Disclaimer: This presentation was developed by a third party and is not funded by WoodWorks or the Softwood Lumber Board.
Timber Structure
Timber Structure

Carbon Summary

- Volume of wood products used (m³): 2081 m³ (73482 ft³) of lumber and sheathing
- U.S. and Canadians forests grow this much wood in: 6 minutes
- Carbon stored in the wood: 1463 metric tons of CO₂
- Avoided greenhouse gas emissions: 1218 metric tons of CO₂
- Total potential carbon benefit: 2681 metric tons of CO₂

Equivalent to:
- 512 cars off the road for a year
- Energy to operate a home for 228 years
CLT / Concrete Floors
Traditional systems: shear keys

Contemporary connectors

Bertsche connector

SFS Intec VB Screws
• Partial composite action → It depends on the fastener
• Analysis: Eurocode 5
Wood-Concrete Composites: UMass Research

Publications


Load-Slip Results

![Diagram of Load-Slip Results](image)

- Force (kN) vs. Slip (mm) graph
- Inset images showing concrete structures with load and slip measurements
- Diagram highlighting specific parts of the structure

Tensile plates inside concrete
19mm plywood
Formwork
LVL beams
Design Building: Largest Installation of WCCs in North America

Earth Sciences Building
UBC, Vancouver
Design Building Structural Connections
Where are the connectors?
Screws
Screws - Benefits

- Tight connection, stiffness
- Internal fastener
- Fire protection
- No pre-drilling required
- Many screw designs available
Tight-Fitting Pins / Slotted Plate
Tight-Fitting Pins / Slotted Plate - Benefits

Aesthetics

Shear planes moved to interior

Multiple interior shear planes

Ductile failure

Fire protection possible

Self-drilling dowels available
Glued Connectors
Glued Connectors - Benefits

- Very high stiffness
- Adhesive / mechanical connection
- Prefabrication and low tolerances
Hangers
Hangers - Benefits

Hidden connectors

Minimized material reduction

Steel-steel connector
Design Building Construction
Connections
Shafts
Floors
Construction Timelapse

Entire timelapse: https://goo.gl/RPKfqQ
Educational Outreach and Projects
Wood-Concrete Bench
Site Visits
Timber Gridshell
Thank You! Questions?

Visit us at:

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