David Moses, PhD, PEng, PE, LEED® AP

Principal
Moses Structural Engineers Inc.
Toronto, ON
Ontario Construction Secretariat

The Future of Building Tall Timber Construction
Long spans and Construction sequencing
TD Place Stadium
TD Place Stadium
2009 MEC Burlington, Ontario
2012 Wayne Gretzky Sports Centre
Brantford, ON – 1st CLT in Ontario
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What about Condos?
Sequester = Absorb

2 cubic metres of wood

= 1 ton

= 1 tonne CO2 removed from atmosphere
Cross-Laminated Timber (CLT)
Global Production

2010 – 2015 (5 years)
Doubled

2015 – 2018 (3 years)
Doubled

2019-2020
New plants in US and Canada will double North American production
Ontario’s Tall Wood Building Reference

October, 2017
Ontario Government

- Ministry of Natural Resources and Forestry
- Ministry of the Environment
- Ministry of Municipal Affairs and Housing
- Economic Development
- Northern Development
Tour of forestry operations in Timmins

Group of architects, engineers and builders from Southern Ontario take in harvesting operations and tour Timmins sawmill.

Published on: August 16, 2019 | Last Updated: August 16, 2019 7:33 PM EDT
36% of Ontario’s forests have indigenous partners, stakeholders, management and growing
# ESTIMATED ENVIRONMENTAL IMPACT OF WOOD USE

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<th>Icon</th>
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<tr>
<td>V</td>
<td>Volume of wood products used: 2,233 cubic meters of CLT and Glulam</td>
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<td>U.S. and Canadian forests grow this much wood in: 6 minutes</td>
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<td>Carbon stored in the wood: 1,753 metric tons of CO₂</td>
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<td>Avoided greenhouse gas emissions: 679 metric tons of CO₂</td>
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<td>Total potential carbon benefit: 2,432 metric tons of CO₂</td>
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**THE ABOVE GHG EMISSIONS ARE EQUIVALENT TO:**

- 511 cars off the road for a year
- Energy to operate a home for 222 years

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*CO₂ in this case study refers to CO₂ equivalent

Table 1. Brock Commons, Vancouver. Source: rethinkWood.com
4D Time Simulations

Brock Commons
Source: CIRS report, CADMakers
3D Modelling / Analysis
2015 14-storeys Norway
University of Toronto
Architect: MJMA & Patkau Architects
The Arbour, George Brown College, Toronto

Architect: Moriyama and Teshima
77 Wade Avenue, Toronto

Architect: Bogdan Newman Caranci
80 Atlantic, Toronto

Architect: Quadrangle
T3 Bayside, Toronto
Architects: 3XN & WZMH
Education & Training

- Engineers, Architects
- Carpenters
- Developers
- Building Owners
- Government (politicians, civil servants, planners, building officials)
STUDENTS CATCH TIMBERFEVER

Cross-disciplinary competition promotes collaboration

LINDA WHITE
SPECIAL TO POSTMEDIA NETWORK

In a competition worthy of reality TV, eight teams of architectural science and civil engineering students from Ryerson University were handed a design brief outlining the type of structure they had to design and build — all with a limited supply of lumber and within the next 36 hours.

The task of the second annual TimberFever Design-Build Competition (www.TimberFever.com): to build accessible structures that would provide urban refuge and would be tested for structural integrity and architectural merit by a team of professional engineers includes the Art Gallery of Ontario addition.

"In the real world, you need to collaborate with all sorts of different professionals. It’s one of the things new graduates are lacking and through this event we gave them some exposure to that," says "Yoss." Giving students hands-on work experience is another important element of the competition. A lot of recent graduates have never picked up a tool and don’t understand how to physically build things.

HANDS-ON EXPERIENCE

Third-year architectural science student and event co-chair Abhishek Wagle embraced the challenge.

advising them on best building practices and ensuring they used power tools safely. industry for the rest of their careers so it’s a good step to building that relationship

TIMBERFEVER DESIGN-BUILD COMPETITION

Presented by Moses Structural Engineers