

**SPECIAL
8-PAGE
SUPPLEMENT**



RECREATION CENTERS

SUMMER 2014 – VOLUME 2, ISSUE 4



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Wood brings us back to our roots – Applications in Recreation Centers



Recreation is synonymous with healthy living. While people are quick to promote the latest trends in physical activity, there's something to be said for things that are tried and true. Things like throwing a baseball around after dinner, walking to the store instead of driving, and participating in the plethora of activities offered by your local recreation center. Long deemed the go-to gathering place for people looking to be active and social within their communities, recreation centers are the perfect place where working out doesn't feel like work, but rather, play.

English-born American comedian Bob Hope once said, "If you watch a game, it's fun. If you play it, it's recreation. If you work at it, it's golf."

Throughout Canada, recreation center designs are recognizing the appeal of wood as a building material. As evidenced throughout the examples in this Wood WORKS! magazine insert, wood offers a warm, natural and aesthetically appeal-

ing ambiance compared to other building materials that tend to have a more 'institutional' look and feel.

Much like our ancestors who took to the surrounding forests for gatherings, habitation and solitude, modern day uses of wood products offer this same feeling by bringing the outdoors indoors. As the design and build community eagerly explore new wood product applications, as evidenced throughout these project profiles, the stereotypes of wood's limitations in construction are slowly diminishing. No building material is perfect, but you can find the perfect material for the right job. As wood gains grounds in construction projects where it was once never considered, Canadians are reaping the benefits of this product in their homes, office buildings, stores, and places of recreation and leisure.

Interested in learning more about wood products? Trust the experts and get the facts at www.woodfacts.cwc.ca.

Mark your CALENDARS 2014 EVENTS

SEPTEMBER

Sept. 10

Wood Solutions Fair – Prairie
Calgary, AB

www.woodsolutionsfair.com

Sept. 24

Wood Design Awards Gala –
Cecobois

www.cecobois.com

OCTOBER

Oct. 30

Wood Solutions Fair – BC
Vancouver, BC

www.woodsolutionsfair.com

NOVEMBER

Nov. 12

Wood Design Awards Gala – Ontario
Toronto, ON

www.wood-works.ca

Nov. 25

Wood Solutions Fair – Ontario
Toronto, ON

www.woodsolutionsfair.com

Nov. 25

Wood Design
Luncheon Conference – BC
Kelowna, BC

www.wood-works.ca

Nov. 27

Wood Design
Luncheon Conference – BC
Victoria, BC

www.wood-works.ca

Nov. 28

Wood Design
Luncheon Conference – BC
Nanaimo, BC

www.wood-works.ca



BRITISH COLUMBIA

T'it'q'et Community Hall and Health Centre

The T'it'q'et Community Hall and Health Centre project was constructed entirely of wood with the exception of the foundations. The building is constructed using a combination of wood frame for the short span areas with a glulam post and beam structure with CLT panel infill for the large span spaces (Multi-purpose and Hall).

Exterior finishes are a combination of rough sawn vertical cedar siding, smooth face #1 grade horizontal cedar siding and pine soffits. Interior finishes consist of plywood paneling, exposed CLT and glulam, carved cedar doors, birch-faced doors, and pine ceilings.

Wood was used to tie the project culturally to the building traditions of the community it serves. The Hall design evokes traditional pit dwellings. The interior environment is designed to promote health and well-being, providing access to daylight and fresh air to all inhabited spaces.

Project architect, Jennifer Marshall of Urban Arts Architect, was presented with the Environmental Performance award at the recent 2014 Wood Design Awards in BC for her work on this structure. Other sustainable design practises have heavily influenced and informed the design of this project as well:

- Green certified and non-toxic materials and locally available materials were utilized. Wood has been specified as the best source of a low embodied energy material. Local wood products were sourced wherever possible, minimizing processing and transportation.
- Local expertise and labour was used to construct the building, providing employment and training for many community members.
- Construction waste was minimized and recycled, with all wood scraps used by the community for other construction projects or firewood.

"This project is the result of the vision and persistence of the T'it'q'et Administration and the P'egp'i7lha people they serve. The building embodies their values of open hearted hosting and caring for each other and the planet. At the entry, a sign announces "Nsnek'wnuk'wa7" (welcome/we are one) which sums it up."

Jennifer Marshall, Architect AIBC, MRAIC
URBAN ARTS ARCHITECTURE

"T'it'q'et is an example of a project that seems expensive and thus impossible but is within the reach of every community. The structure reflects the symbolic meaning of the local first nations and meets both the architectural and budget requirements. This was possible because of the existence of the extremely close relationship between the architectural and structural teams that was built over many years of collaboration. Glulam trusses and CLT shear walls provide a simple and elegant solution that is pure and free of ornamental elements. The structure is architecture in this building and the architecture is structure."

Robert Malczyk MASc, P.Eng., Struct.Eng.,
MIStructE, MBA, Principal
EQUILIBRIUM CONSULTING INC.

OWNER DEVELOPER T'it'q'et Administration	ARCHITECT Urban Arts Architecture	STRUCTURAL ENGINEER Equilibrium Consulting Inc.	CONTRACTOR Heatherbrae Builders
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ALBERTA



PHOTO CREDIT: JASON DZIVER

Elevation Place

At 4,500 feet above sea level and overshadowed by the Rocky Mountains, the town of Canmore lies in the Bow River valley about 50 miles west of Calgary. Established as a coal mining town in the last decades of the 19th century, Canmore's fortunes fell as that industry declined in the 1970s. The tide turned after the 1988 Calgary Olympics when Canmore was re-imagined as a year-round recreational destination for weekenders and tourists alike.

A microcosm of Canmore itself, Elevation Place is a multiplex facility where culture and recreation meet. The building includes an art gallery; library; a large climbing wall; an eight-lane, 25-metre pool; a second leisure pool with water slides and lazy river; a small fitness center; multipurpose rooms; and related support and administrative spaces.

Centrally located and connected to the town's main street by a plaza, the building is organized on two levels, with the second level mostly given over to multipurpose spaces that serve both as studios for yoga, pilates and other activities, and as spectator galleries overlooking the swimming pool and climbing wall. Public spaces are generally oriented to take advantage of southerly views to the Three Sisters mountains.

The town has developed design guidelines for new buildings that favor an alpine vernacular style with steeply pitched roofs for shedding snow. However, this design approach did not lend itself to

a large-scale structure with long spans, so a design solution was sought that would address the intent of the guidelines with respect to regional character but interpret them in a contemporary way.

Both the client and the design team wanted to use wood in the building to the greatest possible degree — as a material connection to Canmore's historic industrial roots, as a symbol of the town's new identity as a center for outdoor recreation and as a way to imbue the new facility with a warm and welcoming atmosphere. The Alberta Building Code dictated that the floor structures be non-combustible, but it permitted the roofs and supporting structure to be constructed of heavy timber.

The design team sought to express the town's evolution by varying the character of the wood structure in each of the main program spaces. The narrative begins in the atrium, where the solid fir post and beam structure features mortice and tenon and spline joints reminiscent of old mine head structures. The library features tree-like splayed glulam columns and fir acoustic screens that are an abstraction of the forest canopy. Finally, the pool area features an unmistakably contemporary structure of long-span glulam beams through which large circular holes have been cut to accommodate the passage of mechanical ducts.

Elsewhere in the building, pine beetle wood has been used to create benches



PHOTO CREDIT: CAMINUS PHOTOGRAPHY INC

around the climbing wall that are reminiscent of fallen logs, bacon veneer fir slats form an acoustic wall alongside the main stair, and solid fir is used to create the reception counter in the library.

All this is complemented by the measured use of rough local stone and abundant natural light to create a facility that is a unique reflection of the community it serves.

"The town worked closely with the architect to create a space that honors and reflects the majestic scenery we have in Canmore. This includes the use of rock, wood and light. The large glulam beams in the pool, library and main entranceway create a sense of openness and strength that is both beautiful and welcoming. Residents and visitors love the new facility and find it a wonderful place to recreate and linger."

Lisa de Soto, Chief Administrative Officer
TOWN OF CANMORE

ARCHITECT

Gibbs Gage Architects

STRUCTURAL ENGINEER

ISL Engineering
and Land Services

GENERAL CONTRACTOR

Graham Construction

WOOD SUPPLIER

Structurlam



PHOTO CREDIT: TOM ARBAN



Kiwanis Aquatics Centre and Grantham Branch Library

and administrative areas and the other containing a branch library and multi-use rooms. The wings ‘hinge’ off of a central lobby that offers expansive views into the various adjacent spaces and serves as the main orientation point for the facility.

The concept of the building took its cues from the prominent typology of park pavilions of the Niagara region. The building capitalizes on the elemental quality of these traditional structures, featuring the roof as the primary means of expression.

Constructed entirely from heavy timber Douglas fir glulam beams and purlins with a continuous 38mm tongue and groove wood deck, the roof is the primary unifying element of the architecture. Structurally, the roof makes use of conventional glulam beams, hybrid glulam flitch beams that incorporate a sandwiched central steel plate, and custom steel tensioned glulam queen post trusses that helped maintain uniformly dimensioned wood members despite the varied span requirements.

Within this carefully designed structural assembly, exposed mechanical ductwork and dropped ceilings were minimized and all gutters integrated within the

overall depth of the structure to maintain the purity of the roof form. Externally, a secondary layer of decking mounted flush with the underside of the purlins achieved a similar goal, allowing conduit and sprinklers to be fully concealed within the large exposed soffits.

Inside, solid Douglas fir slats comprise much of the feature wall and ceiling cladding. This finish, beyond its obvious aesthetic appeal, offers acoustic value in the larger spaces. This is especially important within the pool area where speech audibility is a key factor within the life safety requirements of the space. The project also takes advantage of wood’s durability and proven resistance to the corrosive, humid environment that is characteristic of pool enclosures.

Wood played an important role in achieving the project’s LEED Silver target and broader sustainability objectives. Wood was chosen for its renewability and regarded as the best material choice because of its low embodied energy, clear advantage from a lifecycle assessment perspective, and ability to sequester carbon as a means of reducing and offsetting harmful CO₂ emissions.

The Kiwanis Aquatics Centre and Grantham Branch Library project is a 48,000-sq.ft. expansion and renewal of the City of St. Catharines’ recreational, leisure and library facilities. Wood was chosen for its advantages as both a structural and architectural system and was central to the overall concept, addressing many of the technical challenges of this building type.

The project occupies a triangular portion of land at the eastern tip of the Lester B. Pearson Park immediately north of downtown St. Catharines. The building is planned around two splayed wings, one containing an aquatics center

CLIENT City of St. Catharines	ARCHITECT Perkins + Will in association with Macdonald Zuberec Ensslen Architects	STRUCTURAL ENGINEER Blackwell Structural Engineers	PROJECT MANAGER Bondfield Construction Company Ltd.	TIMBER SUPPLIER Timber Systems Ltd.
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QUÉBEC

Des mégapoutres de bois pour le nouveau Centre de soccer de Montréal

À l'hiver 2014-2015, les jeunes de Montréal pourront profiter d'une nouvelle installation sportive de haut calibre : le Centre de soccer de Montréal. En construction depuis l'été dernier, ce bâtiment de 10 200 m² érigé au complexe environnemental Saint-Michel sera doté d'une structure de bois présentant une innovation technologique de taille. Ainsi, contrairement à la plupart des stades de soccer en bois, la toiture de celui-ci ne sera pas en arche mais plate, constituée de poutres droites ayant une portée libre de près de 70 m!

La raison est simple : le stade devant offrir une hauteur de 13,5 m sur toute la surface du terrain, le projet excluait le recours à des arches pour la structure du toit. Le consortium Saucier + Perrotte / HCMA Architectes a donc imaginé un toit plat constitué de poutres de bois 68,5 m de long et de 4,2 m de haut. Conçues par la firme de génie structural NCK et Nordic Structures Bois, ces énormes poutres sont constituées de panneaux de CLT



CRÉDIT PHOTO : CHRISTINE PASCONE

verticaux reliés en haut et en bas par du bois lamellé-collé. Chaque poutre est composée de trois sections d'environ 23 m, raccordées par des joints en métal et des vis haute performance. Ces vis, qui peuvent atteindre une longueur d'un mètre pour un diamètre de 14 mm, sont insérées en diagonale et les poutres ainsi assemblées résistent à des efforts en tension de 10 000 kilonewtons. Le toit est formé de treize de ces mégapoutres, espacées de 8 m et disposées en diagonale par rapport à l'axe principal du stade, auxquelles s'ajoutent des poutres secondaires disposés à angles variables par rapport aux poutres principales.

Ces poutres impressionnantes, qui pèsent 79 379 kg, reposent sur des

colonnes d'acier à la périphérie du bâtiment à l'enveloppe de verre. Le toit, protégé par une couverture de zinc, mesure 4 mètres d'épaisseur et simule une strate minérale évoquant l'ancienne carrière Miron du site.

Le choix des poutres de bois, qui représentent un volume de 5 000 m³ de bois FSC, s'inscrit dans une approche environnementale globale en vue d'une certification LEED-NC-OR. Géothermie, gestion de l'eau et recouvrement de toit blanc pour lutter contre les îlots de chaleur sont au nombre des solutions retenues par les architectes du projet. Les jeunes pourront ainsi jouer dans un bâtiment chaleureux, novateur et ayant une empreinte minimale sur l'environnement.



ARCHITECTE
Saucier + Perrotte / HCMA
Architectes

GÉNIE STRUCTURAL
NCK

ENTREPRENEUR GÉNÉRAL
Entreprise de Construction
T.E.Q. Inc.

FOURNISSEUR
Nordic Structures Bois

ATLANTIC



C.E. Nicolle Community Centre

As part of a community renewal project, exp. Architects Inc. partnered with the City of Saint John to spearhead the revitalization of an inner city neighborhood by injecting new life into a two-story north end community center. Taking inspiration from the memory of Mr. Clayton Nicolle, a community member who dedicated his life to the well-being of children and adults of all ages and whose name the facility now bears (C.E. 'Nick' Nicolle Community Centre), the design objective was not only to create a landmark within the city, but to empower the neighborhood through a strong sense of identity while complementing the community's needs: accessibility, safety and flexibility of space for diverse programming.

The existing facility was constructed in the mid-1970s using a post and beam exposed glulam structure. The project was developed in multiple phases, beginning with the addition of a new 1,800-sq.ft. entrance lobby and 200-sq.ft. exit stairwell, providing the accessibility and safety upgrades, both constructed with new post and beam glulam elements. The facility is currently undergoing a complete renovation of the remaining 9,000 sq.ft. of floor space. Maintaining key design elements while incorporating new materials became the language to achieve a sense of familiarity for the community while inviting change and new direction. Installing new curtain wall windows and an array of painted fire engine red metal panels in juxtaposition to the existing red brick complement what is found inside; new and old coming together. Interior renovations enhance the natural wood elements original to the facility. The

existing post and beam construction is highlighted for its natural beauty and character by keeping the majority of structural glulam columns and glulam beams exposed. Showcasing the natural wood also included the effort to keep the existing structural wood decks above, visible. To that end, the placement of the mechanical and electrical services was thoroughly discussed and reviewed prior to and during construction, ensuring the structural wood components were not overshadowed. Any new exposed wood was left in its natural state to allow the seasoning of the wood to occur naturally, thus over time providing a seamless transition between new and existing. Using the warmth of the wood components to complement the industrial portions of the exposed services and polished concrete floors keeps the space from feeling institutional while creating a contemporary impression for years to come.

ARCHITECT
exp Architects Inc.

STRUCTURAL ENGINEER
exp Services Inc.

GENERAL CONTRACTOR
John Flood & Sons
(1961) Ltd.

NATIONAL PARTNERS

Canadian Wood Council / Conseil canadien du bois



Natural Resources Canada / Ressources naturelles Canada

BSLC

British Columbia Lumber Council



StructureCraft

STRUCTURLAM

structurlam.com



western archib
structural wood systems



Weyerhaeuser



WOOD WORKS! REGIONS IN CANADA

National Wood WORKS!

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60 Commerce Court, P.O. Box 5001,
North Bay ON P1B 8K9
Tel: 1-866-886-3574

Atlantic

c/o Maritime Lumber Bureau
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