



WOOD  WORKS
 ONTARIO AWARDS PROGRAM
14th ANNUAL
 WOODBRIDGE, NOVEMBER 2014



JURY'S CHOICE AWARD

Deer Clan Longhouse
Crawford Lake, ON

ARCHITECTS
Brook McIlroy

STRUCTURAL ENGINEERS
Blackwell

The recipient of this year's Jury's Choice award, the Deer Clan Longhouse in Milton, Ontario, brings together Canada's aboriginal history and the common future of Canadians by combining different wood construction technologies that span more than 500 years.

"Both traditional First Nations technologies and contemporary wood fabrication systems were used. Wood became part of the medium for telling a fascinating chapter in Canada's history. It's also significant that this is a very public building with a strong educational program that hosts more than 70,000 visitors a year," said Calvin Brook, Principal of Brook McIlroy Architects.

The use of wood facilitated the authenticity of a longhouse from the exterior and provides visitors with a unique experience from within.

Reconstructing a longhouse set on a 15th century archeological site, wood was the obvious choice to create a replica from the outside and provide a more contemporary multiuse visitor centre within.

"Wood was mandatory both as a way of honouring First Nations culture and traditions but also to create continuity in the narrative of a place that spans half a millennium. Wood also allowed us to design an environment that people seem to instinctively embrace," Brook commented.

A wood exoskeleton wraps the exterior of the longhouse and bass wood bark is used as rain screen to create an authentic look. "It's not often we use bark as a rain screen for a fully insulated and air conditioned building," Brook said.

The only challenge posed by the design was making sure the Bass wood bark was harvested in the spring, Brook explained.

The structural system uses wood exclusively, featuring exposed arch/column glulam supports which are intentionally left with a rough-cut finish. This finish was "used as a way of maintaining the wood's inherent qualities and reinforcing the image of a structure sculpted from nature," Brook said.

Within the building, the walls and dome of the Gathering Circle features a unique spiraling, over-lapping Fir panel system which helps tell the story of Aboriginal Creation, Brook explained. A variety of images and audio-visual content displayed on screens in the dome tells the history of the Longhouse and the Wendat community that lived there over five centuries ago.

The layered timber and bark of a traditional long house is echoed in the all wood interior, with exposed pine purlins and tongue and groove cladding.

The interior also has several teaching resources built into the design. Archeological artifacts are displayed in exhibit boxes inset in the circular wood perimeter walls. A replica display of a traditional Longhouse interior built of wood and bark is featured on one end of the longhouse.

Familiar with utilizing wood in a variety projects, Brook explains the material is "robust, easy to work with, sustainable and beautiful. It also seems to resonate with Canada's self-identity which is why we love to use wood in public buildings."



NORTHERN ONTARIO EXCELLENCE AWARD

Victoria Linklater
Memorial School
North Spirit Lake, ON

ARCHITECTS
Architecture 49

STRUCTURAL ENGINEERS
WSP Canada Inc.



Victoria Linklater Memorial School, this year's recipient of the Northern Ontario Excellence award, evokes the mythology and rugged natural surroundings of North Spirit Lake First Nation through the use of wood, creating an inspirational learning environment for students.

Victor Kolynchuk of Architecture49 Inc. explained how trees were a critical part of attaining those goals. "What we tried to do was help create a positive identity for students through culture and place. In this case we did a bit of both."

For generations, children of North Spirit Lake have been spellbound by tales of the Maymayquayshwak, a half-man and half-fish spirit reported to dwell along the cliffs of North Spirit Lake. "The design for this new K-9 school uses structural wood extensively, in combination with natural light from above, to create a forest-like setting and sense of wonder within while angled roofs and walls inside echo the steep cliffs surrounding the lake."

Wood was used throughout the building; for structural systems, roof decking as well as the interior and exterior finishes. "It's not isolated to one particular location," Kolynchuk said.

Wood, structure, natural light from above in multiple directions and movement of students throughout and around the building was key," Kolynchuk said. "We tried to create mystery and wonder using natural light from high levels along with the sensation you feel when you are walking with trees on either side or travelling along the edge of the shores of the lake."

The heart of the school is a central library and media centre which is illuminated from above. Glass walls between tall wood columns allow natural light to flow into adjacent rooms around the centre. Utilizing glass and wood in combination helped the firm achieve several goals. "Transparency of glass in combination with wood structure allows you to see different layers of wood from one room to another as you experience in a forest. We intentionally tried to avoid creating a series of institutional boxes that are separate from each other along a corridor. The central library and spaces around it are visually connected through the use of glass with wood showcased as structure and ceiling as a familiar, unifying element for the design," Kolynchuk explained.

Limiting the colour palette and number of materials used, Kolynchuk said, helped reinforce the positive, inspirational characteristics of wood. "On the outside there are only three colours: the beautiful yellow hue of the wood, the silver of the metal roof, and the black, rock-like, acrylic stucco. The natural beauty of wood is being focused both inside and out," Kolynchuk commented.

While Kolynchuk recognizes that some agencies promote metal for structures due to its' perceived fire-resistance, he said heavy timber construction offers similar advantages. "There are some misconceptions about the ability of wood to resist fire. Heavy timber is very fire resistant because it chars on the outside, and this slows the rate of combustion" Kolynchuk clarified.

"Wood is such an obviously Canadian product that we need to promote more. You get a Canadian feel when you showcase the beauty of wood with natural light and shadow. It's modern, progressive and inspiring. It's important that we take advantage of the opportunities that wood can provide us."



INSTITUTIONAL/ COMMERCIAL WOOD DESIGN AWARD: >\$10M

Lansdowne Park
Ottawa, ON

ARCHITECTS
CannonDesign Ltd.

STRUCTURAL ENGINEERS
Halsall Associates/Moses
Structural Engineers Inc.

The transformation of Ottawa's historic Lansdowne Park with the addition of a vast wood canopy that envelops the stadium's south stands received the accolade of this year's Institutional/Commercial >\$10M Wood Design Award.

The TD Place Stadium's south stand 'veil' serves as the signature element of the project and stands out amongst the concrete of the stadium and greenery of the park. The undulating form is peeled back up at particular locations to allow for physical and visual connections between the stadium and the surrounding park, enabling visitors to exist in both places at once.

"This multisport complex is a true manifestation of a 'stadium within a park' concept, with the veil emerging organically from an engineered and landscaped berm like a row of trees rising within the woods," said Walter Gaudet, Senior Vice President of Cannon Design.

The national capital's history as a logging and lumber town is commemorated with the vast application of wood. It also pays tribute to the nearby Rideau Canal which played an important role in facilitating the timber trade.

Created with glue-laminated cedar, no two pieces are alike on the fluid form of the veil. The material was the ideal choice because it can be formed and shaped with bending and machine to create the desired contours.

"Now that we have the advanced tools for wood design and construction such as 3D solid modelling combined with CNC machining and production, wood provides a material option that cannot be matched by other materials," said Gaudet.

The veil is made up of more than 750,000 parts and is 154 metres wide and 25.5 metres high at its tallest point. The total length of glulam used on this project is an impressive 12.54 kilometres.

With long-term durability a major consideration, cedar's natural durability and ability to weather and age naturally and beautifully over time made it the best choice for the project. It's known as one of the hardest softwood in world and is naturally resistant to rot and decay.

Left unfinished, the veil will slowly change to silvery sheen, avoiding long-term and costly maintenance.

Purlins, the secondary structural beams, look like tree branches extending from the 24 uniquely shaped primary vertical supports.

The durable design of the veil ensures proper drainage to prevent water from pooling, but it also allows for the removal and replacement of individual components (if necessary) to ensure the project's long-term viability.

The redesigned stadium serves as the home to the new Ottawa RedBlacks of the Canadian Football League (CFL) and the Ottawa FURY FC of the North American Soccer League (NASL). It also houses a refurbished 10,000-seat indoor arena which serves as the home venue for the Ottawa 67's of the Ontario Hockey League (OHL).



INSTITUTIONAL/ COMMERCIAL WOOD DESIGN AWARD: <\$10M

**St. Victor Catholic School
Mattawa, ON**

**ARCHITECTS
Larocque Elder
Architects Architectes Inc.**

**STRUCTURAL ENGINEERS
Halsall Associates Ltd.**

A small town in northeastern Ontario, Mattawa has a cultural heritage deeply rooted in the forest industry. This rich history is embodied in this year's Institutional/Commercial <\$10M Wood Design Award winner: the St. Victor Catholic School.

Historically a regional hub for logging activities, and a place where the high point of activity was often considered to be the annual spring log drive along the Ottawa River, the town of Mattawa grew from a trading post to a village and eventually became an incorporated town; the logging industry was the catalyst for this development. Guided by a deep respect for these strong community ties to the forest industry as well as an understanding of the importance rural elementary schools have on the social, economic and environmental fabric of a community, Larocque Elder Architects, Architectes Inc.'s (LEA) promotion of wood materials for the St. Victor Catholic School was strongly supported and embraced by the Nipissing-Parry Sound Catholic District School Board. Supporting sustainable architectural design and embodying an earth-integrated architectural approach while benefiting from ease of construction during winter months and improved access to local markets and trades were among the reasons that made wood the "perfect material," explained LEA Principal Jean Larocque.

Wood materials represent an impressive 40 per cent of the value of the building's superstructure, exterior and interior finishes. Incorporating this much wood required considerable effort on the part of the project team. Extensive research by LEA, collaboration with the Ontario Wood WORKS! technical support team, detailed structural design and coordination work, as well as space planning (as required) to respect the span and performance capacities of the wood materials culminated in the state-of-the-art, 24,850 ft² St. Victor Catholic School. "It's a truly wood school from foundation all the way up," said Larocque. "It's not just using wood in a cosmetic way; it's used as the main structure and roof of the school."

Complex and highly engineered to meet the demanding seismic requirements of the region, the building is largely constructed of PSL wood columns, LVL wood beams and lintels, glulam wood trusses, and engineered wood roof joists in addition to conventional wood framing materials. This sophisticated wood skeleton has then been tastefully finished with natural wood soffits, composite wood panel cladding, rich cherry-finished linear wood ceiling systems, wood ceiling panel treatments, wood flooring in the gymnasium and an abundance of wood display cabinets and millwork.

A material that undoubtedly complements and further emphasizes the sustainable values of the building's architectural design, wood materials used in the construction of the St. Victor Catholic School provide the community with a landmark educational building and community facility that is respectful of the Town's culture and history and supportive of Mattawa's forest industries.

"It's part of our culture and part of who we are in Northern Ontario" Larocque emphasized. "Ultimately I think there is certain warmth associated with wood. It's a personal experience when people are exposed to wood as the materials are more tangible, human, and organic and these qualities generate a strong connection to the natural environment and surrounding community."



MULTI UNIT WOOD DESIGN AWARD

Southdown Institute,
Holland Landing, ON

ARCHITECTS
Montgomery Sisam
Architects

STRUCTURAL ENGINEERS
Read Jones
Christoffersen Ltd.



This year's Multi-Unit Wood design award winner, Southdown Institute, takes advantage of its natural setting to enhance the psychological treatment and spiritual guidance the institute gives to clergy and the vowed religious on both a residential and outpatient basis.

Terry Montgomery of Montgomery Sisam Architects believes that the most compelling feature of the building is the courtyard. "Not only does it embrace an existing stand of white pines, but it creates a contemplative focal point for all the activities in the building, emulating healing and renewal. The combination of dark painted wood walls with red accents and natural wood decking define a large outdoor room filled with dappled natural light. The courtyard preserves the best qualities of this rural site while offering an ideal setting for outdoor activities," -Montgomery said.

Located on a 6.38 acre site which is part of an important watershed, the 30,000 sq. ft. Southdown Institute was designed as a wood structure with prominent wood finishes to complement its natural surroundings.

"We wanted to create a building which was associated with the idea of a retreat from typical urban, institutional settings. We associate wood with residential buildings and cottages, rather than institutions," Montgomery said. "It was important for us to create a sense of place which was intimately linked to natural surroundings and the wood materials helped us to forge this link. We used factory finished cedar siding for the cladding, Ipe (Brazilian walnut) wood decking for the exterior deck, and for interior millwork we used wood from a reclaimed red oak tree which had to be removed to site the building."

After being milled, dried, and treated, the red oak was transformed into the institute's new entry doors as well as a featured wood panel wall in the entrance lobby. To allow the landscape to take prominence over the building the exterior cedar siding was painted charcoal grey. The dark exterior provides a background for the brilliant primary colours of the restored stained glass window in the chapel.

The rural setting located just outside of the municipality offered challenges not normally associated with projects of this kind, such as the need for a private septic system and well water supply. In order to maintain a residential profile for the building, mechanical systems were located in the basement to avoid a large, dominating penthouse element. This made it necessary to re-grade much of the site to excavate the basement and provide good site drainage, while preserving as many of the existing trees as possible.

"We believe it is important to encourage and celebrate wood as a design choice because it is an abundant renewable resource in Canada and we associate wood with our national heritage," Montgomery said. "At the same time, it is a material which ages gracefully and offers an appealing warmth and texture as an interior finish."



RESIDENTIAL WOOD DESIGN AWARD

Great Gulf Active House,
Thorold, ON

ARCHITECTS
superkül

STRUCTURAL ENGINEERS
Quaile Engineering

Energy efficiency, low environmental impact, and superior environmental quality were top of mind for Toronto firm superkül when designing the Great Gulf Active House. This Residential Wood Design Award winner adhered to Active House standards, a Dutch metric which emphasizes the qualities both the client and architects were looking for.

The 3,200 square foot house in Thorold, Ontario breaks the mold of the average suburban residence. Superkül's principal architects, Meg Graham and Andre D'Elia, say the house was the culmination of years of research into how to achieve a more sustainable, but still economical, residential product in a mature and saturated market. It had to be something different in both function and appearance from all of the other houses out there.

Wood was integral to the design and realization of the project's goals. Innovation enabled longer spans, taller walls, and prefabricated panels. The house was designed from the outset as a panelized wood structure to reduce construction waste and the duration of on-site build time. The factory built wall, floor and roof panels were trucked to the site and all framing was completed in just a few days.

Some of the design elements that reduce the house's environmental impact and improve energy efficiency include south-facing glazing, oriented to maximize solar heat gain in the winter, while overhangs and window shades keep the house cool in the summer. The house also features an automated system that operates motorized shades, lighting controls, skylights and windows based on heating and cooling loads. To reduce the need for municipal water, the house has a cistern and rain water system that is used for lawn watering and the low flush toilets.

Wood also plays an aesthetic role in the design. Visually, the Great Gulf Active House stands out in its suburban setting though it is not ostentatious. The warm hued wood is employed in feature elements that are most evident on the exterior where the contrast of the natural cedar provides warmth to the subdued grey brick and metal cladding. The large expanses of red cedar found in the garage door, entry porch and front door are uncommon for most developer homes and bring a warm aesthetic to the front of the house. At the rear, a red cedar fence and a generous cedar deck – framed by a cedar soffit -- extends the interior living space out. The variations in the cedar play off the consistency of the brick and metal cladding.

Wood is also carried through as a feature element of the house's contemporary interior where white oak floors, stairs, handrails, kitchen cabinets, custom designed screens, and millwork details, contrast with crisp white walls.

Using the existing local design guidelines for a traditional gabled roof and adapting them for the Active House yielded a multi-functional design that was the basis for a beautiful open plan home with an abundance of interior daylight, and superior environmental performance.



INTERIOR WOOD DESIGN AWARD

School of Social
Sciences, Ottawa, ON

ARCHITECTS

Diamond Schmitt Architects
in Joint Venture with
KWC Architect

STRUCTURAL ENGINEERS
Halsall Associates

The decorative wood elements in Ottawa University's massive Social Sciences building help bring the facility down to earth by creating a warmth and intimacy that belies the true scale of the project. The Interior Design award winning building features a 15-storey tower, a curved glass prow or 'flatiron', and a six-storey pavilion with a dramatic 12-metre cantilever.

Concrete, steel, porcelain floor tiles and glass guards were selected to stand up to the 10,000 students and 250 staff that use the facility. To soften the effect of these harder materials, wood was used to bring warmth and a welcoming quality to the public and social spaces.

Diamond Schmitt Architects' Donald Schmitt says the eye-catching, sloping amphitheater and main entrance is a design element that his team spent a lot of time on.

"The amphitheater forms not only a marker for the building when you move through campus but also forms a canopy over the main entrance to the building. That whole element was totally clad in wood panels on the exterior and interior," Schmitt said. "By cladding the lecture theatre element at the entry in wood it becomes a real marker of the entrance. It's on an axis of pedestrian movement; you see it when you are coming from any direction on the campus. It's at a crossroads."

"There are many different places where wood is used and many design elements where there is a huge amount of millwork," Schmitt said. "It's a nice surface to work on and it will show use over time. That will be pretty attractive."

The building's large public spaces, which are used by thousands of students, feature cherry wood paneled walls that absorb sound. One of the two atria in the building features a six-storey high biofilter living wall, the largest in North America. Next to the feature stair in the north atrium are two- and three-storey slatted cherry wood screens; wood paneling surrounds the entrances of the large lower floor classrooms.

Around the perimeter of the atria, wood is used in combination with glass. A continuous solid cherry wood handrail tops the glass guards of the upper floors and is interrupted by wood study counters situated in key locations around the perimeter.

The office, seminar, and research spaces of the upper floors feature cherry wood doors and solid wood window sills which connect the spaces with the public floors below.

"It's a building that is largely curtain wall and spandrel clad and I think the wood changes the scale to bring it down to a human scale. It creates a sense of welcome, warmth and comfort. It creates a contrast with the glass and aluminum elements of the cladding as a whole. It creates a distinct place," Schmitt said. "The first five floors are all teaching spaces and filled with undergrad students all day long. Wood creates a sense of place that gives character to the scale and gives the scale back to the individual."



GREEN BUILDING WOOD DESIGN AWARD

Richcraft Recreation Complex, Kanata, ON

ARCHITECTS
Salter Pilon Architecture Inc
STRUCTURAL ENGINEERS
exp Services Inc.



Architects, community stakeholders and government came together to realize a sustainable vision for Ottawa's Richcraft Recreation Complex. The Wood WORKS! Green Building award winning project features a fitness facility, community spaces, a double gymnasium, an 8-lane 25 metre pool and targeted a LEED Gold certification from the outset.

— Pilon Architecture Inc. principal Gerry Pilon says that a major wood component was the natural choice given strong sustainable design agenda presented by the City of Ottawa.

"One of the mandates of the project that the client had was to have a community focus group that we would consult with throughout the design. It was the community that told us that they really wanted wood," Pilon said. "They didn't just tell us that they wanted it to look and feel bright and comfortable they told us wood was a way of achieving our goals. That made it easy for us as a choice."

As a community centre, attention was paid to creating an environment that ensured public inclusiveness. The familiarity and comfort of wood helped achieve a design with the feel of a "home with a big backyard" rather than an institutional building.

"The project is adjacent to an area called Trillium Woods which is a naturalized trail system and park zone that meanders through the city. The community wanted to make the project feel like it was part of that," Pilon said. "Wood is a material that everyone can relate to, it exudes warmth and character. It's a big part of our Canadian landscape and economy."

On approach to the building, visitors are welcomed into an open, two-storey main lobby and central corridor space which features glue laminated timbers, a 64mm thick wood roof deck, and maple slat wall treatments on the second floor. All recreational activities in the building can be viewed from this central hub.

The thermal performance of the roof is increased by the 38mm and 64mm tongue and groove decking because of the inherent insulative properties of the wood.

In the gymnasium, a hybrid wood and steel roof system was devised to meet structural requirements. The 18.5 metre long Douglas fir beams break up the visuals of the exposed metal framing and roof deck. Below, on the gym floor, a sprung wood flooring system provides beautiful aesthetics and the high performance floor that athletes need. The energy absorbing and dissipating system provides that safest surface to play on.

"We have used maple as wall treatments for its acoustical properties within the pool area and the gym," Pilon said.

One of the natural properties of wood is its ability to absorb and release moisture. This hygroscopic effect will result in a moderate level of humidity at all times and improved air quality. Cedar panels were also used within the sauna for the same reason.

"When you celebrate wood you encourage the continued use of a great renewable resource. Wood gives you design flexibility and you can do a lot with it. It's those characteristics that make for special buildings and that why we do it," Pilon said.



ONTARIO WOOD AWARD

Grotto, San Souci, ON

ARCHITECTS
Partisans Projects

STRUCTURAL ENGINEERS
Moses Structural Engineers Inc.

Nestled into the granite shore of a remote island near San Souci, Ontario, the Grotto is a sauna like no other. The Ontario Wood Award winning design by Partisan Projects of Toronto pushes the limits of what can be done with wood. The locally sourced Eastern White cedar interior is unfinished and mirrors the rock and water that surrounds it.

“The project is ambitious, yet very much in harmony with its surroundings. A great deal of time was spent understanding the site and determining the best way to integrate the structure into it - for instance, we digitally scanned the site to produce a highly accurate 3D model to design from so that we could fine-tune the building and have it emerge from the site in precisely the right way,” said Partisan Projects’ Alexander Josephson.

The Partisan team spent many months understanding the site, from the digital mapping to “examining the changing colours of the water, sky and granite, as the light changed from sunrise to sunset.” What emerged was the angular, rugged building that is a part of, yet distinct from, the surrounding landscape.

The project not only pushed the limits of the material but also the tools. Designers went so far as rewriting the software code of CNC machines to achieve their vision. Partisan worked closely with fabricators to “develop the process for achieving a stable panel with such complex geometry, while having all the grain oriented to align once carved.”

Designers had to work closely with local authorities to resolve regulatory issues. The scale of the sauna was effectively reduced by half by moving the “building into the cliff and rotating its geometry to work with the landscape.”

“Given that the island is water access only, the most efficient way to complete the project on time and within budget was to prefabricate it in Toronto and deliver it to the site,” Josephson said. “Partisan managed the entire construction process, which involved coordinating the on-site construction team in Parry Sound with the prefabrication team in Toronto. Delivery to the site required a police-escorted convoy from Toronto, a 60-000 ton crane, and 2 barges to deliver the prefab building to the site.”

Josephson says that the limits of the skilled craftsmen involved were also tested in the hand-assembling of the interior. “Thus the project is a synthesis of cutting edge software, CNC technology and old-world craftsmanship.”

“We can really push the limits with wood, you can sculpt it, form it, bend it, seal it, and burn it,” Josephson said. “Moreover, it is inherently beautiful in its myriad natural forms and thoroughly engages all the senses which adds depth and subtlety to the work that other materials don’t achieve.”