



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





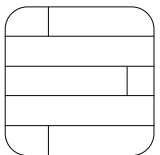
Photos courtesy: Johnston Davidson Architecture

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.



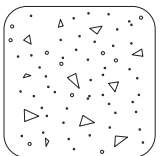
#### GLT

Columns and beams



#### WOOD PANEL

Cedar siding



#### CONCRETE

Foundation and ground floor

#### GROSS FLOOR AREA

812 m<sup>2</sup>

#### 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

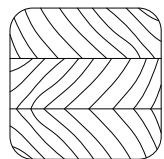






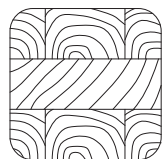
Photos: Ema Peter | Courtesy: Dialog Design and B+H Architects

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.



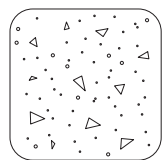
#### GLT

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 m<sup>2</sup>

#### 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** | Ledcor Group

**ADDRESS** | 2335 Lower Mall, Vancouver BC



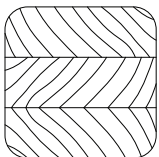
Photo: Don Erhardt





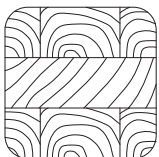
Photos: Don Richard

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 CLT panel technology.



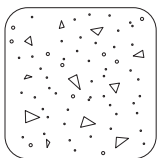
#### **GLT**

Columns and beams



#### **CLT**

Exterior walls, floors, and roof



#### **CONCRETE**

Foundation and cogeneration engine room

#### **GROSS FLOOR AREA**

1,971 m<sup>2</sup>

#### **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

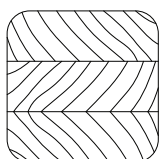




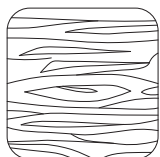


Photos: (Top) Michael Elkan | Courtesy: Acton Ostry Architects  
(Circle) Pollux Chung | Courtesy: Seagate Structures

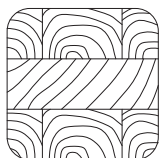
The Brock Commons Tallwood House is an 18-storey mass timber hybrid high-rise, the first of its kind in Canada. Apart from having concrete foundation, ground floor, and elevator cores, the building is predominantly formed by a mass timber structure. It features prefabricated cross-laminated timber (CLT) 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 m<sup>3</sup> 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 m<sup>2</sup> | 162,750 ft<sup>2</sup>

**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)





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sustainability

# 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

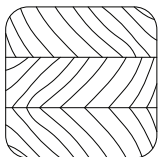






Photos: Don Erhardt

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

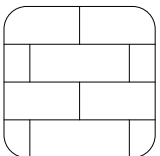
**GROSS FLOOR AREA**  
2,912 m<sup>2</sup>



**HEAVY TIMBER**  
Columns and beams

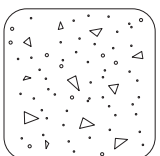
**HEIGHT**  
15.7 m | 3 storeys

**PROGRAM**  
Academic



**RECYCLED BRICK**  
Exterior cladding

**FUNCTIONS**  
Offices, classroom, library



**CONCRETE**  
Foundation

#### MEP CONSULTANTS

Mechanical: Keen Engineering  
Electrical: Freudlich & Associates

#### CONSTRUCTION

1996

#### PROJECT COST

CDN\$6.25M (1996)





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sustainability

# CAMPUS ENERGY CENTRE

**ARCHITECT** | Dialog Design

**STRUCTURAL ENGINEER** | Fast + Epp

**CONSTRUCTION MANAGER** | Ledcor Group

**ADDRESS** | 6130 Agronomy Road, Vancouver BC

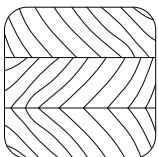






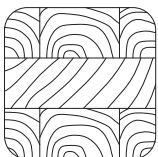
Photos: Ema Peter | Courtesy: Dialog Design

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



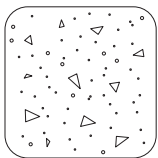
#### CLT

Exterior walls and roof



#### METAL SHROUD

Exterior cladding



#### CONCRETE

Foundation

#### GROSS FLOOR AREA

1,858 m<sup>2</sup> | 19,992 ft<sup>2</sup>

#### HEIGHT

17 m | 2 storeys

#### PROGRAM

Utility

#### 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)





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# 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

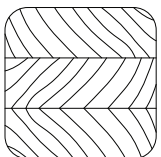


Photo courtesy: UBC Centre for Advanced Wood Processing





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.



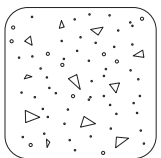
#### GLT

Columns and beams



#### HEAVY TIMBER

Roof trusses



#### CONCRETE

Foundation, basement, machine lab, and core

#### GROSS FLOOR AREA

3,730 m<sup>2</sup>

#### 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)





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# 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

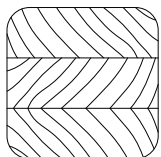




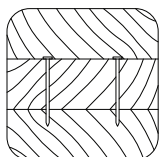


Photos: Don Erhardt

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.



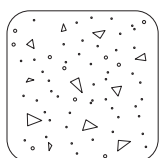
**GLT**  
Columns and beam



**NLT**  
Floors and roof



**CEDAR PANELS**  
Exterior cladding



**CONCRETE**  
Foundation, basement, and ground floor

**GROSS FLOOR AREA**  
5,675 m<sup>2</sup>

**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)