

Six-storey wood buildings ‘a game-changer’

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Under recent and pending building codes revisions in several Canadian jurisdictions, wood will be permitted in multiresidential and office buildings up to six storeys (compared with four storeys in most jurisdictions) with extra fire safety safeguards.

“It is a real game-changer,” Richard Lyall, president of the **Residential Construction Council of Ontario**, says of the scope for increased use of a material that usually is less expensive than concrete or steel. “It will increase the supply of apartment rentals and condos, which will be good for the market.”

He also sees wood’s potential in mid-rise commercial buildings, especially infill, that combine multiresidential, retail and professional offices.

“There is tremendous opportunity, especially in main street and avenue situations,” he predicts.

British Columbia got the ball rolling on building code changes for five- and six-storey wood buildings in 2009, with more than 250 projects now built or near completion. In Prince George, the 29.5-metre high, six-storey Wood Innovation and Design Centre was completed in October, one of the tallest contemporary wood buildings in North America, according to the province.

On Jan. 1, Ontario code revisions will allow wood-frame residential and office buildings up to six storeys, with stairwells of non-combustible materials and combustion-resistant roofs.

This year, Quebec gave the green light, too, and, in November, Calgary became the first Canadian city to accept permit applications for wood buildings of five and six storeys. Changes to the National Building Code of Canada are expected later next year, with limits on floor plate size (smaller than for concrete or steel), building height (no more than 25 metres) and requirements for sprinklers on balconies, closets and attic areas.

“These buildings, once built, are every bit as safe as concrete,” says Michael Giroux, president of the Canadian Wood Council, which has campaigned for the code changes since 2009. His organization is seeking builder interest in projects above 10 storeys.

Even with added safety costs, industry analysts estimate a 10- to 15-per-cent price advantage for wood over traditional materials, which benefits price-sensitive and infill projects.

In a 2013 report for the Building Industry and Land Development Association, former Toronto chief planner Paul Bedford identified “immense potential” to unlock dormant suburban corridors and vacant downtown spaces.

“The tremendous diversity of parcel sizes and shapes allows architects to experiment with different building types and forms to achieve housing choices for all age groups,” he wrote.

Adding wood as a building option would expand the supply of mid-rise housing developments, especially for families and seniors, he says. “This is a tipping point that will allow us to do stuff we were never able to do before.”

That’s also the hope in Calgary, a hot, high-cost housing market with low rental vacancies.

“We hope that opening up this new form of construction and lowering costs at different parts of the process will translate into lower-cost housing,” says Rollin Stanley, general manager of Planning, Development and Assessment for Calgary.

“We have got to start doing this in Calgary to meet our housing needs and try and bring down the cost of housing and open up new areas of the city with an alternative to see if we can start populating some of our corridors,” he says, citing a dearth of four- to eight-storey housing.

Attainable Homes, a Calgary agency that helps lower-income residents buy their first home, is ready to capitalize on the raised height.

“If it is true that six-storey wood frame is cheaper, and I believe it is, that will be a saving and will allow me to obtain or build units at a lower cost and will allow me to keep it within the [budget] criteria I have got,” says David Watson, president of Attainable Homes.

Critics, led by the Canadian Concrete Masonry Producers Association, which published full-page ads this year, raise fire safety in their opposition to expanded wood-frame construction.

“No matter how you look at it from the masonry point of view, we see it [the code change] adding a lot of increased risk,” says Steve Stalko, a U.S. consultant to the association.

Richard McGrath, director of codes and standards/engineered structures for the Cement Association of Canada, participated in the National Building Code review. “From a technical point of view, I certainly feel we are increasing the fire risk in these structures irrespective of the fact we are heavily sprinklering these buildings,” he says.

Some firefighter organizations have weighed in, too. “We are very concerned from a health and safety perspective for firefighters and tenants and residents of these buildings,” says Scott Marks, assistant to the general manager for Canadian operations of the International Association of Fire Fighters.

But Surrey, B.C., fire chief Len Garis, past president of the B.C. Association of Fire Chiefs, describes fire safety concerns as a “red herring.”

“Once they [wood buildings] are constructed and operating, they are no different than any other building constructed of other material,” he says. His association, initially skeptical, endorsed the B.C. code change after a study of provincial fires between 2008 and 2013 concluded an absence of sprinkler systems and smoke alarms, not the construction material, was a key determinant.

Even advocates agree that wood buildings are at particular risk during construction – with several fires in recent years including Surrey – when no sprinklers are in place. Mr. Garis, who has co-authored several studies on fire risks with wood-frame structures, says code revisions impose added safety measures during construction.

Back in Cambridge at the 23-unit apartment complex his company built this year for the Cambridge-Kiwanis Housing Corp., RHC Design-Build president Grant Roughley says the price-conscious project only went ahead with wood as a primary material.

“It [wood] allows a broader range of choices for the design and development industries in terms of how buildings are built,” says Mr. Roughley, who favours no one construction material, evaluating each by price and performance. “It introduces more options at higher density.”

With Ontario’s code change imminent, he says several clients already are reimagining their four-storey wood projects going two floors higher.