

HOMES

M A G A Z I N E

Wood is good for Ontario construction

by Richard Lyall
President, RESCON

We've said it for years and we'll keep saying it – wood is good.

There are a lot of great reasons to build with wood. It's a quieter, quicker and more flexible building process, and it reduces a construction site's carbon footprint, especially when panelized, by a factor of eight.

As for the occupant, there are studies – including out of the University of British Columbia – that say living with visual wood surfaces in a room “lowered sympathetic nervous system activation.” It also improves emotional state and self-expression, and lowers blood pressure and stress levels.

There are many reasons we need to catch-up with the rest of the world with a readily available, under-utilized, home-grown resource.



After seeing the success of wood construction in many parts of Europe as well as the United States, British Columbia approved building five- and six-storey wood buildings in 2009 and has engaged in hundreds of projects since. That's the same year the Ontario residential construction industry — beginning with RESCON, the Canadian Wood Council and Wood WORKS! — began a five-year mission to advocate to raise the limit of wood-frame construction within the Ontario Building Code (OBC) from four to six storeys.

That mission's goal was realized on January 1, 2015, when the OBC was changed. As I expected, Ontario has been slow to the change with only a handful of projects built or underway.

So what's the big deal with adding two storeys to buildings?

We were catching up with the rest of the world, which is surprising given we have a forest industry in distress.

But look around Canada and the world, and you'll see wood-frame projects rising well above six storeys:



80 storeys: Still waiting for approval, but big plans have been unveiled for the world's first wooden skyscraper in London (some feel this will never happen).

telegraph.co.uk/news/2016/04/09/first-look-at-wooden-skyscraper-planned-for-london/



20 storeys: Four buildings of this height were approved in March to tower over an old harbour in Stockholm, Sweden. [dezeen.com/2015/03/23/tham-vidgard-wooden-high-rise-apartments-stockholm-waterfront/](https://www.dezeen.com/2015/03/23/tham-vidgard-wooden-high-rise-apartments-stockholm-waterfront/)



18 storeys: The structure of the Brock Commons student residence at Vancouver's University of British Columbia was completed in the fall. news.ubc.ca/2016/09/15/structure-of-ubcs-tall-wood-building-now-complete/



18 storeys: In March, this residential cross-laminated timber residential and office project was approved for Bordeaux, France. It's a trio of towers fitting in three blocks, including 18-, nine- and seven-storey buildings. globalconstructionreview.com/news/frances-first-wooden-towers-b7e-bu7ilt-bordea7ux/



14 storeys: A completed apartment block in Bergen, Norway. timberdesignandtechnology.com/treet-the-tallest-timber-framed-building-in-the-world/



12 storeys: It's actually a 13-storey condo tower, with 12 to be made of wood, in Quebec City. theglobeandmail.com/report-on-business/industry-news/property-report/quebec-firm-takes-on-wood-high-rise-challenge/article26453443/



10 storeys: A residential condo is planned for Manhattan's West Chelsea neighbourhood. untappedcities.com/2016/01/29/shop-architects-to-bring-nycs-first-wooden-high-rise-building-to-chelsea/

So, if all of these different jurisdictions are dwarfing our midrise revelation, what is holding us back from building up to six?

As you know, Ontarians live in a culture of fear of the unknown and over-regulation. I'm going to address the fear in this space with the help of Lloyd Alter. The former architect is a freelance writer, editor for TreeHuger.com — a website promoting sustainability as well as green news and solutions — and teaches sustainable design at Ryerson University's School of Interior Design. He recently addressed the Toronto Wood Solutions Fair with a fascinating presentation that hit the bull's-eye concerning the myths of building with wood.

Myth No. 1: Using wood is bad for the environment

“As an environmentalist, we should all be promoting wood,” Alter told the crowd. “We have a problem with pine beetles chomping through forests through the country, so we should be chopping more and more of this and stockpiling CLT (cross-laminated timber) panels of a standard size. We should be turning it out like toothpaste to use up this wood.”

The biggest reason we should all be promoting wood, Alter adds, is that 5 to 7 per cent of the carbon dioxide produced in the world is from making cement.

“It's a chemical reaction that releases carbon dioxide when they heat the limestone. Fifty per cent of the carbon is given off by the heat, and 50 per cent is given by the reaction.”

He said that 200-million cubic metres of new wood from the new growth of trees could be harvested every year in North America and Europe without harming the forests. That is enough to build 150,000 typical offices per year.



Myth 2: Wood isn't a durable material

A lot of misinformation is put out there by supporters of concrete. Some people wonder why we can't we build the way the ancient Romans did, after all, the Pantheon is 1,900 years old and made of Roman concrete. But that ancient concrete is made of pozzolana, created out of the ash from Mount Vesuvius's volcanos, which lasts longer than modern-day concrete, Alter says.

"The Romans and the Italians knew something about wood, too," Alter said, noting that he visited a building in Bologna that had been built in 1350 and the original beams were still holding up the masonry.

In fact, Alter said, wood is the most suitable material to handle earthquakes because it is lighter "its sheer strength across the grains."

Myth 3: Wood burns and isn't safe

This is probably the biggest myth of all. There have been campaigns on both sides of the 49th parallel by big concrete to scare people out of their desire for wood construction for fear of fires. This is simply not true.

"Construction fires are not an indictment of wood construction. The province obviously knew this when they brought in the new wood rules, with instructions and recommendations on what to do when you're building with wood," Alter said.

"In the U.K., where they're doing a lot of very big wood products, there's one company (Intelligent Wood Systems) that's actually treating the wood with Borax, a preservative and a flame retardant that's healthy and natural. It has nothing to do with the code; it's entirely to prevent the construction fires that are the great majority of the wood fires that we have," Alter said.

One fire in a New Jersey municipality in 2014 was cited in a media campaign by the concrete industry to hammer home this myth. It was an occupied building of 620 units. Alter said that there was a delay before the fire department was notified and it was at least a 30 minutes before they arrived. The important part of this story, Alter said, is that "every person got out. And I believe that's the point of fire ratings — not to save every part of the building but to last a long enough time to get people out."

In a fire, many people don't realize that heavy timber used in larger wood structures are protected by charring, which actually insulates the inner core against the heat effect, Alter said.



But before we start looking at wooden skyscrapers like London's proposal, Alter said Ontario needs to embrace more midrise buildings, such as the project at Dovercourt and Queen Streets, and Hamilton's purpose-built rental apartments called the Templar Flats.

Alter said the Flats builder used wood because it was light, the builder could adjust for flexibility needed for walls, and he could more easily fit it into an infill lot.

"We can keep infilling, moving the density out of the core and onto the main streets, out into the suburbs – into Scarborough, onto Eglinton and into North York. The ability to build six storeys in wood is a huge opportunity, I believe, right across the city.

"We need concrete. Concrete is very important. We're always going to have concrete. But with the carbon situation that we have, it's almost an obligation to do everything we can to use the lowest carbon alternatives that there are, which for construction, is wood."

Wood is good. Let's embrace it, and then go higher than six.

Richard Lyall, president of RESCON, has represented the building industry in Ontario since 1991. Contact him @RESCONprez or at media@rescon.com.