COAL & MINERAL PROCESSING LABORATORY Addition

ARCHITECT | Johnston Davidson Architecture
STRUCTURAL ENGINEER | Axis Engineering
CONSTRUCTION MANAGER | Ledcor Construction
ADDRESS | 2332 East Mall, Vancouver BC

Photo: Wendy Niamath | Courtesy: Johnston Davidson Architecture
The Coal and Mineral Processing Laboratory Addition, part of the Norman B. Keevil Institute of Mining Engineering, sits adjacent to the original building from 1981. The addition, while small in area, provides a relaxing recreational space for mining engineering students, faculty, and staff. In contrast to the existing concrete building, the upper two levels of the laboratory addition are supported by exposed glue laminated timber (GLT) columns and beams. On the exterior, the building is clad in zinc-shingled tiles. The material choices aim to bring a sense of lightness, warmth, colour, and transparency to the space.

**GLT**
Columns and beams

**GROSS FLOOR AREA**
254 m²

**HEIGHT**
12.2 m | 3 storey

**PROGRAM**
Academic

**FUNCTIONS**
Classrooms, laboratory, and lounge

**MEP CONSULTANT**
Mechanical: AME Group
Electrical: Sandwell

**CONSTRUCTION**
2010 - 2011

**PROJECT COST**
CDN$4,0M (2011)
The Earth Sciences Building houses UBC Faculty of Science departments and the Pacific Museum of the Earth. The building features a free-floating cantilevered cross-laminated timber (CLT) staircase in its atrium. CLT panels also form the primary structure of the office wing, as well as an exterior canopy and interior ceiling finishes. The structure has diagonal glue laminated timber (GLT) braces at the end walls on each story to resist seismic loads. Using over 1,300 tons of CLT, UBC’s Earth Sciences Building is one of the largest panelized wood structure and the largest building application of CLT in North America.

**GROSS FLOOR AREA**
5,675 m²

**HEIGHT**
21.8 m | 5 storeys

**PROGRAM**
Academic

**FUNCTIONS**
Offices, lecture halls, and laboratories

**CERTIFICATION**
LEED Gold (2014)

**MEP CONSULTANTS**
Mechanical: Stantec  
Electrical: Acumen Engineering

**SUSTAINABILITY CONSULTANT**
Perkins and Will Architects

**CONSTRUCTION**
2012

**PROJECT COST**
CDN$74,7M (2013)

More info: [https://science.ubc.ca/about/esb](https://science.ubc.ca/about/esb)
ENGINEERING STUDENT CENTRE

ARCHITECT | Urban Arts Architecture
STRUCTURAL ENGINEER | Fast + Epp
CONSTRUCTION MANAGER | Syncra Construction Corporation
ADDRESS | 2335 Engineering Road, Vancouver BC
The Engineering Student Centre provides space for UBC engineering students to study, gather, socialize, and create a community. The building is also home to the UBC Engineering Undergraduate Society and its main offices. Locally sourced wood was selected as the primary building material. The structure features glue laminated timber (GLT) columns on the periphery, as well as a truss system that suspends the second floor from the roof to create an open space on ground floor. The roof, floor, and shear elements are formed by nail-laminated timber (NLT), and the service zone is conventional stick frame construction.

- **GROSS FLOOR AREA**: 1,083m²
- **HEIGHT**: 10.2 m | 2 storeys
- **PROGRAM**: Academic
- **FUNCTIONS**: Social and study spaces, retail and food services
- **CERTIFICATION**: LEED Gold (2017)
- **CONSTRUCTION**: 2014-2015
- **PROJECT COST**: CDN$5.8M (2015)

**MEP CONSULTANT**
Mechanical: MCW Consultants
Electrical: Stantec

**SUSTAINABILITY CONSULTANT**
Stantec
sustainability

FIRST NATIONS LONGHOUSE

ARCHITECT | McFarland Marceau Architects
STRUCTURAL ENGINEER | CWMM Consulting Engineers
ADDRESS | 1985 West Mall, Vancouver BC

Photo: Don Erhardt
The First Nation Longhouse is part of the First Nations House of Learning, which hosts academic programs and serves as a community centre for First Nations, Métis, and Inuit students, faculty, and staff on campus. The structure is shaped like the typical Musqueam-style longhouse, using regionally harvested western red cedar and traditional Coast Salish techniques in its construction. The building features heavy timber columns and beams, light wood framed walls, naturally weathered shiplap exterior cladding, and a copper roof. The Longhouse’s use of wood acknowledges and emphasizes the First Nations’ history and cultural practice of using wood in construction.

**GROSS FLOOR AREA**
2,000 m²

**HEIGHT**
6.4 m | 1 storey

**PROGRAM**
Academic | Community

**FUNCTIONS**
Offices, classrooms, library, and event space

**CONSTRUCTION**
1993

**PROJECT COST**
CDN$4,2M (1993)

More info: https://indigenous.ubc.ca/longhouse
FOREST SCIENCES CENTRE

ARCHITECT | Dalla-Lana Griffin Dowling Knapp Architects
STRUCTURAL ENGINEER | CWMM Consulting Engineers
CONSTRUCTION MANAGER | Swagger Construction
ADDRESS | 2424 Mail Mall, Vancouver BC
The Forest Sciences Centre is home to the UBC Faculty of Forestry. This building is a collection of three building blocks: an office block, a laboratory, and a wood processing centre, all of which surround a large central atrium. The atrium is known for its 13-meter-tall parallel strand lumber (PSL) columns and a branch-like system of trusses, used to support the skylight roof. The columns are connected to the branches using hybrid steel-to-wood connections. The atrium walls are lined with Douglas-fir boards and big-leaf maple wood veneer.

**GROSS FLOOR AREA**
21,500 m²

**HEIGHT**
23.5 m | 5 storeys

**PROGRAM**
Academic

**FUNCTIONS**
Classrooms, lecture theatres, laboratories, office space, study areas

**MEP CONSULTANT**
Mechanical: DW Thompson Consultants
Electrical: Freundilich & Associates

**CONSTRUCTION**
1996-1998

**PROJECT COST**
CDN$50.2M (1998)

More info: https://forestry.ubc.ca/about-us/forest-sciences-centre
INDIAN RESIDENTIAL SCHOOL HISTORY AND DIALOGUE CENTRE

ARCHITECT | Formline Architecture
STRUCTURAL ENGINEER | Bush Bohlman & Partners
CONSTRUCTION MANAGER | Bird Construction
ADDRESS | 1985 Learner’s Walk, Vancouver BC

Photo: Andrew Latreille | Courtesy: Formline Architecture
The Indian Residential School History and Dialogue Centre (IRSHDC) is home to a collection of records related to Canada’s Indian Residential School system. The building features several symbolic architectural elements such as large standing windows, the copper roof and the charred cedar plank siding. In combination with the concrete foundation and steel columns, the building features glue laminated timber (GLT) columns and beams, and cross-laminated timber (CLT) wall and roof panels. Along the interior staircase, the woven western red cedar wall represents the culture of basket weaving and bulrush mats used in longhouses.

**Columns and beams**
GLT

**Exterior walls and roof**
CLT

**Cladding**
WOOD PANEL

**Foundation, columns, and exterior walls on lower level**
CONCRETE

**GROSS FLOOR AREA**
606 m²

**HEIGHT**
8.4 m | 2 storeys

**PROGRAM**
Academic | Community

**FUNCTIONS**
Record library, exhibition space, research stations, meeting rooms, and lounge

**MEP ENGINEER**
Mechanical: Smith and Andersen
Electrical: AES Engineering

**CONSTRUCTION**
2016 - 2017

**PROJECT COST**
CDN$5,8M (2017)

More info: https://irshdc.ubc.ca
MARINE DRIVE COMMONSBLOCK

ARCHITECT | Hotson Bakker Boniface Haden and B+H Architects
STRUCTURAL ENGINEER | Read Jones Christoffersen Ltd.
CONSTRUCTION MANAGER | Scott Construction
ADDRESS | 2205 Lower Mall, Vancouver BC
Located within the Marine Drive Residence complex, the commons block provides socializing space and amenities for its students. The building features a hybrid structure: a concrete foundation and core, wood frame exterior walls and mass timber structural elements. Its most distinct feature is the series of exposed heavy timber columns and parallel-strand lumber (PSL) beams, which were prefabricated using locally sourced wood. The structure also features exposed glue laminated timber (GLT) columns and beams. The use of wood creates a natural connection between the building and its site environment.

**Columns and beams**

**GROSS FLOOR AREA**
1510 m²

**HEIGHT**
8.8 m | 1 storey

**PROGRAM**
Student residence | Community

**FUNCTIONS**
Amenity and social spaces

**MEP CONSULTANT**
Mechanical: Sterling, Cooper and Associates
Electrical: MCW Consultants

**CONSTRUCTION**
2009
OLD BARN COMMUNITY CENTRE

ARCHITECT | RLA Architects
STRUCTURAL ENGINEER | Bogdonov Pao Associates Ltd.
CONSTRUCTION MANAGER | Donovan Management
ADDRESS | 6308 Thunderbird Blvd, Vancouver BC
The Old Barn Community Center provides a social and recreational space for its surrounding UBC communities. The building is upheld by a series of glue laminated timber (GLT) columns and beams. Laminated veneer lumber (LVL) is also used as beams in some parts of the building. Utilizing traditional materials such as cedar shake and lap siding, the structure combines a post and beam structure and traditionally shaped roof lines with modern glazing systems. The centre is located on a site that was previously occupied by the Old Horse Barn, a 1920-vintage barn home to a team of Clydesdale horses.

**GLT**  
Columns and beams

**GROSS FLOOR AREA**  
3,234 m²

**HEIGHT**  
8.7 m | 2 storeys

**PROGRAM**  
Community

**FUNCTIONS**  
Social spaces, fitness centre, activity rooms, event venues, and a coffee shop

**MEP CONSULTANT**  
Mechanical & Electrical: Kay Design  
Plumbing: Ron Wong and Associates

**CONSTRUCTION**  
2005 - 2006

**PROJECT COST**  
CDN$2,9M (2006)