Architecture

Towering timbers at World Architecture Festival

High buildings made of wood feature in the shortlist for this year's Building of the Year award

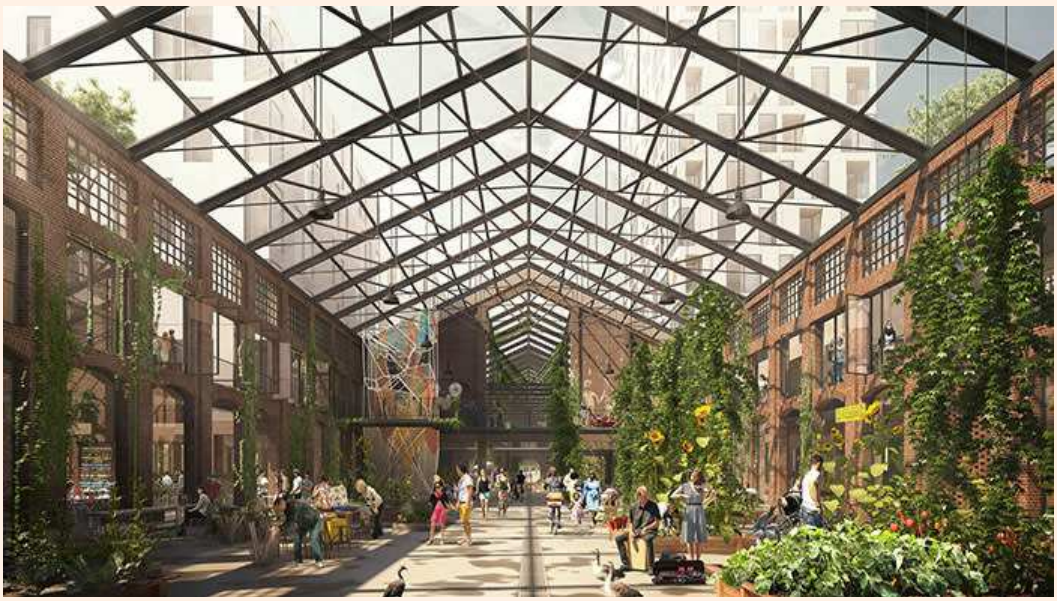
I Love Nydalen, Oslo, Norway by SAAHA © SAAHA

NOVEMBER 10, 2017 Paul Miles

Architects can improve the sustainability of our cities in diverse ways. Repurposing existing buildings rather than demolishing them is an obvious one. Specifying greener construction materials such as timber in highly insulated, low-energy (or even net energy-producing) new buildings is another. Then there are off-the-wall approaches, such as completely enclosing an existing building in a greenhouse — as some Scandinavian architects have done — creating a Mediterranean micro-climate where grapes and figs flourish.

One of the entries shortlisted for this year's World Architecture Festival's Building of the Year award combines all three of these measures. First, it will repurpose a 19th-century nail factory in Nydalen, Oslo, into 110 apartments. Second, the central nave of the 150-year-old brick building will be transformed into a public winter garden with a glass roof. Third, accommodation will be in tower-block extensions constructed from engineered timber (such as cross-laminated timber, a form of jumbo plywood as strong as steel). The project, in WAF's Future Residential category, is I Love Nydalen by Norwegian firm SAAHA.

The firm is only four years old. "As a relatively new company [being shortlisted for WAF] gives us international exposure," says Adnan Harambasic, partner at SAAHA. The young firm's work has been mostly in Norway, where Harambasic notes that "even traditionally conservative clients are taking steps towards more sustainable buildings". One of its projects under construction is the headquarters of SR-Bank in Stavanger. A collaboration with Helen & Hard architects, this 15,000 sq metre timber building will be seven storeys high.



The winter garden in I Love Nydalen © SAAHA

Meanwhile, still on the drawing board, the three timber towers proposed to sprout from the former nail factory in Nydalen will range in height at six, eight and 16 storeys. Unusually, SAAHA has designed these upward extensions to be constructed entirely of engineered timber, even the core of the lift shafts, which are usually made of concrete and steel. The idea of living in a wooden tower block may seem foolhardy. But massive engineered timber does not catch fire; instead, it chars, protecting the interior. “We have the necessary knowledge to build high-rise timber structures with high fire safety,” says Harambasic. “Properly used, wood is a light, lasting, renewable construction material with excellent fire-resistance as well as soundproofing and hygrothermal [humidity moderating] properties.”

Harambasic makes a strong argument for building with wood on a bigger scale. “As the Earth’s life-support systems begin to reach the point of no return, the need to make a transition to a more sustainable way of living and working is not only necessary and desirable, it is urgent,” he says.

“In this context, reducing greenhouse gas emissions is one of the pressing issues for the building industry. Wood is the most significant building material we use today that is grown by the sun. When harvested responsibly, wood is one of the best tools that architects and engineers have for reducing greenhouse gas emissions and storing carbon in our buildings.”

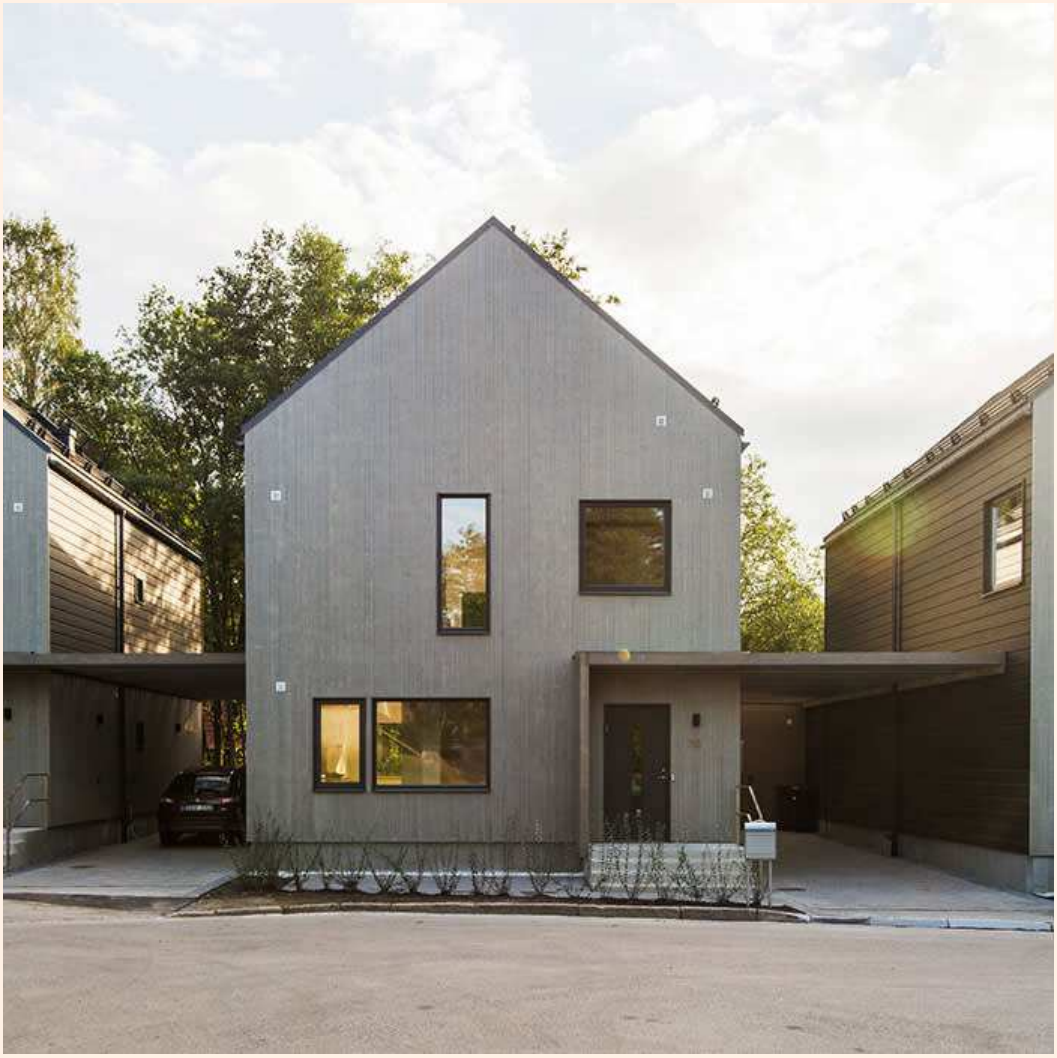
> **We are constantly developing the tradition and technology of wood construction because it’s the most environmentally friendly way to build in the future**
>
> **Anna Markström, architect**

Other timber structures on the Future Residential shortlist include an 18-storey tower block named Hypérion in Bordeaux. French architect Jean-Paul Viguier describes his proposed 57 metre tower block as “the highest living tree . . . taking timber construction to new heights”. Hypérion is scheduled for completion at the end of 2019 but is still awaiting planning permission. The first three floors will be of concrete construction due to a high water table and a design that needs to be earthquake-resilient, explains Viguier. “Timber is an interesting material but it has to be considered in context. Its lightness and ease of construction and its environmental qualities all seem to match the ever-higher constraints that we have to face when building into the very core of the urban fabric.” So is timber the future? “The future of construction is designing sober buildings while keeping the excitement of great architecture,” says Viguier. Hypérion may become the world’s tallest timber tower. That, surely, is exciting.

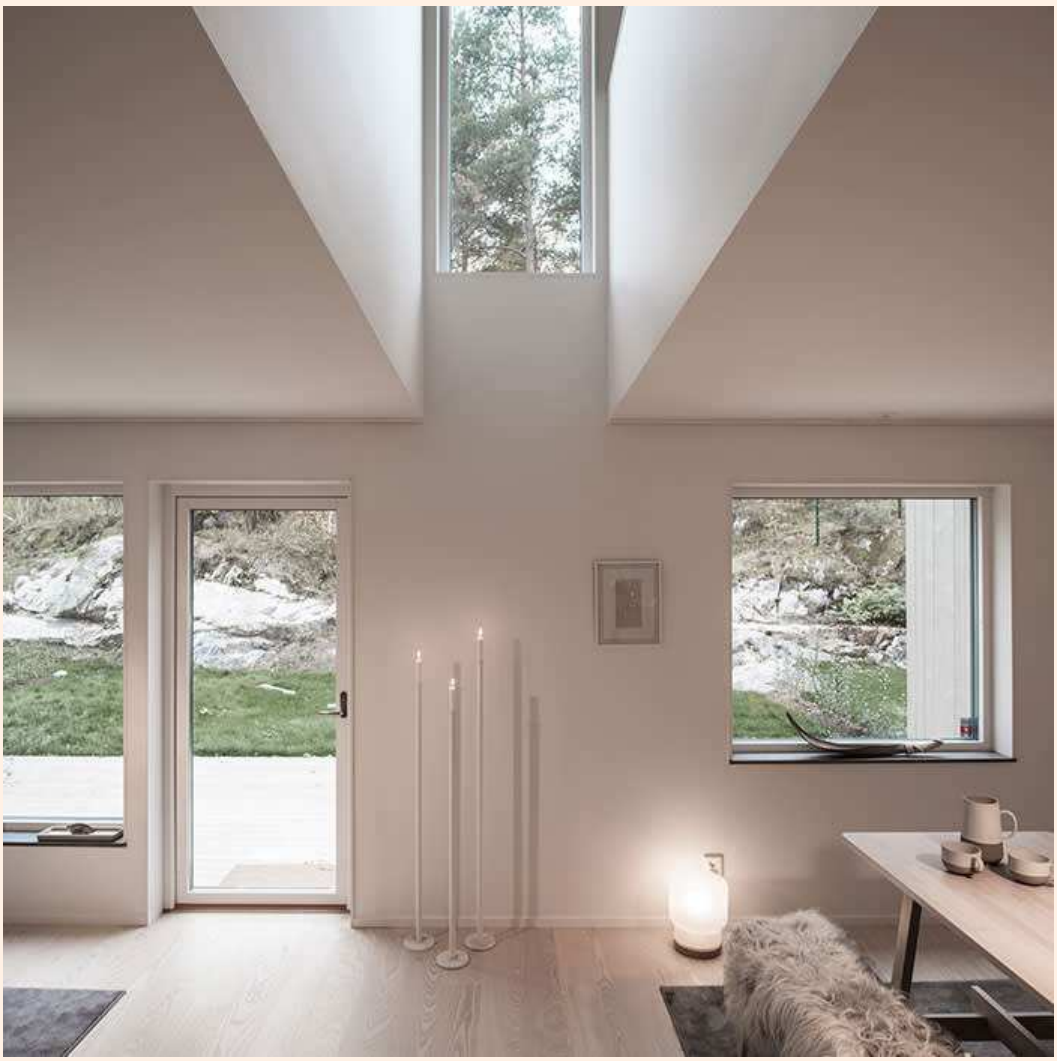
Abebe Court Tower by Hermann Kamte © Hermann Kamte

The buzz about building with engineered timber is spreading. In Lagos, Nigeria, Hermann Kamte proposes a timber extension of 22 floors on top of an existing four-storey building. He intends to show “how the roofs of today can be transformed into the plots of tomorrow”. Kamte’s WAF-shortlisted Abebe Court Tower is, however, very much a concept. He admits that “at the moment its probability to be built is very low, but it was non-existent a few months ago and unimaginable almost a year ago”.

In WAF’s Completed Housing shortlist, the tower blocks are made from concrete and steel. There is just one low-rise timber project, a development of 17 houses in Sweden made of Swedish pine by Sweco. The Swedish firm worked with Foster + Partners on the European HQ for Bloomberg in London which, scoring 98.5 per cent on the Breeam sustainability measure, is one of the greenest office buildings in the world. “We are constantly developing the tradition and technology of wood construction because it’s the most environmentally friendly way to build in the future,” says architect Anna Markström. It seems that timber architecture’s zenith is yet to be reached. For while the 19th century belonged to brick and the 20th to concrete and steel, the 21st century could be characterised by wood.



Above and below: Varvetet, Stockholm, Sweden, by Sweco Architects © Henning Peinerud

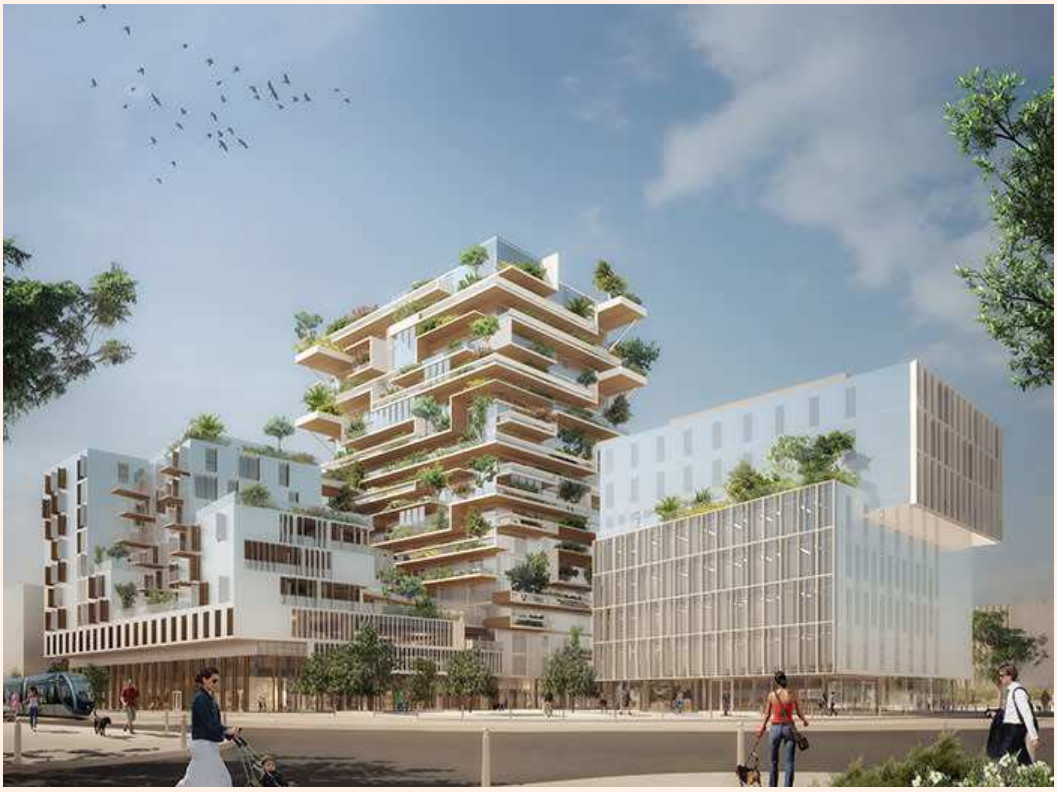


© Henning Peinerud

The roles of recycled waste will also — hopefully — grow in importance. Reusing shipping containers is not a new idea but turning them into floating apartment blocks is possibly a first. Another Scandinavian project on the Completed Housing shortlist is Urban Rigger by Danish-American firm BIG for developer Kim Loudrup. Designed to address the need for (student) accommodation in cities where there is a housing shortage but which have suitable mooring locations — perhaps in disused docks and canals — six shipping containers have been transformed into floating homes for 12 people. The prototype two-storey structure, with three containers on each level, has a central communal courtyard, rooftop garden and solar panels.

The first Urban Rigger was completed at the end of 2016 and has since been moored at various locations in Copenhagen. During that time the floating apartments have survived winds of more than 130km per hour and visits from 15,000 people keen to have a look. Despite being out in the elements, the highly insulated container-homes need little energy to heat. As well as being shortlisted for WAF, Urban Rigger is a finalist in the Danish Design awards 2017. “Urban Rigger has attracted interest from 30 countries and already has more orders than we can fulfil,” says Loudrup. “We expect to place an additional 20 Urban Riggers — 240 student apartments — in the Port of Copenhagen over the next 12-15 months and have obtained building permits for 24 Urban Riggers in the Swedish city of Gothenburg to be delivered in 2018.”

The global need for small, sustainable homes that can be easily relocated to meet changing demand has never been greater. It’s good to see that some architects and developers are pushing the boat out.



Above and below: Hypérion, Bordeaux, by Jean-Paul Viguier © Jean-Paul Viguier et Associés/ Liraat Visuals

© Jean-Paul Viguier et Associés/ Liraat Visuals

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