

**SPECIAL  
8-PAGE  
SUPPLEMENT**



**woodWORKS!**  
Project of the Canadian Wood Council

# WOOD IN ARENAS

WINTER 2013 – VOLUME 2, ISSUE 2



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**woodWORKS!**  
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sur la construction  
commerciale en bois

Canadian  
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## WOOD – A CANADIAN TRADITION

Hockey, similar to wood, has a long standing history with Canadians. Whether you're watching a game from the stands, playing a scrimmage on an icy pond, or taking in the action from a flat screen TV, hockey is something that resonates with all Canadians.

Wood has played a part in this hockey tradition throughout the years, from the sticks, boards and benches to the arena itself. Getting into the winter spirit, this Wood WORKS! insert will feature wood in hockey arenas throughout Canada – it doesn't get more Canadian than this, eh?!

Arenas have a way of drawing people in, and by using wood for the structure, create an aesthetically warm and inviting environment. Whether an observer, supporter or athlete, people from all walks of life gather in arenas during Canada's harsh winters. As you will see throughout the examples in this insert, basking in the warmth of laughter, cheers and stunning wood structures, is all part of the overall arena experience. From the smell of buttery popcorn to the gliding skates and board smashing pucks, arenas are gathering places for communities large and small.

"The Great One," Wayne Gretzky once said, "Hockey is a unique sport in the sense that

you need each and every guy helping each other and pulling in the same direction to be successful." At Wood WORKS!, our regional teams work together to educate and promote the use of wood throughout construction. Our collaborative efforts would not be successful without the ongoing support that we receive from the build and design community. Advances in wood science and technology continually inspire our team to push the boundaries of wood innovation. When you think of wood, you're not only referring to 2 x 4s and flooring, you're talking about a material that makes up a big part of where we live, work and play.

To learn more about how Wood WORKS! can help you with your next wood project visit [www.wood-works.org](http://www.wood-works.org). Wood WORKS! – part of a proud Canadian culture since 1998.



Etienne Lalonde  
National Project Director



## Mark your CALENDARS 2013 and 2014 EVENTS

### NOVEMBER

**Nov. 26-29**  
2013 WOOD DESIGN  
LUNCHEON  
CONFERENCES

*Theme: Taller, Faster, Better  
Performance: Breaking Barriers to  
Innovative Wood Structures*

**Nov. 26**  
Kelowna  
*The Manteo Resort*

**Nov. 28**  
Victoria  
*Delta Ocean Pointe*

**Nov. 29**  
Nanaimo  
*Vancouver Island Conference  
Centre*

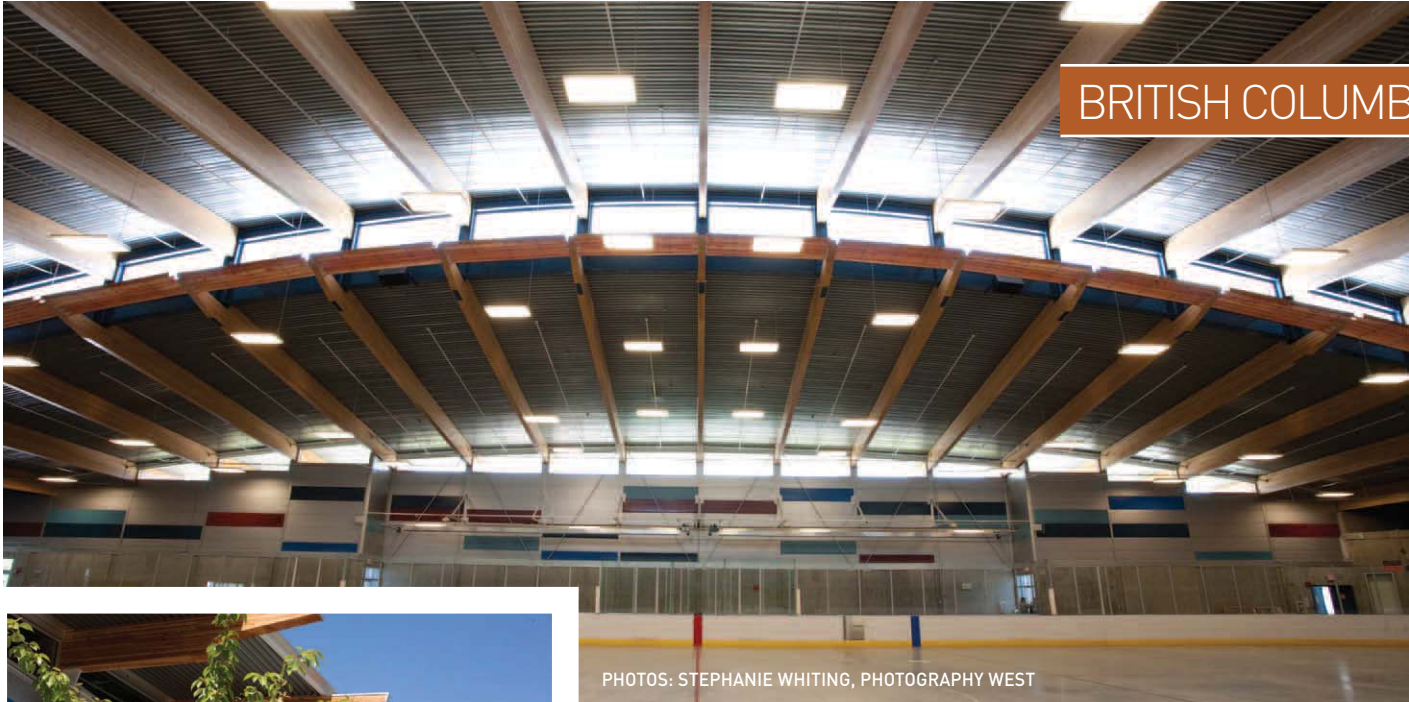
[www.wood-works.ca](http://www.wood-works.ca)

**Nov. 27**  
Prairie Wood Design Awards  
Edmonton, AB  
[www.wood-works.ca](http://www.wood-works.ca)

### JANUARY

**Jan. 23**  
Wood Symposium  
Vancouver, BC  
[www.wood-works.ca](http://www.wood-works.ca)





BRITISH COLUMBIA

PHOTOS: STEPHANIE WHITING, PHOTOGRAPHY WEST

Trout Lake Ice Rink



Located in John Hendry Park in east Vancouver, the Trout Lake Ice Rink was the first phase in the replacement of an aging community center facility. It served as a practice facility for competitors participating in the 2010 Olympic and Paralympic Winter Games and was opened to public use after the Games.

The building is sited at the foot of an east-facing slope, between the park edge and Trout Lake. This siting, together with the roof profile – a shallow vault springing from low perimeter walls – minimizes the impact of the ice rink’s large volume and establishes a scale in keeping with the surrounding single-family neighborhood. The roof structure consists of an arched steel truss spanning the length of the rink, north to south. This primary arch reduces the east-west span which in turn allows the secondary structure of Douglas fir glulam ribs to be reduced, resulting in a simple, appealing

and efficient structure. The single central longitudinal steel truss (210 ft/64 m) is connected by pin joints to buttress walls at the north and south ends of the ice rink and creates a clerestory running the length of the building, allowing natural light to penetrate the space. A skaters’ lounge and lobby area feature wood panelling made from trees blown down in Vancouver’s Stanley Park during a severe winter storm.

Wood has low thermal conductivity and good insulating properties, and light wood-frame technology lends itself readily to the construction of buildings with low operating energy such as this. As a renewable material with low toxicity and low embodied energy, wood contributes to improved indoor environmental quality and lower life cycle energy costs.

**Visit the Trout Lake Ice Rink case study at: [www.naturallywood.com](http://www.naturallywood.com)**

*Wood WORKS! BC provided technical support and wood expertise to building and design professionals, interacting and working with them on the Olympic venues, including the Richmond Olympic Oval, the Vancouver Convention Centre and the Trout Lake Arena.*

*“This project is a legacy of the 2010 Winter Olympics, where wood was a natural choice for material in Olympic venues in Whistler and Greater Vancouver. The Olympics were really a catalyst for inspiring a renewed interest and renaissance in building with wood and took the wood culture in BC to the next level.”*

Mary Tracey, Executive Director, Wood WORKS! BC

<p><b>OWNER</b> Vancouver Board of Parks and Recreation</p>	<p><b>ARCHITECT</b> Francl Architecture</p>	<p><b>STRUCTURAL ENGINEER</b> Fast + Epp</p>	<p><b>GENERAL CONTRACTOR</b> Bird Construction</p>	<p><b>GLULAM FABRICATOR</b> Structurlam Products</p>
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## ALBERTA



PHOTO: STEVE NAGY PHOTOGRAPHY

## Markin MacPhail Centre

BY JIM TAGGART

Located at WinSport's Canada Olympic Park in Calgary, AB, the 500,000-sq.-ft. Markin MacPhail Centre houses four arenas, the 'Ice House' indoor sliding centre, a Performance Training Centre and the offices of Hockey Canada and several other national winter sport organizations.

The facility provides Hockey Canada with a home from which it can operate effectively, share best practices and raise the level of development of its sport. It brings together the sport sciences and athlete support services from all sports, integrating them into a sport institute model. As such, the centre symbolizes Canada's commitment to sport, to the nation's athletes and to the importance of healthy, active lifestyles for all Canadians.

"WinSport staff constantly hear compliments from athletes, spectators and other visitors of how warm the wood finishes make the arena seem," says Dale Oviatt, WinSport's director of communications. "Most are used to entering cold, non-descript arenas made of steel, but the wood uses in the Markin MacPhail Centre give the facility some personality and a touch of class."

Under the prescriptive provisions of the provincial building code, a structure of this size and type is required to be of non-combustible construction, unless it can be demonstrated that an "alternative solution"

is able to provide an equivalent standard of fire and life safety. Given the architect's desire to create an open and inviting interior for this prestigious facility, they chose to work with the authority having jurisdiction to address the challenges of code compliance.

The alternatives proposed were based on a number of special life safety studies including time to egress, a broad-based threat assessment and a fire resistance analysis of the structural system. As a result, the building is not compartmentalized or divided by fire doors and walls, and it was possible to incorporate an innovative and beautiful arched glulam roof structure.

As architect David Edmunds of GEC Architecture explains, "Generally, fire resistance is not the issue, as wood will outperform steel in most situations. Rather, the concerns relate to smoke control and flame spread, so every piece of wood in the roof structure is coated with clear intumescent varnish."

When the surface temperature of the glulam beams reaches a critical point, the varnish foams up to prevent flames attaching themselves to the wood and traveling along its surface. The exposed steel connectors are protected by sprinklers, and an automatic venting system prevents smoke build-up.

The glulam roof structure was carefully designed to be simple, cost-effective and erected in the minimum amount of time.



PHOTO: GOMBERG PROFESSIONAL PHOTOS

As a result, the architects were able to realize the aesthetic benefits of wood, as the savings relative to a conventional solution were too significant for the construction manager to ignore.

Wood finishes are used throughout the building, particularly on the event level. Here, birdseye maple paneling and slatted Douglas fir ceilings are featured in the players' suite which includes changerooms, media and interview rooms, and the "shrine," a long gallery of display cases that celebrates Canada's history of hockey achievement.

Opened in 2012, the Markin MacPhail Centre has already found a place in the hearts of Canada's top athletes. As Canadian women's hockey team player Bobbi-Jo Slusar remarked after her first skate at the new facility, "It felt like home already to me."

**ARCHITECT**  
GEC Architecture

**ENGINEER**  
Halcrow Yolles



PHOTOS: JOHN MINKOWSKYJ, TIM BUHLER

ONTARIO



The Bill Barber Complex, named in honor of Hockey Hall of Famer Bill Barber, a Callander native who maintains close family ties to the community, is a multi-use facility built for the benefit all Callander residents. It accommodates a variety of activities throughout the year and is a catalyst for building community engagement and fostering local economic development.

Demanding budget constraints and a short construction timeline required

an economical and efficient structural solution for the all-weather 24,326-sq. ft. building cover for the 80'x180' open air rink. The project features a TSL glulam arena frame, spruce-pine tongue-and-groove decking, and Western red cedar siding. Not only did the design for the glulam framing achieve these demands and include a provision for future complete close in, it also brought a warm and inviting ambiance to the facility.

Located adjacent to the Callander

Bill Barber Complex



Community Center in Yarlasky Park, the beautiful heavy timber roof structure covers a single pad rink surface and provides shelter for four seasons of sport, leisure and community events on the site. "The roof has enabled the community to use the outdoor rink for a variety of purposes all year long, reports Hector Lavigne, Mayor of the Municipality of Callander. "In fact, the space was used this past summer to host a country music concert, which to our surprise, provided exceptional acoustics."

Wood WORKS! was involved from the initial concept and helped the community see the project through to completion. The venue is well used by the municipality and Mayor Lavigne is pleased with the project. "We are particularly happy with the heavy timber construction and how it represents the history of Callander as a lumber hub. Thanks to Wood WORKS! for the encouragement to use wood in the construction of what will definitely become a Callander icon."



**CLIENT**  
Municipality of Callander, ON

**ARCHITECT**  
Evans Bertrand Hill Wheeler  
(EBHW) Architecture Inc.

**ENGINEER**  
Piotrowski Consultants Ltd.

**TIMBER SUPPLIER**  
Timber Systems Limited

## QUÉBEC



CRÉDIT PHOTO : STÉPHANE GROLEAU

## Aréna et pavillon de services de l'Université du Québec à Chicoutimi (UQAC)

Avec sa forme singulière et son mariage réussi du bois et de l'aluminium en façade, le bâtiment abritant l'aréna et le pavillon de services de l'Université du Québec à Chicoutimi (UQAC) est résolument moderne et distinctif. Son utilisation différente du matériau bois constitue d'ailleurs une signature intéressante pour un aréna, ce qui a sans doute conquis le jury des Prix d'excellence cecobois 2013, qui lui a décerné un prix dans la catégorie Projet institutionnel de plus de 1 000 m<sup>2</sup>.

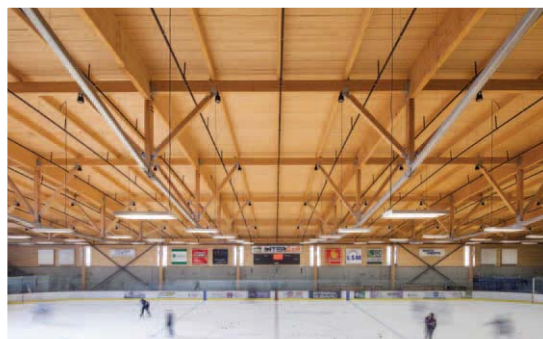
Construit en 2009, l'aréna et le pavillon de services de l'UQAC fait la part belle au bois, utilisé à la fois comme matériau d'apparence et de structure. Selon les architectes du projet, soit Lemay et Les Architectes associés, le bois se révélait d'ailleurs le matériau de prédilection pour cet établissement sportif. En effet, en plus d'être renouvelable, durable et écologique, le bois permettait de grandes portées structurales ainsi que d'excellentes performances thermiques et acoustiques.

À l'intérieur, le bâtiment est soutenu par une structure en bois lamellé-collé et un platelage de bois, jumelé à une structure légère en acier. La structure de bois est laissée apparente, de sorte que les qualités esthétiques du bois contribuent à rendre l'endroit plus chaleureux. À l'extérieur, le revêtement de bois torréfié pour les façades s'inscrivait dans une volonté de

promouvoir la torréfaction, un procédé de thermostratification du bois. La torréfaction permet d'obtenir des teintes rappelant la palette de couleurs du café, en plus de conférer à certaines essences de bois une résistance plus élevée à l'humidité.

### Un modèle

Les architectes ont fait preuve d'une grande sensibilité à l'égard de l'expérience des utilisateurs de l'immeuble. Ce projet démontre d'ailleurs une connaissance aigüe du sport dans le choix des matériaux utilisés et la conception des espaces, ce qui en fait un modèle pour d'autres bâtiments du même type. L'impressionnante forme courbe du bâtiment permet en effet de réduire le volume global tout en intégrant un espace ouvert entre les estrades et la glace, tandis que le choix d'un pontage de bois vient rehausser les performances acoustiques. L'apport en lumière naturelle confère également une atmosphère plus humaine au lieu en plus de mettre en valeur la structure de bois. L'intégration de ces éléments en fait ainsi un endroit agréable, invitant et chaleureux pour les sportifs qui le fréquentent.



#### ARCHITECTES

Lemay, Les Architectes  
Associés

#### INGÉNIEURS

Pasquin St-Jean, Conception  
Habitat 2000

#### CONSULTANTS

Technorm inc. et  
Cegertec

#### FOURNISSEUR DE STRUCTURE DE BOIS LAMELLÉ-COLLÉ

Nordic Structures Bois



# WOOD WORKS! ELEARNING CENTER

## E-LEARNING

A hub of knowledge and learning opportunities about wood in construction

Wood is no longer regarded as a building material simply for residential, boutique and cosmetic construction. With the advent of new wood products, advanced manufacturing technologies and innovative design techniques, wood is now used in a variety of construction – bringing its unique properties of beauty, sustainability, versatility, durability and affordability.

Launched in March 2012 by the Canadian Wood Council and the national Wood WORKS! program, the Wood WORKS! eLearning Center is an online resource that provides free professional development courses for architects, engineers and building professionals.

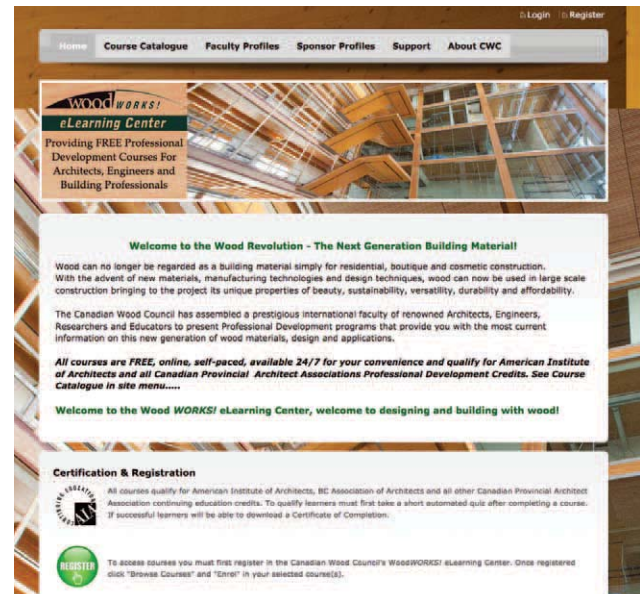
A prestigious international faculty of renowned architects, engineers, researchers and educators has been assembled to present professional development programs that provide individuals with the most current information on wood materials, design and applications. Check out the “Faculty Profiles” to read more about the presenters.

With more than **30 courses on topics** including Cross-Laminated Timber and Dynamic Wood Design, as well as information on contemporary applications of wood, here’s why more than 2,000 people have already taken courses from the Wood WORKS! eLearning Center:

- they receive knowledge about the latest materials, designs and applications;
- they conveniently access courses at their own pace via the Internet;
- they receive certified credits.

All courses are free, online, self-paced, available 24/7 and qualify for American Institute of Architects, all Canadian provincial architect associations and the Engineering Institute of Canada Professional Development Credits. To qualify, learners must first take a short, automated quiz after completing a course to then receive their downloadable Certificate of Completion.

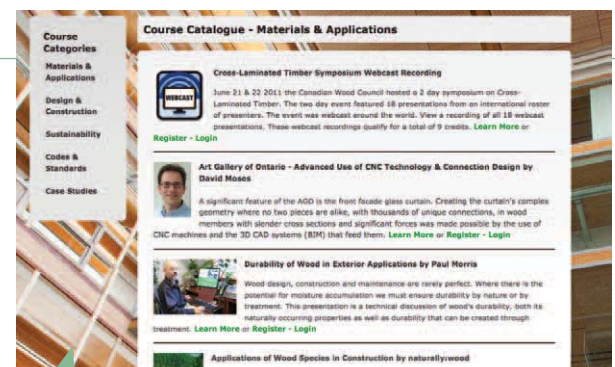
New material is continually being added to the Wood WORKS! eLearning Center. Approximately 12 new presentations were added in 2013. Join the mailing list to keep up-to-date on the latest offerings, and check out the newest additions in the Course Catalogue.



Visit the Wood WORKS! eLearning Center at [www.woodworkselearning.com](http://www.woodworkselearning.com)

### Sample of course offerings:

- 1) Cross-Laminated Timber Symposium Webcast Recording
- 2) Art Gallery of Ontario Transformation by Crispin Howes
- 3) LCT ONE – Case study of an Eight-Story Wood Office Building By Nabih Tahar
- 4) Building Green with Wood Toolkit by naturally:wood



Do you know of a presentation that should be featured on our Wood WORKS! eLearning Center?

Contact Geran Capewell at [geran@woodworkselearning.com](mailto:geran@woodworkselearning.com)

# NATIONAL PARTNERS

Canadian Wood Council / Conseil canadien du bois

Natural Resources Canada / Ressources naturelles Canada



## WOOD WORKS! REGIONS IN CANADA

### National Wood Works!

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Ottawa, ON K1P 6B9  
Tel: 613-747-5544

### Québec

1175, avenue Lavigerie Bureau 200  
Québec, QC G1V 4P1  
Télé : 418-650-7193

### Ontario

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

### British Columbia

3760 Gates Road  
West Kelowna, BC V4T 1A3  
Tel: 1-877-929-WOOD (9663)

### Atlantic

c/o Maritime Lumber Bureau  
P.O. Box 459  
Amherst, NS B4H 4A1  
Tel: 902-667-3889

### Alberta

900-10707 100 Ave.  
Edmonton, AB T5J 3M1  
Tel: 780-392-1952

# WALL THERMAL DESIGN CALCULATOR

Developed by the Canadian Wood Council

Canadian Wood Council / Conseil canadien du bois



## NEW Interactive Online Tool

- ⇒ Quickly determines suitable wall assemblies for climate zones throughout Canada.
- ⇒ Shows: effective/centre of cavity thermal resistance and installed nominal insulation value.
- ⇒ Includes climate specific durability assessment.

[www.cwc.ca/wtd](http://www.cwc.ca/wtd)