



THE UNIVERSITY OF BRITISH COLUMBIA

sustainability

ABDUL LADHA SCIENCE STUDENT CENTRE

ARCHITECT | Johnston Davidson Architecture
STRUCTURAL ENGINEER | CY Loh Associates
CONSTRUCTION MANAGER | Bird Construction
ADDRESS | 2055 East Mall, Vancouver BC



Photo courtesy: Johnston Davidson Architecture

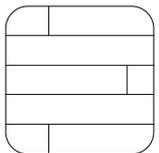


Photos courtesy: Johnston Davidson Architecture

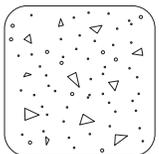
The Abdul Ladha Science Student Centre is one of a few independent student society buildings on campus, the first of its kind to provide socializing and studying space for students within the Faculty of Science. The design features locally sourced mass timber elements in the primary supporting walls and roof, as well as glue laminated timber (GLT) columns and beams that uphold the structure. The use of wood was intended to bring a sense of strength, stability, and warmth to the structure, and was chosen for its local availability and sustainable attributes. Additionally, the exterior wall finish is clad with cedar siding.



GLT
Columns and beams



WOOD PANEL
Cedar siding



CONCRETE
Foundation and ground floor

GROSS FLOOR AREA
812 m²

HEIGHT
9 m | 3 storey

PROGRAM
Academic

FUNCTIONS
Study lounges and meeting rooms

MEP CONSULTANT
Stantec

CONSTRUCTION
2005 - 2006

PROJECT COST
CDN\$3,2M (2006)



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ALMA MATER SOCIETY STUDENT NEST

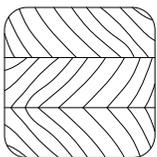
ARCHITECT | Dialog Design and B+H Architects
STRUCTURAL ENGINEER | RJC Engineers
CONSTRUCTION MANAGER | Bird Construction
ADDRESS | 6138 Student Union Blvd, Vancouver BC



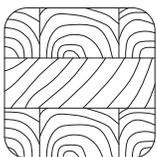


Photos: Ema Peter | Courtesy: Dialog Design and B+H Architects

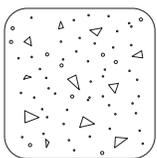
The Alma Mater Society (AMS) Student Nest strives to be a welcoming and inclusive student centre, hosting a wide range of functions including retail and food services, student club rooms, and meeting spaces. The building's structure is mainly concrete while strategically employing mass timber structural elements to enhance the design. The East atrium stands out for its four-story-high, curved glue laminated timber (GLT) columns. The West atrium's saw tooth roof is constructed with cross laminated timber panels (CLT), supported by GLT trusses. The Nest fully embraces sustainability in both its functions and built-form.



GLT
Columns in East and main atriums, and roof supports



CLT
Sawtooth roof and sky-bridges floor



CONCRETE
Foundation and main structure

GROSS FLOOR AREA
23,699 m²

HEIGHT
12 m | 5 storeys

PROGRAM
Community

FUNCTIONS
Social spaces, food services, retail, meeting and study rooms, climbing wall

CERTIFICATION
LEED Platinum (2017)

MEP CONSULTANT
AME Group

SUSTAINABILITY CONSULTANT
Halsall Associates and Dialog Design

CONSTRUCTION
2012-2015

PROJECT COST
CDN\$109,6M (2015)



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BIOENERGY RESEARCH AND DEMONSTRATION FACILITY

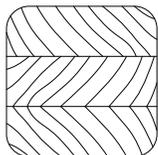
ARCHITECT | McFarland Marceau Architects
STRUCTURAL ENGINEER | RJC Engineers
CONSTRUCTION MANAGER | Leducor Group
ADDRESS | 2335 Lower Mall, Vancouver BC



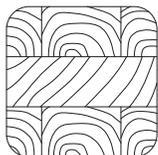


Photos: Don Erhardt

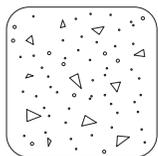
The Bioenergy Research and Demonstration Facility (BRDF) is an energy generation facility that processes wood waste biomass to generate thermal energy for the UBC campus. The building features an exposed mass timber structure, with Douglas-Fir glue laminated timber (GLT) columns and beams attached through steel connectors, and Spruce-Pine-Fir cross-laminated timber (CLT) panels for the floor, walls, and roof. The CLT panels were fabricated locally, mostly from 90% pine beetle-affected lumber. The BRDF is one of North America's first industrial buildings to be constructed with CTL panel technology.



GLT
Columns and beams



CLT
Exterior walls, floors, and roof



CONCRETE
Foundation and cogeneration engine room

GROSS FLOOR AREA
1,971 m²

HEIGHT
17.3 m | 4 storeys

PROGRAM
Utility

FUNCTIONS
Power plant, laboratory, offices

CERTIFICATION
LEED Gold (2014)

MEP CONSULTANT
Stantec

SUSTAINABILITY CONSULTANT
McFarland Marceau Architects

CONSTRUCTION
2010-2012

PROJECT COST
CDN\$27,4M (2012)



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BROCK COMMONS TALLWOOD HOUSE

ARCHITECT | Acton Ostry Architects

STRUCTURAL ENGINEER | Fast + Epp

CONSTRUCTION MANAGER | Urban One Builders

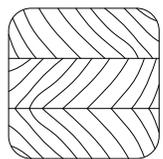
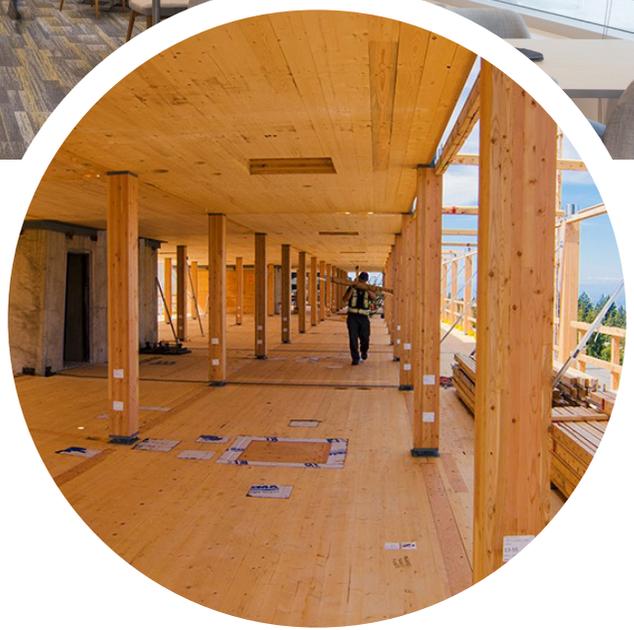
ADDRESS | 6088 Walter Gage Road, Vancouver BC





Photos: (Top) Michael Elkan | Courtesy: Acton Ostry Architects
(Circle) Pollux Chung | Courtesy: Seagate Structures

The Brock Commons Tallwood House is an 18-storey mass timber hybrid high-rise, the first of its kind in Canada. Apart from having concrete foundation, ground floor, and elevator cores, the building is predominantly formed by a mass timber structure. It features prefabricated cross-laminated timber (CLT) floor panels, supported mostly on glue laminated timber (GLT) columns and some parallel strand lumber (PSL) columns. Tallwood House provides accommodation for more than 400 students. The building used more than 2,300 m³ of wood and is one of the tallest hybrid mass timber structures to date.



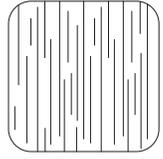
GLT
Columns



PSL
Columns



CLT
Floors



CEDAR PANELS
Exterior cladding

GROSS FLOOR AREA
15,120 m² | 162,750 ft²

HEIGHT
54 m | 18 storeys

PROGRAM
Student residence

FUNCTIONS
Student residences, social and study spaces, meeting room

CERTIFICATION
LEED Gold (target)

MEP CONSULTANT
Stantec

SUSTAINABILITY CONSULTANT
Stantec

CONSTRUCTION
2015-2017

PROJECT COST
CDN\$51,5M (2017)

C.K. CHOI BUILDING for the Institute of Asian Research

ARCHITECT | Matsuzaki Wright Architects

STRUCTURAL ENGINEER |

Read Jones Christoffersen Consulting Engineers

CONSTRUCTION MANAGER | Country West Construction

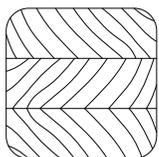
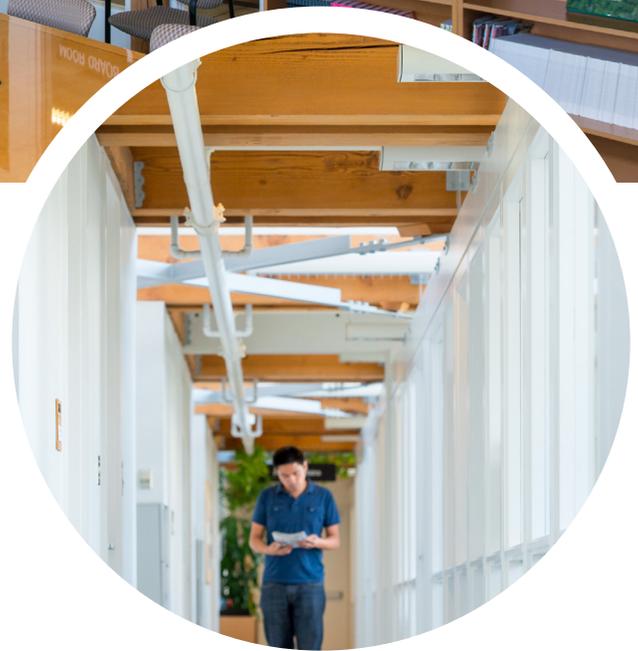
ADDRESS | 1855 West Mall, Vancouver BC





Photos: Don Erhardt

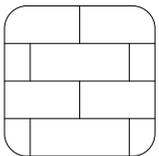
The C.K. Choi Building houses the Institute of Asian Research, the Institute for European Studies and the Pacific Affairs journal. The building was designed to reach new benchmarks in sustainability, and is therefore considered the first green building on the UBC Vancouver Campus. The building features innovative Douglas-fir heavy timber structure, as well as glue laminated timber (GLT) columns and beams mainly as the support of the curved atrium roofs. The project team made use of reused construction materials such as timber salvaged from the neighboring deconstructed Armories Building.



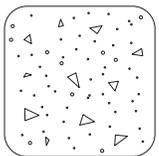
GLT
Atrium roof



HEAVY TIMBER
Columns and beams



RECYCLED BRICK
Exterior cladding



CONCRETE
Foundation

GROSS FLOOR AREA
2,912 m²

HEIGHT
15.7 m | 3 storeys

PROGRAM
Academic

FUNCTIONS
Offices, classroom, library

MEP CONSULTANTS
Mechanical: Keen Engineering
Electrical: Freudlich & Associates

CONSTRUCTION
1996

PROJECT COST
CDN\$6.25M (1996)



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CAMPUS ENERGY CENTRE

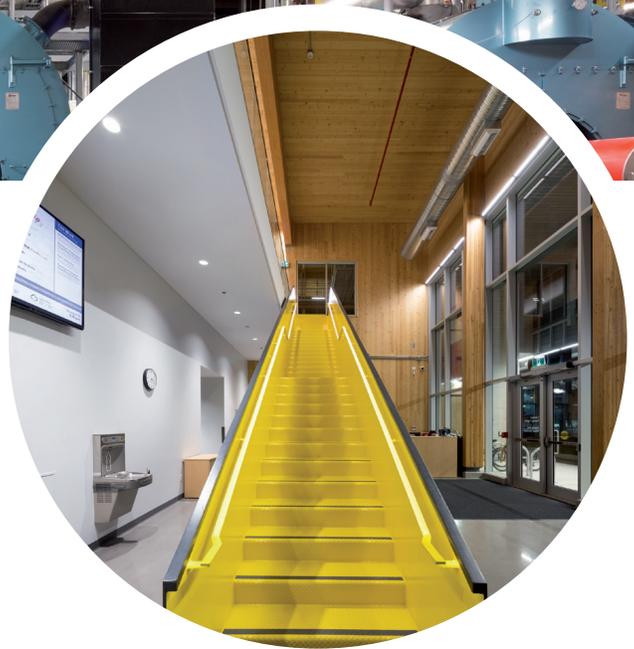
ARCHITECT | Dialog Design
STRUCTURAL ENGINEER | Fast + Epp
CONSTRUCTION MANAGER | Ledcor Group
ADDRESS | 6130 Agronomy Road, Vancouver BC



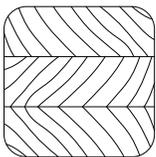
Photo: Ema Peter | Courtesy: Dialog Design



Photos: Ema Peter | Courtesy: Dialog Design

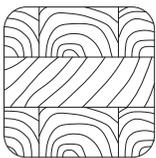


The Campus Energy Centre (CEC) is a state-of-the-art hot water boiler facility and the primary energy source for the academic campus district energy system. The primary structure consists of locally sourced cross-laminated timber (CLT) panels supported by glue laminated timber (GLT) columns and beams that span twenty metres across the facility. Zinc metal shrouds are used as the building envelope, meeting ventilation and light transparency requirements. The CEC building and facility support UBC in achieving their goal of reducing green house gas emissions.



GLT
Columns and beams

GROSS FLOOR AREA
1,858 m² | 19,992 ft²



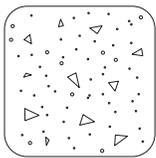
CLT
Exterior walls and roof

HEIGHT
17 m | 2 storeys



METAL SHROUD
Exterior cladding

PROGRAM
Utility



CONCRETE
Foundation

FUNCTIONS
Power plant

CERTIFICATION
LEED Gold (2017)

MEP CONSULTANTS

Mechanical: FVB Energy
Electrical: Applied Engineering Solutions

SUSTAINABILITY CONSULTANT

Recollective Consulting

CONSTRUCTION

2013-2015

PROJECT COST

CDN\$24M (2015)

CENTRE FOR ADVANCED WOOD PROCESSING

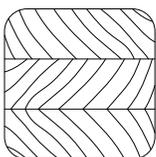
ARCHITECT | Dalla-Lana Griffin Dowling Knapp Architects
STRUCTURAL ENGINEER | CWMM Consulting Engineers
CONSTRUCTION MANAGER | Swagger Construction
ADDRESS | 2424 Main Mall, Vancouver BC





Photos: (Top) Jamie Myers, (Circle) Brandon Chan
 Courtesy: UBC Centre for Advanced Wood Processing

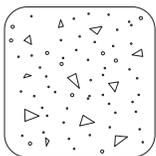
The Centre of Advanced Wood Processing (CAWP) is Canada's national centre for education, training, and technical assistance for the wood products manufacturing industry. The building was designed to feature the latest innovations in engineered wood products and techniques. In combination with a concrete foundation and basement, the structure is upheld by glue laminated timber (GLT) columns and beams. Additionally, heavy timber trusses are used to support the roof of its machine laboratory. CAWP is situated within the Forest Sciences complex, home to the UBC Faculty of Forestry.



GLT
 Columns and beams



HEAVY TIMBER
 Roof trusses



CONCRETE
 Foundation, basement, machine lab, and core

GROSS FLOOR AREA
 3,730 m²

HEIGHT
 10.1 m | 3 storeys

PROGRAM
 Academic

FUNCTIONS
 Laboratories and classrooms

MEP CONSULTANT
 Mechanical: DW Thompson
 Consultants
 Electrical: Freundlich &
 Associates

CONSTRUCTION
 1998

PROJECT COST
 CDN\$50,2M (1998)

CENTRE FOR INTERACTIVE RESEARCH ON SUSTAINABILITY

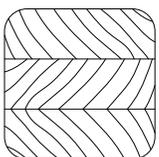
ARCHITECT | Perkins and Will Architects
STRUCTURAL ENGINEER | Fast + Epp
CONSTRUCTION MANAGER | Heatherbrae Construction
ADDRESS | 2260 West Mall, Vancouver BC



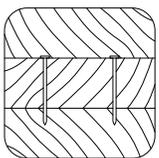


Photos: Don Erhardt

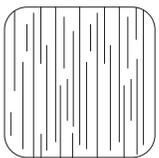
The Centre of Interactive Research on Sustainability (CIRS) is the flagship of Campus as a Living Lab and UBC's sustainability hub. Since 2008, the building has also been the subject of sustainable building research. It consists of a hybrid structure, with cast-in-place concrete foundation, basement and ground level, and glue laminated timber (GLT) beams that support the auditorium roof. Nailed-laminated timber (NLT), sourced regionally from pine-beetle infested forests are used as floor decking. Additionally, the exterior cladding is stained Western cedar panels.



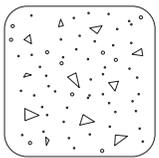
GLT
Columns and beam



NLT
Floors and roof



CEDAR PANELS
Exterior cladding



CONCRETE
Foundation, basement, and ground floor

GROSS FLOOR AREA
5,675 m²

HEIGHT
22 m | 5 storeys

PROGRAM
Academic

FUNCTIONS
Lecture halls, office space, meeting rooms, labs

CERTIFICATION
LEED Platinum (2013)

MEP CONSULTANT
Stantec

SUSTAINABILITY CONSULTANT
Perkins and Will Architects

CONSTRUCTION
2009 - 2011

PROJECT COST
CDN\$36.8M (2011)