



Kinsol

Timber Systems

www.kinsoltimber.com

THE PROPONENT

Kinsol Timber Systems Ltd. ("Kinsol") specializes in working collaboratively with architects, engineers and general contractors to deliver carefully detailed, constructible, and ambitious structures. A Vancouver Island based facility, with access to Canada's best timber, our shop and site crews are broadly experienced in planning, fabricating, and erecting timber structures in some of the most challenging conditions.

Our team has a breadth of experience spanning all aspects of timber work from mass timber structures, architectural beam work and traditional joinery, to commercial and institutional projects across multiple sectors. We specialize in working with architects, engineers and other professional clients in order to deliver projects within agreed timetables and budgets. No single person or firm can provide all of the answers all of the time; we understand that our best work is achieved through the cooperation with, and support of, a larger team. Our most successful projects are collaborations where we participate alongside other professionals at the very earliest stages of the design and specification process.

Kinsol typically works on three or four projects concurrently; project scopes and values range considerably from modest additions to complex multi-year projects that include a full range of design, engineering and construction management services. Kinsol has a portfolio that demonstrates competence in new construction, timber engineering and the conservation of historic timber buildings. Increasingly, Kinsol has been called upon to answer design and build opportunities where challenging logistics and complex locations are important considerations.

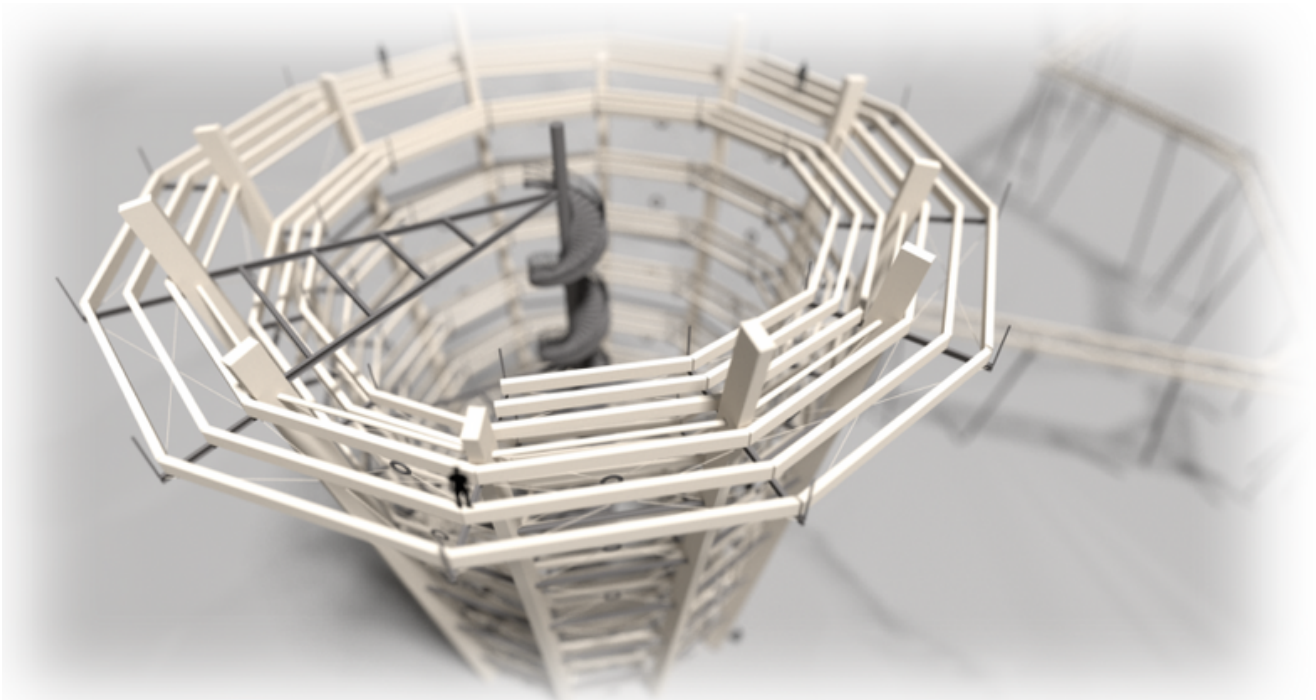


CORE VALUES:

- *Integrity*
- *Performance*
- *Community*

MASS TIMBER CONSTRUCTION APPROACH

As specialist builders, Kinsol offers unique experience in the planning and leadership of the mass timber structures. With many years of experience in innovative and daring structures, we have developed a methodology for optimizing structure, digitally pre-planning our work, and stream-lining material procurement – all resulting in improved efficiency on site.



Building Information Modelling (BIM)

3D design models are the standard for our industry. The advanced software that we use was developed specifically for the design of timber structures and it is fully-integrated with CNC processes and compatible with all major CAD software.

Building Information Modeling (BIM) allows Kinsol to quickly blend our drawing work with other structural and architectural drawings to ensure that all aspects of the building fit together seamlessly. We can easily output our drawings in a wide variety of formats and file types, so that other designers can interact with them. By designing in 3D space, we can overcome the challenges associated with connection-detailing for complex geometric shapes and structures that have a high number of individual components.

One of the chief benefits of this approach is that it reduces the sorts of costly errors that are typical of less integrated designs. 3D models allow us to reduce our contingencies and optimize our material use which ultimately means less waste for us and less cost for our clients.



Pre-Construction Phase

Design & Budgeting

We develop structural concepts in collaboration with the design team and client, for the purposes of improving durability and constructability, while running parallel budgeting in support of the owner. *“Prevention Through Design”* meetings involving key stake holders from the client, design and construction teams are an essential part of this phase.

3D Modelling & Shop Drawings

Parallel to the development of a structural scheme, a 3D model is generated for the purposes of Shop Drawing production and construction planning. In some cases, the structure may be computationally designed based on collaboratively-written algorithms, speeding up the design time. When sign-off is obtained on the final structural design, shop drawings are produced as a direct export from the parametric model.

Construction Phase

Material Procurement

This will overlap with design and detailing, particularly for the long lead-time items. During this phase, we supervise our suppliers closely to ensure consistent high quality. We have strong relationships with multiple glulam manufacturers in Canada, the United States, and Europe, and are experienced in procuring this material for delivery regardless of origin country.

Shop Fabrication

Following shop drawings being finalized, careful coordination allows for early fabrication of members & connections, with framing done using hand and CNC tools. Individual members are assembled into prefabricated modules, where appropriate. The precision of these components directly contributes to the overall accuracy, quality and speed of site installation. After pre-fabrication, the components are loaded onto trucks, wrapped appropriately and shipped to site.

Site Assembly and Installation

Site personnel receive and stage material according to the installation plan, organizing the site to permit the further assembly of shop fabricated materials into larger systems, while maintaining important traffic corridors and hoisting access. Notably, prefabrication and pre-assembly greatly enhance site safety as it increases the amount of work that can be performed under improved conditions.

Project Management

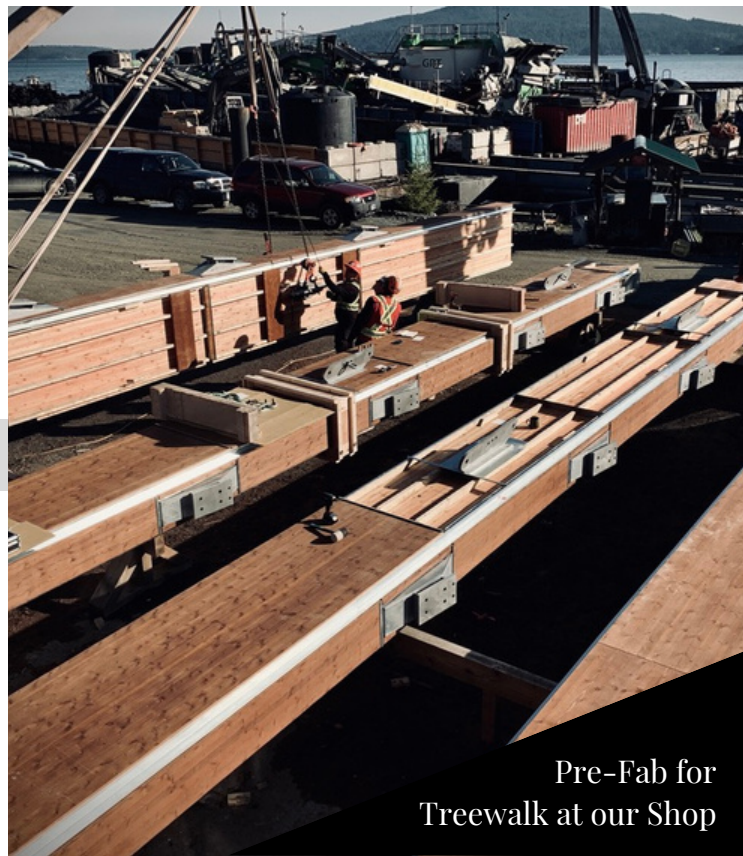
Our project managers participate early in the design process and continue to play a prominent role in the planning and execution of the project. Early and consistent involvement promotes coordination through each phase of the project and allows for timely and thoughtful responses to problems that arise.

QUALITY ASSURANCE

Our experience with innovative timber buildings has taught us some valuable lessons about the pre-planning process and the importance of exhaustive digital planning, systemic quality and process control, and ongoing digitalization of the construction process through the use of *Total Station Technology*.

Component Geometry

The quickest way to lose speed on site is to have the prefabricated components not fit when they are suspended from the crane's hook. It cannot be assumed that global panel geometry is correct, simply because it was assembled according to the shop drawing. Timber manufacturing has come a long way in terms of its precision, however, we continue to measure our tolerances in tenths of inches rather than in thousandths, as with milled steel. There are good reasons for this, but it remains that we must apply prescriptive diligence around geometry management. We do this in a series of steps. As a starting point, every panel has a label identifying its precise location in the building and giving us the ability to take and record information at different stages of its evolution. For panel construction, jigs are shot in using survey equipment and held fast by anchorage to the concrete slab. These jigs are frequently checked using the same survey control points to confirm ongoing accuracy. Next, upon completion of each panel, global geometry is recorded on a control sheet and signed off by the prefabrication supervisor. Prior to shipment from the storage yard to the site, the same control sheet is used to double check the global geometry to make sure that nothing has changed. In the event that a change has occurred, we have the opportunity to fix that issue before it gets to site.



Pre-Fab for
Trewalk at our Shop

Moisture Management

An important aspect of managing consistent geometry lies in the process for managing moisture. Because wood is hygroscopic it has the natural characteristic of expanding and contracting as it takes on and releases water. While this generally is quite small from board to board (particularly when kiln dried), the cumulative effect on mass timber can create geometry problems on large panels. Plainly speaking, moisture management is a significant challenge with large, prefabricated structures. The conventional approach is to stack and store these panels outside and cover them with tarps. While this does have some positive effect, it is not a great solution. Nonetheless, the sheer size of these structures makes it challenging to do much more. Regardless of the challenge, it is vital that we take and record moisture readings, both for inbound raw materials and outbound prefabricated materials.



Fort St. John
Civil Building

Proof of Performance

Building trust with engineers and Authorities Having Jurisdiction is important to permitting efficient, uninterrupted prefabrication. In the early stages of shop assembly, we work with building inspectors who come to our shop and verify the quality installation of systems which may become concealed during the assembly process. We have established good relationships with these inspectors and developed a method of reporting that gives them confidence that they do not need to be in our shop inspecting every panel. This has often been nothing more than a quality control checklist, signed by the supervisor, and accompanied by a photograph showing the services needing inspecting.

Building Geometry

As you can already tell, we are big fans of BIM...but, we do not cease modeling when the model is “done.” One of the greatest missed opportunities in BIM is the ongoing incorporation of as-built geometry into the model and the comparison to QC control sheets, thereby empowering our superintendent to digitally understand exactly what their geometric constraints will be in the upcoming week. By comparing this data ahead of time, we are able to anticipate fit challenges and get ahead of them to prevent costly delays. Our business has invested tens of thousands of dollars tooling up and training our staff to capture the extraordinary value of Total Station technology and its data feedback capabilities into the BIM model, and we see the value it delivers on every project.



Sustainability

Wood is the most abundant naturally renewable building material on the planet. With its capacity for sequestering carbon and the minimal extraction and processing energy required (wood has the lowest embodied energy of any primary building material), designing with wood, where suitable, makes a significant contribution to the sustainability of a design.

But it's more complex than that.

For good reason, sustainable design often focuses on durability - for the purpose of conserving resources. This means ensuring that a structure will last, as a result of careful material selections, performance connection detailing, and on-going care and maintenance. Also, designing with the specific intent that the structure can be renovated or rehabilitated without complete dismantling is an integral part to sustainable design.

Recovering materials at the end of a building's life rather than sending them to landfill is another way to extend material longevity—and wood is well suited to deconstruction and re-use, perhaps more so than steel. When longevity is a challenge, then resource conservation typically involves the three 'R's (reduce, reuse and recycle). These are especially important for finite non-renewable resources. There is a fourth "R" that is worth considering — a shift to renewable resources like forest products.

With the implementation of forestry practices that manage and maintain this valuable resource, alongside the evolution of building technology, we can effectively provide renewable building materials in the long term. As an example, the wood technologies encompassed by mass timber allow the use of younger trees to create strong and durable products, taking us away from the traditional practices of harvesting precious Old Growth forests.



Fort St.
John
Civil
Building

HEALTH AND SAFETY

Kinsol is dedicated to the health, safety, and well-being of its staff, clients and professional associates. This additionally includes members of the public when they enter our work areas. We believe that there is a safe and practical solution for every work task.

Our commitment to meet or exceed the safe work requirements under WorkSafe BC's Act, Regulations, and Guidelines is evident in the Jobsite Specific Work Plan that we create for each project. Our policies and procedures are defined in the company's Health, Safety, and Environmental manual, which is a condition of employment for every Kinsol employee, and a requirement for all subcontractors working on our sites.

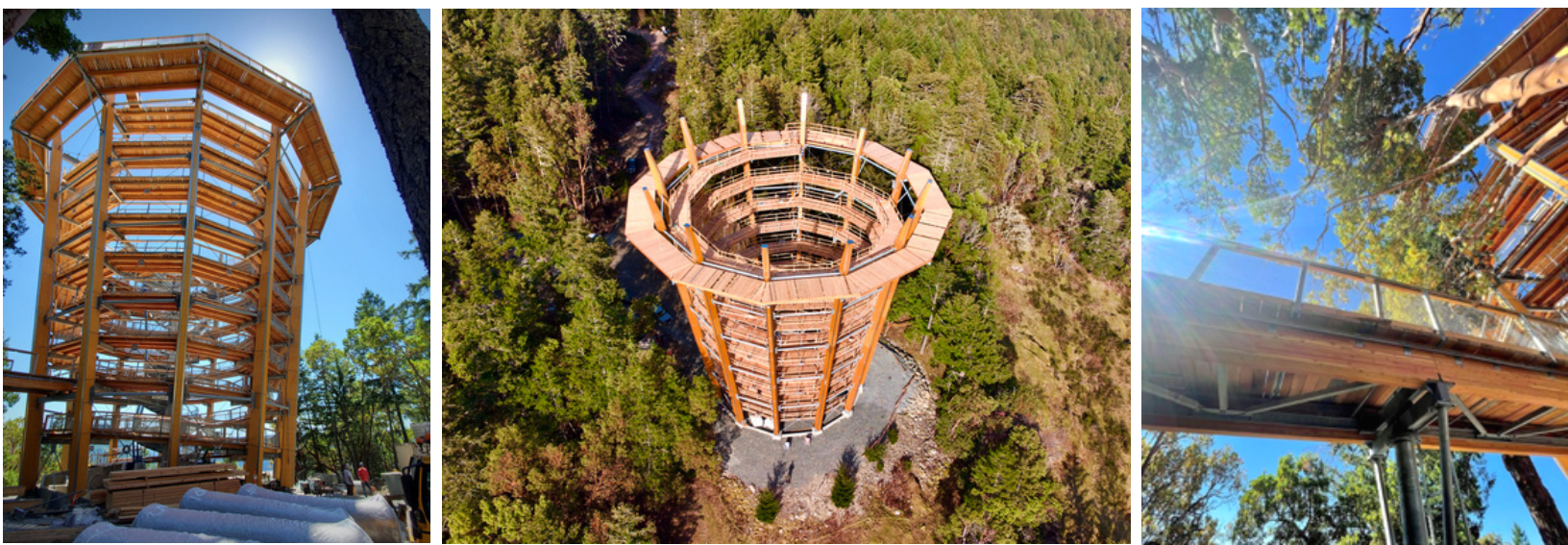
The health and safety of our colleagues and guests is the direct concern of the company owners, and we recognize the function of management in providing the right circumstances under which work may be carried out safely. This includes providing the following: good and accurate information, effective and relevant training, well- maintained tools and equipment, personal protective equipment, thorough work planning, detailed risk assessments, appropriate supervision, and an open environment where any concern can be expressed without fear of repercussions.



SELECT HEAVY TIMBER EXPERIENCE

PROJECT	STATUS/ COMPLETION DATE	Sq. Ft.	RESIDENTIAL	INSTITUTIONAL	MIXED USE	OFFICE
RRU Westshore Campus HCMA Architecture Langford, BC	Pre-Constr.	103,527	■			
Cowichan Secondary HCMA Architecture Duncan, BC	Constr.	11,975	■			
Leləḡ Community Centre Francl Architecture Vancouver, BC	Pre-Constr.	15,000		■		
Bowen Isl. Community Centre Principle Architecture Bowen Isl, BC	Constr.	19,500		■		
Youtube HQ HLW San Bruno, CA	Design	-				■
Métis Cultural Centre Mindful Architecture Fort McMurray, AB	Constr.	46,876	■			
Google Java Michael Green Architecture Sunnyvale, CA	Constr.	340,000		■		
Google MT1 Michael Green Architecture Sunnyvale, CA	Constr.	180,000				■
Bayview Elementary Francl Architecture Vancouver, BC	Constr.	75,000	■			
Fort St. John Civil Bldg. KMBR Architects Fort St. John, BC	Constr.	45,000	■			
Malahat Skywalk Murdoch & Company Malahat, BC	July 2021	-		■		
Esquimalt Town Square D'Ambrosio Arch.+Urbanism Esquimalt, BC	Constr.	49,000		■		
Brechin United VIA Architecture Nanaimo, BC	Constr.	70,000		■		
Charter Telecom HQ Waymark Architecture Langford, BC	2019	27,000				■
Sea to Sky Treewalk Aspect Structural Engineers Squamish, BC	July 2021	-		■		
Mt. Tuam Residence Typ (Mark Keller) Salt Spring Island, BC	Constr.	5,150	■	■		
Minoru Aquatic Centre HCMA Architecture Richmond, BC	2019	110,000		■		
GlenLyon Norfolk School Low Hammond Rowe Victoria, BC	2019	32,000	■			
Malahat Long House Scott M Kemp Malahat, BC	2019	10,000		■		
Malahat Rec Centre Scott M Kemp Malahat, BC	2019	10,676		■		
Tsawwassen Mills Mall Stantec Consulting Tsawwassen, BC	2016	52,000		■		
Shawnigan Lake School Library Christine Lintott Shawnigan, BC	2016	12,500	■			
Hoshino Cloud Walk ISL Engineering Tomamu, Japan	2015	-		■		
N. Saanich Middle School Chang Holovsky N. Saanich, BC	2012	54,896	■			

SELECT MASS TIMBER PROJECTS



MALAHAT SKYWALK

Malahat, B.C.



Client	<i>A. Spire By Nature</i>
General Contractor	<i>Kinsol Timber Systems</i>
Architect	<i>Murdoch & Company Architecture</i>
Engineer	<i>Aspect Engineers</i>
Timber Supplier	<i>Western Archrib</i>
Scope of Work	<i>Mass timber design-assist contractor including installation of all mass timber components.</i>

The Malahat Skywalk is an accessible 650m treetop walk through a beautiful arbutus forest leading to a spectacular gentle spiral ramp that takes you up 40m to a sightseeing lookout offering views of Finlayson Arm and the distant Coast Mountains. It will provide a stunning new perspective on beautiful southern Vancouver Island. This project aims to protect and enhance the ecological values of the park in collaboration with First Nations; balancing public use with ecological values and connecting visitors to the park's natural values and cultural heritage. Opening July 15 2021.

REFERENCE: Ken Bailey, General Manager - Malahat Skywalk Corp.
 1.604.815.9107 - ken.bailey@malahatskywalk.com



GOOGLE MT1 OFFICE BUILDING

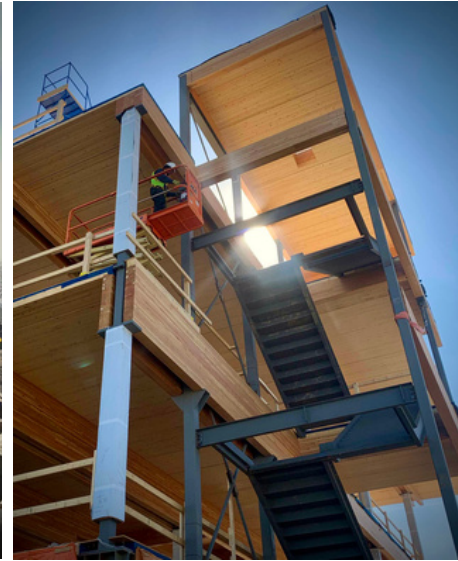
Sunnyvale, CA



Client	<i>Google LLC</i>
General Contractor	<i>XL Construction</i>
Architect	<i>Michael Green Architecture</i>
Engineer	<i>Equilibrium</i>
Timber Supplier	<i>Structurlam</i>
Scope of Work	<i>Mass timber design-assist contractor including installation of all mass timber components - Glulam & CLT</i>

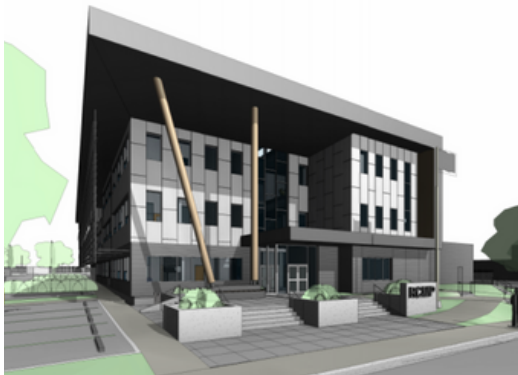
Google's innovative pilot mass timber project is a 5-story, 180,000 square foot office building in Sunnyvale, California. With an expected completion date of August 2022, the building is projected to have 96% fewer emissions, reach completion 6 weeks earlier and come in at a 3.6% lower cost than if it were built with steel. One side of the building will have meeting rooms, support space and traditional office space, while the other side will offer uninterrupted views of the outdoors and provide two floors of space intended to be used by teams of employees. The two sides of the structure will be connected by stairs and bridges.

REFERENCE: Dave Beck, Vice President - XL Construction Corp.
408.240.6304 - dbeck@xlconstruction.com



FORT ST. JOHN CIVIL BUILDING

Fort St. John, B.C.



Client *City of Fort St. John*

General Contractor *Unitech Construction*

Architect *KMBR Architects*

Engineer *Fast + Epp*

Timber Supplier *Kinsol (NLT) & Western Archrib (Glulam)*

Scope of Work *Mass timber design-assist contractor including installation of all mass timber components & fabrication of NLT*

With an expected completion date of 2022 the RCMP detachment in Fort St. John, BC will be a 3-story heavy timber structure and 1-story detention facility for a total of 44,778 sqft. The project will meet or exceed all current RCMP Standards. It also intends to meet an exceptional energy performance benchmark – Net Zero by design. Most of the floors and roofs in the new detachment building will be built with BC-sourced Nail Laminated Timber (NLT) Wood Decking fabricated and installed by Kinsol.

REFERENCE: Wally Mansell, Senior Project Manager - Unitech Construction
604.880.9755 - wmansell@unitechcm.ca



BAYVIEW ELEMENTARY SCHOOL

Vancouver, BC



Client *School District No. 39*

General Contractor *Chandos Construction*

Architect *Francl Architecture*

Engineer *Fast + Epp*

Timber Supplier *Kalesnikoff Mass Timber & Lumber*

Scope of Work *Installation of CLT walls, floors & roof;
Glulam columns and beams*

The new 75,000 sqft mass timber school is anticipated to be occupied winter 2021/2022. The structural walls, floors and roof will be cross-laminated timber (CLT) complemented by glulam columns and beams. The use of mass timber means low carbon construction, delivering a net CO2 benefit of 1,137 metric tonnes. The 2-story school will accommodate 365 students, including a preschool, two kindergarten classrooms and another 13 classrooms for grades one through seven. The lower level will house administrative offices, classrooms, two multipurpose rooms and a large gymnasium, while the upper level will contain more classrooms and the library.

REFERENCE: Mathew Chrystian, Project Manager - Chandos Construction
778.372.6928 - mchrystian@chandos.com



ESQUIMALT TOWN SQUARE

Esquimalt, BC



Client *Aragon Properties Ltd.*

General Contractor *Aragon Construction Management Corp.*

Architect *D'Ambrosio Architecture + urbanism*

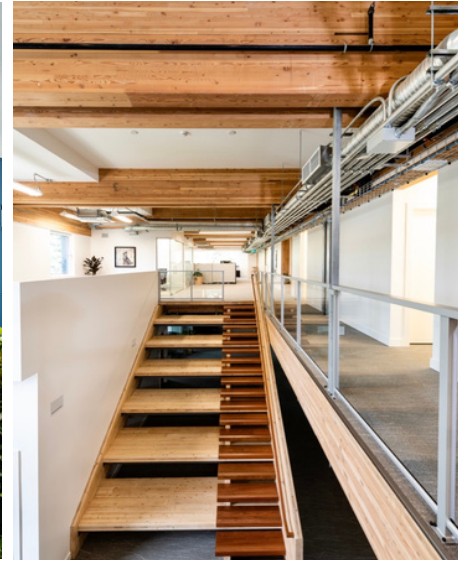
Engineer *RJC Engineers*

Timber Supplier *Hasslacher Norica Timber*

Scope of Work *Installation of Glulam frame*

Rising 5 stories, this 49,000 sqft mixed use building will house Esquimalt's public library as well as provide office space to this growing town square. The building will be constructed with a spruce glulam frame and will feature exposed timber throughout. Anticipated opening Fall 2020.

REFERENCE: Luke Ramsay, Development & Construction - Aragon Properties
604.356.0452 - lramsay@aragon.ca



CHARTER TELECOM HEADQUARTERS

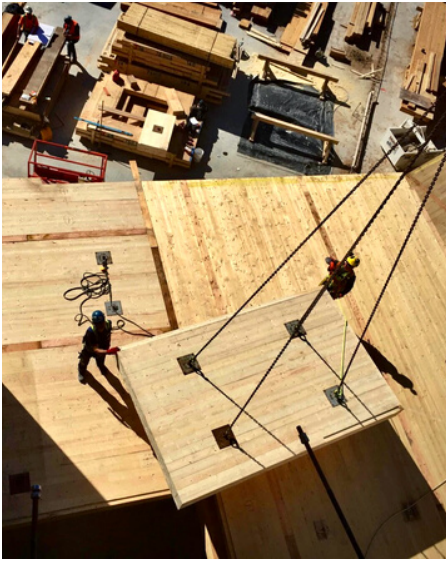
Langford, BC



Client	<i>Charter Telecom</i>
General Contractor	<i>Road's End Construction</i>
Architect	<i>Waymark Architecture</i>
Engineer	<i>Blackwell Structural Engineers</i>
Timber Supplier	<i>Structurlam</i>
Scope of Work	<i>Mass timber design-assist contractor including installation of all mass timber components - CLT</i>

The Charter Telecom Headquarters is a four-storey, 27,000 square foot office complex. The building also features a single residential unit and an event space on the top floor. As the first commercial office in North America to achieve Passive House certification, this building is a testament to the application of wood materials in high-performance buildings.

REFERENCE: David Dare, Owner - Road's End Contracting
250.883.5763 - info@roadsend.ca



BRECHIN UNITED

Nanaimo, BC



Client *Brechin United Church*

General Contractor *JBR Construction*

Architect *VIA Architecture*

Engineer *RJC Engineers*

Timber Supplier *Structurlam*

Scope of Work *Installation of all mass timber components - CLT and Glulam*

This 70,000 sqft hybrid mass timber and lightwood framing project in Nanaimo, BC features exposed glulam and cross laminated timber in the renewal of the Brechin United Church and adjoining 5 story, 74-unit affordable housing development.

**REFERENCE: Mark Sullivan, Senior Project Manager - JBR Construction
604.989.4847**

MICHAEL MARSHALL, B.SC., MA ORGL

Partner & CEO



Michael obtained a Bachelor of Science degree in Social & Behavioral Sciences from Linfield College in McMinnville, Oregon and later received a Master's degree in Organizational Leadership from Gonzaga University in Spokane, Washington. Following his move to Canada in 2006, Michael joined the management team of StructureCraft Builders, where he oversaw the complete design-build process — including business development, engineering, 3D modeling, prefabrication, and installation.

In 2017, he partnered with colleague Steve Stevenson to form Kinsol Timber Systems, a heavy timber carpentry business specializing in the prefabrication and installation of challenging timber structures, where he currently serves as its CEO.

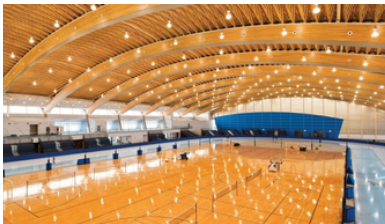
Throughout his career Michael has led the completion of numerous award-winning timber structures, including the Richmond Olympic Speed Skating Oval, the Arena Stage at the Mead Centre for American Theatre in Washington DC, the Bow River Pedestrian Bridge in Banff, AB, the Hoshino Cloudwalk in Tomamu, Japan, and many others. Michael has been a frequent guest speaker with various industry associations, including serving as the keynote speaker at the Structure Oregon Conference.

Select Projects



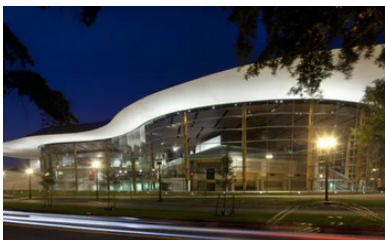
Muskrat Street Footbridge, Banff, AB

- \$6,230,000 Design-Build Competition
- Prime Contractor
- 113m timber footbridge, 80m clear span
- foundations, approaches and utility crossing



Richmond Oval, Richmond, B.C.

- \$5,900,000 Negotiated, Design-Build
- 267,000 sqft custom “Wood Wave” roof



Arena Stage, Washington, DC

- \$4,200,000 Negotiated, Design-Build Prime Contractor
- 650' long & 60' tall free-form timber backed facade



VanDusen Gardens, Vancouver, B.C.

- \$2,420,000 Negotiated Design-Assist
- 27,000 sqft free-form panelized timber structure
- fast-tracked project



Pearl Visitors Centre, China

- \$1,100,000 Negotiated Design-Build
- 30,000 sqft free-form mass timber roof
- design, supply, and supervision of installation
- fast-tracked project

STEVE STEVENSON, B.A.

Partner & COO



Steve obtained a Bachelor's Degree in Social Sciences from the University of Victoria, and later completed several courses with the Sauder School of Business (UBC) and the Harvard School of Business, as well as multiple professional development seminars.

In 2017, he partnered with colleague Michael Marshall to form Kinsol Timber Systems, a heavy timber carpentry business specializing in the prefabrication and installation of challenging timber structures, where he currently serves as its COO. At Kinsol, Steve oversees all operational activity and often is called on to manage the most complex projects. This includes the management of the production of construction drawings, coordination with suppliers, fabrication, and installation.

Steve brings the in-depth knowledge and extraordinary skillset that this position demands, including construction supervision, conflict resolution, strategic planning and proven leadership skills. Prior to joining Kinsol, Steve held senior positions with Clark Hamilton Enterprises Inc., and Wakefield Construction Inc.

Select Projects



Malahat Skywalk, Bamberon, B.C.

- \$17,250,000 Construction Management
- 50m tall, 1450m long wilderness walkway & viewing tower
- civil, foundations, structures, finishes



Sea to Sky Treewalk, Squamish, B.C.

- \$6,800,000 Construction Management
- 30m tall, 960m long wilderness walkway & viewing tower
- civil, foundations, structures, finishes



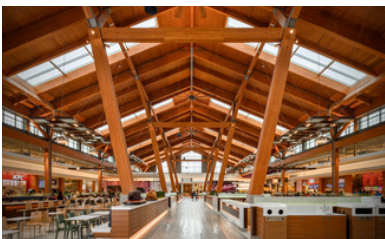
Tomamu Cloudwalk, Hokkaido, Japan

- \$1,200,000 Design-Build
- 90m long cable stayed pedestrian walkway & viewing platform
- foundations, structures, finishes



Whistler Viewing Deck, Whistler, B.C.

- \$1,300,000 Design-Build
- 7200 sqft outdoor, cantilevered viewing deck & dining space
- foundations, structures, finishes



Tsawwassen Mills Mall, Tsawwassen, B.C.

- \$2,400,000 Design-Assist
- 52,000 sqft vaulted heavy timber structures
- structures, finishes