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News from MTI

Hello Mass Timber Colleagues!

Feature: Canadian lumber tariffs: What's new?

April 25th, 2025

It's time to walk the talk on diversifying Canada's forest sector – markets and products. Donald Trump's tariffs, layered over on-going anti-dumping and countervailing duties, threaten grave damage to Canada's softwood lumber industry.

Our industry is particularly vulnerable because it exports 75-80% of its production to the USA. Over more than 40 years, it has been weakened by punitive anti-dumping and countervailing duties (up to 30%). Softwood lumber exports to the USA of 28.1 million cubic metres in 2023 resulted in Canadian producers forfeiting roughly CA\$720 million in revenue. USA tariffs can kickstart efforts to seek non-U.S. markets and innovate at home.

There is a huge opportunity to rejuvenate Canada's forest products sector by diversifying into the manufacture of higher valued products, such as mass timber (MT). Canada already produces a small amount of MT(\$400 million), a prefabricated, engineered wood product used in building construction. MT is made by laminating multiple layers of solid wood and bonding them with structural adhesives.

Producing MT has many benefits. Manufacturing Mass Timber generates more employment per cubic metre than commodity production. MT has more than three times the value of lumber by volume. Canada's slow-grown timber boasts strength

that surpasses suppliers from other regions. Canadian building codes now permit MT buildings of up to 18 stories – a potentially substantial domestic market. MT is a value-added product with many merits including its potential in decarbonizing construction.

What is currently a niche product needs support to become a major success. An industrial strategy. Supply chains, engineering specifications, and production facilities need to be aggressively built out. MT manufacturing facilities can be located beside sawmills or in urban areas. MT manufacturers can access open market lumber, freeing them from forest management or ownership. MT participants can include Indigenous business, startups, as well as traditional forest products companies. More education, marketing and incentives are required to help architects, engineers, and builders who are leading the charge on mass timber. Municipalities and investors must be able to see the benefits. Funding from government can be used to leverage private investment and expand the domestic market.

Canada's forest sector is at a pivotal moment, with a critical need to diversify its products and markets. A coordinated response is called for, involving industry and the federal, provincial, municipal and Indigenous governments. There is an opportunity begging to be seized. Game on.

Jeremy Williams, Arborvitae Environmental Services Ltd.
Anne Koven, Founding Director, Mass Timber Institute, University of Toronto
Bud Knauff, R J Knauff & Associates
Don Huff, Ecostrategy
Tom Clark, CMC Consulting

Feature: U of T M. Arch. Students Design for Net Zero Carbon

April 25, 2025

Each year, second year Masters of Architecture students at U of T take the Comprehensive Studio, where they combine their design concept with a detailed investigation of building science and structural systems. This year, students were tasked with creating a mixed use building containing a shelter and community support spaces to reimagine the site of West Neighbourhood House on Ossington Ave. in Toronto. The studio is divided into smaller sections, each with a different professor

and their own theme driving the design. However, all students share a net zero carbon budget. This March, I was fortunate to interview a few comprehensive studio students about their experiences.

Sanjana Patel (MTI): Does a design for this studio always start with mass timber?

Megan Barrientos: It is highly recommended to use mass timber. We understand concrete to be more affordable & industry standard, but high in embodied carbon. It is sometimes pushed under the rug that CLT emissions are comparable to concrete if it is not locally sourced.

Babak Abnar: We were all intrigued by the concept of a “vegetarian” building when it was introduced in this studio. Mass timber can be a part of the strategy. However, my professor, Brigitte, doesn’t insist on it. She pointed out the real issues with it. We are limited to only two manufacturers in Ontario, so if they are busy, the material has to be sourced from out of province, far away.

Aboubak (Abou) Diarra: Personally, I wonder if we can all use CLT. We understand that it is a low carbon alternative to steel. However, we are facing a new market for new material. I wonder if we have enough resources in Canada to support it.

SP: Right, there is wood supply, but not always manufacturing capacity. It’s clear you are considering carbon emissions at different stages in the life of a building material. What kind of Life Cycle Analysis (LCA) you are undertaking?

Megan: Earlier, we did an LCA on structural components for the midterm. For the next assignment, we are doing an LCA for the envelope. The structural LCA encouraged many people to choose mass timber

SP: What materials are being considered for your design?

Arjay Asuncion: We are using a CLT floor and rammed earth façade. Rammed earth has no adhesive required and it provides good insulation. We considered the colours of a rammed earth façade as well.

Sibora Sokolaj: Arjay and I are also using hempcrete for insulation. There is a Canadian company that manufactures the hempcrete blocks. We are also using long span glulam beams. There is a range of material being used - others in the studio are using cork.



Image: Students create sectional models to demonstrate the relationship between the public and private building programs. Credit: Sibora Sokolaj and Arjay Asuncion

Megan: Going back to CLT, my partner and I are considering it for its aesthetic qualities as well. Our project is a community center and residential space, and we found value in something that appears more natural for both uses. Our first year studio was indigenous themed, so it also seemed like a natural transition to use sustainable materials.

SP: How does choosing CLT impact the design? For example, are you leaning towards certain forms more than others?

Arjay: It made it more complicated. Architecture is about finding precedents, and it was difficult to find the precedent for our purpose.

Megan: When we had to find precedents, the consultants directed us to steel buildings. We are proposing a diagrid and at the beginning, we didn't know how big the diagrid had to be or how the curtainwall interfaced with it. There's a lot of unknowns, even after talking to professionals. We are being very ambitious with the material.

SP: The diagrid reminds me of the Academic Wood Tower at U of T

Megan: Yes, that was the only precedent we could find of the mass timber diagrid as well

Arjay: To add to that, even the Academic Wood Tower used a hybrid steel and timber structure

SP: What other precedents are you looking at, and how do they relate to your designs?

Sibora: We are looking at the MV building as a precedent for form and unit layout. We are imitating a steel structure with mass timber. I think we are encouraged to use CLT, but we don't automatically understand the implication, such as how to translate a steel precedent to wood. We have been very experimental in design.

Abou: We are looking at the Caracol building. It was recommended to us because it has a big void like our design. It is a precedent related to our design concept, more than material.



Image: Behind the scenes of a model photo. Lifted into three sections, the model shows the voids central to the design concept. Credit: Aboubak Diarra and TJ Qu

Babak: Our precedent, Isla intersection, doesn't have a single mass timber element. It is steel, but we are converting it. We are proposing a hybrid, with steel and concrete on the bottom, and timber on the top. We are okay with this because there needs to be a balance, if there is not enough material to meet local demand. What was important in both the precedent and our project was the public realm. We designed a ramp that runs several stories up to create the semi-public space. We are also challenging the Ontario Building Code by proposing the apartment corridor is on the outside. This would allow all units to have passive ventilation.

SP: It's interesting to hear how each concept began with the precedent studies. I understand each studio has a theme that also guides design. What is your studio's theme?

Megan: The theme of Daniel Chung's section is to design around how a building makes you feel, so "woven" was the word we chose to evoke and the diagrid created that feeling.

Abou: With Maria Denegri's section, it's all about interstitial spaces. We designed a large void, to mimic bringing the street into the building. The void separates the public and the residential space.

Sibora: Our section's theme, with Sam Dufaux, was to create a vegetarian building. We are considering replacements for concrete wherever we can like "earth topping" instead of concrete topping on the CLT.

SP: What about the operational carbon component? How has your experience been in creating energy use models for building science assignments?

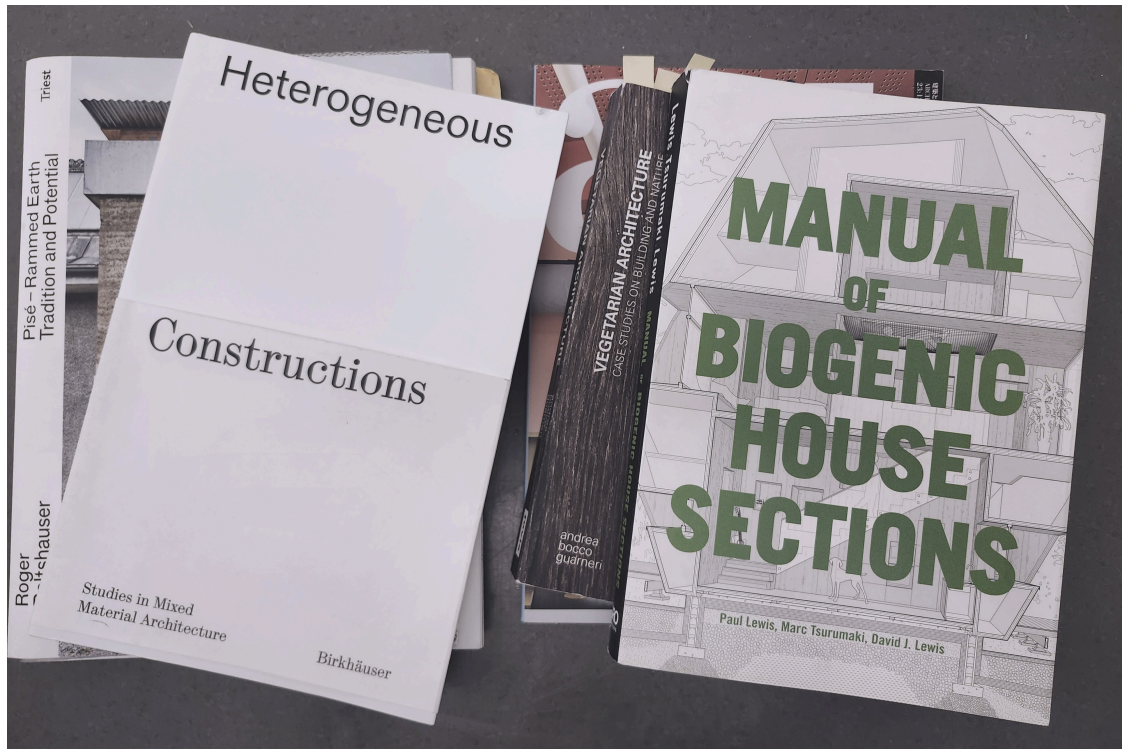
Isaac Valle: You need to have renewable energy sources, such as solar energy or geothermal energy. When we first tested the Energy Use Intensity (EUI), we could only get solar panels to provide 5% of the required EUI. This emphasized how we really need to drop the EUI to be fully powered by renewable energy.

Megan: For building science models, you also need to have a more complete design and understanding of material assemblies

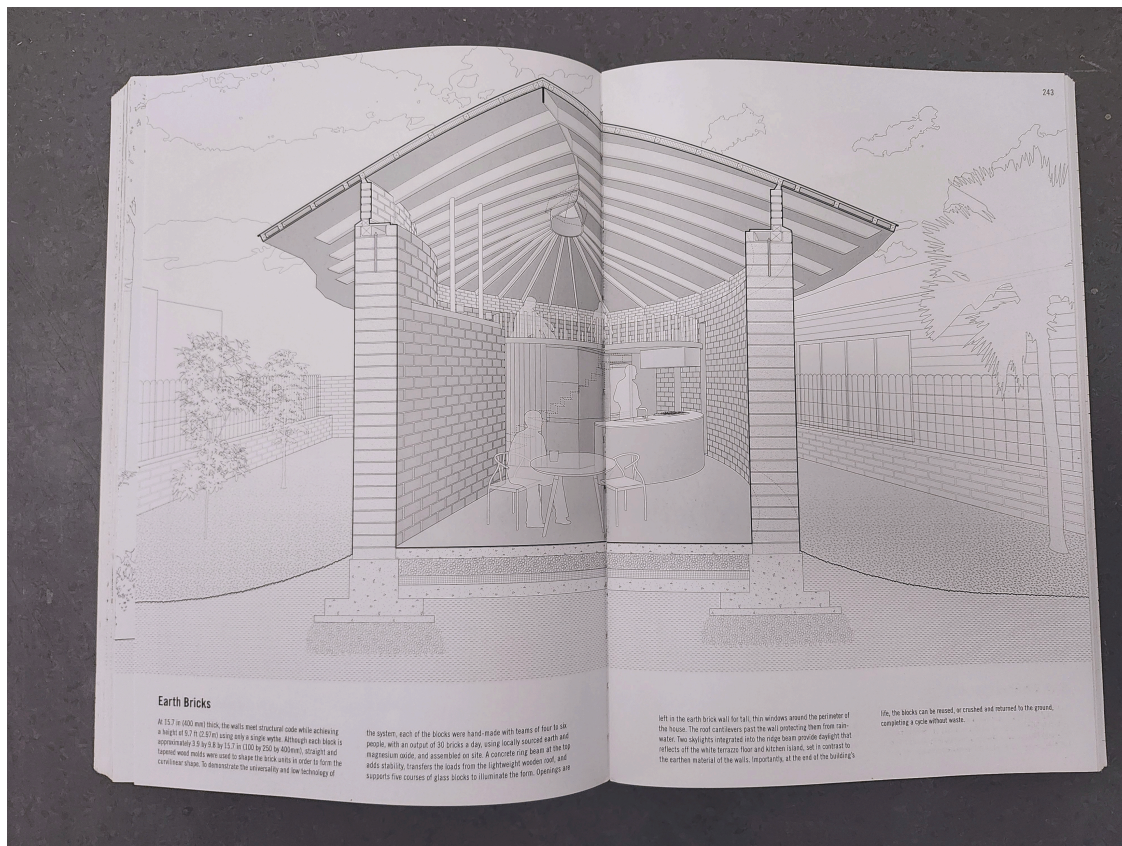
SP: What sort of resources have you been given for detailing assemblies?

Sibora: The studio is referencing an assortment of books. These include *Manual of Biogenic House Sections* by Paul Lewis, Marc Tsurumaki, and David J. Lewis,

Vegetarian Architecture by Andrea Bocco Guarnieri, as well as some trade magazines. The books have illustrated detailed sections and provided precedents on materials like rammed earth.



Students have a shared library of books focused on building with renewable or low embodied carbon materials



Extract from Manual of Biogenic House Sections

You can see more work from Comprehensive Studio and other courses at The End of Year Show 2024/2025 (May 23–June 27, 2025), at 1 Spadina Cres.

Other Updates

- The trade war presents an opportunity for mass timber development in B.C. [Read the article here](#)
- Cambium, a supply chain technology company, receives funding to support the production of mass timber from salvaged wood. Their digital platform tracks each stage of the lumber manufacturing supply chain to achieve this. [Read the article here.](#)
- Timberlab, a mass timber manufacturer based in Portland, USA, breaks ground on a new manufacturing facility in Albany. [Read the article here.](#)



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