



SPECIAL 8-PAGE SUPPLEMENT

OFFICES

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MOUNTAIN EQUIPMENT CO-OP HEAD OFFICE
 PHOTO CREDIT: ED WHITE PHOTOGRAPHICS,
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Wood – Awakening our Senses at Home and at Work

It's a common phenomenon that many people spend more time at the office than they do at home. Recognizing this shift, employers are opting for office spaces that not only provide necessary resources, but that also incorporate elements of design that make their environments inviting, open and able to access natural light.

Whether I want to clear my head or relax with my family, I find myself often suggesting going for a walk. There's something familiar and calming about being surrounded by nature – yes, even during our cold Canadian winters. The same is true for working environments. In fact, there's a term for it: biophilia. Biophilia refers to the bond that exists between humans and other living systems, such as the outdoors. It makes sense then that wood is selected as the material of choice for today's office construction, both from a structural, comfortable and aesthetic point of view.

As you will see from the projects featured in this magazine insert, exposed wood can be modern or rustic and has the ability to add a natural element to any office design. Winston Churchill once said, "We shape our buildings, thereafter they shape us." Today's office designs are moving away from the institutional and boxy schematics, and instead embracing a work environment that offers collaboration amongst employees through open concept layouts. Whether it's exposed beams, wood furniture or flooring, wood elements incorporated into office designs are a way of bringing the outside, inside – a sure benefit for individuals who may not have the chance to leave their office and go for a brisk walk throughout the day.

So whether you're reading this from the comfort of your office or home, I'd encourage you to reflect on the many benefits that wood contributes toward today's buildings from both a construction and design perspective. Look around. Are you embracing this biophilia movement at work or at home? If not, be part of the change and make your environment work for you, so that you can live in harmony with your surroundings.

Etienne Lalonde

Mark your CALENDARS 2016 EVENTS

JANUARY

Jan. 22

International Wood Symposium
Vancouver, BC
<http://wood-works.ca/bc/>

FEBRUARY

February 4

Mid-rise Workshop
Calgary, Alberta
<http://wood-works.ca/alberta/educational-events/workshops-2/>

Feb. 18, 19

Mass Timber Panels –
 NLT – CLT – Composites & more
Vancouver, BC
<http://wood-works.ca/bc/>

Feb. 29

Wood Design Awards BC
Vancouver, BC
<http://wood-works.ca/bc/>

MARCH

March 8

Prairie Wood Design Awards Gala
Edmonton, Alberta
<http://wood-works.ca/alberta/wda/event-information/>

Interested in attending a Wood WORKS! educational opportunity in your region? Check out the events listed in this insert and get involved with your regional Wood WORKS! today.

This Wood WORKS! magazine insert was created to help inspire design professionals throughout Canada. Do you have a project that features wood as a primary building material? Take advantage of our Wood WORKS! magazine insert and get featured today! Contact Natalie Tarini at ntarini@cwc.ca, and share your story.



PHOTO CREDITS: FACTION PROJECTS INC.



BRITISH COLUMBIA

3935 Lakeshore Road

Kelowna, BC

This innovative and exciting office design strives to enhance Kelowna's identity as a modern, progressive city, and responds to the resort-oriented playful context being developed in this area along Lakeshore Road. The building structure was built of locally sourced wood and is one of the first private commercial buildings in western Canada to extensively use innovative new products such as cross-laminated timber (CLT). The project is targeted at progressive professionals and retailers who operate lifestyle-focused businesses, highlighted by the high degree of connection between the indoor and outdoor environment.

The building takes advantage of CLT's thin profile, two-way flat slab characteristics, and a warm, exposed structural aesthetic to meet the project objectives. These objectives include the sustainable aspects of responsible industry and minimizing the building's carbon footprint, as well as recognition of the socio-economic benefit of using locally sourced materials and familiar technologies. The shop-fabricated structural elements of posts, beams, and panels were delivered to site complete with pre-installed connectors. This facilitated quick erection during



the winter season and resulted in labor savings.

The project was constructed adjacent to the City of Kelowna Mission Creek Greenway which provides beautiful views to the building occupants as well as opportunities for exercise. The glulam post-and-beam structure, in combination with the CLT floor and roof slabs allow for

a high degree of transparency between the building interior and the surrounding exterior environment, maximizing natural light penetration and access to views. Extensive cantilevers provide shading as well as opportunities for outdoor amenity space, and the exposed fir ceiling exhibits a warm aesthetic while providing an economic open ceiling solution. The result is a flexible, warm, efficient, day lit building that connects its users with the natural environment.

"We're extremely happy with the outcome – it's a project that is really different from the status quo. The use of CLT enabled us to achieve a distinctive design as well as check all the financial boxes required as a developer. We love the space – it's warm, comfortable and aesthetically pleasing. The structural use of wood made open spaces possible, providing for a lot of transparency and connection between inside and outside. The office space is now fully leased out, and we attribute much of that success to the pleasing interior environment."

Tim McLennan – Architect AIBC, MRAIC
Principal, Eidos Architecture Inc. | Director,
Design and Operations, Faction Projects Inc.

Completed: Fall 2014

Size: 14,000 sq.ft.

CLIENT

Faction Projects Inc.

ARCHITECT

Eidos Architecture Inc.

STRUCTURAL ENGINEER

Bourcet Engineering

GENERAL CONTRACTOR

Braniff Construction Ltd.

TIMBER SUPPLIER

Structurlam



ALBERTA



PHOTO CREDITS: NICOLE AUSSER

COVER IMAGE: ROSS AUSSER

Mosaic Centre for Conscious Community and Commerce

By Dennis Cuku

Edmonton, AB

It's likely that the first thing you'll notice as you wipe off your shoes at the Mosaic Centre for Conscious Community and Commerce is the impressive heavy timber superstructure in the three-story atrium. Exposed wood ceiling, decking and columns were designed using glue-laminated beams (glulam) to satisfy all of the building's design targets: beauty, pragmatism, sustainability and health.

Not only are the pine and fir structural elements beautiful, but also sustainable. By using wood, the building is estimated to have avoided 1,360 tons of greenhouse gas emissions in comparison to using concrete – the equivalent of taking 261 cars off the road per year. Add to that, glulam beams and columns are an efficient use of wood as they are heavily optimized and engineered prior to being manufactured. More importantly, glulam does not require large dimension timbers and therein eliminates any possible strength reductions due to abnormalities in the tree stock.

So what about the cost of a heavy timber building? In the early design phases of the project, both concrete and steel were explored for use as the primary structural elements. Concrete was not chosen due to economic feasibility based on the relatively small size of the building. In addition, the amount of embodied energy – the total



energy required to produce the structural elements – in concrete is high compared to wood glulam. Steel is the most common choice for a building of this size in Canada based on cost, but was only used to connect the east and west sides of the building by way of the interchange stairs.

Why did the owners pay 1.5 per cent more to utilize a wood structure? Humans spend the majority of their lives indoors and, if we are honest with ourselves, dwellings are becoming less and less inspiring. The owners wanted the Mosaic Centre to provide the tenants with the feeling of being in a wood building. It is hard to put into words what is different, and should you be able to, it is nearly impossible to quantify. Bringing the

design elements found in the heavy timber buildings of Edmonton's old warehouse district back to life would provide a unique occupant experience.

Why a wood structure was the right choice at The Mosaic Centre:

Beauty – an exposed wood building offers a more positive occupant experience. Glulam beams and columns use wood efficiently, minimizing waste.

A total of 558 cubic meters of lumber was used in the Mosaic Centre equating 438 tons of carbon dioxide being stored in the superstructure.

Using wood, the building avoided 930 tons of greenhouse gas emissions when compared to using concrete.

ARCHITECT
Manasc Isaac

STRUCTURAL ENGINEER
Revolve Engineering

BUILDER
Cuku's Nest Enterprises

GENERAL CONTRACTOR
Chandos

TIMBER SUPPLIER
Western Archrib



PHOTO CREDITS: GORDON KING

216 Pretoria Avenue

Ottawa, ON

Originally a blacksmith's workshop, the renovated office building at 216 Pretoria Avenue stands as a testament to conservation, sustainable design and excellence in timber construction. Wood was used throughout the design for conservation, structural and aesthetic purposes.

The design for the new office space takes advantage of the existing structure; most of the existing wood framing was retained, as well as the original built-up wood slab floor from the blacksmith's workshop, forming part of the ceiling in the lower level. The "warehouse floor" wood slab was preserved and repaired by infilling openings using custom-milled white pine lumber, installed to match the existing in place. The new and old components of the floor are connected together using the traditional techniques used for the original floor construction. The roof over the main floor could not be retained due to structural issues and a poor building envelope. The cross-laminated timber (CLT) panel roof deck is a contemporary version of the existing wood slab floor below and pays homage to the heritage of the building. The CLT roofing system was prefabricated and

assembled on-site in less than a day. The redesign of the office space recreates the honest industrial forms and heavy timber from the original blacksmith workshop.

Glue-laminated beams and Douglas fir columns form the core structural system, in combination with the existing wood perimeter framing. The key structural details seen throughout the office are



the connections between the beams and columns, assembled using custom steel bases, flanges and bolts. One of the most innovative structural feats of the building is the three-story CLT entry tower, complete with a suspended steel stair structure. The two elements form a powerful symbiotic relationship; the CLT walls provide the supporting structure for the main stair while the stair itself provides lateral shear resistance.

Using exposed wood also fulfilled the required fire-ratings for structural, wall and floor elements. Given the non-typical construction, calculations were prepared for building officials using data from the Canadian Wood Council and manufacturers to demonstrate compliance.

Aesthetically, wood's warmth, lightweight appearance and natural elegance play an important role in the building. Solid maple, birch and veneered plywood were chosen as the primary materials for cabinetry, millwork, doors, interior window sills, and baseboards. The combination of wood elements with soft cream colored walls provides warmth and effectively tempers and reflects light to create an open, natural atelier space.

ARCHITECT

Robertson Martin Architects

STRUCTURAL ENGINEER

Goodeve Manhire Partners Inc.

GENERAL CONTRACTOR

Robertson Martin Architects

TIMBER SUPPLIERS

Nordic Structures and
Goodfellow

QUÉBEC



PHOTO CREDITS: STEPHANE GROLEAU

STGM Office

Quebec City, QC

Cramped at their former location, architects St-Gelais Montminy + Associés / Architectes (STGM) and their partners established new head offices at the gates of the Écoquartier D'Estimauville eco-district in Quebec, in a building that they designed. Featuring a sleek, modern design, the new offices are predominantly characterized by innovative and environmentally responsible choices. Most notably, wood was widely used for the exterior facing and interior finishes, as well as for the structure.

Measuring 43 ft. by 130 ft., the two-floor building was designed with a long, narrow footprint of approximately 10,764 sq.ft. It is the building's shorter side, to the north, that faces the street. The facade is sheathed in eastern white cedar left in its natural state. As the wood takes on a beautiful silvery color over time, the designer fully expects that it will harmonize with the dark grey fibrocement panels used on the sides of the building.

Wise choices

For the designers, it was clear that light wood framing was the structural system most suited to the particularities of the

project. The building rests on a deposit of loosely packed soil, which in addition to amplifying seismic effects, also has a low bearing capacity. Composed of light wood precast elements, the building is lighter and more flexible and therefore requires less extensive foundations. The designers also knew from experience that a light wood frame structure would prove far more economical. In the interior of the building, the roof trusses are left exposed on the second floor and painted white, reflecting the natural light that bathes 86 per cent of the interior spaces.

In addition to the use of wood, the designers, hoping to achieve LEED Platinum certification, took several measures to limit the environmental impact of the building, many of which were especially innovative. For example, the building is heated and cooled almost entirely by solar and aerothermal energy, a technology that has proven its worth in Europe. Located in a space left open in summer and closed in the winter, a heat pump controls four modules of capacitors



and atomizers. In the summer, the space is open and the modules take in fresh air for the cooling of the building. In the winter when the space is closed, the modules recover the heat from the exhaust emitted by the solar wall. Overall, the building consumes 57 per cent less energy than a conventional building.

ARCHITECT
STGM

STRUCTURAL ENGINEER
Groupe Alco

GENERAL CONTRACTOR
Construction E Huot

TIMBER SUPPLIERS
Structure RBR (structure), Scierie MS Bilodeau (exterior cladding) and Matériauthèque de Montmagny (recycled wood)



ATLANTIC

PHOTO CREDITS: COLIN TURNER, EXP ARCHITECTS INC.

exp**Saint John, NB**

Having outgrown the previous office in Saint John, NB, exp staff needed to relocate to a new space that would suit the firm's growing needs. It was decided the new office should showcase the multi-disciplinary talents and potential the exp Saint John office could provide to the public. The location selected on the east side of the city was an existing heritage brick-clad factory building, originally built with ship timber structural

framing. The building was constructed around 1910 for the manufacturing of the first automobile in the region called the Singer Six.

Inspired by the industrial space and the original handcrafted detailing, the architect created an open office concept to house both office staff and a materials testing lab. The design sought to highlight the quality of the existing materials along with the natural light provided by the original clerestory windows as well as provide flexibility in the space to accommodate future growth of the company. The characteristics of these design ideas were achieved through the open spaces that encourage collaboration among disciplines while providing a limited amount of cubical walls. This allows staff to easily interact, contrary to traditional office layouts which use high cubical walls to segregate employees.

By sandblasting away the years of paint, stains and discoloration from the structural timbers, the natural beauty and grain of the wood is seen. It emanates the material's warmth and harkens to the craftsmen of the historical shipyards of Saint John. This quality of wood materials

is not typically found in traditional office spaces, but exp embraced and used it to enhance the overall interior design. The interior finishes and materials express the sustainable and green values that exp promotes in all of its work. As members of LEED, exp knows that reusing existing wood elements and showcasing its natural beauty is preferred over incorporating new raw material. This was a key design principle in the renovation of the office.

To further express exp's identity, the architect designed and built a bookshelf that also served as a standalone worktable, fostering collaboration. The bookshelf was constructed from two antique shelving units that were modified to serve as the base for the new worktable. New wood was used to clad the modified bookshelf, and a clear varnish was applied.

Wood features and components were used as key design elements in the renovation of the Saint John office. Exp seeks to push the boundaries of each project by incorporating wood for not only structural, but also sustainable, aesthetic and architectural purposes.



ARCHITECT
exp Architects Inc.

STRUCTURAL ENGINEER
exp Services Inc.

GENERAL CONTRACTOR
Avant-Garde Construction
and Management Inc.

NATIONAL PARTNERS

Canadian Wood Council
Conseil canadien du bois



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Canada

Ressources naturelles
Canada

BSLC

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SAINT-GOBAIN



StructureCraft

STRUCTURLAM
structurlam.com

western archrib
structural wood systems



Weyerhaeuser



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