

# NOVÆ RES URBIS TORONTO

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■ MASS TIMBER BUILDS ARE GAINING MOMENTUM, BUT ONTARIO HAS SOME CATCHING UP TO DO

## GETTING OUR TEETH INTO WOOD

Matt Durnan

As an energy-efficient alternative to conventional construction materials and technologies, mass timber construction is starting to gain momentum in visibility and popularity. However, while there have been some early adopters of mass timber building in the development industry, Ontario and Canada as a whole are still lagging behind our geographic neighbours to the south when it comes to new mass timber building construction.

At a panel discussion hosted by **Urban Land Institute** (ULI) on June 8, industry leaders in the mass timber sector outlined the benefits of mass timber for new building construction and discussed what could be done here in Ontario to garner take-up and meet anticipated

future demand for mass timber buildings in Toronto as developers seek to construct more environmentally friendly and sustainable projects.

Mass timber construction has a number of benefits for builders, including shorter lead times in procuring

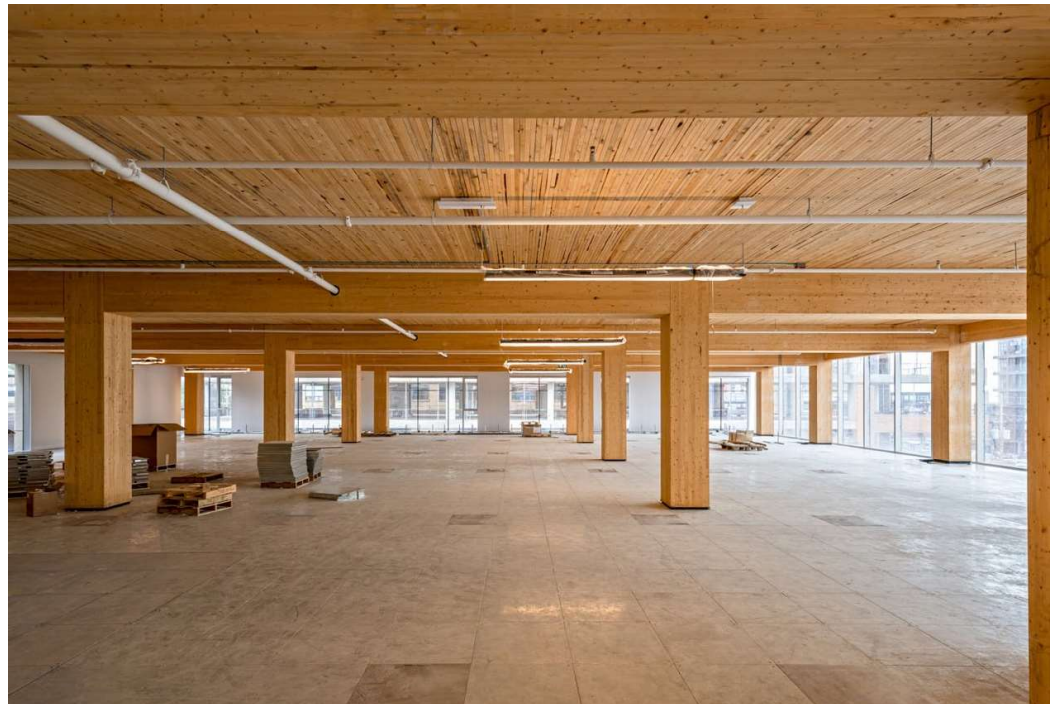
materials which are delivered to the construction site partly prefabricated, speedier construction and better overall cost effectiveness over the entire lifetime of the building.

The mass timber built form uses wood that is engineered

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Photo inside Hullmark's heavy timber office building at 80 Atlantic Avenue in Liberty Village. Hullmark is one of the city's early adopters of mass timber builds, with this project having been completed in 2020. The building was the host venue for a panel discussion hosted by Urban Land Institute on mass timber on June 8. Panelists discussed the growing trend of mass timber construction and what challenges it could face, including supply chain issues and how Toronto can become a leader in this building typology.

ARCHITECT: BOP QUADRANGLE  
SOURCE: HULLMARK



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for high strength ratings like that of its construction material counterparts, steel and concrete. Mass timber products differ quite substantially from light wood construction materials that are often seen when framing a typical house.

The built form utilizes compressed layers of wood that create strong, structural elements and are formed through lamination, fasteners or adhesives.

In addition to time and cost saving benefits, mass timber construction tends to be more sustainable than its steel and concrete alternatives, which are a more carbon intensive and are larger contributors to construction waste.

With recent changes to the Ontario Building Code having expanded permissions for mass timber buildings,

including permitting increased height allowances of up to 12 storeys for the structures, the built form could have a bright future in Ontario construction, as it is can be used for a range of building types including housing, institutional buildings, as well as offices.

While the benefits of mass timber construction may be numerous, its uptake in Ontario has been somewhat slow, and Canada is behind the curve when it comes to adopting mass timber construction.

“It has been said that the construction industry is one of the least innovative in terms of the industrial sectors. The fact that this new technology, a new approach to an old material has come along, I think a lot of people are sitting back and waiting to see it evolve and waiting to see it perfected, somewhat,” **Carpenters’ District Council of Ontario** president **Mike Yorke** told *NRU*.

“If you look at the US market, once Americans get their teeth into something, they really go for it. If you look at the evolution of this market sector in the US over the last 20 years, it was slow to start as well, but it has taken off like crazy over the last three to four years and there’s literally hundreds of [mass timber] buildings.”

In Toronto, there are a few early adopters who have recognized the value and potential of a mass timber build, and that has led to the construction of some spectacular and award-winning buildings, including **Hullmark’s** office and retail heavy timber building located at 80 Atlantic Avenue in the heart of Liberty Village.

The five-storey building was the host venue for the ULI panel discussion on June 8 and was recently the recipient of a 2022 **Royal Architectural Institute of Canada’s** (RAIC) Governor General’s medal in architecture. **BDP Quadrangle** was the architect on the project.

Hullmark’s building at 80 Atlantic got underway in 2016, just as the province passed the first Building Code change allowing increased building heights for mass timber builds from four storeys to six storeys.

As one of the early adopters of this built form, Hullmark president **Jeff Hull** told *NRU* that it was a real learning experience throughout the course of the project.

“We spent a lot of time working in advance with our architects, our structural engineers, the wood supplier, the assembler, the trade that was going to be on the site, putting all the pieces together in the pre-design and coordination, and even still there were some things that we learned along the way,” Hull told *NRU*.

“We learned about the sequencing of trades because we did have concrete on

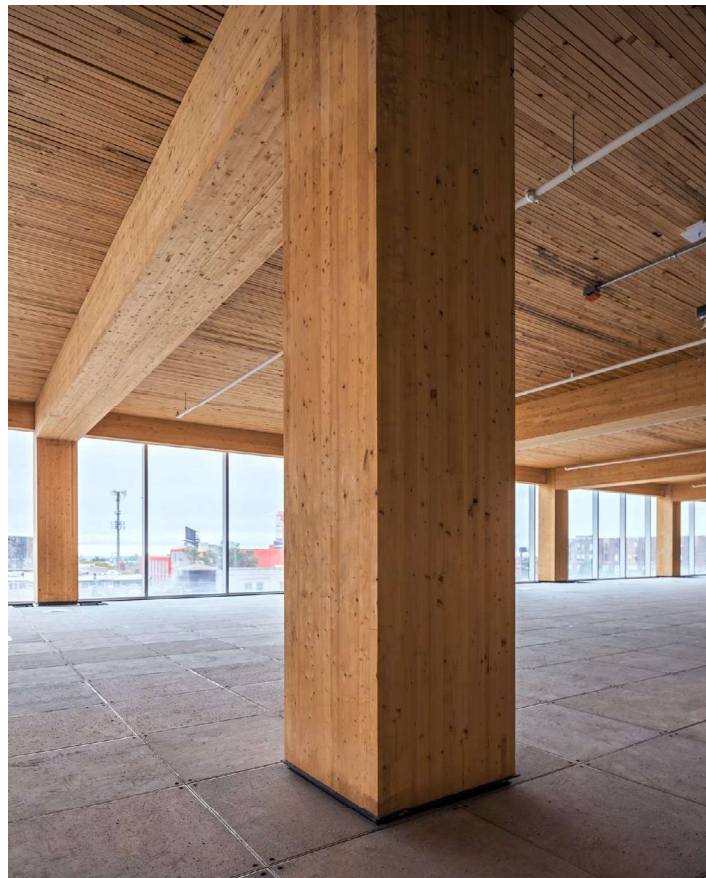


Photo inside Hullmark’s heavy timber office building at 80 Atlantic Avenue in Liberty Village. Hullmark is one of the city’s early adopters of mass timber builds, with this project having been completed in 2020. The building was the host venue for a panel discussion hosted by Urban Land Institute on mass timber on June 8. Panelists discussed the growing trend of mass timber construction and what challenges it could face, including supply chain issues and how Toronto can become a leader in this building typology.

ARCHITECT: BDP QUADRANGLE  
SOURCE: HULLMARK

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this project, and the wood contractor. We had to learn how to keep the wood dry when it rains, because it's hard to avoid. Wind is also a challenge when you're putting up lighter pieces of wood as opposed to forming concrete."

Additional challenges associated with mass timber builds are supply chain constraints, as Ontario's marketplace for suppliers of engineered timber is still quite scant.

**BTY**, a cost consulting firm that entered into the world of project management about seven years ago, was contracted by the **Ontario Secondary School Teachers' Federation** (OSSTF) for the construction of a new headquarters at 60 Mobile Drive in North York. The OSSTF opted for a mass timber build in order to help achieve its goal of a LEED platinum certification. (See: "Expanding Sustainability". *Novae Res Urbis Toronto*, Friday, June 17, 2020).

"There are less suppliers—it's a little bit more difficult and you need to get in line early. The earlier you can bring in your supplier, the better," **BTY** director **Penny Phelan** told *NRU*.

"We had the contractor on early and started talking to the timber suppliers very early so that they could help

us with the design. There's not many suppliers. Ours came from Northern Quebec and it was all shipped down. When we designed this building, our choices [for mass timber suppliers] were Northern Quebec, British Columbia or Europe."

Since that time, an Ontario-based supplier of mass timber has made its way into the fold, with St. Thomas-based **Element5** working to address the mass timber supply needs of Toronto and other builders across Ontario who are eyeing mass timber for their projects.

"I think Ontario is just finding its footing on where these buildings are best suited, but the great thing about mass timber is that it's a very dynamic product and it's able to do anything," **Element5** sales manager **Lee Scott** told *NRU*.

"We're doing single-family homes, fire stations, schools, daycares, universities, luxury condos and we're doing affordable housing. It's a huge spectrum, it's just about finding that optimal design and where it fits in."

According to Scott, projections indicate that Ontario will need at least 10 more manufacturers like **Element5** to come online within the next 10 years to meet market demand for mass timber.

"**Patrick Chouinard**, who

founded **Element5** saw a gap in the marketplace where you either have to go overseas, or to the west coast or Northern Quebec to get this product," Scott said.

"If you're situated in Toronto or the GTA or Southern Ontario, we're the closest manufacturer from everywhere—from Washington, to Boston, to almost Denver. There's this huge gap here, and you have Toronto and the GTA with almost eight million people—there's a massive amount of people, and **Element5** won't be able to do it all. Logistics play a big role in costing, we become less competitive and less sustainable the further away you get from the factory [in St. Thomas]."

Once more suppliers enter the marketplace, mass timber could play an integral role in addressing Ontario's housing affordability crisis.

Much like modular housing, mass timber builds offer quick and easy housing models that can be churned out in large numbers in a relatively short period of time. Scott says that the lead in time for **Element5** to get materials to a site for a job is roughly eight months, which is just as fast, if not faster, than getting materials like steel to a job site.

"I think mass timber can play a huge role in the affordable housing crisis. **Element5** has developed an affordable housing typology that has been designed to be optimized for a mass timber offering," Scott said.

"It leaves a lot of timber

exposed and you're able to design and pump these buildings out of the factory and get them erected very quickly. We've already done affordable housing projects [in Kitchener] and we have another dozen in the pipeline right now. I think the fact that these buildings are healthy and can be affordable and implemented very quickly, they have the potential to be a massive player in affordable housing solutions."

Not only does mass timber have a potentially significant role to play in creating more sustainable and environmentally-friendly buildings, but there is another gap that could potentially be addressed as mass timber continues to garner more interest from the development sector.

"I really believe that Ontario has the potential to step up to the plate in creating a symbiotic relationship between our land development and construction economies in the south and the resource-based economies in Ontario's north," Yorke said.

"There are benchmarks out there that we've yet to meet, and there's benchmarks driven by Austria, Italy, Quebec and BC, and those models would include higher recognition for the use of mass timber in projects. I think there's higher levels of government support for the forestry sector in other Canadian jurisdictions. Mass timber is another alternative for the forestry sector and we really need to pursue that [in Ontario]." 🌱