.

The warmth of the wood is juxtaposed against walls of concrete block with a serrated face, emphasizing the relationship of the handmade to the industrial. A single ribbon window in the block wall serves as a kitchen pass-through and a visual connection between customers and chefs. This feature animates the main dining space as steam, smells, and the motions of work become a part of the dining experience. The relationship is accentuated further with the addition of a planted living wall defining the south end of the main dining space.



EXPLODED AXON OF PRIMARY ELEMENTS

With a variety of seating provided, visitors can choose between booths in "The Cave," communal dining tables in the open, or bar seating in front of the exposed kitchen. Whether made of plywood or white oak, each element is an exercise in careful detailing and expression of material. With a dining area of only 1,500 sq.ft., CO-OP Ramen creates a remarkable variety of spaces

that remain unified by the design and material palette. The exploration of what a humble sheet of Douglas fir plywood could become generated a variety of solutions and resulted in a system of articulation attuned to the material and able to elevate it through a focused attention to detail. This simple strategy provides a tactile experience within an industrial relic, giving it humanity and scale.

ARCHITECT
Marlon Blackwell Architects
Fayetteville, AR

STRUCTURAL ENGINEER
Gore 227 Inc.
Springdale, AR

GENERAL CONTRACTOR
Heart + Soule Builders
Bentonville, AR

PHOTOGRAPHY
Timothy Hursley
Little Rock, AR

A mountaintop neighborhood architecturally expresses the social and environmental values shared by its builders and occupants.

North America

Horizon Neighborhood

"These buildings are reminiscent of the mining tradition in Utah. Mine structures would often be set right into the mountain."
– Jury

Horizon is the first pre-designed neighborhood to be built at a 9,000-ft. elevation on Utah's Powder Mountain, about an hour's drive north of Salt Lake City. It consists of 30 wood-clad cabins ranging in size from 1,000 to 3,000 sq.ft., along with a series of strategically placed garages. Buyers choose from four typologies, which either follow the contours like mountain goats, or are crossgrain, projecting off the mountainside like extreme skiers. The cabins are then customized for each owner. The theme and variation, in combination with the dramatic topography, result in a neighborhood that has a powerful sense of both unity and variety. The first eight cabins are now complete, with subsequent units under construction.

Commissioned as a home base for Summit Series, an ambitious speaker program that attracts a community of innovators and social impact investors from a broad range of fields, this new village is an architectural expression of Summit's values: community building, climate responsiveness, and land stewardship. This isn't another ski resort, but rather a planned community for entrepreneurs and creative types working together to address global challenges.

The cabins are aggregated around courtyards in a way that maximizes both community and privacy to foster chance meetings and social interactions. The experience of passing from garages, between units, and under bridges is like a game of Snakes and Ladders. The siting of the buildings and bridges was also carefully organized to minimize views into neighboring units, while framing unobstructed sunset views to the southwest.

Climate responsiveness begins with passive solar orientation, combined with thermal mass concrete floors and hydronic-in-floor heating. The steel stilts make the buildings light on the fragile high desert landscape. A series of protected courtyards create microclimates in an otherwise open and windswept landscape. The dense neighborhood will allow most of Powder Mountain's 11,500 acres to remain undeveloped and conserved for future generations. Important design considerations included following strict codes dictating building assemblies that were non-combustible because of the prevalence of wildfires in the region.

The modest cabins stand in contrast to the excessive architecture that is now typical of resorts in the Mountain West. Each cabin consists of a cedar-shingled roof and vertical shiplap cedar walls inspired by the cedar-clad barns of the Eden Valley below. Aluminum-clad wood windows and cedar interiors complete the monolithic sculptural effect called Heritage Modern by the clients. The cabins are accessed on the second floor via steel bridges due to the extremely high annual snowfall that gives Powder Mountain its name.

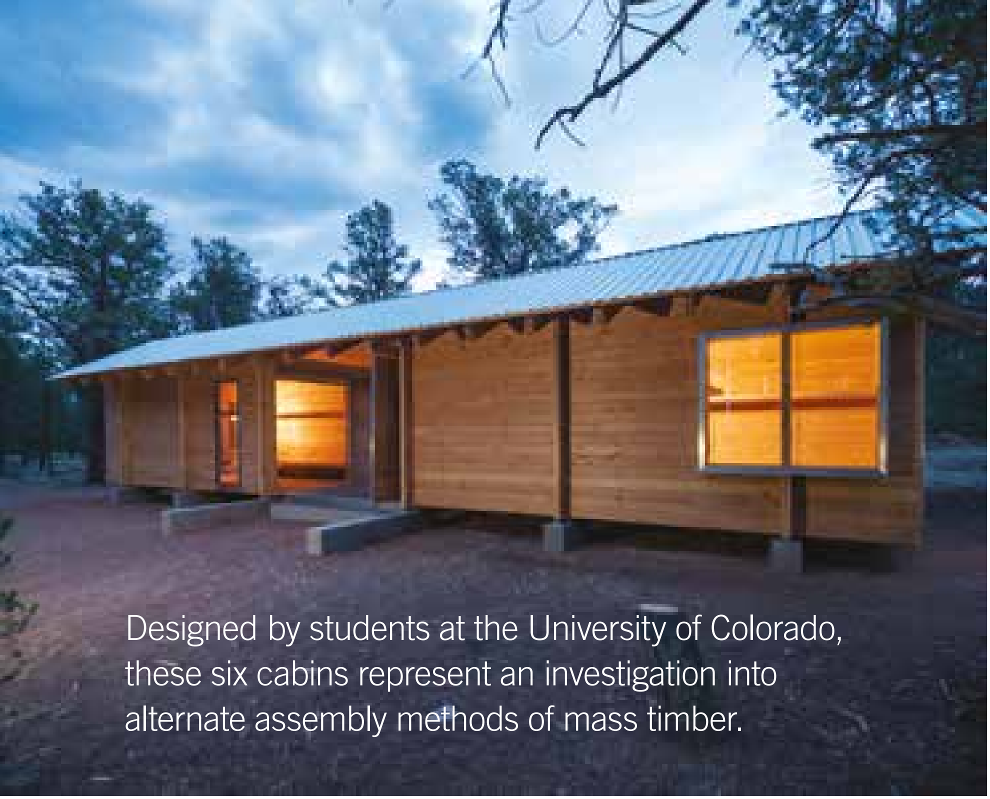
ARCHITECT
MacKay-Lyons Sweetapple Architects
Halifax, NS

STRUCTURAL ENGINEER
Dynamic Structures
Provo, UT

GENERAL CONTRACTOR
Mountain Resort Builders
Park City, UT

PHOTOGRAPHY
DoubleSpace Photography
Toronto, ON

Paul Bundy
Roy, UT



Designed by students at the University of Colorado, these six cabins represent an investigation into alternate assembly methods of mass timber.

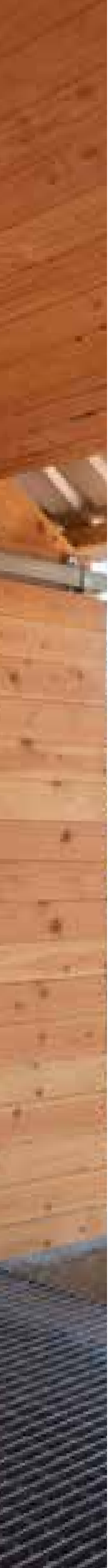
North America

Cottonwood Cabins

High on the Colorado Plateau just outside of Thoreau, NM, in a desert landscape characterized by juniper and ponderosa pine forests, six new bunkhouses and an outdoor kitchen create a welcome refuge for trekkers at the basecamp for Cottonwood Gulch Expeditions.

Drawing on the camp's rich "porch culture," the new cabins are conceived as pairs of 200-sq.ft. bunkhouses that share a singular roof over a common outdoor gathering space. Each cabin seeks strong connections to nature using apertures to maximize the experience of the outdoor environment. The

doors, conceived of as movable walls, are mounted on sliding tracks that, when opened, connect each bunkhouse to a shared porch. Large glazing areas allow the interior to be flooded by the morning light and provide occupiable moments to contemplate the world outside.



The cabins are elevated above the landscape to give a degree of separation from the fauna of the high desert. Inside, bunks float above the floor, suspended from the ceiling by steel rods. This removes all interior vertical surfaces and provides clear sight lines into corners, leaving no space for rodents to hide or nest. Floating exterior porches are constructed of bar grate to make them visually transparent and facilitate the catch and relocation of rattlesnakes.

Each cabin's bunk beds are designed to offer trekkers agency on how they occupy the space. Traditional rigid bunk beds are replaced with floating platforms designed with more space than required for a single mattress. This gives each trekker the ability to choose whether they engage a window, find an introspective moment of solitude, sleep close to a friend, utilize negative space for benches, or find their own creative way to make the cabin their own.

The cabin's construction is an investigation into mass timber building techniques. Screw-laminated 3x6-in. tongue-and-groove fir timbers are used to achieve solid floors, walls, and ceilings. The screw-laminated timbers act as a single diaphragm, achieving greater spans and cantilevers than individual pieces of lumber could on their own. This construction method allows for various self-supporting assemblies without the need for additional framing. Traditional headers over doors and windows are no longer required as the timbers work to carry the loads. This structural assembly is also utilized in the fabrication of the doors, window bucks, and post-tensioned floating bunk beds.

ARCHITECT/
GENERAL CONTRACTOR

Students from the Colorado Building Workshop at the University of Colorado
Faculty: Rick Sommerfeld,
Will Koning, and J.D. Signom
Denver, CO

STRUCTURAL ENGINEER

Andy Paddock
Denver, CO

PHOTOGRAPHY

Jesse Kuroiwa
Denver, CO

“This project fit into its context; even the materiality felt like it was of the place. They’ve built off of an existing column structure and they’ve made sense of that.”

– Jury

Navigating an existing foundation and dealing with a short construction window were just some of the challenges encountered while creating this government office in central China.

International

Party and Public Service Center, Yuanheguan Village

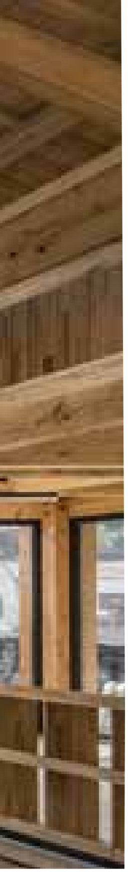
Located in central China's Hubei Province, Wudang Mountain Tourism Economic Zone in Shiyan City has been actively promoting B&B business and improving the surrounding environment of the scenic area. Yuanheguan Village is close to the entrance of the Wudang Mountain Scenic Area, and was selected as a prioritized place for a pilot program. According to the plan, the plot where the original village committee office was situated was to be transformed into a B&B reception demonstration area. To guarantee services for the villagers, it was essential to figure out how to build it in a short time.

Based on careful consideration of the village's conditions, LUO Studio recommended reusing a residential plot adjacent to the main road as the new site of the village committee office. This plot was once requisitioned for a development project, but for some reason the project had been put on hold, leaving a foundation and several structural columns on the site. Since continuing construction work on this basis could save a lot of time, the subdistrict office and the village committee agreed to reuse and transform the plot, hoping to reshape the built landscape along the streets and reenergize the dilapidated western area of the village.

The construction load of the foundation was calculated based on the originally planned construction for a house featuring three to four stories and a concrete frame structure (a typical local building type along the streets). The design team set several principles for the subsequent construction: avoiding damage or alteration to the original structure, minimizing extra load increased by the upper new construction, and effectively combining the forces of the new extension and the old construction. After comprehensive research and analysis, LUO decided to carry out subsequent construction with wooden structures.

The concrete columns that already existed on the site constituted a grid in a disorderly arrangement. Compared to the wooden structure, the original concrete column grid is incomplete. For this reason, necessary columns needed to be placed to the 2 m-wide column lay in the central area so as to make up for the lack of span of wooden beam members. In this way, it also helped to solve the irregularity of the column grid between the north and south sides. By connecting the new column grid with the wooden beams, the design team realized the integration of the concrete column foundation and the wooden structure for the first floor.

The structure of beams and columns on the first floor grows upwards. The central area with very dense columns and beams was extended upwards to form the roof ridge. The ridge area was turned into a linear skylight, which ensures enough daylighting for the interior space that has a depth of 15 m. The roof slopes to the north and south sides. The entrance is on the north



side and faces the street, above which a long overhanging element forms a large covered area that responds to the characteristics of official architectures unique to the area.

Based on the principle of sharing and openness, the interior space breaks the introverted layout of conventional village committee offices. Except for the conference area, the financial room, and two added enclosed equipment rooms, all other spaces are open. Within the open space, a lot of convenient seating, reading, and communication areas were created.

CLIENT
Yuanheguan Village Committee

ARCHITECT
LUO Studio
Beijing, China

STRUCTURAL ENGINEER
Yuejie Luo
Beijing, China

GENERAL CONTRACTOR
Shangmuzao Building Technique Co., Ltd.
Beijing, China

PHOTOGRAPHY
Weiqi Jin
Beijing, China

A space to live and move within a pine forest, this family villa in Soulac-sur-Mer, not far from Bordeaux in the west of France, is a see-through haven that invites the beauty of its surrounding environment inside.

International

Wooden Villa at Soulac-sur-Mer

The floor and the ceiling mirror each other's dimensions, breaking down all notions of hierarchy. One's eyesight glides between pine trees and interior perspectives while feet wander with ease from the warm sand outside onto the supple okoume wood flooring indoors.

The site itself is integrated into the architecture; to enter the pine forest is to enter the house. The house is built where the air flows, with the pine and oak trees providing shelter from strong winds. The ocean, though not visible, is so close that the sound of the surf lends to the rhythm of the day. Nature runs through the bedrooms and the living room. Redefining the threshold, the designers haven't created a traditional front entrance; to enter the house, you stride right into the 130-sq.m. living space or into one of the five rooms sitting on the pine forest.

The roof comprises 136 larch caissons and the floor is made of 136 okoume wood panels – a perfect symmetry. The main inspiration for space stems from the single-story American villa, and the floor and the ceiling required engineering skills developed by American architect John Lautner's vision for open architecture.



A scaffolding warehouse had to be installed on-site to shelter the construction, and the level of precision required to build the roof did not allow any humidity. The larch has been sanded down to acquire a refined finish usually reserved for furniture. There are no screws and no apparent nails. The use of shadow joints offers a unique sense of fluidity both inside and outside of the house.

If the standard height for sliding glass doors is 2.2 m, here they reach beyond 3 m high. The shadows of the pine forest, projected onto the interior wooden surfaces, accompany the inhabitants with different degrees of intensity all throughout the day. The bedrooms and living room make the most of all four cardinal directions: north, south, east, and west.

Two-thirds of the house is built using glass walls that are too light to hold down the roof in heavy weather. Taking this into account, the designers weighed the roof down with metal and anchored the house with cement walls – pushing wood and glass to their limits in such a way that they reveal their strengths and weaknesses.

ARCHITECT
Nicolas Dahan Architects
Paris, France

STRUCTURAL ENGINEER
CESMA Ingenieros
Madrid, Spain
Actiom IS
Bordeaux, France

PHOTOGRAPHY
Vincent Leroux
Pantin, France

CITATION AWARDS

On the shores of Ontario's Georgian Bay, a gathering place awaits all who believe in the power of truth and reconciliation.

North America

Awen' Indigenous Gathering Place

The Awen' Indigenous Gathering Place is a collaboration by Brook McIlroy's Indigenous Design Studio (landscape architects and architects), Envision-Tatham (landscape architects and engineers), and Dr. Duke Redbird, a renowned Saugeen First Nation educator, artist, and poet. The project combines an open-air timber and steel pavilion and ceremonial lawn. These features are prominently sited on a naturalized hilltop in Harbourview Park in Collingwood, ON, that links the town to the waters of Georgian Bay. As a luminous and iconic beacon along the shoreline, the pavilion creates a symbolic gateway to enable discussions, connections, and cultural recognition necessary to foster truth and reconciliation.

Based on the teachings of Dr. Redbird, the pavilion is a sculptural representation of the food forest. Each layer of the food forest is linked to one of the Seven Ancestor Teachings, an ancient Anishinaabe/Midewiwin guidance on the ethics of proper behavior and conduct, or "the good way of life."

SITE PLAN

The 7 m-tall Alaskan yellow cedar poles are tilted at varying angles and arranged in a circle to evoke the visual attributes of a forest clearing. The tapered form of the poles draws attention up toward the laser-cut steel canopies, each cut with a pattern representing the layers of the food forest. The native plants represented in the structure's canopy would have been gathered by the Anishinaabe people for food, medicine, and materials around what is now Collingwood.

Seating platforms below each canopy are crafted from 200 mm-wide planks of the same timber. The platforms surround the poles and anchor them to a central gathering place, creating a spacious room that can accommodate both large and small events. Backlit weathering steel plates, perforated with the names of the Seven Ancestor Teachings in Ojibwe, clad the front of the platforms.

Alaskan yellow cedar was selected for the length of its timber, its uniform yellow color, and its resistance to rot and infestation. Although referred to as cedar, *Chamaecyparis nootkatensis* is a cypress tree that is native to the northwest coast of North America. The wood also lent itself well to the machine-lathing fabrication technique used to form the poles of the Awen' Indigenous Gathering Place. The poles were hand-hewn to add texture and bring the fine grain of the wood to the foreground. Over time, the poles and platforms will darken to a deep gray tone and further unite the wood with the white steel canopies above.

CLIENT
Town of Collingwood
Collingwood, ON

ARCHITECT
Brook McIlroy Inc.
Toronto, ON

STRUCTURAL ENGINEER
Envision-Tatham Inc.
Collingwood, ON

GENERAL CONTRACTOR
Lafontaine IronWerks
Tiny, ON

TIMBER SUPPLIER
Nicola Logworks
Merritt, BC

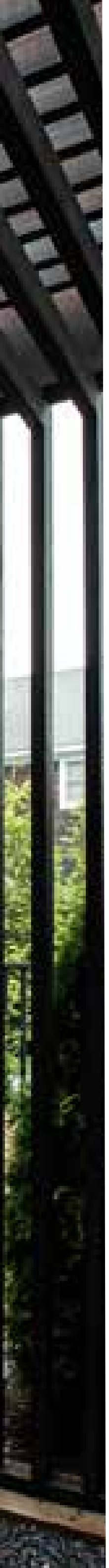
PHOTOGRAPHY
David Whittaker
Toronto, ON

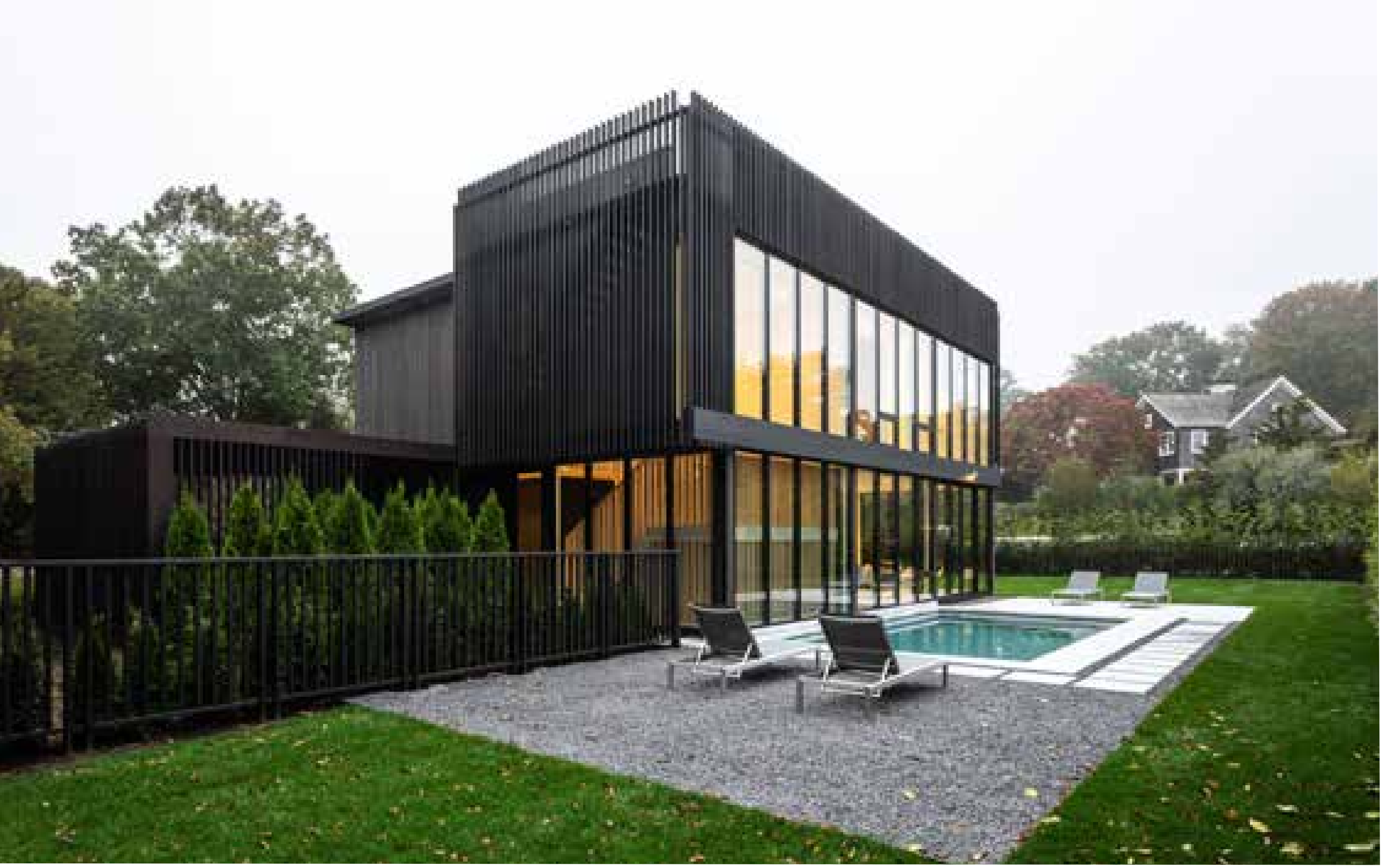
A custom wood stair design and black cedar facade help lend a subtle sophistication to this peninsular getaway.

North America

Harbor Hideaway

Located in the centuries-old whaling village of Sag Harbor, NY, the 2,630-sq.ft. Harbor Hideaway project is a single-family, two-story residence. The property is situated in the center of a small peninsula and is one of the only lots in the neighborhood without direct water views. Although the instinct would be to design a new house to face the street, the designers flipped the traditional orientation of the home to face the rear corner of the yard.





The first floor's facade was designed to act as a subtle privacy screen from the street, while the rear of the home is fully glazed on both levels with custom windows to create a strong connection between the home's interiors, the property's natural landscape, and the spectacular views of the nearby harbors. The second floor, which faces the street, is fully glazed to allow for the morning sun to come into the bedrooms.

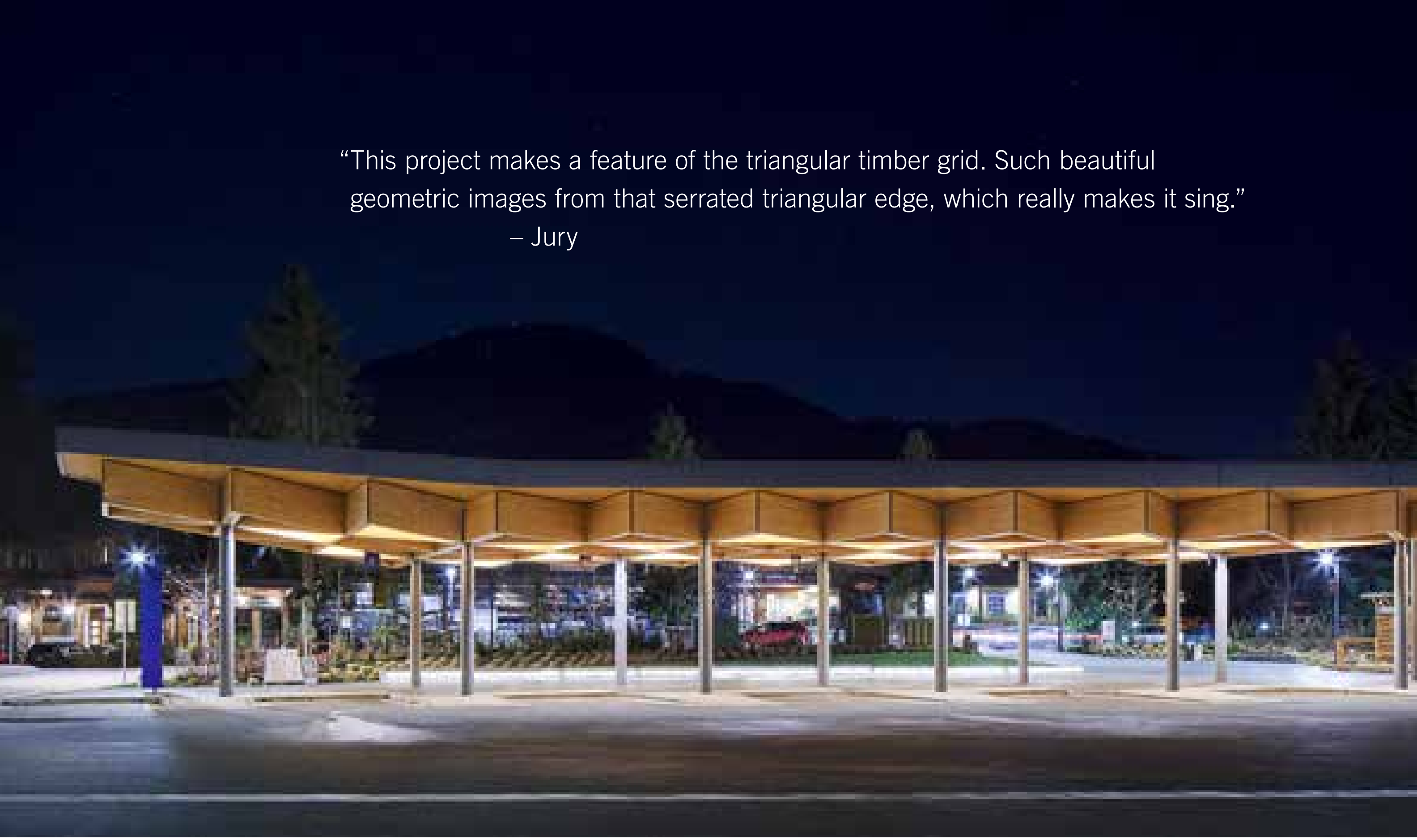
The entire home uses a simple material palette of blackened steel, light hardwood, and neutral colors. These material and furnishing selections provide a subtle sophistication and allow the property's surrounding natural elements to organically provide a pop of color. At the entry, the custom wood stair design connects the three interior levels of the home with a single gesture, providing a sense of openness that makes the home's modest footprint feel much larger. The rhythmic black cedar facade wraps the entire home to naturally shade the south-facing bedrooms from the high summer sun and becomes a visual connection between the home and the carport, creating a covered entry in its path.

ARCHITECT
The Up Studio
Long Island City, NY

STRUCTURAL ENGINEER
Kevin Cieslukowski
New York, NY

PHOTOGRAPHY
Alan Tansey
New York, NY

"This project makes a feature of the triangular timber grid. Such beautiful geometric images from that serrated triangular edge, which really makes it sing."
– Jury



Taking cues from the local landscape and the sports inspired by it, this elevated canopy creates a fine first impression for visitors to this resort town.

North America

Whistler Gateway Loop

The canopy of the Whistler Gateway Loop creates a first impression for visitors arriving at Whistler, BC, by highway coach. The triangulated geometry of steel columns is informed by both the practical requirement for curb alignments for highway coaches and the symbolic representation of local columnar basalt formations visible from the highway approach to Whistler Village. The elevated canopy protects passengers from the elements while maintaining safety via an open and visible ground plane.

To achieve the iconic appearance desired by the Resort Municipality of Whistler, the design team developed an expressive, spruce/pine timber structure composed of a triangular arrangement of glulam beams supporting CLT timber panels. Wood fulfilled several project requirements. It utilized local trades, coordinated with Whistler's alpine architecture, eliminated bird roosting opportunities, and projected a warm arrival experience for visitors.

To showcase the natural beauty of the engineered wood, the support systems were pared down with the number of columns minimized, braces eliminated, and timber connections concealed. The wood-on-steel structure creates a stiff yet light roof that can manage the demanding snow loads of the village. Conventional bolted connections would have been unsightly where six double glulam beams meet a single steel column. Instead, the HSK system was chosen for its strength, stability, and concealed adhesive connections. Due to the loading and geometry, the project's use of the system is the most ambitious to date, according to Timber Composite Technology, the developers of the system.

The project was constrained by a very short construction window. Construction had to take place between Labor Day and the first significant snowfall of the year (as early as the end of October in Whistler). With less than two months to erect the structure, the design approach focused on off-site prefabrication of beams and panels. The final design resolves the needs of vehicular and pedestrian access with that of a comfortable guest experience.

ARCHITECT
PUBLIC: Architecture + Communication
Vancouver, BC

STRUCTURAL ENGINEER
Fast + Epp
Vancouver, BC

GENERAL CONTRACTOR
Cusano Contracting
Surrey, BC

PHOTOGRAPHY
Andrew Latreille
Vancouver, BC


1

“This project was upfront about making it clear it was a wood structure. The arcade, by stripping away the facade, reveals the wood.”
– Jury

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

North America

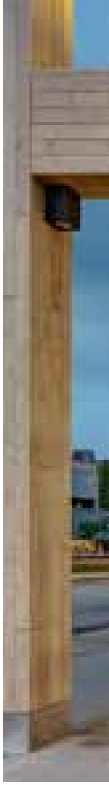
111 East Grand Ave

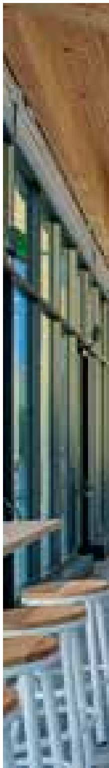
In the East Village of Des Moines, IA, 111 East Grand is situated in one of the city's original industrial areas. Factories and warehouses that once thrived there are now being adapted for reuse as restaurants, businesses, and housing after an era of decline. To complement the aged fabric of the neighborhood 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.

The four-story, mixed-use mass timber building has 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 make up 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 multistory 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 by 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

A challenging topography and short building season were just some of the obstacles overcome to achieve this stunning Passive House.

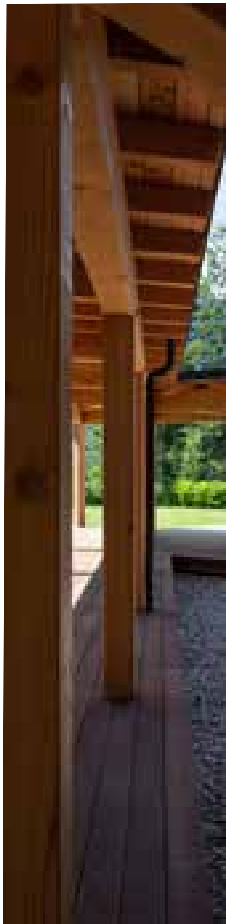
North America

Passive Ski Cabin

Built for an accomplished professional skier, Passive Ski Cabin was an exercise in cohesion and progression. Built in Revelstoke, BC, the house was to be a base for adventures in the area, a sanctuary, and a social gathering hub for friends of the client.

The site is reached down a narrow driveway, opening up onto a plateau facing Mt. Begbie with a steep drop-off to the valley floor below. Integrating high-performance building design with Passive House fundamentals, innovative materials and technology were paramount, balanced with a high level of aesthetic and a strong architectural statement. “Greenwashing” was to be avoided, as was placing high performance above architectural style.


3131



The house is orientated southwest to perfectly capture Mt. Begbie from the double-height lounge area and views out from the mezzanine floor above, directly connected to the upper floor main bedroom. The client's use of the house was paramount, with her journey from the bedroom to the lounge and kitchen mapped out to give an immediate view of the surrounding mountains and snow conditions.

The client's brief was to incorporate a large garage, main house, and garden around a central courtyard influenced from travels in Japan. A rainwater garden containing a Japanese maple was surrounded by a Douglas fir-covered walkway. The buildings and garden were arranged in a triangle, referencing the client's family connections, being from a family of three sisters.

With inclement weather and a short building season, the decision was made to proceed with a CLT prefabricated construction, using innovative Kerto-Q knee panels made of LVL at 300 mm spacings along the length of the upper walls. Bracing the wall to roof connection in this manner, from the exterior, allowed the interior to remain free of steel or timber collar ties, creating a completely open and pure space.

For the walls and roof, 120 mm CLT was utilized, and 160 mm CLT panels were used for the upper floor. Wrapping the entire CLT structure is a 300 mm-thick blanket of woodfiber insulation, which provides exceptional thermal resistances as well as a thermally bridge-free envelope. Utilizing CLT as the interior structure removed the need for a vapor barrier, as the overall envelope was breathable and capable of drying to the exterior in the winter and the interior in the summer.

Wood is utilized throughout the design with zero steel structure, wrapped around a warm and inviting walkway that provides both a focal point and a point of reflection to the house and the surrounding mountains.

ARCHITECT
Stark Architecture
Squamish, BC

STRUCTURAL ENGINEER
Woodall Structural Engineering Ltd.
Calgary, AB

GENERAL CONTRACTOR
Tree Construction Inc.
Revelstoke, BC

PHOTOGRAPHY
Ema Peter
Vancouver, BC

A campus gathering place draws on Indigenous traditions to offer students a safe harbor during life's journey.

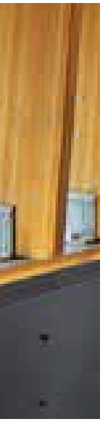
North America

Odeyto Indigenous Centre at Seneca College

The new home for the First Peoples @ Seneca Newnham Campus, Odeyto is intended to provide a safe and recognizable space for Indigenous and non-Indigenous students alike while attending Seneca College.

Often, Indigenous students have left their home communities for the first time to pursue their education in unknown urban landscapes. The design of Odeyto (an Anishinaabe word for "good journey") reflects and acknowledges this, by being a home away from home where students can gather not only to practice their traditions, but also to find new friendships and family.

Conceptually, the project was inspired by the image of a wood canoe pulling up to a dock. The addition's canoe-like form is "docked" alongside the contrasting rigid lines of the existing precast concrete building. As the only building on campus with an organic curvilinear design, the "wood canoe" has a distinctive presence, announcing its importance through its form.



Striking when viewed from the outside, the building's curves create a warm, womb-like interior lined in wood. The structure alludes to the Haudenosaunee longhouse, a traditional reference further reinforced by glass entrances on the east and west, where two red doors honor missing and murdered Indigenous women.

Wood predominates the interior, reinforcing the analogy to a canoe. The interior of the building consists of two distinct spaces. The former classroom has been remodeled into a warmly lit work area with a low ceiling where students can use computers, work with tutors, or speak with a counselor. Beyond this, in the new purpose-built addition, the main lounge is a generous space for all kinds of gatherings. Its high, curved wood ceiling is supported by glulam rib structures with connections that are visibly expressed in celebration of the craft and beauty of the construction of the building – much as a birch bark canoe's beauty is manifested through its construction, not decoration. Thin and light, the 28 glulam ribs resemble the ribs of a canoe, with the number being a nod to the number of days in the moon's cycle.

The renovation offers a bridge between the rigors of post-secondary education and the familiarity of culture. It's a space that provides the necessities of academic life while at the same time offering a safe harbor, a "dock" where a wood canoe can stay awhile.

ARCHITECT
Gow Hastings Architects
Toronto, ON

Two Row Architect
Ohsweken, ON

STRUCTURAL ENGINEER
Read Jones Christoffersen
Toronto, ON

GENERAL CONTRACTOR
Mettko Contracting Inc.
Halton Hills, ON

PHOTOGRAPHY
Tom Arban
Toronto, ON

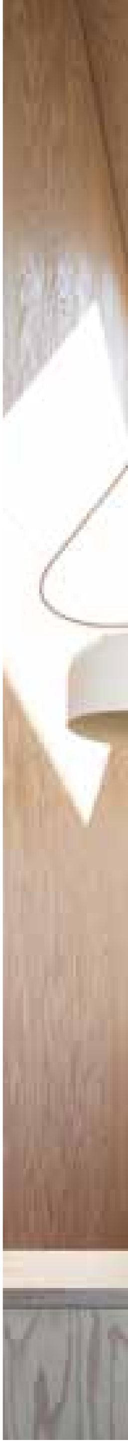
Functionality and sustainability were high on this Vancouver family's wish list when designing their dream home.

North America

Veil House

A family of four in a neighborhood on Vancouver's east side asked for a home that, while modern in design, would draw inspiration from the house silhouettes around them, with their pitched roofs, and capture the unpretentious energy of the street.

The family also valued their privacy and requested their house be a refuge that was veiled from the street. Through effective design and landscaping, passersby can see only the office and dining room feature windows; even the front door is hidden behind the primary wall so it can be opened with complete privacy.



Inside, functionality of the space was vital to the evolution of the project. On the main floor, the architects situated the dining room to be isolated from the living room and kitchen for acoustic separation, and the room now operates as an additional station for remote learning and work meetings. To address their request for both indoor and outdoor living, these spaces all flow easily into the next, finally leading onto a rectangular cedar deck. Sliding doors were placed in both the living and dining rooms, promoting cross-ventilation in the warmer months for passive cooling.

In addressing the family's wish to build a home with sustainable practices, the designers focused on the dismantling of the existing home on the site, recycling over 74,000 kg of materials while repurposing materials as applicable within the project and sending the 9,000 kg of remaining materials for reuse on other builds across the Lower Mainland. Less than 7% entered the landfill, and while this process took two extra weeks to complete, once provincial tax incentives were factored in, the "unbuild" cost less than a conventional demolition.

The repurposed materials for Veil House can be seen by the family every day. They are in the gabion retaining wall filled with pieces of concrete from the demolition of the original house, in the reclaimed oak stair treads leading to both the upper and lower house levels, as well as in the site hoarding now treated as artwork in the garage.

Throughout the interior, rotary Douglas fir plywood – a low-grade construction material elevated by a whitewashed stain – was used through careful curation to add warmth to the walls by displacing long runs of drywall and reducing the material footprint of the site. On the exterior, the design team used wood as a tool for the building cladding, turning the horizontal conventions of tongue-and-groove Western red cedar 90° to create a vertical format, then wrapping the wood to the roof to achieve a monolithic wall treatment. This also resulted in a third line of defense to the degradation of the torch-on roof below thanks to a cosmetic veiling.

ARCHITECT
Measured Architecture
Vancouver, BC

STRUCTURAL ENGINEER
Entuitive
Vancouver, BC

GENERAL CONTRACTOR
Powers Construction
Vancouver, BC

PHOTOGRAPHY
Ema Peter
Vancouver, BC

A Japanese architectural firm uses locally sourced materials to build a bridge between the natural and built environments.

International

Light & Green Office

This project involved relocating an architectural design office from a suburb to the center of the city in Sapporo, Japan. Based on the premise of using locally sourced materials, the designers selected Ezo pine, a species native to Hokkaido, as a structural material. Employing the traditional Japanese construction method of "shinkabe" (a wall in which framing is set between pillars exposed on the interior side), a highly airtight and insulated 2,979-sq.ft. building was realized.





The goal was to create a creative space comprising a dynamic wooden structure surrounded by beams and shinkabe walls where one can feel the beauty of ever-changing light throughout the day and seasonal changes in the scenery through the shadows on the beams of the building.

In order to provide constant natural light throughout the day in an environment mostly surrounded by mid- and high-rise residential complexes, high sidelight windows on the northeast and southwest sides were installed, as well as a raised roof in the shape of a hyperbolic paraboloidal shell.

The first floor is mainly used for meetings with visitors. The design team aimed to create a new design office that is open to society, with wide openings to the street and large glass partitions that provide a clear view of the interior and exterior, while maintaining an appropriate distance from the surrounding gaze by adding a "doma" (earthen floor) as a buffer zone.

In planning the building, the presence of marronnier trees next to the site was considered in determining the arrangement of the openings, and a reflection pool was installed as a device to bring in the movements of trees and natural light by the reflection on the water surface.

It takes three years to produce lumber from Ezo pine logs. Lumber remnants generated in the manufacturing process were used to make lattices in the exterior walls. Contact points were made smaller and the materials were divided in three layers to inhibit decay. The design team made maximum use of raw wood and left the wood surfaces unfinished as much as possible so that visitors can feel the beautiful textures of locally sourced wood.

ARCHITECT
Endo Architectural Atelier Co., Ltd.
Sapporo, Japan

STRUCTURAL ENGINEER
Kosaku Ando Structural
Planning Office Co., Ltd.
Tokyo, Japan

GENERAL CONTRACTOR
Hiragata Komuten Co., Ltd.
Otaru, Japan

PHOTOGRAPHY
Ken Goshima
Tokyo, Japan

“It’s a really exuberant utilitarian use of public infrastructure. The structure is thoughtful and nicely detailed, with a modest insertion into the landscape.”

– Jury

A winery in the process of a generational change goes for a look that is timeless.

International

Lookout da Cova

Spain's Abadía da Cova Winery required an outdoor space where visitors could enjoy tasting their wines while contemplating the landscape. The architects added a 3,014-sq.ft. open-service area, including an indoor wine bar, bathroom, storage room area, and a small wine-tasting room.

The building plot, oriented to the southwest, is located in a rural environment that includes a traditional village surrounded by an intensely worked and transformed agricultural area. The landscape is characterized by the terraces of dry-joint masonry walls that cling to the steep slopes generating the narrow horizontal platforms where the vines are grown, usually along trellis structures between wooden posts.

To reflect the environmental values that identify Abadía da Cova, the architects wove in the interrelationship of the environment and surrounding landscape. Acetylated Scots pine from 28-year-old plantation trees achieves unparalleled levels of durability and stability, allowing the project to avoid the use of finishes with biocides that could affect the surrounding vineyards. On the other hand, the decision not to resort to lamination processes meant that available timber sizes were limited and dimensions were reduced. Also, considering the exposure to wind forces, different strategies were implemented.

The configuration of the porticos was solved by triangulating in such a way that all elements are, in general, only subject to axial efforts. The whole structure is anchored to the ground by means of a slab and reinforced concrete walls, providing the necessary rigidity. The outer side of the concrete walls is resolved with a formwork of wooden logs of varied diameters.

Both the weather and the seasonal activity of the winery left a short time window for the execution of the project, extending from the end of winter to the beginning of the tourist season (about three months). Therefore, a prefabricated execution was chosen for all the steel and wood elements. A 3D model was developed that allowed all the elements to be cut in CNC and the welded joints to be resolved in the workshop. Once the reinforced concrete base had been executed, the rest of the assembly was resolved in a very short time by means of screwed joints.

The steel structure, which connects the main structure with the foundation, was hot-dip galvanized. The railings were resolved in stainless steel (as all steel elements in contact with acetylated wood) and incorporate a stainless steel mesh, which will serve as a support structure for climbing plants, contributing to the mimicry of the building and preventing overheating due to the high temperatures that are common in the area during summer.

ARCHITECT
Arrokabe Arquitectos SLP
A Coruña, Spain

STRUCTURAL ENGINEER
Mecanismo Ingeniería
Madrid, Spain

GENERAL CONTRACTOR
Construcciones Joalpe SL
Baldrei, Spain

PHOTOGRAPHY
Luis Díaz Díaz
Vigo, Spain

This residential project's fusing of structure and volume creates a unique structural expression that's all aces.

International

House of Cards

Built in response to structural and zoning constraints, this new construction was placed on top of existing foundations and was limited by a prescribed maximum allowable height. The design for this residence grew out of the foundation's asymmetrical cruciform geometry where each structural bay of the cruciform created a "house of cards."

The independent bays were prefabricated from CLT panels and bridged together on-site via the final roof formation. The complex CLT geometry is unique and the subsequent fabrication was assembled on-site within a week. The project's fusing of structure and volume minimizes additional interior finishes. In the living area, four CLT floor panels are exposed in the ceiling; this pure structural expression alternates between the gypsum board panels of the suspended ceiling. The CLT panels are exposed in the pitched bedroom ceilings upstairs as well as in the ceiling of the central top floor hall, thus showing the full extent of the triangular structural bays.

The project envelope is built as a timber rainscreen made of chemically seasoned Douglas fir battens. Considered a facade element due to the steep pitch, the roof is also built from the same timber rainscreen and construction technique. In order to streamline construction and avoid visible screws or nails in the timber battens, the battens were prefabricated as assemblies prior to being brought on-site. The details consider the larger impression of the project as an abstract volumetry; for example, all gutters and drainage elements are concealed behind the rainscreen with minimal impact on the exterior surface.

Interior elements such as the central staircase – visually floating in the space, suspended from a wood floor grid that spans between the CLT bays – highlight the opportunity that the column-free prefabricated CLT structure allows. Integrated into the house is a Type D central ventilation system with heat recovery, as well as rainwater collection and reuse.

Exterior pedestrian and car access is through discrete concrete retaining walls that carve out of the restored dune landscape.

The geometry of the house is reminiscent of historical beach house architecture in the area, characterized by steep roof angles. This, and the restrictions of the existing foundation, steered both the structural and architectural logic of the project.

ARCHITECT
Vantieghem Talebi
Venice, CA

STRUCTURAL ENGINEER
UTIL Struktuurstudies
Brussels, Belgium

PHOTOGRAPHY
Vantieghem Talebi
Venice, CA

Bromont Summit Chalet
Bromont, QC
Please see 234

SoLo
Soo Valley, BC
Please see page 130

Toronto Montessori School, Bayview Campus
Toronto, ON
Please see page 210

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

Canadian Wood Council Award

720 Yonge Mass Timber Building

The first commercial mass timber project to be built in Toronto, ON, 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, that features a 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 obtaining the appropriate approvals. Numerous alternative code solutions were required because 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

A focus on stewardship helps this addition to a revitalized children's area establish a strong connection to Alberta's agricultural heritage.

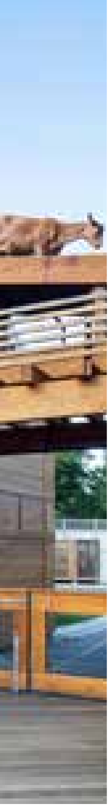
Canadian Wood Council Award

Edmonton Valley Zoo Children's Precinct: Urban Farm

The Urban Farm is part of the larger revitalization of the Edmonton Valley Zoo's Children's Precinct. Originally known as Storyland Zoo, the Children's Precinct is the oldest and most established area in the entire zoo and its de facto heart.

Comprised of a number of connected buildings and structures, the centerpiece of the Urban Farm, known as the Urban Barn, houses animal stalls and exhibit spaces, zookeeper work areas, public washroom facilities, classroom spaces, and a café kitchen and seating area. Opposite the Urban Barn and framing a generous outdoor public space and outdoor animal holding area and contact yard, an Amenity Wall provides seating, stroller storage, and interactive interpretive elements. At the entrance to the courtyard formed by the Urban Barn and Amenity Wall, the Dairy Bar provides seasonal treats to visitors while also contributing to the zone's interpretive narrative about farming in Alberta.

Intervening in the zoo's historic landscape required the design team to cultivate visitor experiences that both facilitate educational messaging focused on conservation and respect the zoo's very specific sense of place. The design was able to meet these goals by grounding the architectural and material languages of the project in site-specific and site-appropriate responses that both honor the rich history of the zoo and look forward to its future role as a vanguard of ecological stewardship. The siting and form of the buildings, for example, is a direct response to a desire to maintain the site's characteristic mature tree canopy. The predominant use of rapidly renewable wood as a primary construction material, meanwhile, connects traditional modes of construction with contemporary fabrication techniques and reinforces the zoo's commitment to sustainable design best practices. The Urban Barn interprets vernacular barn building construction techniques through a contemporary lens. The building's design leverages the inherent fire-resistant properties



of heavy timber construction in the development of a structural system that is fully expressed throughout the building (with finishes added only where required by programmatic necessity).

The design team worked closely with Beam Craft, the project's primary carpentry trade, during the construction phase to refine the connection details between heavy timber elements and more fully realize the potential of wood as a building material. Each connection detail was modeled in three dimensions, with the information from these 3D shop drawings used to directly inform the milling of individual structural members. This integrated approach to fabrication greatly reduced the time on-site required to erect the timber structure.

Unlike many zoos where buildings function as containers for animal exhibits, the architecture of the Urban Farm is entirely integrated into the project's interpretive narrative and facilitates a fully immersive visitor experience, thanks in no small part to its expressive and engaging heavy timber structure.

ARCHITECT
the marc boutin architectural collaborative inc.
Calgary, AB

STRUCTURAL ENGINEER
Read Jones Christoffersen Ltd.
Edmonton, AB

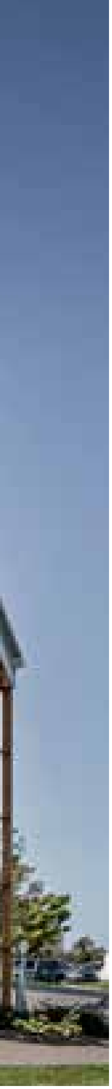
GENERAL CONTRACTOR
Clark Builders
Edmonton, AB

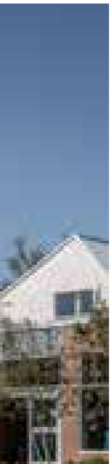
PHOTOGRAPHY
Adrien Williams
Montréal, QC

“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.

Canadian Wood Council Award

Green Gables Visitor Centre





The Green Gables Visitor Centre in Cavendish, PE, 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. As the largest building on the site, the Centre 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 Centre features locally sourced wood in the form of 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 connections to the exterior and the use of locally sourced exposed wood products.

As the Centre is a seasonal tourist destination, summer weather had a large influence on the design. The lobby is flooded with natural light from 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 Prince Edward Island red sand-colored concrete floors and white painted walls.

Overall, the building not only has enhanced the story about *Anne of Green Gables* and 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

This home away from home in the heart of Ontario's cottage country bursts from the boreal forest to create a welcoming and eco-friendly space.

Canadian Wood Council Award

Metrick Cottage and Boathouse

Set amid an enclave of seasonal waterfront homes, Metrick Cottage is a semi-charred, wood-clad residence and boathouse situated on Lake Joseph, ON, about a two-hour drive north of Toronto. This multigenerational family retreat draws inspiration from the rugged beauty that surrounds it to create a warm, elegant, and eco-friendly home.

The main residence consists of three distinct pods comprising four bedrooms, four baths, and an open living area in between. The boathouse is a complementary three-slip storage set at water level. Uniquely sited, this 5,400-sq.ft. property offers an unobstructed panoramic view of the lake and shoreline beyond.

The design challenge was to create a home that expresses the use of all-natural wood materials, keeping in mind that most construction products had to be brought in by boat to circumvent the dramatic inland topography. The materials also had to be durable enough to withstand the harsh seasonal climates without relying heavily on paints or stains. As a result, Douglas fir timbers, cedar, and torrefied ash were selected as the main material components for their lightweight nature and modularity.

Once the wood was selected, the inherent properties of Douglas fir wood siding, together with the technique of surface charring known as “shou sugi ban,” informed the overall design. The charring creates a wear layer for increased durability and reduces its susceptibility to fire, pests, and rot over the life of the siding. It also creates a desirable aesthetic effect, making the cottage appear as if it has been nestled in the forest for a long time.

The visible structural components, such as the exposed roof rafters and the scissor joist, were carefully crafted and prefabricated from Douglas fir. In order to accentuate the wood structure and create a seamless method of construction, a custom anchoring and fastening system developed with the structural engineer was used and strategically lit to further emphasize its beauty. The hidden structural components used throughout were prefabricated wood TJI joists, wood wall structure framing, and LVL beams, which allowed for ease of transportability and reduced site waste.

Various textures of wood were used, ranging from horizontal and vertical fir boards to a dramatic, customized scissor-truss design with concealed fittings. Using the more rustic, rough-sawn fir cladding on the exterior resulted in a complementary finish to the rugged Northern Ontario backdrop of boreal forest. In contrast, the interior of the cottage was finished with finely milled, torrefied ash for the floor, wall, and ceiling boards, offering a warm and engaging family gathering and recreational space that provides a rich background to the family’s daily activities.

ARCHITECT
Akb Architects
Toronto, ON

STRUCTURAL ENGINEER
Moses Structural Engineers
Toronto, ON

GENERAL CONTRACTOR
Mazenga North Building Group
North York, ON

PHOTOGRAPHY
Shai Gil
Wasaga Beach, ON

A modern loft office concept combines the richness and warmth of a late 19th-century heavy timber building with the advantages of modern construction.

Canadian Wood Council Award

T3 West Midtown

Currently the largest mass timber building in the U.S., T3 West Midtown in Atlanta, GA, is a 255,000-sq.ft. commercial development situated on the former brownfield site of the Atlantic Steel Mill. The structure is situated within the Atlantic Station development, a master-planned neighborhood designed to mitigate urban sprawl and encourage sustainability by creating live and work spaces that are within walking distance to the everyday things people need.

The architectural design takes its cue from early industrial buildings in the area, which was once a hub of heavy industry and rail transportation. The project site was the former home of a foundry. This industrial heritage provided the inspiration for the exterior steel-frame expression and wooden gantries serving as balconies for individual office tenants. The building is elevated above the ground level with common and retail areas at the first level and office space above. Expansive park-facing glazing dissolves the distinction between interior and exterior, tying the lobby to the park landscape beyond. This connection to the surrounding landscape is emphasized by uninterrupted views through the building aligned with the internal lobby circulation.

The interior design of the common areas, with its emphasis on warm wood finishes and imagery, capitalizes on the ability of wood to create inviting spaces that tie directly to the surrounding landscape. The timber elements that define the building's public spaces enclose larger communal areas in the lobby and social spaces, and also define the smaller, more intimate spaces designed for privacy and conversation.

Above the first floor, the neutral and repetitive wood structural elements braced with steel accents create a universal interior space that can be personalized for each individual tenant's requirements. Extensive exterior glazing allows light penetration deep into the floor plate while also harboring a connection to the exterior landscape framed by the rich timber structure.

The exposed mass timber structural system comprises DLT panels over a laminated post-and-beam frame with a steel brace-frame lateral system. The gravity system comprises DLT floor and roof panels over a glulam post-and-beam substructure. The lateral system consists of perimeter and internal steel-braced frames, which were installed in sequence with the timber structure. State-of-the-art mechanical systems, enclosure, elevatoring, acoustics, and voice and data technology were integrated within the structure, contributing to T3's, designation as the first Wired Certified Platinum New Development in Atlanta. The site-specific timber elements were fabricated off-site and allowed a quick assembly and considerably shortened time from excavation to occupancy, highlighting one of the significant benefits of modern mass timber construction.

ARCHITECT
Hartshorne Plunkard Architecture
Chicago, IL
DLR Group
Chicago, IL

STRUCTURAL ENGINEER
Magnusson Klemencic Associates
Chicago, IL

GENERAL CONTRACTOR
New South Construction
Atlanta, GA

PHOTOGRAPHY
Creative Sources Photography
Atlanta, GA

SPONSOR AWARDS

Dispelling the notion of a "bunker police station," this project uses natural wood materials and ample lighting to create a civic facility that celebrates community.

Sustainable Forestry Initiative Award

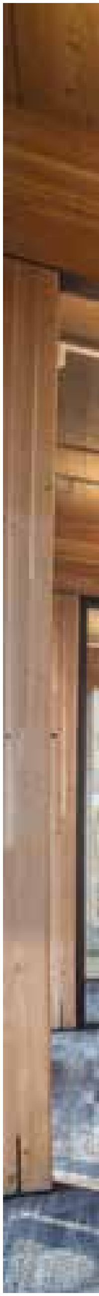
Robert Libke Public Safety Building

Situated at the geographical center of "Oregon's first city," the Robert Libke Public Safety Building anchors a civic campus that celebrates history and provides enhanced amenities to the neighborhood. At a time when tensions are high between law enforcement and the community, this project reaches out with a welcoming presence. Its warm glow and transparent exterior were designed to create strong connections between public safety staff and the people they serve while balancing safety and security needs.

Design inspiration came from the forested basalt bluffs that were carved by the nearby Willamette Falls. It was here that both Indigenous people and pioneers were drawn to the landscape at the confluence of two rivers. The building and site are a representation of the innovative spirit and depth of history in Oregon City, from the geology of the land's natural striations to the various aspects of human interaction. The entire structure of the building is constructed with mass timber, from the vaulted roof of the multipurpose courtroom/council chambers to the interior wood shear walls located in key places throughout the floor plan.

CLT is utilized as gravity-bearing exterior walls, which are strategically placed to fall on a grid that holds the glulam girders and avoids perimeter columns. By reducing the necessary number of beams and columns with a thoughtful structural layout, the design keeps the ceiling plane clean and highlights the exposed CLT roof structure above.

Staff wellness was a major design consideration. The adjacencies in the floor plan create flexible, collaborative zones for occupants to utilize throughout the space. The daylight that was "carved" into the building in the form of courtyards and a 160-ft.-long centrally located clerestory window is key in providing equitable access to light for all users. The design rejects the notion of a "bunker police station," instead creating a healthy working environment full of natural wood materials and daylight that results in a safe space for the community's public servants to decompress.




CITY OF

While most of the project is comprised of sanded but unfinished Douglas fir CLT panels and glulam, there are several other wood details to note. In addition to finding efficiencies and cost savings with CLT's prefabrication, the mass timber prefab process also allowed for unique craft opportunities in the design. For the CLT wall behind the city councilors' dais desk, the design team worked directly with the manufacturer to create a custom CNC-routed pattern carved into the surface of the wood. Another type of wood present in the project is juniper, sourced from eastern Oregon and located on the slats of the exterior benches. This material was left untreated by chemicals and will patina into a beautiful natural gray tone in the public plaza that leads to the building.

By continually collaborating with the owner and contractor, the design team was able to be fiscally responsible with public funds and create a long-lasting facility that celebrates the community and its rich history.

ARCHITECT
FFA" Architecture and Interiors Inc.
Portland, OR

STRUCTURAL ENGINEER
KPFF Consulting Engineers
Portland, OR

GENERAL CONTRACTOR
P&C Construction
Portland, OR

PHOTOGRAPHY
Christian Columbres
West Linn, OR

A leading-edge project sets the standard for other buildings that will be built in a highly sustainable district, creating a hub for innovation in the region.

Sansin Award

Catalyst Building, Eastern Washington University

Located in Spokane, WA, the 164,800-sq.ft. Catalyst Building is the first completed building in a highly sustainable district called the South Landing Eco-District. Housing Eastern Washington University's science, technology, engineering, and mathematics programs, the building includes offices, classrooms, common study areas, and an Innovation Lab on the ground floor.

The building is connected to the university district by way of the Gateway Bridge – a pedestrian bridge that brings together the two university core areas. The Catalyst is also situated near an active railway, which means it must contend with airborne noise and ground vibration. The resulting design demonstrates how a prefabricated mass timber construction approach can address site-specific conditions and limitations through deep integration between design, manufacturing, and construction.

The project team aimed to design and construct a mass timber building that could exceed the performance of a comparable conventional steel and concrete building while showcasing the benefits of CLT concerning aesthetics, building efficiency, and environmental impact. This goal was realized through sustainable MEP design, smart building management systems, and the use of more than 4,000 m^3 of spruce-pine-fir and Alaskan yellow cedar CLT and glulam products. The CLT panels used in the building were sourced from local working forests, harvested using sound ecological practices, and manufactured 15 mi. from the site.

Innovative prefabricated mass timber floor plates were developed to provide 30-ft.-long spans required for flexible office and academic multifunctional uses. This was achieved using a ribbed panel system, combining CLT panels atop glulam "ribs" to provide the necessary strength and rigidity through wood-wood composite action. This design innovation allowed for highly efficient MEP branch servicing between the ribs. In addition to the mass timber gravity system, other CLT applications include the building shear wall lateral system and exterior prefabricated panels. Window cutouts from the exterior panels were saved and used as exit stair treads.

"Passive-first" strategies include rainwater capture for reducing water use, envelope design using Passive House standards, and durable material application to achieve a design life expectancy of 75 years. The Catalyst Building also previews the future of the energy grid: a shared energy model called an eco-district where power is shared between multiple buildings and drawn from a centralized energy plant. Catalyst's roof hosts a 213 kW photovoltaic array, and an additional field of photovoltaics planned at an adjacent site will cover the building's remaining energy needs. It also has an energy-efficient radiant heating/cooling system throughout, heat recovery of all exhaust air, and a high-performing building envelope design that uses CLT in a curtain wall application.

The Catalyst Building symbolizes both Spokane's and Washington State's commitments to sustainability, and it serves as a hub for growth in the region.

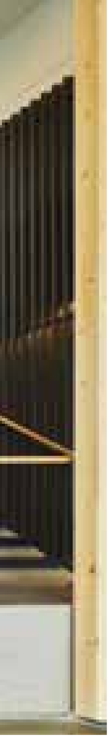
ARCHITECT
MGA | Michael Green Architecture
(Design Architect)
Vancouver, BC

Katerra (Architect of Record)
Seattle, WA

STRUCTURAL ENGINEER
KPFF Consulting Engineers
Portland, OR

GENERAL CONTRACTOR
Katerra
Seattle, WA

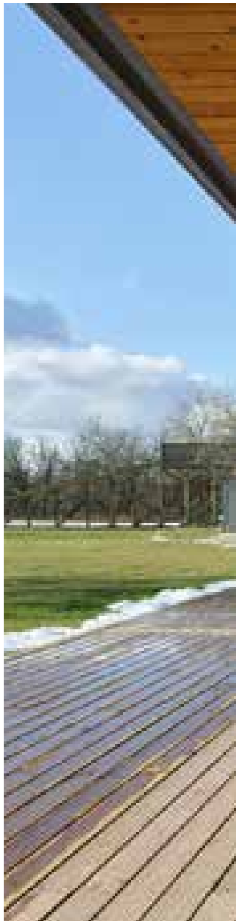
PHOTOGRAPHY
Benjamin Benschneider
Bellingham, WA



Travis Price Centre, Camp Manitou

True North Youth Foundation's Camp Manitou is a year-round camp and recreation facility located on 28 acres of land along the Assiniboine River in Headingley, MB, just west of Winnipeg. The camp has been providing meaningful camp experiences to children, youth, and community groups since 1930.

Since taking responsibility for the camp in 2014, the foundation has made considerable improvements, including construction of a state-of-the-art outdoor hockey facility to support their hockey academy. Eleven additional acres are currently being developed to provide recreational experiences, including kayaking, canoeing, mountain biking, and cross-country skiing.



The interior materials and finishes for this camp building are designed to be simple, durable, and timeless enough to provide years of fun and memories.

Envisioned as the centerpiece of the camp, the Travis Price Centre is a flexible multiuse facility that includes a 200-person dining hall, commercial kitchen, and dormitories, as well as administrative offices and meeting rooms. The building also supports several outdoor functions with fully accessible washrooms, exterior change rooms and lockers for the outdoor pool area, and a covered deck that opens up to the adjacent field and fire pit.

The building's form is simple. Two adjacent gable-roofed volumes are offset in plan to provide views to the exterior and create outdoor spaces. The main entrance intersects the building with a pronounced pitched roof that is pulled back on the west side to create a welcoming lodge-like entrance.

In addition to its aesthetic qualities, the extensive use of wood provided numerous benefits to the project, including ease of construction, cost-effectiveness, durability, ease of maintenance, and the ability to be prefabricated and finished off-site.

The building's primary structure – including trusses, roof joists, load-bearing columns, and walls – is constructed from wood. All these elements along with the interior wood demising walls were prefabricated off-site to reduce project costs and expedite the construction schedule.

Shiplap cedar siding is utilized on soffits and walls at the entrances, extending seamlessly into interior spaces to provide natural warmth. Cedar is also used to highlight the exterior gathering area along the building's south facade and is prominently featured on the vaulted ceiling of the hall. All cedar was pre-stained off-site to ensure quick installation and consistency of finish. Douglas fir veneer, the color matched to the cedar cladding, was used on all interior doors while solid Douglas fir was used for interior and exterior benches. Wood was also used for exterior elements, including the large pressure-treated deck and exterior cedar fencing that was stained to complement the charcoal metal standing seam siding.

Overall, the use of wood reflects the camp's commitment to having visitors experience this unique natural environment, grounding the building in its beautiful setting.

ARCHITECT
1x1 architecture inc.
Winnipeg, MB

STRUCTURAL ENGINEER
Crosier Kilgour & Partners Ltd.
Winnipeg, MB

GENERAL CONTRACTOR
Concord Projects Ltd.
Winnipeg, MB

PHOTOGRAPHY
Lisa Stinner-Kun
Winnipeg, MB


Canadian Wood *WORKS!* Awards

Canadian Wood *WORKS!* Awards

Dear reader,

We are proud and excited to be sharing the recipients of this year's Canadian Wood *WORKS!* Awards with you. From coast to coast, across Canada, these wood projects are examples of innovation, ingenuity and vision. Each year we find ourselves in awe as design professionals from across the country showcase what is possible while using wood.

The Wood Design Awards are an annual opportunity to explore wood's potential, which grows each year as projects become larger, taller, and more ambitious. We have yet again been inspired by the architects, engineers, designers, and project teams that are putting enormous effort to reach new frontiers and expand wood's potential. And, as building codes change and technology continues to advance, new opportunities will continue to arise and so, we look to you as leaders in wood innovation.

The aesthetic, environmental, and economic benefits of building with wood may be clear to those who are familiar with it, but we feel that it needs to be shared proudly and boldly. These projects are celebrating the forest industry, creating pride, and adding solid case studies to the narrative that wood is good – for communities, for the environment and for Canada.

We would like to thank this year's jurors for their expertise, our sponsors for their generous support, and project owners, wood product and system manufacturers for their ongoing commitment to wood innovation and excellence.

Congratulations to the award recipients - we are honored to showcase your hard work! Your projects are paving the way for a future of sustainable, livable and affordable communities.

Please enjoy learning about these brilliant wood building projects.

Lynn Embury-Williams
Executive Director
Wood *WORKS!* BC

Rory Koska
Program Director
Alberta Wood *WORKS!*

Marianne Berube
Executive Director
Ontario Wood *WORKS!*

AWARD AND EVENT SPONSORS

FUNDERS

Natural Resources Canada | Ressources naturelles Canada

Catalyst Building
Spokane, WA
Please see page 116

BRITISH COLUMBIA

Residential Wood Design

An innovative mass timber home elevates off-grid design.

SoLo

In the most recent Wood Design & Building Awards, SoLo was selected for a Merit award. (The Honor winners and a complete list of projects will be featured in our next issue.) Wood was chosen as this residence's primary structural material, resulting in a beyond net-zero carbon building. The wood is also exposed in its entirety throughout the home – a "temple to Douglas fir." While SoLo stands out as an exceptional example of sustainable construction in a challenging location, the wood structure also represents a key step in the development of larger buildings.

According to Perkins&Will, "We've taken lessons learned from SoLo around prefabrication and detailing of the panelized mass timber facade and are looking at ways to apply it to a system suitable for mid- and high-rise buildings." The 37-story Canada's Earth Tower – a mixed-use landmark planned for Vancouver – is one of the projects the company has in mind.

“We are currently working with engineers and fabricators to develop a wood-based facade system that would work similar to other prefabricated facade systems, such as a curtain wall or precast concrete that attaches back to the main structure of the building. In this case, encapsulated mass timber would serve as the main structural element of the facade panels, resulting in a wood-based, low-carbon alternative with high thermal performance targets.”

High thermal performance targets are part of what makes this home unique. Sited atop a forested knoll overlooking the spectacular Soo Valley, north of Whistler in British Columbia’s Coast Mountains, SoLo is not a typical alpine home. With the client’s intention to pioneer a future zero-emissions alpine community, Perkins&Will designed a prototype that demonstrates a unique approach to building off-grid in a remote environment, where every choice has consequences. It is also the firm’s first Passive House–certified project. SoLo has earned the highest rating from EnerGuide, Canada’s energy performance rating system, and exceeds Step 5 of the British Columbia Energy Step Code, indicating the highest level of energy efficiency in the province.

To minimize site disturbance, the modular prefabricated home was placed on a light structure above the uneven terrain, reinforcing its relationship to the site as a "visitor," allowing nature and the site to remain the focus. SoLo embodies a simple aesthetic through a restrained material palette and edited architectural features. The interior of the house features only six materials, with Douglas fir celebrated throughout as both structure and finish. As part of their commitment to promote health and well-being, the architects purposely eliminated the use of any harmful chemicals.

Solving the challenges provided by the site's remote location and seasonal construction window, local builders were commissioned to prefabricate the wooden modular building elements off-site. This was essential to allow for quick erection of the building in the summer season, while decreasing the

amount of equipment and materials needed on-site – also reducing the project's embodied carbon footprint.

Given the valley's extreme climate, it was critical to have an "enclosure first" approach to ensure efficiency and outstanding comfort. Employing Passive House principles, the designers applied a two-layer approach to the enclosure. An outer heavy timber frame acts as a shield, resisting the weather, while the heavily insulated inner layer acts as the thermal barrier. The main house was encased in 2-ft.-thick insulation and sits independent of the large outer roof structure and surrounding steel platform. To ensure the house functions with exceptional thermal performance and air tightness, detailed thermal modeling was conducted for each weather condition. Even with the addition of double-height glazing to take advantage of the valley's views, the home has achieved PHI Low Energy Building certification.

To maintain the large north-facing window and open-concept design, the architects used an innovative structural solution that eliminated the need for wood shear walls. Introducing two tension-rod braced frames at each end allowed the frames to collect the seismic loads from the roof and enabled unobstructed views from the large feature window. The braced frames secure the roof, while the limited shear walls within are used to secure the house, creating two independent seismic systems.

As an "off-grid" home, several systems are required for the home's operational independence. With the goal to eliminate fossil fuels and combustion from its operation, power is provided by a photovoltaic array (mounted vertically on the south facade) and geo-exchange system coupled with a hydrogen fuel cell for backup energy storage. The house collects and treats its own drinking water and processes its wastewater. The result is a beautiful and self-sufficient 4,090-sq.ft. house that generates more energy than it uses – beyond net zero energy. SoLo merges beauty and function, while optimizing the use of wood to achieve its goals.

ARCHITECT
Perkins&Will
Vancouver, BC

STRUCTURAL ENGINEER
Glotman Simpson
Vancouver, BC

GENERAL CONTRACTOR
Durfeld Constructors
Whistler, BC

PHOTOGRAPHY
Latreille Architectural Photography Ltd
Vancouver, BC

Multi-Unit Residential Wood Design

Despite appearances, there's nothing square about this cutting-edge approach to designing livable space.

Cubes

Located adjacent to the campus of the new Comox Valley Hospital and North Island College campus in Courtenay, BC, Cubes has two mixed-use buildings consisting of 60 purpose-built rental apartment units and ground-level commercial space. The unit mix in the project consists of 45 one-bedroom units ranging in size from 580 sq.ft. to 620 sq.ft., and 15 two-bedroom units at 800 sq.ft. apiece.

The residential construction was built off-site with an innovative hybrid framing system utilizing mass timber floors, elevator shafts, and manufactured framed wall assemblies that shortened the construction schedule by three months. Technical solutions were found that addressed all acoustic, fire rating, and building envelope requirements of the building code for the use

of the mass timber flooring system and elevator shafts without encapsulation; this allowed for the wood to be exposed as ceilings in the rental residential units and as walls by the elevator lobby on the residential floor.

Being able to use raw mass timber floors and elevator shafts as the final finishes in the building proved highly economical. Eliminating insulation, paint and drywall as the finishes created a healthy environment both physically and psychologically, something which is not usually found in basic rental apartment buildings. Since occupancy, the feedback has been overwhelmingly positive both from an aesthetic point of view and also from a livability perspective, with many tenants commenting that it has been the quietest building they have ever lived in.

The buildings incorporated numerous features, including having no horizontal venting to the outside and the use of heat pumps, ventless dryers, and an efficient heat recovery ventilator system to provide fresh air to all residential units and the corridors.

Walls, ceilings, floors, elevator shafts, and roofs are dowel laminated timber panels, which, through an engineered acoustic solution, allowed for the ceilings in the suites to have exposed ceilings with a Kerfed edge lamina effect. Elevator shafts were exposed in corridors to provide warm wood feature walls in the elevator lobby on the residential floor. All wood used was SPF graded.

ARCHITECT
Studio 531 Architects
Victoria, BC

STRUCTURAL ENGINEER
Skyline Engineering
Victoria, BC

GENERAL CONTRACTOR
AFC Construction Ltd.
Courtenay, BC

PHOTOGRAPHY
Proper Measure North Island
Courtenay, BC

Commercial Wood Design

With nature in mind, this commercial space integrates the beauty and spirit of the outdoors with a seamless shopping experience.

MEC Vancouver

Mountain Equipment Company (MEC) is a distinctive retail and mixed-use building at the gateway of the Olympic Village neighborhood in Vancouver. From conceptualization, this flagship store was intended to embody the brand and values of the client and reflect the design language established for MEC's new stores across the country, starting with the company's mass timber head office in 2014.

Wood is the defining aesthetic expression of the project. As a sustainable and locally sourced material, it was chosen for its reduced embodied energy and a subsequently lessened environmental impact, ensuring our natural playground can support recreation for years to come. MEC's members value efficient function over decoration: they appreciate the inherent beauty of a well-designed object doing a job well. To translate this architecturally, wood – requiring minimal finish and lending itself to simple and honest tectonic expression – was a clear material choice to express MEC's brand.


MEC
MEC

For MEC Vancouver, when three levels of concrete parking reach grade the structure flips to mass timber, utilizing a Douglas fir glulam column-and-beam system with spruce/pine CLT floors and roof. On ground level, a generous cedar wood soffit/column canopy runs the length of the building along E. 2nd Avenue to mark the entry, with ample ground-level glass to activate the street edge and draw a visual connection to the store interior.

Upon entry, the double-height interior atrium is all about materiality, showing off a steel feature stair and a fully expressed mass timber structure. Large raw steel brace frames provide seismic resilience and anchor the design. Generous daylighting, a tall floor-to-floor plate, and expansive views to the outside prioritize user wellness.

High-performance features include high insulation and air tightness (R50 and R40 for the roof and walls), strategic air handling through radiant heating and cooling, and wastewater management. A hot water loop system is connected to a district heating network (NEU) with a highly efficient power plant. In practice, the building rejects heat to the district heating network, selling energy to the system (the first for buildings ≠ that use the NEU). These factors result in a reduction of 6 tons of CO_2 yearly.

Between two green roofs, a flat central blue roof collects rainwater for the gray water system. A 15,000 L underground rainwater cistern is treated to strict City of Vancouver standards for usage in the toilets, allowing for an annual reuse volume of over 500,000 L. Combined with low consumption fixtures, it results in a total water use reduction of 46.6% compared to LEED requirements.

MEC Vancouver is a unique commercial building that rethinks how a large retail store can serve its community and benefit the environment. The project's sustainable goals became drivers to create architecturally interesting space, finely balancing sustainability, community engagement, and attractiveness.

CLIENT
MEC
Vancouver, BC

ARCHITECT
Proscenium Architecture + Interiors Inc.
Vancouver, BC

STRUCTURAL ENGINEER
Fast + Epp
Vancouver, BC

GENERAL CONTRACTOR
Heatherbrae Builders
Vancouver, BC

PHOTOGRAPHY
Michael Elkan
Vancouver, BC
Kori Chan
Vancouver, BC
Shannon Elmitt
Vancouver, BC

As one of several wood frame dormitories on campus, this project creates a unique opportunity for studying Passive House performance in Canada.

Environmental Performance Award

Skeena Residence, University of British Columbia

The new Skeena Residence at the Okanagan campus of the University of British Columbia in Kelowna, BC, completes an ensemble of residence buildings encircling the central green space on campus known as Commons Field. Comprising 72,600 sq.ft. over six stories, the ground floor includes common housing amenities and building service spaces while the upper five stories include accommodation for 220 students.

The five residential floors offer shared bathrooms flanked by two bedrooms. This layout allows space for quiet study when required. Additionally, each floor has both a study lounge and a house lounge (equipped with a kitchenette, dining table, and couches) with views of the surrounding mountains. Locating these spaces at opposite ends of the floor ensures that quiet study is not interrupted by noise from social areas.

The Skeena Residence also has a large laundry room on the first floor located adjacent to the student lounge. Separated by a glass wall, the relationship between the two spaces encourages chance meetings and spontaneous gatherings. The transparency also offers passive surveillance, promoting a sense of security. In short, the design of the building supports community life.

Wood as a primary structural material offers several practical advantages. Unlike concrete or steel, wood frame construction has inherent thermal resistance properties. Thermal bridging is more easily managed with wood, which simplifies construction details and reduces associated costs. Wood is also more workable on-site compared with steel or concrete; hydronic heating pipes, for example, have twice as much insulation in a Passive House construction like this one, making installation a unique challenge. Fitting them into place is much more straightforward with wood.

Skeena Residence is the first Passive House dormitory in Canada and the second in North America. The building has been fitted with a comprehensive monitoring system that will gather data to compare Skeena's energy use and occupant comfort with neighboring buildings built to LEED Gold and BC Building Code standards.

The exterior complements the existing campus color palette with a combination of brightly colored fiber cement panels and darker metal panels. A feeling of depth is created by bringing the fiber cement panels forward of the metal panels, emphasizing the depth of the window reveals. This gives articulation to the simple form, without introducing complexity that would compromise energy performance.

ARCHITECT
PUBLIC: Architecture + Communication
Vancouver, BC

STRUCTURAL ENGINEER
Bush, Bohlman & Partners LLP
Vancouver, BC

GENERAL CONTRACTOR
Sawchuck Developments Co. Ltd.
Kelowna, BC

PHOTOGRAPHY
Latreille Architectural Photography Ltd
Vancouver, BC

A new health care center aims to provide culturally sensitive and timely care to a BC First Nations community.

Skeetchestn Health Centre

Located 50 km west of Kamloops, BC, the Skeetchestn Health Centre is a new health facility managed by the Q'wemtsín Health Society, offering access to health services for the First Nations residents of Skeetchestn a few short minutes away. Providing space for visiting health professionals, the center consists of two exam rooms, a dental room, counseling rooms, an immunization room, a bathing room, a fitness/physio room, and a multipurpose community health room.

Wood was chosen because it is a contextual building material that has been used by the local First Nations for generations. The building's program is broken into a simple parti with parallel rectilinear wings, and the entrance and public spaces located between the two. The health treatment services are in one wing, and the other wing is reserved for health administration staff. The central public space with entrance, reception, waiting area, and community health room is fully glazed at the front and back, and it has a higher volume with clerestory glazing to allow natural light into the central public space.

The central interior walls have vertical grain (VG) Douglas fir wood slats with 19 mm spacing and is also spaced off the wall to provide sound absorption. At the front of the building is a covered drop-off area with a sloped V-shaped glulam column supporting a large overhang with VG fir wood soffit. The central upper roof structure thickness is consistent with beams recessed to allow the VG fir wood ceiling/soffit to be on a continuous plane from outside to inside the building. The sloped V-shaped glulam column and recessed beams accentuate the dramatic wood canopy and ceiling inside the building.

ARCHITECT
dk Architecture
North Vancouver, BC

STRUCTURAL ENGINEER
Fast + Epp
Vancouver, BC

GENERAL CONTRACTOR
Ledcor Construction Limited
Kelowna, BC

PHOTOGRAPHY
Martin Knowles
Vancouver, BC

This new seat of the Tsleil-Waututh Nation pays homage to the forest and ocean waters that have sustained its people for thousands of years.

Institutional
Wood Design – Large

Tsleil-Waututh Administration & Health Centre

The 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 cedar-clad 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 number 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 skilful concealment of the dense network of building services.


3178

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 Ltd
Vancouver, BC
City Spatial Consulting Ltd.
Vancouver, BC

Western Red Cedar

Attention to detail and the bespoke nature of this home highlights the craftsmanship of material and connection.

Lakehouse

This lakehouse in Summerland, BC, is a single-story, mass timber structure overlooking the south shore of Okanagan Lake. Designed to create moments of discovery, the footprint is modest, allowing negative space to become areas of repose.

Thermally modified wood screens are used as a method to both contain and reveal space as one moves through the site. A birch forest welcomes guests in the entry courtyard, which is contained on all four sides by wood screens and a sliding entry gate. At night, the courtyard glows with the structured placement of trees and in-ground lighting, continuously transforming with the changing seasons. The interplay of built form and landscape is perceived inside and out.

The main pivoting entry door is not revealed until one moves past the wood screening elements. Changing elevation slightly, the ground plane finish subtly shifts from crushed granite in the courtyard to smooth architectural concrete. One reaches the suspended, thermally modified wood slats above a koi pond, contained as the CLT roof above provides shade and cover.

The building form is organized into two parts connected by a central circulation spine; the flat roof has deep overhangs and wood slats that serve as shading devices. The glazed central skylight allows natural daylight to filter into the home, reducing the need for artificial lights, and for 10 months of the year provides needed thermal heat gain. A visual connection to Okanagan Lake reveals itself upon entry, as light washes in from all sides and above.

The home is framed of conventional light wood construction and mass timber elements, including CLT and glulam beams. Sustainable features include storm water management, water-efficient landscaping, use of regional materials, renewable materials, ventilation effectiveness, low-emitting materials, and maximized daylight and views.

ARCHITECT
HDR Architecture Associates, Inc.
Penticton, BC

STRUCTURAL ENGINEER
Equilibrium Consulting Inc.
Vancouver, BC

GENERAL CONTRACTOR
Greyback Construction Ltd.
Penticton, BC

PHOTOGRAPHY
HDR Architecture Associates, Inc.
Penticton, BC

Wood Innovation

Designers of this cultural catalyst for Vancouver's artists and innovators find inspiration in nature in more ways than one.

Pavilion at Great Northern Way

Inspired by the layered composition of flowers, Vancouver's Pavilion at Great Northern Way is both a coffeehouse and landmark sculpture. Intended to be a cultural catalyst for the city's emerging art, design, and innovation district, the 2,000-sq.ft. structure activates the plaza of the former industrial zone, creating a heart for the new campus community.

The uniquely curved petal forms overlap, creating an undulating pattern comprising five inner petals that form the grand singular volume and five outer petals that flare out to announce the three entrances. The petals converge at the top to form an oculus, filtering daylight to illuminate the wood-clad interior and creating a warm and inviting ambience.

During concept design, the team was determined to explore what is possible in wood construction through digital fabrication. Through material and fabrication research, and in collaboration with industry partners, the design team proposed fabricating a complex curvature NLT structural panel, a proof-of-concept prototype for a curved mass timber structure.

The prototype was composed of readily available standard 2x lumber, cut at precise angles to aggregate the panel curvature, and laminated together using wooden dowels and aluminum nails to form a faceted structural shell of complex double curvature. Leveraging computational design and advanced fabrication techniques, the shell was milled by a five-axis CNC route to achieve a smooth curved interior surface finish. The shell panels were set to be assembled for the actual build of the project.

Learning from the curved NLT prototype, the design team worked with the structural engineers and fabricators to optimize the petal forms and develop a lighter and more cost-effective structural solution. The final structure is a prefabricated waffle-based system that comprises hybrid timber and steel plate structural components. Each petal is composed of curved glulam column beams with embedded CNC steel plate splines, laminated strand lumber purlins, CNC blocking, and plywood sheathing. The inner petals connect structurally to a steel ring beam to form the free-span dome structure, while the outer petals rest on the inner petals' structure. Each petal consists of a number of individual panels, fabricated at the shop, sized to fit a flatbed truck, shipped, and then assembled and erected on-site.

Our decision to construct this complex and expressive structure in wood was intentional and deliberate – a proof of concept through research and innovation, on a small scale, for the recognition of wood as an option for complex structures. Wood allows us to rethink interiors, moving away from stark white gypsum walls towards the warm glow of a natural material. Prefabrication allows for economy and conservation of material and energy usage in production and assembly. Environmentally sensitive products were used for all materials such as engineered birch plywood and FSC-certified lumber.

ARCHITECT
Perkins&Will
Vancouver, BC

STRUCTURAL ENGINEERS
RJC Engineers
Vancouver, BC

Spearhead Inc.
Nelson, BC

GENERAL CONTRACTOR
Ledcor Group
Vancouver, BC

Tetherstone Construction Inc.
Vancouver, BC

PHOTOGRAPHY
Ema Peter
Vancouver, BC

Nick Diamond
Nelson, BC

Latreille Architectural Photography Ltd
Vancouver, BC

Sponsors

Alberta Government

Alberta Forest Products Association

PRAIRIE

This highly sustainable building is very energy efficient, using a high-performance curtain wall, triple-glazed windows, and high levels of thermal performance in the building envelope.

Métis Crossing Cultural Gathering Centre

The Métis Crossing grounds sit on a 512-acre site – river lot titles from the original Métis settlers to the region in the late 1800s – along the North Saskatchewan River, just outside Smoky Lake, AB (about 120 km northeast of Edmonton). As the first major Métis cultural interpretive center in the province, it is a premier destination for Métis cultural education and public gatherings.

The new Cultural Gathering Centre provides over 10,000 sq.ft. of gathering spaces, meeting rooms, classrooms, and interpretive spaces. Designed to seat over 350 people indoors, it is an ideal venue for weddings and large gatherings, such as corporate retreats. The expansive 2,600-sq.ft. deck and canopy on the south side provides stunning views of the river valley. Timber was a natural choice for the primary structural material, given its long history of use in traditional Métis construction practices. In keeping with the structure's connection to its heritage, the building was designed by Métis architect Tiffany Shaw-Collinge from Manasc Isaac Architects, now Reimagine Architects.

The Cultural Gathering Centre hints at the building style of the fur trade–era river lot homes, yet offers modern functionality. To make the best use of timber's natural properties and strengths, many different types of wood were utilized throughout the building to achieve the functional and aesthetic goals. The selected types included traditional styles such as heavy timber and stud framing, to newer engineered wood products such as glulam and engineered lumber. The exposed timber structure is featured prominently in the main gathering hall, while the truss shape is intended to mimic the infinity symbol, an important image in Métis culture.

Métis employment also was a large consideration on the project. Big Ray Dumais Construction, a 100% Métis-owned and -operated company, was the subtrade selected for the framing of the building, while Carvel Electric, also Métis owned and operated, was engaged as the electrical subtrade.

Designed around a significant fireplace, the Cultural Gathering Centre invites people to gather and share stories, play music, and share in celebrations. The base of the fireplace is detailed with dovetail joints, evoking Métis construction techniques. The dovetails appear again at the huge "kitchen table" (a movable table adjacent to the commercial kitchen), that invites conversation.

This highly sustainable building is very energy efficient, using a high-performance curtain wall, triple-glazed windows, and high levels of thermal performance in the building envelope. The large veranda shades the south side of the building, minimizing overheating, and the north side has high-level windows that open to provide natural ventilation.

The butterfly-shaped roof presented a unique challenge for the design team, as this area was intended to be entirely column-free, while spanning 47 ft. across the hall. To achieve the long spans needed with readily available solid timber lengths, Fast + Epp developed a unique truss system that allowed the timber chords to be discontinuous in the middle, at the low point of the roof. This timber truss shape was separated purposely from the Douglas fir glulam columns that support the hybrid trusses and glulam roof beams, as a statement towards the integration of historical and contemporary materials.

The roof framing utilizes rustic, spruce-pine glulam decking panels supported by heavy timber and steel trusses; each truss consists of solid 10- by 12-in. Douglas fir timber chords and circular steel web members. The truss connections consist entirely of countersunk self-tapping screws to ensure a clean aesthetic.

Douglas fir glulam columns were used throughout the building to support the hybrid trusses as well as additional glulam roof beams. In areas where the timber framing was not exposed (offices, mechanical room, classrooms), engineered timber joists were used to minimize the structural depth and optimize the costs. Conventional wood stud walls (SPF framing with Douglas fir plywood) were used at the building perimeter and at shear wall locations. The expansive exterior deck also was framed in timber, with built-up dimensional lumber and engineered joists.

The dovetail joint and post-and-beam detail was utilized in the millwork of the Cultural Gathering Centre to reflect techniques that were historically utilized in the fur trade when building homesteads or forts. A vertical Accoya screen surrounds the deck area, where post-and-beam detail can be found on the outside corners. The dovetail joint is utilized in the bench of the fireplace, the Métis kitchen table, and the mobile kiosk cart.

The roof over the deck utilizes Accoya structural joists supported by Douglas fir glulam beams and columns. The large roof canopy over the south deck explores the nuance of Métis culture, where indoor and outdoor integration is key. This extended deck tempers the division between the two environments in a significant and considered way. Wood is also used for a timber-framed picnic shelter and playground elements.

CLIENT
Métis Crossing Inc.
Smoky Lake, AB

ARCHITECT
Reimagine Architects
Edmonton, AB

STRUCTURAL ENGINEER
Fast + Epp
Vancouver, BC

GENERAL CONTRACTOR
GenMec ACL
Bonnyville, AB

PHOTOGRAPHY
Cooper & O'Hara
Edmonton, AB

Recreational

"Look deep into nature, and then you will understand everything better," Albert Einstein once said. The Welcome Centre for this botanic garden concurs.

University of Alberta Botanic Garden Welcome Centre

The University of Alberta Botanic Garden is a lush oasis made up of manicured gardens, mixed woodland vegetation, and an extensive nature trail system. Operated by the University of Alberta, the garden has seen an increased number of annual visitors in recent years. This is in part due to the addition of the Aga Khan Garden, a spectacular 11-acre Islamic design-inspired feature garden.

Visitors to the garden are greeted at the new Welcome Centre, a charming and elegant pavilion made of wood. It contains ticket booths, a gift shop, a concession stand, restrooms, and a large outdoor canopy to accommodate functions.

A wood structure made sense for this project, given the natural environment of the garden. Surrounded by 240 acres of gardens and trees, wood lent itself to a Welcome Centre in its organic, warm, and sustainable sensibility. The biomorphic form of the center and its canopy was drawn from a tree. Poetically, the garden structure suggests the gentle lightness of a falling leaf, suspended in midair to provide shelter from the elements while expressing a gesture of hospitality to visitors. The leaf drives inspiration inside the building, too, where the glulam beams represent the veins of a leaf and provide structure to the entire assembly. The center's glulam panels are made of Douglas fir and are showcased prominently in the design: clear-coated on the exterior and left natural on the interior. Accoya wood was used as an exterior cladding element, above recycled Tyndall Stone. Due to the method of treatment for the Accoya, it did not need to be finished, and it boasts a minimum lifespan of 50 years.

Sustainability was crucial to a project situated so beautifully in nature. For cladding, the design team recycled Tyndall Stone with a granite base reused from another University of Alberta building that was demolished. Greenwall cables were installed as a passive design element in front of the south glazing of the building. As vines grow up the cables, they will provide shade during the summer months. When the leaves die in the winter, their absence will allow more solar heat to enter the building.

The roof was parametrically modeled using computer-scripted software to guide all the water that falls on it into a single location on the north side of the building. In a mild rain, water will run down a rainwater leader and drip down a rain chain. In heavier rains, the water will shoot out of the spout at the end of the rainwater leader.

ARCHITECT
Reimagine Architects
Edmonton, AB

STRUCTURAL ENGINEER
Fast + Epp
Edmonton, AB

GENERAL CONTRACTOR
Clark Builders
Edmonton, AB

PHOTOGRAPHY
Cooper & O'Hara
Edmonton, AB

Residential

A Southern Alberta family's rustic mountain home aims for the highest standards of sustainability.

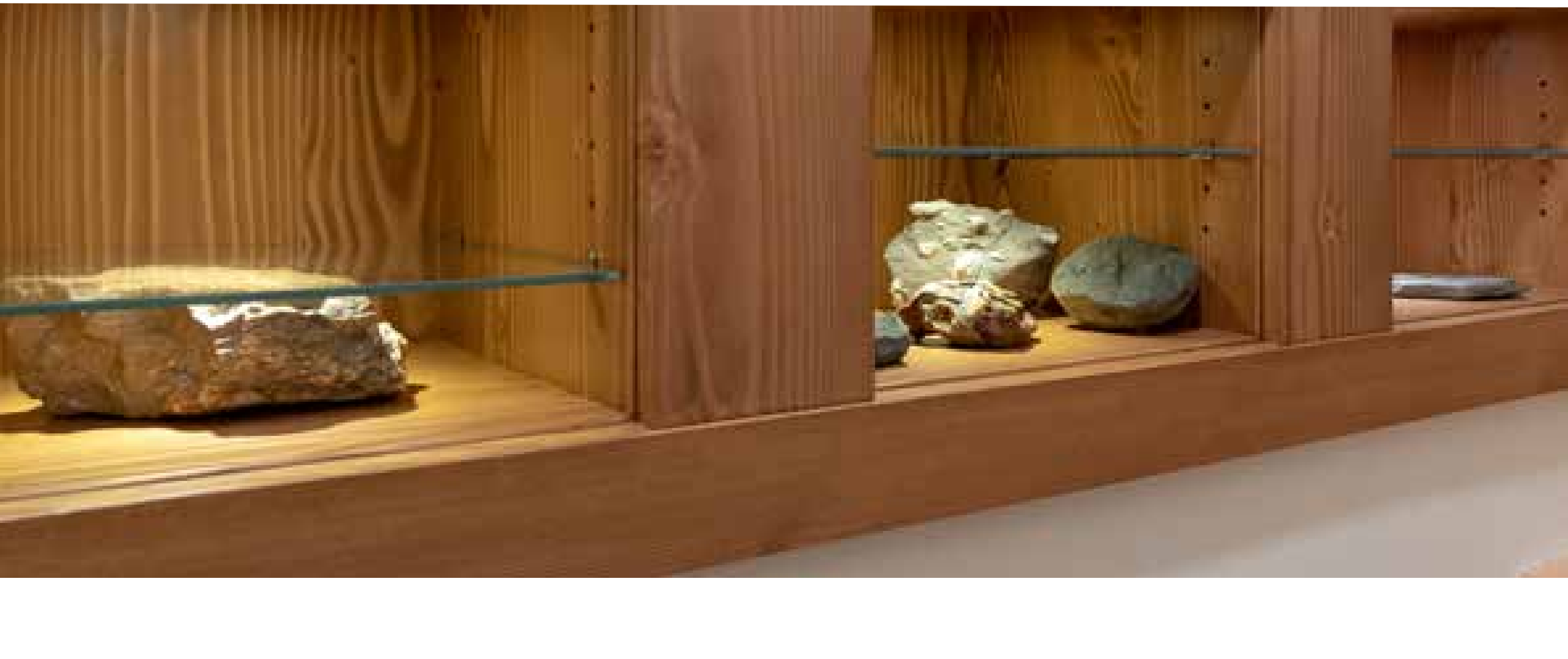
The Confluence

Dubbed "The Confluence," this modest family residence in Southern Alberta is an ode to the prairie vernacular architecture, with a modified craftsman style and a small carbon footprint that emulates historic houses of the area.

Wood was an obvious choice as a building material. Wood features are found throughout the design: structure, columns, joists, LVLs, glulams, preassembled wall panels, flooring, stairs, timbers, and finish work. All wood on the project is sustainably sourced from one of the following categories: FSC certified, SFI certified, PEFC certified, reclaimed, or surplus from another project. From net positive energy to net-zero water, from locally sourced materials to nearly 100% waste diversion, and from salvaged products to non-toxic products, this is one of the greenest homes in the world.

The timber design, both inside and outside, mimics a forest canopy above the occupants and creates a primal sheltering effect for the building. These structural elements, as robust as they would be in nature, are composed of durable, sustainable wood that is mostly sourced from within 1,000 km of the project site. From fir to hemlock to balsam fir and more, integrating various species for various applications adds visual interest and an inherent warmth to the home.

The intentional use of wood throughout the project integrates the surrounding forest into the design and provides the family with a biophilic connection to their natural surroundings. Through the lifetime of the project, weathering and aging will show patina and these imperfections of natural materials will give character to the home by emulating the beautiful imperfection found in nature.



The ubiquitous styling of organic materials ties in well with the natural environment and echoes the nearby forests, mountains, and lakes. Design features with considerations for texture, color, shape, and pattern are imperative to create a confluence of interesting materials that illustrate the personal history of the occupants. Different textures are exemplified in the range of building materials and interior design, from the striking wood grains to the smooth concrete floor to the soft rigidity of the glass countertop. "The Confluence" aims to become the fourth residence on the planet to achieve full certification for the Living Building Challenge, the most rigorous green building rating system. The goal is to create a home that is sustainable with its water and energy use while choosing the greenest building products, all while connecting this home to the surrounding environment and values of this region.

ARCHITECT
Southern Alberta Institute of Technology (SAIT)
Calgary, AB

STRUCTURAL ENGINEER/ GENERAL CONTRACTOR
Woodpecker European Timber Framing
Exshaw, AB

PHOTOGRAPHY
Joleen Molenaar
Calgary, AB

Jury's Choice

Rehabilitation and preservation of existing materials of this historic site highlight the complex log work that was, at one time, so prevalent.

Bar U Ranch Work Horse Barn

Located near Longview, AB, the Bar U Ranch National Historic Site of Canada is home to the largest collection of historical ranch buildings in Canada. This heritage project involves the rehabilitation of the Work Horse Barn, a Classified Federal Heritage Building, as per the standards and guidelines for the conservation of historic places in Canada. The Work Horse Barn continues to accommodate Percheron horses, a unique breed of draft horse that has featured prominently on this site since the early 1900s. The rehabilitation treatment allows for the continued use of this historic place.

The key upgrades include a new screw-pile foundation, concrete grade beams, and salvaged sandstone masonry top course. Adjustments were made to the new finished floor elevation to improve site drainage, necessitating replacement of the concrete central aisle and two layers of new rough-sawn fir floorboards. To accomplish this work, the barn and lean-to were separated, lifted, and moved. The entire barn interior was documented, cataloged, disassembled, and stored on-site prior to lifting and moving. The project also includes repair and replacement of exterior wood siding, interior structural reinforcement and bracing, historic log and heavy timber repair and replacement (including dovetail joints), new chinking and daubing, and the reinstatement of the Bar U Ranch brand on the wood roof shingles. Preservation of existing materials was accomplished with gentle cleaning and a new application of linseed oil paint finishes on the exterior.

The history of the Work Horse Barn is told through wood. It is the largest log structure constructed at the ranch and was part of the first group of buildings at the Bar U, built between 1883 and 1892. The two-story wood building is constructed of log exterior walls and a wood pole and timber-framed gable roof. The barn is a characteristic working building on a foothills ranch, and the site as a whole is an example of one of the region's most important early ranch sites. The barn has undergone a number of modifications to meet changing needs, including a shed-roofed lean-to on the west side for grain storage and a sling for lifting hay into the loft at the barn's south end.

The "working" nature of the barn is made visible through interventions, constructed primarily of wood, made over the years. The function-oriented approach to wood construction is integral to the Work Horse Barn's story and was likewise fundamental to the team's approach to the rehabilitation project.

The new logs are expected to shrink and the barn will settle most dramatically in the year following its installation. Once the bulk of the settling is complete, Parks Canada will paint the exterior walls with linseed oil paint and install daubing to complete the exterior. On the interior, with time and use, the new wood elements will blend into the existing materials, making the story of this rehabilitation quieter over time.

As a whole, the project reminds us of the origins of wood construction, the simple yet complex log work construction that was once so prevalent, the innate adaptability and repairability of the material, and its ability to frame and support spaces for highly variable functions.

ARCHITECT
1x1 architecture inc.
Winnipeg, MB

STRUCTURAL ENGINEER
Technical Services Parks Canada, Government of Canada
Gatineau, QC

GENERAL CONTRACTOR
Nitro Construction
Lethbridge, AB

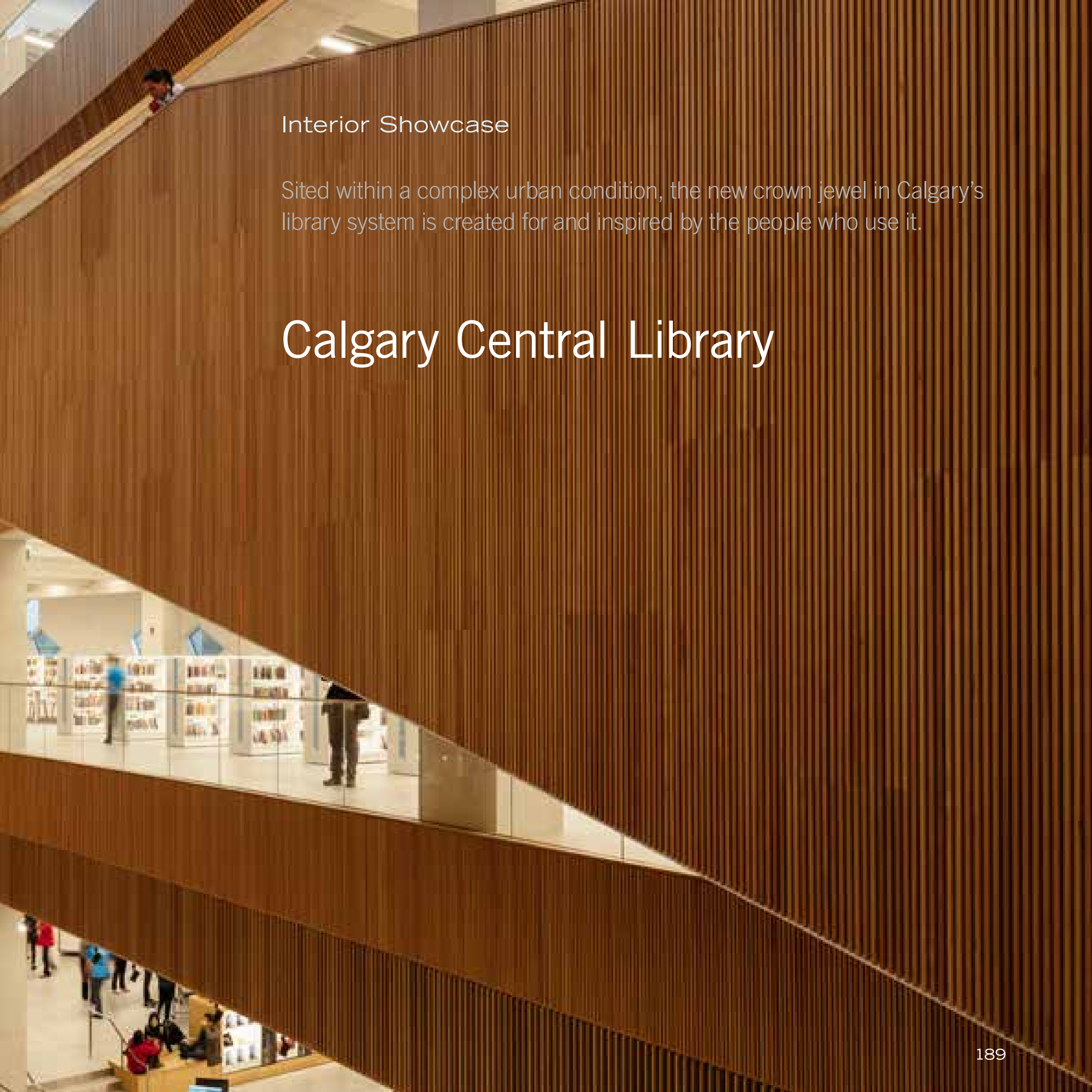
LOG WORK SUBCONTRACTOR
Housewright
Edmonton, AB

PHOTOGRAPHY
Kailey Kroeker, 1x1 architecture inc.
Winnipeg, MB

Interior Showcase

Sited within a complex urban condition, the new crown jewel in Calgary's library system is created for and inspired by the people who use it.

Calgary Central Library



Providing 240,000 sq.ft. of functional space, the Central Library is home to a physical collection of 450,000 books, a 350-seat performance hall, more than 30 community meeting areas, a café, a children's library, outdoor plazas, dedicated spaces for teens, recording studios, and more. Calgary Public Library is one of the most actively used library systems in North America, and the new main branch was accordingly created for and inspired by its diverse users.

Sightseers and avid readers are welcomed into the naturally lit space below a curved oculus ceiling that spans the length of the building, creating a warm and environmentally pleasant atmosphere. To provide privacy while maintaining visibility, vertical solid hemlock slats line the space and ascend to an 85-ft. atrium. Shaped as a pointed ellipse, the slats serve as a compass for people to quickly grasp the circulation and organizational logic of the library. At the uppermost level is the Great Reading Room, a hidden gem that provides a space for focused study and inspiration.

The designers specifically chose West Coast hemlock for the interior ceiling and walls to provide architectural appeal, regional availability, color, and the aesthetic feeling of wood warmth. The product and design also offer acoustic absorption, Class A flame spread rating, and future access to creatively hidden mechanical and data lines.

For the railings, custom furniture, and other custom millwork throughout the building, FSC-sourced white oak was selected. In addition to coming from environmentally responsible sources, this material provides characteristics of a natural design that complements the hemlock slat features. White oak also offers exceptional durability to the curved and sloped surfaces that were integral to this project. The design and engineering of the slopes, curves, angles, and variable spacing of the wood components are driven by the curved footprint of the building. The design intent was transformed through a collaborative effort, creating a grandiose, awe-inspiring, and harmonious symphony of a learning center – an iconic statement that promotes interaction between community and public buildings.

ARCHITECT
DIALOG
Calgary, AB
Snøhetta
New York, NY

STRUCTURAL ENGINEER
Entuitive
Calgary, AB

GENERAL CONTRACTOR
Stuart Olson
Calgary, AB

PHOTOGRAPHY
Michael Grimm
New York, NY

Industrial

A nondenominational cemetery facility finds a balance between light and shadow, the ephemeral and the permanent.

South Haven Centre for Remembrance

The new South Haven Centre for Remembrance creates a new nondenominational facility for the City of Edmonton. The design features a symbolic 13 m tower that emerges from the prairie landscape, making reference to the existing grave sites, monuments, columbaria, and the latent memory they embody.

Our memory of visiting a cemetery is marked by time: the position of the sun, the quality of light, and the weather on that particular day. For some, it may be a solitary visit for ceremony; for others, it may be experienced through ritual visits that span the rest of their lives. The primary objective of the design was to memorialize moments in time and spatially capture the quality of the seasons through the interplay of light and shadow.

The unique nature of this building typology was coupled with the rare opportunity to position a building within a vast 21 ha site. The development of a partially submerged landform building was conceived as a wandering line in the landscape, providing visual connection to and from the building. The planning strategy focused on the careful placement of the main entry and key public program spaces, which allow a spatial sequence of public spaces to unfold to address public arrival, as well as providing spaces and areas for silence and reflection.

The organizational strategy spatially distinguishes between the ephemeral and the permanent. The ephemeral references short visits and responds to the natural characteristics of light, sound, and weather, which are closely connected to time and the seasons. The permanent corresponds to burial and the physical record associated with sustaining memory and the physical artifacts that characterize the cemetery; this is the deep foundation of the building as they service the everlasting memory of the individuals that are laid to rest.

The color and overall character of the building considers the relationship of modulating light patterns within the building interior throughout the seasons, as well as the long crisp winter shadows that are cast from the building edges. The combination of black hot rolled steel panels and a black charred ("shou sugi ban" Accoya) skin act as a counterpoint to the snowy winter conditions and the changing relationship of the building in the landscape throughout the year.


The main entrance sequence provides a compressed moment of darkness prior to opening the oversized steel pivot doors, which reveal the light luminous interior space and the framed view of the downtown skyline viewed across the winter-garden courtyard.

The tower is characterized by a large triangular clerestory that allows diffused north light to enter the meeting rooms. The form and development of the tower evolved through multiple iterations to optimize the quality of light and, more specifically, how light and shadow cast within the tower on the summer solstice. The word "solstice" is derived from the Latin words *sol* (sun) and *sistere* (to stand still), and the reverence of light and shadow within the tower is celebrated on this annual datum.

ARCHITECT
SHAPE Architecture Inc.
Vancouver, BC
Group2 Architects
Calgary, AB
PECHET Studio
Vancouver, BC

STRUCTURAL ENGINEER
Fast + Epp
Vancouver, BC

GENERAL CONTRACTOR
K-Rite Construction Ltd.
Edmonton, AB

PHOTOGRAPHY
Ema Peter
Vancouver, BC

Industry Award

Unique applications of wood products throughout this residential project attest to the many advantages in wood construction.

Maison 9732

The owner and designer-builder for Maison 9732 sought to offer a uniquely expressive and responsible house design that was tailored to suit the eclectic mix of homes in Edmonton's Old Strathcona neighborhood. The design's goals were to combine inspiration in building features from the art nouveau and biomimetics movements, passive design features, and high-performance building and enclosure design. The competing demands of these goals required that every ounce of the owner's structural engineering, BIM design, and construction experience were applied to develop workable solutions to the many novel conditions present in the project.

The project structure, enclosure systems, and finishes feature a number of unique applications of wood products throughout, lending the numerous advantages in wood construction to both apparent and hidden aspects of the residence. Advanced light wood framing techniques were employed above the main floor to benefit from wood's light structural weight, low thermal conductivity, and variable vapor permeability in the exterior wall and roof assemblies.

The variable vapor permeability, stability, and adaptability of fir plywood were essential in maintaining high-performance curved exterior walls, and in window and door installations. For these elements, precise BIM design information, CNC machining, and careful framing were employed to allow plywood component assembly and support of curved window bucks set outside of the exterior wall framing over the continuous exterior insulation layers.

More visually apparent are the exposed Douglas fir glulam beams and columns that are arranged organically to deliver warmth and visual interest to the open concept for the main floor, while also serving to remove framing weight and minimize thermal transfer through the exterior wall assemblies. Several wood species are featured in the finishes, most notably Douglas fir for the doors and moldings as well as a mature white birch tree that was harvested and slabbed on-site by the owner prior to demolition for use as live-edge shelving and other finishing applications.

High-performance building features present in the project are the continuous insulated envelope applied at the exterior of all elements below grade and in contact with soils at R-34 effective, a split insulated above-grade exterior wall assembly including 4 in. of continuous exterior insulation at R-30 effective, and a split-insulated flat roof system rated at R-66 effective. Other high-efficiency building systems include insulated fiberglass glazing, hydronic heating, and dedicated energy recovery ventilation.

STRUCTURAL ENGINEER/
GENERAL CONTRACTOR

Jason Bykewich,
Ethos Engineering Inc.
Edmonton, AB

PHOTOGRAPHY

Benoît Pellerin
Montréal, QC

Commercial

Structure and light combine in this medical facility to create an intuitive interior flow for users and transport visitors to an elevated, light-filled environment.

Beacon

Beacon is a health-oriented commercial building that centers around a purpose-designed skin clinic in Calgary, AB. The building features three clinics (dermatology, aesthetics, rheumatology) at the second-story level and retail units at grade, all on top of underground parking. Concrete was used for the building base, while wood was used as a primary inspiration to create a warm and welcoming space. At street level, massive concrete columns appear thin in profile, supporting a concrete veil above and demarcating retail entrances. Intermittently staggered with panels of glazing, these generous transparent planes engage passersby and maximize street frontage. On the second floor, the protective concrete veil wraps the structure, creating a strong visual break, an acoustic barrier from the street, and an enclosure for building users. As dermatological clinics require a significant amount of soft natural light for patient assessment and treatment, the project's interior function necessitated a solution that would permit an abundance of diffuse light. The top floor features a sequence of light-filled spaces defined by a wood beam system that offers sound separation between rooms.

The Alberta Building Code does not permit the use of CLT in vertical load-bearing application, and so the design called for a different material that is tested and approved. Resulting in a much finer structure than originally intended, Brisco Fineline Beams were critical in creating the unique architectural aesthetic of the overall building, increasing value for its users and achieving a sustainable material

foundation. The beams could also be sanded if damaged by water, allowing more freedom during installation. The coffered wood system solves a number of functional requirements: it acts as a roof structure that allows large spans and an uninterrupted floor plate, it creates intimacy by way of 7-ft. thresholds, and it provides a surface that diffuses light via natural material for a warm, tranquil glow. As much of the treatment experience is spent horizontally in an extended examination chair, the typical patient perspective is of the ceiling. Replacing the ubiquitous acoustic tile that often characterizes these structures and their experiences was key to transforming the patient experience. The arc of the wood ceiling not only draws a wash of natural light to the interior from the roofline edge, its iconic appearance elegantly bows out of view without compromising the private spaces tucked behind. Further, the high coffered ceiling combined with the mechanical system and natural air convection ensures that warm air remains in the ceiling space while conditioned air circulates in the bottom 7 ft. of the space occupied by patients and staff to promote focused and wakeful conditions.

ARCHITECT
5468796 Architecture
Winnipeg, MB

STRUCTURAL ENGINEER
Wolsey Structural Engineering Ltd.
Calgary, AB

GENERAL CONTRACTOR
RNDSQR
Calgary, AB

PHOTOGRAPHY
James Brittain Photography
Montréal, QC

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Timber Systems

ONTARIO

Innovation

A new mass timber building positions this laboratory as a leader in sustainable practices.

Canadian Nuclear Laboratories Main Gatehouse and Logistics Warehouse

Canadian Nuclear Laboratories (CNL) is Canada's national nuclear science and technology organization. Known for its rich history as a research leader, the organization's 3,700 ha Chalk River campus encompasses more than 300 buildings in a picturesque setting along the Ottawa River. As many of the facilities date to the campus's inception in the 1940s, dozens of its buildings are slated for demolition in the coming decade.

This long-term perspective has led CNL to adopt a carbon-literate outlook for the gradual replacement of its aging facilities. By committing to building three major new buildings in mass timber, CNL has repositioned itself as a leader in both energy research and sustainable building practices.

The three new mass timber buildings – the Main Gatehouse and Logistics Warehouse, Support Facility, and forthcoming Science Collaboration Centre – were conceived in parallel by a single, cohesive Integrated Project Delivery team. Though programmatically diverse, the three buildings share a progressive, incremental approach to sustainable campus-building and show a strong commitment to the use of mass timber. In addition to their carbon-sequestering structures, all three of the buildings are designed to meet FSTII requirements for net-zero carbon-ready facilities.

The 5,060-sq.m mass timber Main Gatehouse and Logistics Warehouse includes site security functions, shipping and receiving, offices, and a conference center. The building plays a key support role for CNL by providing procurement, warehousing, and logistics services across the entire Chalk River site.

In addition to its infrastructural role, the building acts as a gateway to the larger campus. Since it occupies a site close to the adjacent Chalk River community, the Logistics Warehouse presents a public face for the organization, its western elevation greeting visitors with an elegant, minimal glass-and-terracotta skin. A bespoke system of brise-soleil and a custom gradient frit help to define the building's various functions while highlighting the glulam and CLT structure.

While the wood-filled entry lobby and conference center are a key focal point of

the project, the building's mass timber warehouse plays an equally important role by providing a practical demonstration of wood's ability to support a complex system of industrial requirements. By proving wood's worth in both a technical and an aesthetic capacity, the Logistics Warehouse makes a compelling first step in CNL's ongoing process of campus regeneration.

ARCHITECT
HDR
Ottawa, ON

STRUCTURAL ENGINEER
LEA Consulting
Toronto, ON

GENERAL CONTRACTOR
Chandos Sullivan
Ottawa, ON

PHOTOGRAPHY
Kevin Belanger
Ottawa, ON

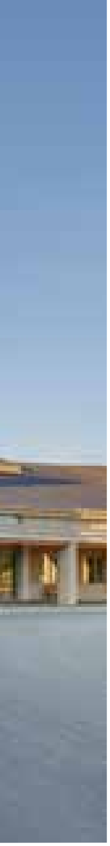
A project finds inspiration in nature's fractal patterns to create an academic space that achieves warmth and welcome.

Toronto Montessori School, Bayview campus

The new addition to Toronto Montessori School's (TMS) Bayview campus includes a new entrance, atrium, advancement and heads offices, double gym, and related support areas all surrounding a number of new gardens and courtyard areas. The semicircular building wraps around a landscaped entry plaza intended to create a sense of campus for TMS.

The heart of the building, the main atrium, is composed of three main wood structural arches that support the main load of the building. From the arches, a series of beams span across the triangular curtain walls and connect the perimetral columns. The beams form a mid-range fractal pattern, emulating tree-like patterns that are pleasant to the eyes.

Humans are hard-wired to perceive nature's fractal patterns, from the form of a tree's trunk and branches to the fine veining of its leaves. Some fractals repeat, while others lead to chaotic fractal patterns. Our eyes employ fractal search patterns, first



scanning larger elements like tree trunks or cloud patterns, then shifting to finer elements like branches and curves of cloud elements. Similarly, the rhythm, pattern, shape, light, and shadow of building forms can reflect a mid-range dimensional "visual sweet spot" to which we emotionally resonate.

The main structure is finished with exposed wood beams and wood deck, giving the atrium a sense of unity and lightness. The wood chosen for the project was Douglas fir stained to match a warm tone with hints of red and yellow, specifically to achieve a sense of warmth and welcome to the space.

A key aspect considered during the design was to use as much natural light as possible, which was achieved with the triangular curtain walls and skylight. Standing on the space, the glass seems to disappear thanks to the wood mullions that match the main structure color and fractal pattern, tying the structure together and creating an illusion of three strong trees working together to hold robust foliage.

The concept of warmth and welcome is also reflected on the outside, with the entrance canopy composed of wood and stone. The canopy follows the semi-circular building's footprint, acting like welcoming arms to the students and visitors.

CLIENT
Toronto Montessori School
Toronto, ON

ARCHITECT
Farrow Partners Inc.
Toronto, ON

STRUCTURAL ENGINEER
WSP Global Inc.
Toronto, ON

GENERAL CONTRACTOR
TriAxis Construction Limited
Mississauga, ON

PHOTOGRAPHY
Tom Arban
Toronto, ON

Institutional

Traditional Indigenous structures and the use of wood inspired the creation of this institution that houses programs for Indigenous and non-Indigenous people.

Fort Frances campus, Seven Generations Education Institute

Seven Generations Education Institute is a publicly funded, not-for-profit educational institute providing culturally enriched high school and postsecondary education and trade programs to both Indigenous and non-Indigenous people. Located on Treaty 3 territory near Fort Frances, ON, the school represents the first dedicated new build in support of the educational goals of the 10 First Nations communities that govern it.

Completed in 2019, the 37,000-sq.ft. flagship building houses both academic and administrative space and includes 12 classrooms, a library with multi-media support and training areas, maker space, a multi-trade lab, and a culinary lab with cafeteria.

The long, narrow design and arched roofline of the building was inspired by the Ojibwe teaching of Turtle Island and the traditional longhouse, while the use of wood was used to acknowledge the institute's Ojibwe history and culture. Glulam Douglas fir columns and beams create large overhangs and cantilevers that define and shelter outdoor spaces while providing shading to the larger glazed areas on the envelope. The modulation in height of the glulam frames created the gradual arc of the roof in a simple and cost-effective manner.

The circular conference room is an interpretation of the roundhouse and

is meant to accommodate traditional ceremonies as well as meeting space for the First Nations board.

The building structure consists entirely of an independent and prefabricated glulam frame with structural insulated panels (SIPs) forming the entirety of the roof and wall envelope. The SIPs were part of a strategy to reduce the overall weight of the building due to the very low load-bearing capacity of the site. Floor, roof, and wall assemblies were designed to be thermally efficient but lightweight to mitigate the need for multiple piles at column locations.

Wood products have allowed the creation of a cost- and energy-efficient facility. The simple circular forms are powerful associative cues that allow Seven Generations to establish a distinct identity within the Rainy River district and reinforces its status as an inclusive learning institute that is looking to the future while fully acknowledging and building upon its Ojibwe history and culture.

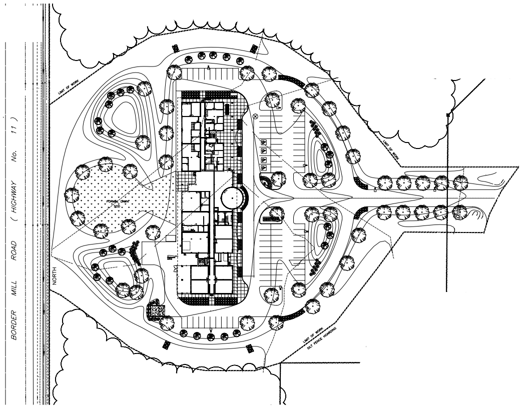
CLIENT
Seven Generations Education Institute
Fort Frances, ON

ARCHITECT
Nelson Architecture Inc.
Kenora, ON

STRUCTURAL ENGINEER
Lavergne Draward & Associates
Winnipeg, MB

GENERAL CONTRACTORS
Jarnel Contracting (Superstructure)
Kenora, ON
Solid Construction (Foundation)
Kenora, ON

PHOTOGRAPHY
Paige Tuusa
Kenora, ON



SITE PLAN

Commercial Wood Design – Low-Rise

This spacious, light-filled terminal provides commuters with an elevated transit experience.

York Region Transit SmartVMC Bus Terminal

Located in the Vaughan Metropolitan Centre northwest of Toronto, the York Region Transit (YRT) SmartVMC Bus Terminal is designed to be open and inviting, fulfilling YRT's ambition to elevate the experience of public transit.

The iconic curvilinear roof floats above a spacious pavilion and extends out to shelter the two platform wings enclosing the bus loop. Its central waiting area is generously daylit and naturally ventilated, anchored between two blocks clad in white precast concrete housing public washrooms, and staff, and service spaces.


PLACE
BUS TERMINAL

Underground, the tunnel from the subway station is covered with colorful wall tiles that enliven the walk for commuters, ending at stairs and escalators that are washed by light from the terminal's clerestory windows above.

The terminal inverts the normal transit typology by wrapping the bus loop with platforms contiguous with the surrounding public space, with no barriers or fare gates. Flowering shrubs planted in the island within the bus loop flank a smoke evacuation shaft for the subway below that has been wrapped with an organically shaped perforated metal shroud. It, in turn, is backed by a massive interactive video wall at the north end of the site that showcases the work of local and international artists.

The terminal roof is built of heavy timber, a renewable resource that heads the many sustainable initiatives undertaken in the overall design. Extensive daylighting in the pavilion removes the need for artificial lighting during the day. At the same time, a shading canopy and overhanging roof manage solar gain so natural ventilation can keep the interior comfortable in the summer. A "cool roof" with a white, high-albedo membrane also reduces the urban heat-island effect.

The structural system is a hybrid of steel framing and FSC-certified spruce-pine glulam beams. The prefabricated glulam timber beams and SFI-certified spruce-pine CLT roof deck ensured high quality control and speedy erection on-site. Careful coordination and innovative detailing were needed to adapt the flat CLT panels to a flowing form with doubly curved sections.

Steel I-beams were clad in heavy timber facings to maintain the overall wood look, and the main glulam beams that form the spine of the roof over the bus platforms were doubled up with a secondary, non-structural beam to form a chase for lighting, speakers, and cameras.

Along with the interconnected subway station, the terminal forms a mobility hub at the heart of this community, adjacent to offices, retail, cafés, a YMCA, and a public library. It sits on a 100-acre parcel being developed by SmartCentres REIT, which contributed to the cost of the underground tunnel between the terminal and the subway. The project points the way to a low-carbon future that embraces architectural expression and civic excellence.

ARCHITECT
Diamond Schmitt
Toronto, ON

STRUCTURAL ENGINEER
Fast + Epp
Vancouver, BC

GENERAL CONTRACTOR
Bondfield Construction
Toronto, ON

PHOTOGRAPHER
Tom Arban Photography
Toronto, ON

Commercial Wood Design – Mid-Rise

This former classical revival-style building's current iteration provides modern office space – and panoramic downtown views.

One Young

In 1905, Lippert's Home Furnishing Co. constructed a three-story building at the intersection of King and Young streets in Kitchener, ON. This building was constructed in the classical revival style, with ordered compositions of arched brick windows, elaborate terracotta details, decorative brick corbeling, and rhythmic brick pilasters.

Fifteen years later, the building was converted to the Windsor Annex Apartments, and then in 1929, it became the Mayfair Hotel (after adding three stories to the top). This early-century building created a landmark in Kitchener that helped build the fabric of a vibrant downtown core.

Unfortunately, after a major flood compromised its structural integrity, the building was demolished in 2015. The site stood vacant until 2019, when a new developer employed a design team to create a modern commercial building that would be branded as One Young.

Based on the zoning for the site, the building was designated for five stories and could be built across the entire site. While a prime location in downtown Kitchener, the site was small with no space for tenant parking. For this project to be successful, the building needed to maximize land use while offering a state-of-the-art and attractive modern office space with good visibility.

The glass wrapping around each floor of the building offers panoramic views over downtown Kitchener. Unique to this project, the glass curtain wall showcases a to-scale replicated image of the former hotel's classical revival-style exterior through a process called frit glass, paying tribute to the building's history. The fritted glass image creates a soft ghosted effect that allows the observer to see a faint picture of the former building without compromising visibility. Observers can also see the warm, beautiful structural wood interior and modern office space with the historic view of the old building.

The beams and columns of the building are constructed with glulam, and the floor slabs are NLT. The floor system is not only strong and durable but also textured and elegant. The NLT floors also received a protective underlayment and a 3-in.-thick floating concrete slab to finish each floor. The finished concrete floors add modernity, durability, and flexibility for the owner to host a wide range of tenant types.

ARCHITECT/
STRUCTURAL ENGINEER
WalterFedy
Kitchener, ON

GENERAL CONTRACTOR
Jackman Construction Ltd.
Kitchener, ON

TIMBER SUPPLIER
Timmerman Timberworks
New Lowell, ON

PHOTOGRAPHY
Matthew Smith
Kitchener, ON

Since mass timber construction is newer to Ontario, there was a learning curve with this project. The Ontario Building Code (OBC) is still adapting to this new type of building product, so situations have arisen requiring special attention. One example was the use of wood ceilings in the exit stairwells. The OBC does not allow products with a flame spread rating greater than 150 to be used in an exit stairwell, a requirement that wood does not meet. A spray-applied flame control intumescent fire-retardant varnish and clear wood sealer were used for these areas to reduce the flame spread rating to 15, which allows the design intent to remain and meet code.

Northern Ontario Excellence Award

The highly visible wood interior of this multipurpose building helps students to feel at home to socialize, relax, and study.

Student Centre, Laurentian University

Laurentian University is Canada's only bilingual and tri-cultural (English, French, and Indigenous) postsecondary institution, offering students a culturally rich educational experience in an intimate setting. Located on a picturesque 765-acre campus minutes from the city of Sudbury, ON, the university is surrounded by five lakes and the vast boreal forest.

In alignment with the university's Campus Master Plan to modernize and build student-focused spaces and facilities, the new Student Centre is the university's first stand-alone building completed in its 57-year history. Funded and operated by students, the center provides a mix of social, learning, and support spaces that enhance student life, and it gives the Student General Association (SGA) greater visibility.

The design team was asked to create a space that responded to student needs while also complementing the campus's unique topography and Northern Ontario identity. Following a series of student consultations, the team recognized that students needed a comfortable place both to be productive and to socialize.

The Student Centre functions as a vital juncture along the campus's spine, linking the university's east and west campuses and giving students a centralized gathering place. Its brow-like shape is inspired by Greater Sudbury's changing landscape, its industrial heritage, and its new spirit as a "brutally beautiful city." Built on two floors on a topographically challenging site, the Student Centre appears to emerge from the bedrock, reflecting the lakes and forests that frame its views. This unique presence provides the SGA with a strong identity that's rooted in nature.

Inside, a two-story atrium lounge serves to build kinship among classmates and cultivate pride of place. The multipurpose space encourages students and visitors to meet and socialize, lounge, and rest between classes, grab a quick bite to eat, or study quietly alone or in groups. Open sightlines foster community while a central fireplace ensures a comfortable home away from home.

With winters in the North compelling most students to stay indoors, the design uses wood to bring the outdoors inside. Wood is prominently visible throughout, running the length of the ceiling of the atrium and out to the underside of the large canopy. The roof structure reflects the spirit of the forest while anchoring itself into the dense Canadian Shield below. CLT beams float above the building and radiate

around an axis in the top-right corner, while the structure is in tension from various points as it's pulled back from spilling out onto the main thoroughfare of University Road. Graphic and film applications of botanical shapes add to the rich, natural palette that promotes well-being.

The exterior cladding comprises steel panels, a nod to nearby industry and a robust shield against snow and wind. A high-performance building envelope, natural ventilation, and solar shading all work to reduce the building's environmental impact. Inside, expansive floor-to-ceiling glazing provides abundant daylight and enables students to enjoy nature from inside. A direct bridge link to the West Residence also enables residents to walk between buildings without having to venture into the cold.

ARCHITECTS
Gow Hastings Architects
Toronto, ON

Yallowega Bélanger Salach Architecture
Sudbury, ON

STRUCTURAL ENGINEER
A2S Associates Limited
Sudbury, ON

GENERAL CONTRACTOR
Capital Construction
Sudbury, ON

PHOTOGRAPHY
Tom Arban Photography
Toronto, ON

Jurors

M. DAVID MOSES
Président
MOSES STRUCTURAL ENGINEERS
mosesstructures.com

M. JACQUES WHITE
Directeur
ÉCOLE D'ARCHITECTURE DE L'UNIVERSITÉ LAVAL
arc.ulaval.ca

MME MARIE-FRANCE STENDAHL
Associée principale
R2K ARCHITECTE
r2k-architecte.com

M. FRANÇOIS CHAURETTE
Conseiller technique
CECOBOIS
cecobois.com

MME CAROLINE FRENETTE
Professeure
DÉPARTEMENT DE MATHÉMATIQUES, INFORMATIQUE ET GÉNIE DE L'UNIVERSITÉ DU QUÉBEC À RIMOUSKI
uqar.ca

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- stgm2
- AMBIANCEBOIS STRUCTURES
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QUÉBEC

Commercial Building Under 1,000 m²

Developing accommodations on a site that aims to protect our fragile natural resources requires an environmentally friendly approach.

Parc Côtier Kiskotuk Lodgings

Nestled in the Bas-Saint-Laurent region, the park's reception building and its charming chalets, perched above the trees, reflect the rural character of their surroundings.

The extensive use of wood for the structures and cladding, particularly the use of Eastern white cedar, a local species, creates a cohesive look despite the wide variety of architectural forms.

Although modest, the project features several ingenious and highly creative details, particularly in terms of sustainability. Drawing on ancestral techniques for protecting wood against the elements, the designers took inspiration from traditional methods while also pushing them further to create buildings that are decidedly more modern in appearance than conventional chalets.

The jury particularly commends the deliberate frugality of the project that demonstrates tremendous skill in doing much with very little. These compact spaces are thoughtfully designed and functional, and they inspire a feeling of well-being.

CLIENT
Société du parc Kiskotuk
Rivière-du-Loup, QC

ARCHITECT
Fabien Nadeau
Cacouna, QC

GENERAL CONTRACTOR
Marcel Charest et Fils
Saint-Pascal, QC

WOOD SUPPLIERS
Art Massif
Saint-Jean-Port-Joli, QC

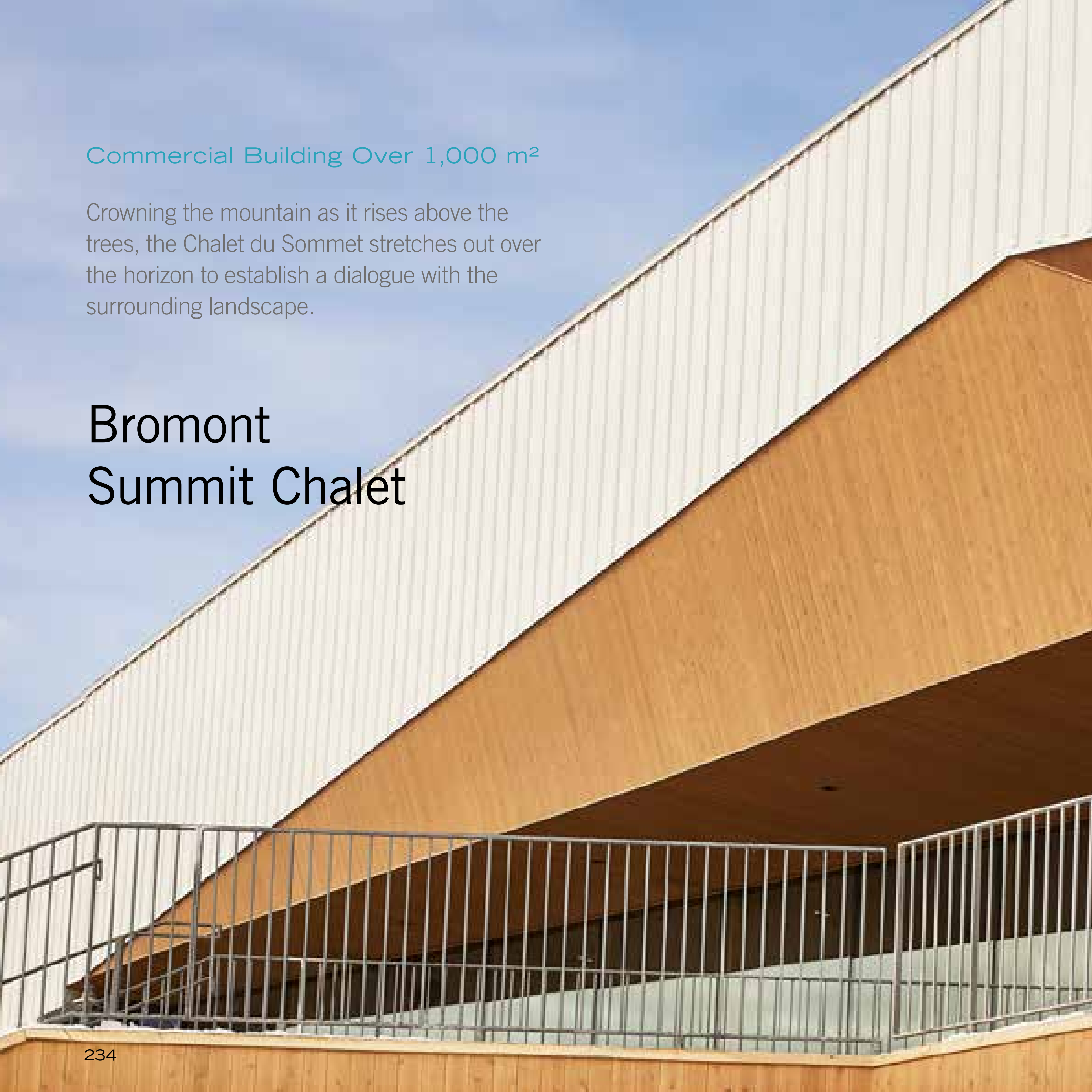
Linéaire Design
L'Islet, QC

PHOTOGRAPHY
Benoît Ouellet
Rivière-du-Loup, QC

Commercial Building Over 1,000 m²

Crowning the mountain as it rises above the trees, the Chalet du Sommet stretches out over the horizon to establish a dialogue with the surrounding landscape.

Bromont Summit Chalet



Magnificent, stunning, elegant. The jury had nothing but praise for the beauty of this building, but also for the finesse of the workmanship, which is particularly reflected in the meticulous attention to detail.

A veritable celebration of nature, wood, and the building's Nordic environment, the chalet envelops guests in a warm, welcoming ambience. Designed to integrate into its alpine setting, the building follows the shape of the mountain's summit. Its delicate, fluid volume elegantly reinterprets the traditional ski lodge, giving the structure a resolutely modern flare.

Supported by glass curtain walls, its white roof is made to seem as if it's floating above the landscape, and the abundant use of wood (for the structure, the ceiling, the cladding, and the furniture) creates an engaging interplay of textures.

The use of a combined exposed glulam and light wood-frame structure supported the project team's goal to create quality architecture while keeping construction costs down. Another refined detail, the wood battens used for the ceiling allow for the discreet integration of the lighting elements.

CLIENT
Bromont, Montagne d'Expériences
Bromont, QC

ARCHITECT
Lemay
Montréal, QC

STRUCTURAL ENGINEER
Elema
Montréal, QC

MECHANICAL AND ELECTRICAL ENGINEER
Dallaire Consultants
Saint-Lambert, QC

GENERAL CONTRACTOR
Decarel
Montréal, QC

WOOD SUPPLIERS
Charpentes Montmonrency
Saint-Raymond, QC

Construction MB
Chambly, QC

Groupe Concept PV
Magog, QC

Ébénisterie Chambois
Saint-Georges, QC

PHOTOGRAPHY
Phil Bernard
Montréal, QC

Vincent Girard
Montréal, QC

Institutional Building Under 1,000 m²

Efficiency and playfulness combine to create this learning space that's bright and engaging for a minimal cost.

Anne-Hébert Library

The Anne-Hébert Library is distinguished by its rationally optimized structure and by the simplicity and intelligence of the solutions used, which serve to create an unembellished, sober architecture. Its efficient grid-like layout demonstrates that it's possible to offer quality architecture and allow users to benefit from the biophilic quality of wood on their well-being, all while respecting a tight budget.

Built entirely in wood, the building combines all the advantages of a light wood-frame structure with glulam beams and columns to create a warm, inviting environment at a minimal cost.

Its welcoming vestibule, its glazed facades, its immaculate interior, and the use of plywood for the furniture help to create spaces that are bright, engaging, and playful. The whiteness of the interior spaces allows the beauty and warmth of the wood to stand out and ensures the subtle integration of the lighting and mechanical components.

The exterior is clad in a very smooth, black-stained wood in a successful attempt to ensure the library's harmonious integration with the neighboring building.

CLIENT
City of Sainte-Catherine-de-la-Jacques-Cartier
Québec City, QC

ARCHITECT
ABCP Architecture
Québec City, QC

STRUCTURAL ENGINEER
LGT
Québec City, QC

GENERAL CONTRACTOR
Construction N. Bossé
Québec City, QC

WOOD SUPPLIERS
Charpentes Montmorency
Saint-Raymond, QC

Construction N. Bossé
Saint-Raymond, QC

PHOTOGRAPHY
David Boyer
Montréal, QC

ABCP Architecture
Québec City, QC

Institutional Building Over 1,000 m²

A new facility in Québec City offers a model for the type of building that can facilitate outdoor public recreation.

Base Plein Air Sainte-Foy Reception Pavilion

The jury was seduced by the charm of this stunning project that celebrates wood in all its forms, creating an overall design that is at once aesthetic and coherent.

This design intent is manifest right from the outside; its exterior, clad in cedar shingles, and its evocative architectural form, made to resemble a cluster of houses, create the impression of a welcoming village. Built on a human scale, the pavilion seamlessly integrates into its environment and offers a warm and welcoming atmosphere.

The skillful play of architectural forms lends itself magnificently to the use of wood, and wood, in turn, gives the structure an air of nobility. The carefully coordinated variations between the light and dark tones provide an intriguing relief that harmonizes with the Nordic character of the site.

Nature and this Nordic spirit also extend to the interior, where the judicious use of a combined light wood-frame and glulam structure creates a strong visual impact in the reception hall. In the great room, the meticulous details of the assemblies give the space a sense of grandeur and help showcase the magnificence of the wooden structure.

CLIENT
City of Québec
Québec City, QC

ARCHITECT
Patriarche
Québec City, QC

ENGINEER
FNX Innov
Québec City, QC

STRUCTURAL ENGINEER
WSP
Québec City, QC

GENERAL CONTRACTOR
Drolet Construction
Québec City, QC

WOOD SUPPLIERS
Art Massif
Saint-Jean-Port-Joli, QC

Clyvanor
Saint-Georges, QC

SBC Cedar
Saint-Prosper, QC

Maxi-Forêt
Trois-Rivières, QC

IC2 Technologies
Québec City, QC

Goodfellow
Montréal, QC

PHOTOGRAPHY
Stéphane Groleau
Québec City, QC

"The contrast between the steel and the wood is really beautiful. Somehow that contrast between the two almost heightens the experience of that wood ceiling within the ice rink itself. It's like the wood is floating."

– Jury

Outdoor Infrastructure

This covered rink makes the greatest possible use of glulam with the addition of steel to increase its span while keeping its budget under control.

Parc des Saphirs Skating Rink

The Patinoire du Parc des Saphirs project aims to develop an urban park on the outskirts of a wooded area on the edge of the Royal Québec Golf Club in Québec's capital region.

Integrating a structure of this size in a natural environment required meticulous attention to detail to ensure a smooth fit. The building is mostly open to the street to encourage citizens to visit. The service building located at the other end closes off the northeastern facade, shielding the playing surface from prevailing winter winds. The new structure aims to provide a protected playground that can be used as an ice rink in winter and as a dek hockey or basketball court in summer.

The service building acts as a reception area, changing room, and common room for various activities. It is fully supported by a light timber frame structure and covered with spruce siding, which marks its relationship to the large roof.

The strategic use of wood is this project's greatest innovation. The service building has a light frame structure as the rink cover, using a combination of glulam timber and steel to increase span without breaking the budget.

The design of the rink's roof was the hardest challenge. The objective was to give an impression of lightness while exploiting the full potential of wood. The adaptability expected for this building prompted the team to develop a project that could accommodate both winter and summer sports while ensuring maximum usability of the service building.

The glulam timber structure in tandem with the steel tensioning system permits a free span of 28 m despite its relatively low thickness. The geometry of the structure allows drainage on both sides of the roof, facilitating rainwater management. This large wooden veil rests on a steel colonnade extending on both sides of the playing surface. Without any additional elements, the bracing

of the entire roof structure is integrated within the steel support system.

The unique shape of the roof is intrinsically innovative. The main trusses' variable girths are sized to minimize wood volume across the structure. Each truss is constructed using two identical pieces of wood assembled to conceal the connections between the trusses, tie rods, and columns. Dozens of hidden connectors are needed to connect trusses and columns. Angled in two different directions, columns are supported halfway between two trusses. The columns are off-kilter in all directions, yielding breathtaking results.

CLIENT
Ville de Boischatel
Boischatel, QC

ARCHITECT
ABCP Architecture
Québec City, QC

STRUCTURAL ENGINEER
L2C Expert Conseil en structure
Lévis, QC

MECHANIC AND ELECTRIC ENGINEER (CONSORTIUM)
Consortium TST-Enerco
Québec City, QC

GENERAL CONTRACTOR
Construction Durand
Québec City, QC

PHOTOGRAPHY
Stéphane Groleau
Québec City, QC

Multi-Residential Building

This eco-responsible housing development located on a former industrial site aims to be the largest multi-residential wood project in the world.

Arbora

Consisting of three eight-story buildings, the Arbora complex in Montréal's Griffintown is the largest multi-residential wood project in the world.

The project is a reflection of the developer's determination to push the limits of wood construction and offer a welcoming and unique environment by leaving the wood structure exposed within the living spaces.

This design feature, a first in Canada, was made possible following successful lab demonstrations confirming the very high fire resistance of wood systems, even when not encapsulated in drywall.

The jury commends the project team's ambition not only to build with wood, but also to minimize the building's environmental footprint by targeting LEED Platinum certification. Arbora is an inspiring project that brings innovation and prestige to the world of multi-residential wood construction.

CLIENT
GrifAldo SEC
Saint-Lambert, QC

ARCHITECT
Lemay
Montréal, QC
Provencher_Roy
Saint-Lambert, QC

GENERAL CONTRACTOR
Sotramont
Montréal, QC

STRUCTURAL ENGINEER
Nordic Structures
Montréal, QC

MECHANICAL AND ELECTRICAL ENGINEER
Bouthillette Parizeau
Montréal, QC

INTERIOR DESIGN
Humà Design + Architecture
Montréal, QC
UL
Montréal, QC

ACOUSTIC CONSULTANTS
MJM Acoustique
Longueuil, QC
Constructions FGP
Saint-Basile-le-Grand, QC

LEED CONSULTANT
Écohabitation
Montréal, QC

WOOD SUPPLIER
Nordic Structures
Montréal, QC

PHOTOGRAPHY
Adrien Williams
Montréal, QC
Alexandre Parent
Montréal, QC
Félix Audette
Montréal, QC

Industrial Building and Sustainable Development

When a manufacturer of glulam structures builds its own timber factory, the results can only be spectacular.

Charpentes Montmorency Facility

Without exaggeration, this wood-manufacturing facility is the ultimate showcase for the technical and aesthetic qualities of this noble material.

Left exposed on the interior, the wooden structure, combined with the use of polycarbonate panels, provides a comfortable, bright, and modern work environment. The wooden staircase in the center of the building lends a richness and warmth to the space.

Beyond aesthetics, the selected structural design, which uses NLT ceiling panels, helped optimize the construction and save costs. The finesse of the details, including the beams and columns assembled without metal connectors, not only contributes to the elegance of the space, but also highlights the exceptional workmanship.

Other remarkable details include the ingenious and harmonious integration of the lighting elements, which are inserted between the double beams, as well as the use of a biomass boiler that uses the plant's sawmill residue to heat the building's floors.

Already reproduced in two other buildings, including the head office of Oïkos Construction and the new Saint-Raymond business incubator, this optimized design has a promising future.

CLIENT
Charpentes Montmorency
Saint-Raymond, QC

GENERAL CONTRACTOR
Construction Côté & Fils
Saint-Raymond, QC

ARCHITECT
CARGOarchitecture
Québec City, QC

WOOD SUPPLIER
Charpentes Montmorency
Saint-Raymond, QC

PHOTOGRAPHY
Dave Tremblay
Québec City, QC

Light Wood-Frame

With 72 rental housing units and contemporary architecture, this urban living project fits perfectly into the Lévis landscape.

Promenade des Forts

One of the first six-story light wood-frame projects in Québec, Promenades des Forts is also the first of its kind to include NLT stairwells and elevator shafts, thereby limiting the risk of their shrinkage differential with the rest of the frame.

Efficient, economical, and innovative, this building is the result of a remarkable concerted effort by all the different professionals involved. The project serves as an example paving the way for the successful development of other light wood-frame projects.

CLIENT
Groupe Immobilier Brochu
Lévis, QC

ENGINEER
Cime Consultants
Québec City, QC

ARCHITECT
D Lavoie Architecte
Québec City, QC

WOOD SUPPLIER
Structures RBR
Saint-Anges, QC

PHOTOGRAPHY
Étienne Huard
Lévis, QC
Marc-Antoine Méthot
Québec City, QC

U.S. WoodWorks Wood Design Awards

U.S. WoodWorks Wood Design Awards

Once again, I have the pleasure of introducing winners of the U.S. WoodWorks Wood Design Awards – and, once again, they exemplify one of the most wonderful things about wood construction: its ability to support multiple project objectives, either alone or in combination with other materials.

In addition to structural innovation, the beauty and biophilic characteristics of exposed wood are prevalent, along with wood's sustainability. At the Kendeda Building for Innovative Sustainable Design, NLT and glulam are central to a design focused on resilience. Designers of the Karsh Alumni and Visitors Center chose dramatic glulam arches in part to signify Duke University's commitment to environmental stewardship. Princeton University's Laboratory for Embodied Computation is itself a research project, involving a close study of natural and low-embodied energy materials. Platte Fifteen demonstrates the performance, sustainability, and cost-viability of mass timber, 1040 W. Fulton motivated the City of Chicago to include glulam in its building code, and Freedom House uses light-frame wood construction to bring the familiarity and warmth of home to an institutional setting. And the list goes on.

I hope you enjoy reading about these projects as much as I did. I invite you to visit our online community, the WoodWorks Innovation Network (woodworksinnovationnetwork.org), to learn more about these and other innovative wood buildings, and to connect with their teams.

Jennifer Cover

Jennifer Cover, PE
President and CEO
U.S. WoodWorks

Jurors

CLARE ARCHER
Vice President/Senior Director
GILBANE BUILDING COMPANY
gilbaneco.com

JOHN MITCHELL, LEED AP BD+C
Associate Partner
HARTSHORNE PLUNKARD ARCHITECTURE
hparchitecture.com

KATE DIAMOND, FAIA, LEED AP
Civic Design Director
HDR
hdrinc.com

JULIE HIROMOTO, FAIA,
LEED AP BD+C, WELL AP
Director of Integration, Principal
HKS INC.
hksinc.com

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VAAGEN TIMBERS

UNITED STATES

Multi-Family Wood Design

As this adaptive reuse project in a historic Milwaukee neighborhood demonstrates, the greenest buildings are ones that already exist.

Timber Lofts

One of the few neighborhoods in Milwaukee, WI, that are still well preserved, the historic Walker's Point district lies just south of downtown, showcasing its architectural roots through warehouse spaces dating back to the mid-1800s. A direct reflection of its historic yet trendsetting locale, Timber Lofts is a 68,400-sq.ft. adaptive reuse project that combines a 130-year-old warehouse renovation with four stories of new construction in an adjacent parcel – with the two structures uniting to create a 60-unit, multi-family complex with ground-floor retail.

One of the defining characteristics of the ambitious five-story renovation was to preserve and reuse original wood flooring from the historic landmark. Individual boards were meticulously deconstructed, stacked, and set aside for cleaning and sandblasting to remove paint, exposing the wood's maple grain. After subflooring and sound control materials were added, the original wood floor was reinstalled. In addition to the reclaimed wood floor, the original arched window openings, rolling fire doors, and exposed heavy timber frame, including wood joist rafters, were also preserved.

The idea from the onset was to harmonize the existing building with new construction, a goal that was made easier when the developer and contractor both wanted to use CLT for the project. The new addition punches into the existing brick building at each floor, creating a continuous interior loop that showcases wood framing in both structures. Luxury apartments in the new building blend high style with an eco-friendly, warm aesthetic featuring exposed CLT ceilings and glulam columns and beams – all highlighted by floor-to-ceiling windows. The interior walls were built using light wood-frame construction.

Mass timber panels were installed without additional stain or sealants to highlight the pine's natural blond finish, and white walls provide a modern contrast to the natural wood surroundings. Outside, a charcoal brick facade harmonizes with the native Cream City brick of its historic neighbor.

Timber Lofts was built utilizing Historic Tax Credits, available for the rehabilitation of income-producing buildings that are determined by the National Park Service (NPS) to be "certified historic structures," which meant that all aspects of the project had to be reviewed and approved by the NPS.

The Timber Lofts project was completed in the spring of 2020, offering studio, one-bedroom, and two-bedroom apartments. Residential units were 90% leased six months after opening and retail leasing is expected to increase after the pandemic. It was the first building in Milwaukee to be constructed using CLT.

CLIENT
Pieper Properties
Milwaukee, WI

ARCHITECT
Engberg Anderson Architects
Milwaukee, WI

STRUCTURAL ENGINEER
Pierce Engineers, INC
Milwaukee, WI

GENERAL CONTRACTOR
Catalyst Construction
Milwaukee, WI

PHOTOGRAPHY
ADX Creative
Milwaukee, WI
Roost Photography
Milwaukee, WI
Engberg Anderson
Milwaukee, WI

A waterfront development puts the “mixed” in mixed-use commercial by merging traditionally exclusive industrial uses with commercial maker spaces.

Outpost

Outpost is a phased, hybrid structure merging recreation, retail, and work environments that’s designed to foster a sense of community in a developing section of Hood River, OR. As part of the city’s waterfront master plan, it will eventually become a 60,000-sq.ft. development connecting the city with the Columbia River.

Phase 1, a large complex that reimagines traditional mixes of spaces and how they are organized, is composed of two three-story, 150,000-sq.ft. buildings. Functioning as one large structure, the buildings are aligned within the exterior envelope to form what appears to be a simple bar shape; however, they are separated like the hulls of a catamaran to create a central, shared open area. The common area knits the buildings together at each level and provides consolidated vertical circulation (elevators and stairs) and open spaces (exterior terraces) that function as gathering spaces and communal hubs. Largely open to the environment, the central area features an outdoor fireplace and an expansive partially covered pavilion.

The buildings are unified through a shared exterior aesthetic with a mix of naturally finished cedar on the ground floor and charred cedar cladding on the upper two floors. The visual distinction between floors also reveals the functional separations. The ground floor supports light industrial activities (a brewery, distillery, and maker spaces) with easy access and the opportunity for double-height spaces, while the upper floors support retail, co-working, office, and recreation spaces.

Circulation to upper levels is carved out along the buildings’ edges, providing protection from the elements and enhancing the experience for the visitor. Moving traditional street-level retail to the second floor activates these spaces in a dynamic way. Elevated outdoor streets capture views of the waterfront, Mt. Adams, and Mt. Hood, making the buildings a destination for visitors and locals. Tenants, co-working patrons, and guests are able to share space with producers and retailers while enjoying the waterfront’s edge.

Built with efficiency in mind, the buildings' structural framing is exposed to celebrate the simple means of construction. Locally sourced and sustainably harvested, laminated wood beams are complemented with infill walls and pathways made with Douglas fir decking. Outside, the oversized windows of the complex are based on traditional industrial proportions illuminating the interior spaces with daylight. Inside, the warm wood is familiar, conjuring images of early industrial buildings, barns, and mountain lodges. Daylighting and transparency are also accentuated at the ground floor through glazed, double-height spaces that let visitors catch a glimpse of activity from within the buildings, conveying a sense of openness. Blackened steel handrails reinforce the industrial aesthetic.

Outpost is the first step in reimagining Hood River's reconnection to its waterfront. Originally devoid of public spaces, the water's edge is now a recreational zone coexisting with new commercial and communal spaces. Elevated walkways, beginning with those at Outpost, will ultimately establish a network of buildings that are connected via boardwalk-type structures. The project represents a new prototype, a venue featuring warm and sustainable spaces that are designed to engage people and to elevate the process of making.

CLIENT
Key Development
Hood River, OR

ARCHITECT
Skylab
Portland, OR

STRUCTURAL ENGINEER
Valar Consulting Engineers
Clackamas, OR

GENERAL CONTRACTOR
Celio Contracting Inc.
Hood River, OR

PHOTOGRAPHY
Stephen A. Miller
Portland, OR

Commercial Wood Design – Low-Rise

A renowned Napa Valley winery chooses a stunning wood-centric design to elevate the tasting experience and celebrate its rich history.

Cakebread Cellars

The expansion of Cakebread Cellars' renowned Napa Valley winery was an opportunity to build upon its signature architectural vocabulary while creating new ways to celebrate its rich history. The innovative use of wood throughout the project – in both new hospitality and production areas – created a modern tasting experience for guests and a seamless integration with existing buildings on the property.

A variety of new interior and exterior environments were created for guests to experience all aspects of the wine-making process. For the new visitor center, the use of white oak and hemlock, as well as custom barrel stave light fixtures and a striking network of glulam beams overhead, creates a grand entry reflective of Cakebread's reputation as one of Napa's most renowned wineries. Nine new tasting rooms were designed to deliver immersive experiences for guests, from views into active production areas to intimate indoor/outdoor settings.

Each tasting room offers a unique view, from harvest to fermentation to bottling, creating the ideal setting for wine education and tasting. It was important for the client to have warm, inviting, and elevated tasting rooms that are each distinct in their own way. To achieve this, wood features prominently in the tasting room design, employed in different ways to provide an atmosphere that is sophisticated and welcoming.

Locally reclaimed redwood was integrated to establish a continuity of form and aesthetic on the exterior of the new buildings. Redwood cladding and a redwood trellis surround the north courtyard, formed by the new visitor center and west wing buildings. The use of wood in one of the most heavily trafficked interior areas of the winery helped maintain a peaceful, serene atmosphere for arriving guests to meet their wine educator, and the design benefited from wood's sound-dampening and noise control qualities.

CLIENT
Cakebread Cellars
Napa Valley, CA

ARCHITECT
BCV Architecture + Interiors
San Francisco, CA

STRUCTURAL ENGINEER
Kenneth Campbell Structural Engineer
Santa Rosa, CA

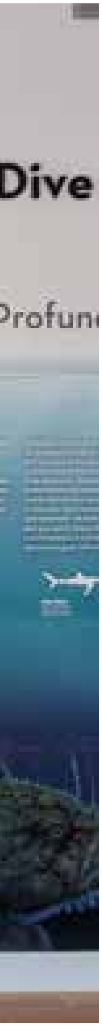
GENERAL CONTRACTOR
Wright Contracting
Santa Rosa, CA

PHOTOGRAPHY
Bruce Damonte
San Francisco, CA

How fitting that a structure dedicated to preserving the beauty and integrity of beach environments is making a few waves of its own.

Jones Beach Energy & Nature Center


Deep
Hacia la



With its seamless integration into the surrounding environment, Long Island's Jones Beach Energy & Nature Center exemplifies what can be achieved with a thoughtful approach to institutional wood design. Half educational facility and half dune restoration project, the center both complements and celebrates the awe-inspiring qualities of its environmental context.

At 330 ft. in length, the linear one-story building rises from foundations belonging to a previous 1960s bathhouse, extended on either side to accommodate the center's educational program. As a result of resiliency measures, the building perches above the horizon, providing stunning views of dunes and the Atlantic Ocean to the south. A newly constructed landscape, reclaimed from 9.5 acres of demolished concrete parking, surrounds the building's other sides with native plant species, immersing it in an expanding natural environment.

Organized around a series of interior volumes that house offices, support spaces, and classrooms, a continuous exhibition space flows from gallery to gallery, spilling out onto a shaded canopy and amphitheater. Characterized by sloping roofs and clerestory windows, the interior spaces are luminous. A mass timber roof structure adds resonance to the warmth of the building's terracotta-colored radiant tile floor, a material nod to the former brick bathhouse.

From the exterior, the roof's iconic silhouette evokes a series of waves, reflecting the center's mission of environmental education. A cedar-clad trellis surrounds the building on all sides, enveloping a continuous porch in a changing rhythm of shadows. The wood deck and cedar cladding have a natural hue that mirrors the surrounding dune grasses and sand, and the solar panels use a lay-flat grid system that mounts low to the roof, keeping the building profile clean and avoiding powerful uplift from coastal winds.

The combination of mass timber roof, light-frame walls, and wood shear walls celebrates the structural qualities of wood and creates a natural rhythm for the interior division of exhibition space. Western red cedar was used on the exterior because of the building's coastal location and rot-resistant qualities of the species. Using a sustainably sourced, rapid-growth species like Western red cedar for cladding, in addition to wood-frame construction, helped meet the project's goal of a light carbon footprint.

Timber piles were used to construct the 700-ft. deck surrounding the center, similar to a pier over the ocean. This approach was taken to address the constraints of the building's siting on a flood plain, turning that constraint into a design opportunity that aligns with the coastal context. The natural patina of the cladding was also a design advantage.

ARCHITECT
nARCHITECTS
Brooklyn, NY

STRUCTURAL ENGINEER
Silman Structural Engineering
New York, NY

GENERAL CONTRACTOR
Scalamandre Construction
Freeport, NY

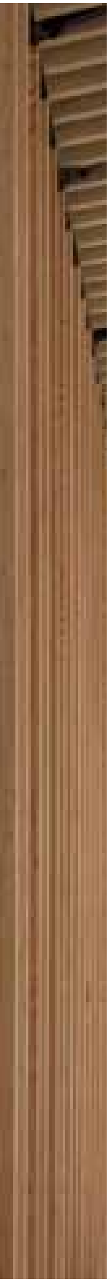
PHOTOGRAPHY
Michael Moran
New York, NY

An academic building houses a first-of-its-kind CLT rocking wall system for North America.

The Forest Science Complex, Oregon State University College of Forestry

The Forest Science Complex is a learning and research environment for the College of Forestry at Oregon State University. In 2020, it became home to two new mass timber buildings: Peavy Hall and the A.A. “Red” Emmerson Advanced Wood Products Laboratory. Both buildings are designed to inspire interaction and learning.

At Peavy Hall, the design concept is connected to the complex natural layers, systems, and networks of a forest from soil to sky. With Oregon’s diverse forest ecosystems for inspiration, the building is designed as two intersecting bars, connected to the existing Richardson Hall. A simple academic bar features 20 classrooms, computer rooms, and laboratories where students can study all aspects of the forest landscape. Timber stairwells filled with natural light flank both ends of the academic corridor. The use of wood as the primary material was a major driver during design, and is evident in both the building’s interior and exterior. The entire structure is built from mass timber made from locally sourced Douglas fir. The exterior is clad in red alder, which has been modified through a process called acetylation to increase dimensional stability and resist rot.



The Advanced Wood Products Laboratory is home to the TallWood Design Institute, which brings together industry and academia to advance knowledge about the use of wood products in buildings through applied research, product development, testing, and professional education. The institute required an expansive and flexible space to test and adapt technologies as they emerge. The building structure is simple and elegant, made from glulam and a veneer-based CLT product that achieves the long span required. The lab space is broken into two bays: a structural testing bay with a reaction wall and strong floor, and a manufacturing bay equipped with advanced robotics and fabrication equipment. The unique design of the building enclosure is an integration of translucent panels and structural wood panels, creating a beautiful daylit space that becomes the backdrop for innovation.

To meet seismic requirements, Peavy Hall employs the first CLT rocking wall system in North America with shear walls composed of separate sections connected vertically by a post-tension system. This allows the walls to self-center during a seismic event and for components to be selectively replaced as needed post-earthquake. The ability to safely continue building operations and mitigate the need for rebuilding increases the building's longevity, reducing waste.

Energy modeling was used throughout the design process to inform energy-related design decisions. Upgrading the glazing allowed for a balance between daylighting and solar heat gain, improving energy efficiency. Radiant flooring was used at perimeter areas to efficiently provide comfortable indoor temperatures. The buildings were also designed to be photovoltaic-ready, with conduit and infrastructure in place to adapt to the use of solar panels.

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

CLIENT
Oregon State University
Corvallis, OR

ARCHITECT
MGA | Michael Green Architecture
Portland, OR

STRUCTURAL ENGINEER
Equilibrium Consulting Inc.
Vancouver, BC

GENERAL CONTRACTOR
Andersen Construction
Portland, OR

PHOTOGRAPHY
Ema Peter
Vancouver, BC
Josh Partee
Portland, OR
James Jones
Vancouver, BC

Institutional Wood Design

Designed to help urban residents connect with nature, Philadelphia’s reopened Discovery Center is a project that’s truly for the birds – in all the best possible ways.

The Discovery Center

A simple light wood frame serves as the structural system for The Discovery Center, an urban bird sanctuary and leadership development center conceived in partnership with The Audubon Society of Pennsylvania, Outward Bound Philadelphia, and the Strawberry Mansion neighborhood.

The center's east wing includes exhibition space, community meeting rooms, administrative space, and storage, while the west wing includes a large multifunctional event space for classes, meetings, workshops, and gatherings. The two wings, which each consist of platform-framed walls and prefabricated roof trusses, are joined by a connecting roof that serves as the entry point to the site and building. The roof trusses have been left exposed in all primary interior spaces, providing a warm quality to the interiors while maximizing volume of the spaces. The tower features a steel frame, which allows for the tall space and open corners.

The building design employs a limited palette of materials. The exterior is primarily Western red cedar charred by fire. This centuries-old wood preservation technique greatly extends the life of the material, embodying the paradox of natural forces that are at once destructive, restorative, and protective. This choice of building material invites another level of inquiry into both the novel ecology of The Discovery Center site and human inhabitation of the natural world.

The design relies on simple forms, including the nearly 500-ft.-long charred wood facade site wall that incorporates bird "nesting shelves" and a single-entry portal from the city to this unexpected natural setting. The entry portal is lined in clear-finished Western red cedar and incorporates a slatted wood donor wall that's designed to significantly reduce bird collisions with glass. The warm tones of the cedar signal entry to visitors while the dark understated tones of the charred wood create a neutral backdrop to the seasonal colors of the landscape.

The building and site design maximized a broad range of programmatic and project stakeholder goals on a very modest construction budget. The use of exposed conventional wood framing for the building structure economically shaped warm and inviting interior spaces. In alignment with the goal of engaging the community in the design and construction of the project, the 3x12-ft. exterior wall panels were flame-charred, shop-fabricated, and installed by a non-profit construction training program that introduces urban youths to the carpentry trades.

ARCHITECT
DIGSAU
Philadelphia, PA

STRUCTURAL ENGINEER
CVM
King of Prussia, PA

GENERAL CONTRACTOR
INTECH Construction, Inc.
Philadelphia, PA

PHOTOGRAPHY
Halkin Mason Photography
Philadelphia, PA

Green Building With Wood

A classroom and teacher in one: by highlighting sustainable design strategies and systems, this innovative project exposes students to a better way of building.

The Kendeda Building for Innovative Sustainable Design

The Kendeda Building for Innovative Sustainable Design is a 37,000-sq.ft. project on the campus of Atlanta's Georgia Tech. It houses two levels of lab spaces, two 75-seat classrooms, and a 175-seat lecture hall all arranged around a two-level atrium.

Immediately upon entering the building, it is clear that it's unique on campus. The timber-framed atrium is washed in daylight entering from a ring of clerestory windows below a fluted NLT roof deck. The glulam framing system rhythmically moves down the atrium as the floor steps with the natural grade of the site, while steel brace frames and timber-steel queen post trusses add to the visual register of structural forces at work. The exposed timber structure and wood finish materials are the primary feature of the interior design.

From the very first sketches, the design team knew that wood was the right choice for several environmental reasons. The project was pursuing Living Building Challenge certification, and the building's design was intended to put responsible timber on display. New wood was FSC-certified and sourced from regional forests, and the NLT decking also included 50% salvaged lumber.

Twenty-five thousand linear feet of 2x4 material was salvaged from Atlanta's Lifecycle Building Center, which sourced the lumber from discarded film sets. The decking was assembled by apprentices hired through local non-profit Georgia Works!, providing valuable trade skills to individuals facing chronic homelessness. Off-cuts were assembled into the seat steps that descend the three tiers of the atrium. In addition to the structural timber, wood salvaged from trees felled on campus was used for countertops and furniture.

A primary goal for the project design was to make the building function as a teaching tool. By highlighting sustainable design strategies and systems, including the timber structure, students are exposed to a better way of building. Expressing the timber structural system throughout the building speaks to a student population that is specifically focused on engineering, technology, and understanding how things work. The legibility of the gravity and lateral structural systems speaks specifically to a way of teaching and learning valued on campus. Georgia Tech's mission is to maximize the impact of the building by exposing as many students as possible to the project. After learning in a building expressing such a strong position on resilience and sustainability, they will take those values with them into their future endeavors both as leaders in the STEM fields and as global citizens.

CLIENT
Georgia Institute of Technology
Atlanta, GA

ARCHITECT
The Miller Hull Partnership
Seattle, WA

Lord Aeck Sargent
Atlanta, GA

STRUCTURAL ENGINEER
Uzun + Case
Atlanta, GA

GENERAL CONTRACTOR
Skanska USA
Atlanta, GA

PHOTOGRAPHY
Jonathan Hillyer
Atlanta, GA

Beauty of Wood

A new alumni and visitors center enhances Duke's reputation as a "University in the Forest" – as well as its connections to its past.

Karsh Alumni and Visitors Center

Duke University's new alumni and visitors center is the first structure people see as they arrive on campus, and administrators wanted it to reflect the institution's history and character. They wanted a design that aligns with Duke's description as a "University in the Forest," and signifies their commitment to sustainability and environmental stewardship.

The center includes an event center with large lobby, a meeting pavilion, the historic Forlines House with offices and meeting rooms, and an alumni association office building. The complex of four buildings was conceived as a village within woodland, organized around a central court and wood arcade/cloister. Wood was used inside and out as both structure and finish to enhance the connection between the built and natural environment, stressing Duke's long history as a biophilic university. It also works to make the institutional welcome center warm and inviting.

The project includes a variety of wood species. Regional Southern yellow pine is used in the structural glulam arches of the two public buildings. Floors are red oak, again found locally. Wood paneling is veneered with white oak from Duke's own forests. Desks and other cabinetry use the same wood, both as veneer and solid lumber. Acoustic ceilings are natural wood planks or strips. The arcade is built of Nootka cypress, also known as yellow cedar or Alaskan cedar, a wood selected for its durability in damp climates. Its ceiling deck is fir tongue and groove.

Much of the wood is detailed to enhance its reference to the older campus in modern ways. The veneered paneling in the events pavilion and desk fronts is perforated by CNC machines in patterns of historic Duke windows. The wood brackets and arches of the arcades are separate pieces laminated at joints for delicate strength.

Arrangement of the buildings and spaces around them supports the campus as a pedestrian realm, declaring a point of entry, reducing on-campus vehicles, and enhancing accessibility for all. The courtyard, as well as the materials and shape of the buildings, reflects Duke's history and character while recognizing modern means of construction.

At the entry and arcades, surrounding bluestone terraces are flush with interior floors for accessibility. This is made feasible by hidden ground gutters below the stone that also collect run-off from arcade roofs and the central court. All groundwater on-site drains to a campus-wide bio-pond, where it is cleaned before returning to nature. Locally quarried Duke stone was used for the exterior base of the large events pavilion with precast stone above, a combination often seen on Duke's original west campus.

CLIENT
Duke University
Durham, NC

ARCHITECT
Centerbrook Architects and Planners
Centerbrook, CT

STRUCTURAL ENGINEER
LHC Structural Engineers
Raleigh, NC

GENERAL CONTRACTOR
LeChase Construction
Durham, NC

PHOTOGRAPHY
Peter Aaron
New York, NY

When a 2014 earthquake left this historic California winery in a precarious tilt, it took a massive repair and retrofit to set things straight.

Trefethen Family Vineyards

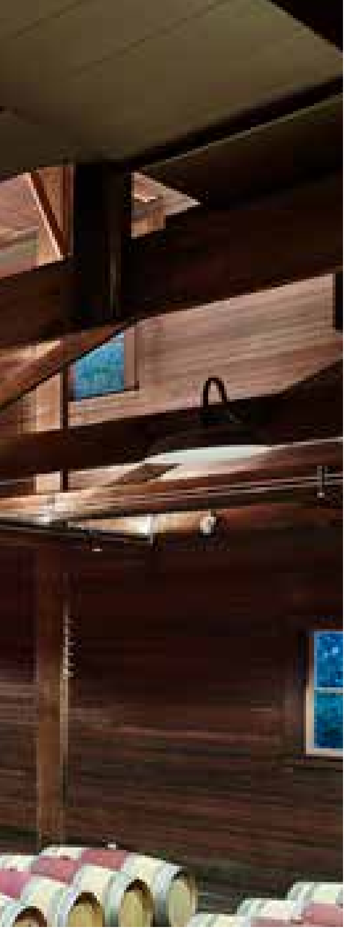
The historic Trefethen Winery structure was originally constructed in 1886 by Hamden McIntyre, a Scottish ship captain and well-known architect of wineries in the Napa Valley. This three-story, 18,000-sq.ft. structure was severely damaged during an earthquake in 2014, leaving it in a precarious tilt with the second and third stories shifted approximately four feet.

When determining the structural approach for repair and retrofit, extensive coordination among the owners, architect, and preservation architect was critical to ensure new elements designed to improve the structure's resilience did not detract from its character or historic fabric. It was important to the Trefethen family to save as much of the existing framing as possible, maintaining the historic feel of the structure.

In the aftermath of the earthquake, new exterior shear walls and interior steel moment frames were added to strengthen the structure. Damaged connections were repaired and strengthened with bolted-plate connections and wood epoxy where possible, and all strengthening to exposed members remained exposed. Existing connections often utilized custom let-in wood connections with minimal or no additional hardware.

While the exterior of the structure is clad in a simple painted straight sheathing, interior spaces are almost fully clad with redwood tongue-and-groove sheathing, creating majestic, vaulted spaces that showcase the timber construction with minimal hardware and let-in connections. Exterior elements, including the straight sheathing and historic windows, were repaired and reinstalled to the original aesthetic. Work on exterior walls was approached from the exterior of the structure to preserve the interior sheathing, which was repaired where needed but remains largely in its original condition. Historic mortared stone foundations were also retained.

Positive connections between existing beams, posts, and foundations were provided, and bolted



steel side plates were added at floor beams where required for additional strength. Where possible, damaged or split framing members were revived with color-matched injected wood epoxy and bolted steel side plates. The majority of the framing members were preserved, with only a few requiring complete replacement.

With the addition of two strategically placed and connected two-story bolted-connection steel moment frames, the building has not only survived but been made stronger to continue as a piece of living history of wine-making in Napa Valley. As a final tribute, additional steel gravity framing was provided so the Trefethen family could leave a single "Remembrance Post" in its deflected state to illustrate the magnitude of the earthquake withstood by the structure.

CLIENT
Trefethen Family Vineyards
Napa, CA

ARCHITECTS
Taylor Lombardo Architects
San Francisco, CA

Preservation Architecture
Oakland, CA

STRUCTURAL ENGINEER
ZFA Structural Engineers
Santa Rosa, CA

GENERAL CONTRACTOR
Facility Development Company
Santa Rosa, CA

PHOTOGRAPHY
Adrián Gregorutti
Rutherford, CA

Jury’s Choice

Freedom House Expansion

Freedom House is a non-profit organization in Green Bay, WI, that provides support to families going through difficult times. That support comes in the form of programming services and transitional housing, both of which are offered at the new Freedom House facility.

Analysis of the former structure on the site, a converted 1960s nursing home, determined that the building was well past its useful life. A new facility needed to be up and running in time to offer families a place to stay during the following Wisconsin winter.

Two distinct occupancies were needed in the new facility: residential for transitional housing and business for administrative staff and programming services. The challenge of an acute corner lot and sloping site led to the development of a bifurcated plan, separating the two occupancies. A glazed bridge links the two areas, with a one-hour rated fire wall providing safe separation at the residential block. Each family unit within the residential wing was additionally required to be one hour separated from the corridor and adjacent units, both alongside and between floors.

Ample use of wood as a visible exterior element helps this facility for families become a (transitional) home away from home.

The staff and design team made the conscious decision to utilize wood as a visible exterior element to convey the warmth and familiarity of a home. Cedar siding is a common material used on older homes in the Green Bay area, and it would be easily recognized as residential in character. A connection is perceived on a more subconscious level between the wood of the exterior and the feel of walking through a wood-framed building. There is an integrity to the building gained from being composed of the same material that clads it.

Gabled forms were used on both wings of the building to unify and distinguish their uses. Home-sized gabled units, in repetition, represent the simple geometry of a house and the individuality of each family. A single gable over the business occupancy wing offers consistency of form, while further simplifying the structure. Use of wood on the exterior of both wings showcases a unified organization to the community.

Wood's ready availability as a structural material also lent itself to the tight construction timeline required. Primary structural elements – walls, roof framing, and floor framing – were all designed and built from locally available wood products, avoiding the potentially significant lead times required for other materials. The design team wanted to show that with simple materials and shapes, responsible design is a possibility even within a conservative budget. In accomplishing this, the staff of Freedom House leads by example for the community they serve.

CLIENT
Freedom House Ministries Green Bay
Green Bay, WI

ARCHITECT
Berners Schober
Green Bay, WI

STRUCTURAL ENGINEER
RA Smith, Inc.
Brookfield, WI

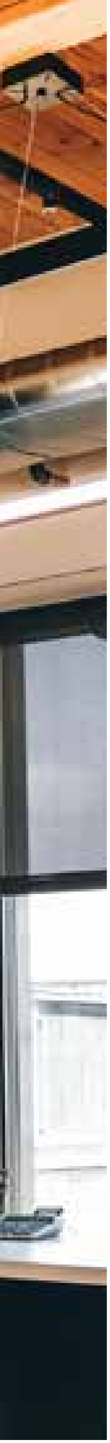
GENERAL CONTRACTOR
Immel Construction
Green Bay, WI

PHOTOGRAPHY
Tricia Shay Photography
Oconomowoc, WI

Regional Excellence

The success of this innovative building in Chicago's Fulton Market neighborhood bodes well for future timber projects in the Windy City.

1040 W. Fulton



Located in a neighborhood filled with decades-old timber lofts and former meatpacking warehouses, 1040 W. Fulton added to the area's rich heritage when it became one of the first multistory timber office buildings to be constructed in Chicago in 75 years. The 42,000-sq.ft. project includes four stories of offices, ground-level retail, basement and ground-level parking, and a green roof.

The team thought glulam was an obvious choice for the design, as the members would provide an exposed wood aesthetic similar to the older and highly sought-after buildings in the area. However, at the time 1040 W. Fulton was built, the Chicago Building Code had no specific allowance for the use of glulam.

Proposing a timber design beyond the prescriptive limits of a building code can be challenging. This is true in any jurisdiction, let alone one whose history includes a fire that wiped out most of the city 150 years ago. The team worked closely with building officials, providing performance data and other information that created confidence in both the materials and project. As a result, the City of Chicago chose to update its building code to allow glulam construction.

A hybrid design allowed the team to accommodate Type III-A construction for the timber office stories and Type I-A construction for the first story and basement. Exterior walls include steel columns and beams that support the brick cladding. Glulam columns, girders, and beams comprise the framing system for the upper stories; the roof and floor assemblies include tongue-and-groove decking with plywood over the decking for the diaphragm, and the floor assembly also includes a 2-in. topping slab.

The project at 1040 W. Fulton serves as a proof of concept, a necessary and important step in bringing more and larger timber projects to the City of Chicago. While this particular building type, framing system, and scale are not unique, they are distinctive for their location.

ARCHITECT
Hartshorne Plunkard Architecture
Chicago, IL

STRUCTURAL ENGINEER
IMEG Corporation
Naperville, IL

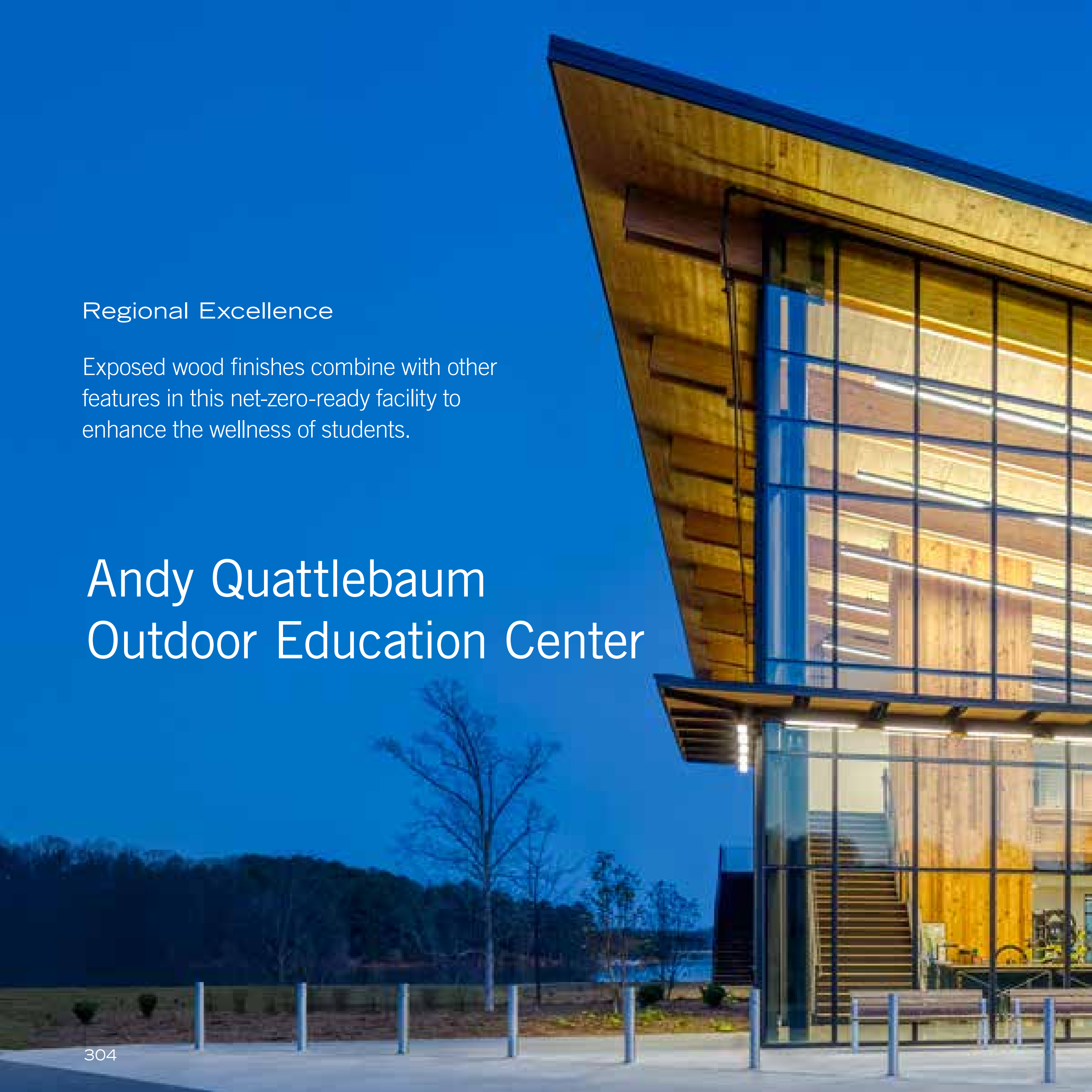
GENERAL CONTRACTOR
Summit Design + Build, LLC
Chicago, IL

PHOTOGRAPHY
Danny Carpenter
Grand Haven, MI

Regional Excellence

Exposed wood finishes combine with other features in this net-zero-ready facility to enhance the wellness of students.

Andy Quattlebaum Outdoor Education Center



Part of the Snow Family Outdoor Fitness and Wellness Complex, this outdoor education center at South Carolina's Clemson University is a model of active design, helping students cope with stress and learn to make healthy choices during their academic lives.

The 16,000-sq.ft. facility includes two multi-use classroom spaces, a storefront for equipment display and rentals, a boathouse, a trip-planning resource center, and a patio on Lake Hartwell, as well as a deck on the second level overlooking the lake. Classrooms are designed to be flexible to accommodate a wide range of learning, from yoga, rowing, and aerobics to standard academics.

The building is also net-zero ready; with the installation of photovoltaic devices on both roofs, the facility will produce enough energy to offset its needs.

The Andy Quattlebaum Outdoor Education Center is Clemson's first mass timber facility. It includes CLT floors, roof, and shear walls; glulam beams, and steel columns. Careful coordination allowed wood members to be used not only as structural elements but also as the finish in most spaces. This eliminated the need for almost all ceiling finishes, which reduced material and labor costs and helped the project stay within budget. The warmth of the exposed wood structure also enriches the user experience and contributes to the function of the project, a social destination that encourages and helps to facilitate fitness and wellness among Clemson students.

CLIENT
Clemson University
Clemson, SC

ARCHITECT
Cooper Carry
Atlanta, GA

STRUCTURAL ENGINEER
Britt, Peters and Associates Inc.
Greenville, SC

GENERAL CONTRACTOR
Sherman Construction
Piedmont, SC

PHOTOGRAPHY
Jonathan Hillyer
Atlanta, GA


ADVENTURE TRIPS

Regional Excellence

A small project with big ambition becomes the first application of CLT shear walls in the State of California.

Plumas County Biomass Boiler Building

The Plumas County Biomass Boiler Building houses an innovative energy-producing biomass boiler servicing the adjacent Plumas County Health and Human Services Center. It's a single-story, single-room structure of approximately 2,000 sq.ft., with a 33-ft. single-span shed roof. The structural system consists entirely of CLT roof and wall panels, and it was the first application of CLT shear walls in the State of California.

The new building is, in fact, a facility of "firsts" for the Golden State. Its advanced system, which includes a community-scale biomass boiler and small-scale power generator, is the first of its kind in California and only the second in the U.S. The boiler uses organic waste material to generate heat and power. This waste material, referred to as woody biomass, is one of Plumas County's most abundant natural resources, and its increased utilization contributes to enhanced ecological, economic, and community well-being.

Plumas County had originally envisioned a prefabricated metal building but changed course to demonstrate the sustainable use of timber while underscoring its commitment to sustainable forestry. In partnership with Wisewood Energy, Plumas County engaged AMLGM Architects and Holmes Structures to re-envision the building as a mass timber structure with CLT roof panels and wall panels acting as both the vertical and lateral force-resisting systems. Holmes Structures worked closely with Plumas County to establish rational and conservative design criteria for California's first full CLT building.

One of the many benefits of CLT construction is the reduced installation time and crew size required to lift, set, and screw the panels into place. The timeline of the project, from concept development to substantial completion of the building, was less than a year.

CLIENT
Plumas County
Quincy, CA

ARCHITECT
AMLGM
San Francisco, CA

STRUCTURAL ENGINEER
Holmes Structures
San Francisco, CA

GENERAL CONTRACTOR
Houston Construction
Quincy, CA

PHOTOGRAPHY
Eva Slusser
San Francisco, CA


OPEN
revel

Regional Excellence

Celebrating the materiality of timber and steel, this mixed-use building honors the industrial heritage of its Seattle neighborhood.

Cedar Speedster

Cedar Speedster is a three-story mass timber building in Seattle's Fremont neighborhood. The 40,000-sq.ft. mixed-use structure pays homage to the area's lumber-producing history with timber construction, an expressive interior wood structure, and modern cedar-clad exterior.

With its contemporary Pacific Northwest vernacular, the building weaves easily into the existing neighborhood fabric, celebrating the character of natural materials and time-tested construction techniques.

The ground floor serves as a lively retail and community hub with two restaurants, a brewery taproom, and a shared lobby space that allows office tenants and retail patrons to mingle. The large exterior terrace at the primary corner serves as a vibrant outdoor gathering and dining space for the anchor tenant restaurant, Revel. The exposed Douglas fir structure amplifies the warmth and community created in these street-level spaces.

The two floors above serve as headquarters for sports and lifestyle brand Evo. The exposed wood structure and gracious exterior terraces complement their open office space plan and commitment to outdoor lifestyle and experiences.

The cedar-clad, timber-framed building sits on top of a one-story, post-tensioned concrete garage that daylights at the alley. A timber grid of columns, girders, and purlins are organized off the primary core.

The structural system utilizes a concrete shear core with a 3-in. composite concrete floor and roof diaphragm working in concert with the timber framing. No additional lateral bracing was required, allowing maximum flexibility for views and tenant improvements. Glulam columns run continuously from the ground floor to the roof, which helped reduce wood shrinkage and increase installation speed.

Now fully occupied, the building – with its wood-centric design – has been popular with the community and tenants, leading to its financial success. The client team is thrilled with the building's form, materiality, uniqueness, and overall achievements. As one of the newest wood projects in Seattle, Cedar Speedster feels both fresh and familiar. It appeals to the dynamic tech-driven office market in Fremont while hearkening back to its industrial past. It also honors good food, creativity, and the quirky spirit that's central to the Fremont way of life.

CLIENT
Revelution LC
Seattle, WA

ARCHITECT
Weber Thompson
Seattle, WA

STRUCTURAL ENGINEER
DCI Engineers
Seattle, WA

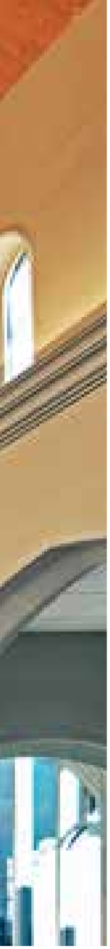
GENERAL CONTRACTOR
Turner Construction Company
Seattle, WA

PHOTOGRAPHY
Meghan Montgomery/Built Work Photography
Seattle, WA

Regional Excellence

Intricate trusses supporting the roof are just one of the reasons this congregation is singing the praises of wood.

Church of the Incarnation Chapel and Parish Hall



For this expansion project, which consists of a new parish hall, 300-seat chapel, and prayer room at a prominent Dallas church, sculptural wood was used to create a modern addition that also pays homage to the past, celebrating the time-honored craft of wood in ecclesiastical architecture.

Central to the functional layout is a narthex from the existing sanctuary to the parish hall, across the face of a new three-story education building, and into the new chapel and prayer room.

The architectural focal point is an exposed glulam roof system for the parish hall and chapel, which also includes a tongue-and-groove wood deck on wood purlins.

The trusses have concealed bolted connections, stained surfaces, and carefully cut intersections. The exposed decking is supported by evenly spaced wood timbers between the trusses, allowing the system to work as a whole.

By presenting carefully crafted wood in a hallowed atmosphere, the goal was to create a warm and inviting space for people to worship. The design flows and feels natural, and the intricate wood trusses help to create the spiritual environment the architecture seeks to express.

The Church of the Incarnation's new chapel and parish hall are impressive and inspirational structures, befitting the prominence of the church and exceeding the expectations of its congregation.

CLIENT
Church of the Incarnation
Dallas, TX

ARCHITECT
HH Architects
Richardson, TX

STRUCTURAL ENGINEER
Datum Engineering, Inc.
Dallas, TX

GENERAL CONTRACTOR
Lee Lewis Construction
Dallas, TX

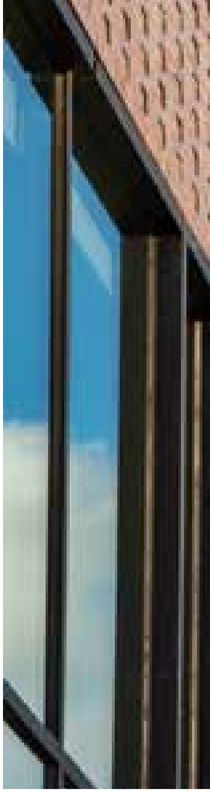
PHOTOGRAPHY
Jeff Koke Datum, HH Architects
Dallas, TX

Regional Excellence

Denver's first CLT commercial office building isn't just pretty to look at – it's been a huge education opportunity for just about everyone in the Mile High City.

Platte Fifteen

In the heart of Denver's downtown sits Platte Fifteen, the city's first commercial office building to use CLT. This five-story, 150,418-sq.ft. building features highly efficient floor plates and zero lot line construction with two stories (85,000 sq.ft.) of below-grade parking. Amenities and features include 10-ft. full-height glass, a rooftop deck with unobstructed views of downtown Denver and the Rocky Mountains, common areas, a secure lobby, bike storage, commuter locker room, fitness center, and underground parking.



The ground level has seven retail spaces while the upper stories include office space and the rooftop patio. The parking garage and first story are reinforced concrete, and the stories above are built with glulam columns, beams, and girders, and CLT floor plates. The foundation includes a 3-ft.-thick mat slab that incorporates a storm retention vault, sewage ejector vault, and sand and oil injector vault.

To preserve the clean look and feel of the CLT, the construction team coordinated every location where piping, conduits, and ductwork would need to penetrate the panels. This information was added to the CLT shop drawings so it could be incorporated

into the manufacturing process. By cutting and drilling these openings in the factory rather than on-site, the clean look of the material was preserved while increasing efficiency in the field.

In constructing one of Denver's first CLT buildings, the team felt a deep responsibility to educate the public on the benefits and features of mass timber. Since the material was so new to the Denver market, many stakeholders and students were unaware of its intricacies and green building benefits. The team contacted the construction management and architecture departments of surrounding higher education facilities, giving students tours of the building and providing first-hand education on CLT construction.

Educating municipalities was also a must. The team conducted tours for the City of Denver to aid in early adoption of the tall mass timber code provisions included in the 2021 International Building Code. The Fire Department was given tours to help them understand mass timber from a firefighting standpoint. The team also brought in surety partners to help them better understand mass timber performance and level of risk exposure.

OZ Architecture was inspired by the architectural character and context of the neighborhood and spent time studying the facades of surrounding historic brick buildings for inspiration in terms of proportion, scale, and detail. They felt it was important to respect the history of the area and reinterpret it in a contemporary way as part of this transformational opportunity. Platte Fifteen offers a working environment where people can enjoy a warm, inviting atmosphere that's naturally enriched with exposed mass timber. In creating this building, the project team also proved that wood is a cost-viable, sustainable structural option with benefits for mid-rise commercial construction.

CLIENT
Crescent Real Estate
Centennial, CO

ARCHITECT
OZ Architecture
Denver, CO

STRUCTURAL ENGINEER
KL&A Engineers and Builders
Loveland, CO

GENERAL CONTRACTOR
Adolfson & Peterson Construction
Aurora, CO

PHOTOGRAPHY
JC Buck Studios
Denver, CO

An open, flexible layout is just one of the ways this building is both an experiment and a research instrument for the architecture students who will use it.

Princeton University Laboratory for Embodied Computation

The goal of this project was to create a facility for the next generation of architecture research. The building is organized as a large double-height warehouse-like space for multiple research projects. An open, flexible layout allows for the reconfiguration of classroom, workshop, robotic equipment, testing, and exhibition space. Overall, the building suggests a new hybrid approach that is contradictory by design: high- and low-tech, familiar and new, functional and aesthetic, and digital and biological.

The Laboratory for Embodied Computation is itself a research project on multiple levels – for both the design team and the school – involving a close study of natural and low-embodied energy materials.

For example, the exterior cladding is made from 900 scaffolding boards salvaged from New York City construction sites, which are ubiquitous but typically discarded. More than a sustainable material saved from landfill, the boards led the team to consider what they wanted from the project's materials. They chose to emphasize natural variation, processing each board based on its individual properties and creating a uniquely beautiful, weathered facade. To achieve its vision, the studio invented custom CNC sand-blasting equipment, which uses algorithms to detect wood knots.

Just as biologists use a microscope to study organisms, architects will use this structure to study buildings. In other words, the project is a simple but futuristic building designed to host research on the future of buildings. Already, university researchers are working to determine if geometries of the grain change in the blasted wood will impact thermal performance.

This facility is Princeton's new home for interdisciplinary educational collaboration on fabrication, robotics, and sensors – studies where computers meet the physical world to become "embodied computation." Areas of research will include automated construction, embedded sensors, feedback systems,

geothermal wells, energy harnessing, and wall and roof prototypes.

The small site has a history of educational and architectural innovation. It hosted Buckminster Fuller's first Geosphere, the pioneering environmental analysis of Victor and Aladar Olgyay, and the architectural camouflage studies of Jean Labatut. The context also involves a setting at the intersection of the university and the natural environment. Finally, the context involves creating space for fabrication, assembly, testing, and teaching within 8,000 sq.ft. This required the design team to think about the research projects and equipment of today as well as 10 and 20 years from now, including the opportunities and anxieties of technologies of computation and automation.

CLIENT
Princeton University
Princeton, NJ

ARCHITECTS
The Living
New York, NY

NK Architects (AOR)
Morristown, NJ

STRUCTURAL ENGINEER
Buro Happold Consulting Engineers
New York, NY

GENERAL CONTRACTOR
Epic Construction
Piscataway, NJ

PHOTOGRAPHY
Michael Moran
Brooklyn, NY

Pablo Marvel
Brooklyn, NY

Regional Excellence

At this Tennis Pavilion, CLT provides an unexpected but aesthetically warm and structurally progressive building solution.

Carriage Club Tennis Pavilion

Sited in the heart of the historic Carriage Club in Kansas City, MO, this new tennis pavilion embodies its mission – the education and advancement of tennis for all ages – in its structural organization and materials, which include expansive views, long-span interior spaces, and the beauty of exposed mass timber. Situated on 6.6 acres, the project layout is a reaction to site constraints and original court placement.

The building's progressive design features CLT panels as the primary structure, a first for the Kansas City area. The panels, which form the roof and exterior walls, are left exposed and treated with clear sealer, celebrating the natural grain and welcoming aesthetic of the wood. The facility brings structure to the otherwise unstructured layout, connecting viewers to players in the surrounding courts.

Extending from interior to exterior, the CLT panels cantilever to create shaded viewing platforms that are accessed via operable glass partitions. The social hub of the campus, the pavilion includes a pro shop, gathering areas, indoor and outdoor seating, food and beverage areas, and locker rooms.

The selection of CLT allowed for sculptural roof forms that provide shade at certain times of day and natural daylighting at others. The inviting aesthetic of the wood provides a material warmth that contributes to a facility designed for relaxation and rejuvenation.

With an eye towards the future, this project utilizes responsibly harvested timber to dramatically improve the building's environmental impact and long-term energy performance. Maximizing material efficiency, the prefabricated panels significantly reduce construction waste. Minimizing the facility's reliance on artificial lighting, the overhangs and roof angles provide optimized natural daylighting, as well as strategic shading to ensure solar heat gain is minimized during the summer season.

Shading of exterior spaces was also carefully planned, with the addition of pergolas flanking key seating areas to ensure user comfort during peak tennis and paddle seasons. Stormwater is harvested from both the facility's roof and surrounding site, diverting water into nearby landscape beds that further reduce the heat-island effect of the paved courts. These landscape beds, flanking both the structure and raised viewing platforms, are filled with Indigenous plants with low water consumption, minimizing the amount of water used for landscape irrigation.

CLIENT
Carriage Club
Kansas City, MO

ARCHITECT
Generator Studio
Kansas City, MO

STRUCTURAL ENGINEER
SMA Engineering
Kansas City, MO

GENERAL CONTRACTOR
Centric Projects
Kansas City, MO

PHOTOGRAPHY
Michael Robinson
Kansas City, MO

Regional Excellence

Inspired by urban-planning concepts, this academic facility mixes the old with the new to provide a supportive environment for the budding artists within.

UCLA Margo Leavin Graduate Art Studios

Located in Culver City, CA, the Margo Leavin Graduate Art Studios at the University of California, Los Angeles houses all disciplines within UCLA's Master of Fine Arts program: ceramics, interdisciplinary studio, new genres, painting and drawing, photography, and sculpture.

The 48,000-sq.ft. project entailed a cohesive renovation of an existing 21,000-sq.ft. warehouse to create artists' studios, lab spaces, a gallery, classroom, shared exhibition spaces, and an artist-in-residence loft. On the exterior, covered yards feature a communal entry garden, sculpture yard, and loading zone.

Optimizing the industrial warehouse vernacular, the planning is based on four efficient strategies: purging obsolete structures, creating a new continuous ground plane, creating a new expanded roof, and defining an enlarged perimeter enclosure to facilitate fluid program boundaries. The internal organization was conceived as an urban community where individual artist studios are clustered together as neighborhoods within the renovated warehouse, with shared urban spaces (galleries, labs, outdoor yards) distributed around the complex to foster production and exchange.

Interior partitions throughout the project were constructed using nominal Douglas fir wood framing. Wood studs were spaced as widely as possible (24 in. on center unless a tighter spacing was required for structural reasons) to reduce sound transmission through the walls. Interior partitions were constructed at full height to the underside of the floor assembly or capped with flat roof assembly everywhere except the individual studios, where sound transmission and acoustic liveliness was welcome and embraced by students. In the gallery and the shoot room on the lower level, where the design team wanted to maintain the exposed flat glulam beams supporting the floor above, tectum panels were directly attached between joists to achieve the desired acoustic absorption levels without compromising the aesthetic of the exposed structure.

While the minimum 10-in.-thick exterior concrete walls contribute to the energy efficiency of the building envelope, the glulam roof structure further enhances the building's efficiency. Above-deck rigid insulation was used on both the existing renovated warehouse and the new addition to allow the bowstring trusses and glulam beams to be visible from the underside on the interior. A translucent polycarbonate roofing system was implemented above the glulam structure in the covered unenclosed yards, diffusing any shadows cast by the structure above while maintaining access to natural daylight and ventilation.

The studios' design and infrastructure prioritize the student experience, emphasizing flexibility of use, freedom from programmatic constraints, and wellness. Adaptability is ensured with high ceilings and expansive spaces characteristic of warehouses, which incorporate vast areas without structural impediments due to the engineering of the concrete walls, glulam vaults, and bowstring trusses. Wood construction throughout the interior, with exposed framing at the upper zone, makes the construction visible for ease of reconfiguration in individual artist studios – aligning construction with the raw, creative spirit that contributes to the artistic freedom of students and faculty alike.

CLIENT
The Regents of the University of California
Los Angeles, CA

ARCHITECT
Johnston Marklee
Los Angeles, CA

STRUCTURAL ENGINEER
Simpson Gumpertz & Heger
Los Angeles, CA

GENERAL CONTRACTOR
Abbott Construction
Pasadena, CA

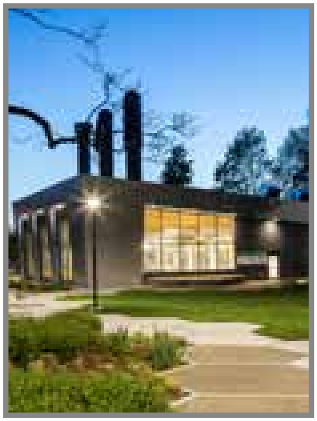
PHOTOGRAPHY
Iwan Baan
Amsterdam, The Netherlands


Foyer
BMO

OTHER AWARDS

British Columbia

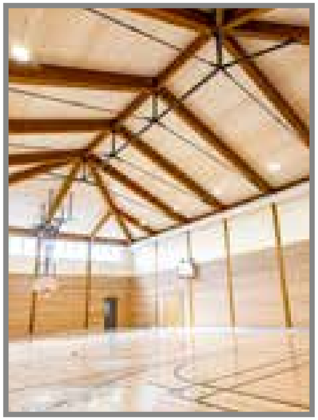
JURY'S CHOICE
Charter Telecom Headquarters
Victoria, BC



JURY'S CHOICE
West Village District Energy Centre
Surrey, BC

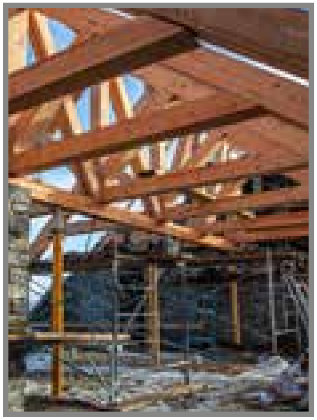
Québec

STRUCTURAL DESIGN
New F1 Paddocks – Canadian Grand Prix
Montréal, QC



STRUCTURAL DESIGN
Gymnasium at École Centrale de St-Samuel-de-Horton
Saint-Samuel, QC

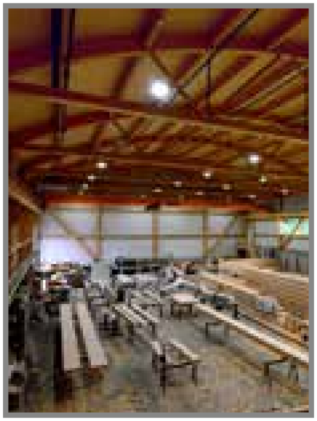
Québec



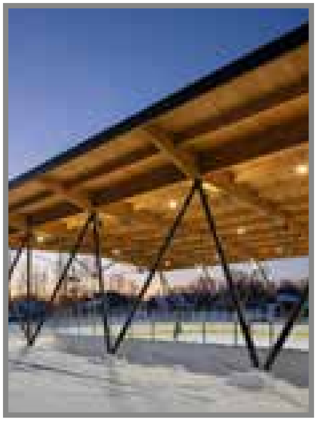
HERITAGE AWARD
The New Barracks
Québec City, QC

INTERIOR DESIGN
Le Diamant Theatre
Québec City, QC

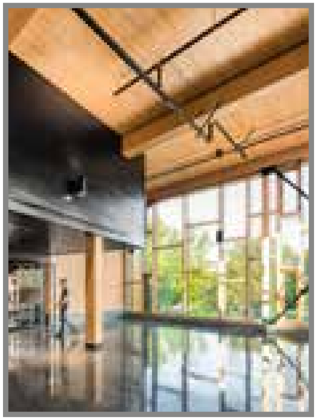
INTERIOR DESIGN
National Assembly Reception Pavilion
Québec City, QC



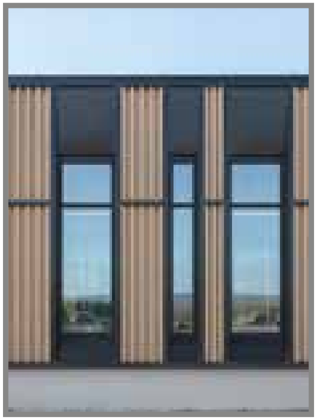
INNOVATIVE SOLUTIONS
Art Massif Plant, Saint-Jean-Port-Joli
Saint-Jean-Port-Joli, QC



STRUCTURAL DESIGN HONORABLE MENTION
Haendel Park Covered Skating Rink
Candiac, QC



SUSTAINABLE DEVELOPMENT
Exploration Centre at Parc de la Rivière-des-Mille-Îles
Laval, QC



SUSTAINABILITY
Horisol Workers' Cooperative
Saint-Jean-Port-Joli, QC

LANDSCAPING
Miyagi Parklet
Québec City, QC

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