

WOOD WORK

■ Self-build houses yes, but workspace? **Samuel Horti** analyses the pros and cons of using timber in the construction of office buildings

There's confident and then there's Andrew Waugh. "I think timber will replace all other materials for construction, without a doubt," proclaims the founder and director at Shoreditch-based Waugh Thistleton Architects (WTA).

Others may not be quite as convinced of its potential to totally usurp other materials, but there are plenty of converts to the cause who see it playing a growing role in construction, and not just of small residential schemes. It is now attracting the eye of office developers.

Last year, WTA unveiled the world's largest timber-frame building in Dalston, east London, and it is currently working on five major cross-laminated timber (CLT) office

buildings in the capital. There are also thought to be at least five other architect-designed schemes in London currently under way.

So why are office developers starting to shout 'timber' and could it really replace existing construction methods and materials?

Two of the big attractions of timber are its sustainability credentials and speed of deployment. Using timber slashes development time as the building's frame can be part-assembled remotely in a factory and then delivered to the site to be completed.

Waugh estimates that timber buildings take about 25% less time to put up than standard buildings. Boulton Brooks development director Alex Aitchison calls the pace of the



Getting back to nature: Lendlease's International House in Sydney (main image and images on left) uses CLT throughout



Branching out: Boulton Brooks' 40,000 sq ft Orsman Road office development in London

process "unbelievable". The company is using CLT at its 40,000 sq ft Orsman Road office development in London. "It's eight to 10 weeks and you've got a whole building. It's incredible," he says.

Developers can expect certainty alongside that speed as contractors are able to give more assurance that work will be done on time, says Robert Wolstenholme, managing director of Trilogy Property, which used timber to build some of the offices at its 600,000 sq ft 'urban campus' at the East India Docks in east London.

"The [timber subcontractor] said 'we'll have the first floor finished by 11:15 on the Monday', and it was like clockwork. The traditional methods of building had to try to keep up with the Austrian company building with timber."

Faster delivery is not the only upside. Property owners can also begin collecting rent earlier. Some developers also believe timber offices could attract higher rents than traditional offices - when occupiers eventually get used to the product. Lendlease has built multiple CLT buildings in Australia, including International House in Sydney, part of its circa 3m sq ft Barangaroo South development in the city.

Buildings made from timber make for more "appealing environments to work in", says the development's managing director Rob Deck, adding:

"You get a connection to nature - it does have a different look and feel to it that's quite appealing."

Some studies suggest that exposed interior wood could have psychological benefits for those who use the building. Deck agrees. He says that timber gives office workers a "greater sense of wellbeing".

"People have an immediate, natural response to the timber," he explains. "It feels like a warm, inviting, almost harmonious environment, which is important in an office, where we spend so much time." Part of that might be because timber keeps a much more stable temperature than steel and concrete.

Risk and reward

Aitchison says that exposed timber frames also create a unique aesthetic that sets a building apart from others on the market, which has financial benefits. "It comes with risk, but with that comes reward. You're going to get higher rents and higher investment yields because you're differentiating your product from the market," he says.

At the moment, there is no evidence to suggest that occupiers are prepared to pay more for a timber office, but developers say that timber buildings will, at the very least, attract a lot of interest and let quickly. One company that subscribes to this viewpoint is Ethical Property. The company has used timber in a number of its buildings, including The

Green House, a 50,000 sq ft commercial space in Bethnal Green, east London. Conrad Peberdy, director of development at Ethical, predicts higher long-term retention rates from tenants in timber buildings.

"We wouldn't see it as an opportunity to increase rents, but it should lead to much higher occupancy levels going forward because it's going to be a much healthier, pleasant environment," he says.

"So we expect to see higher rates of demand, higher retention rates and fewer voids under our model. There are commercial advantages and it will probably be more profitable for us in the long term, but not because we're increasing rents."

Developers say building with timber should eventually be cheaper than using traditional materials because it requires a reduced workforce to build over a shorter period. However, at present, the number of expert contractors is limited and most are still getting used to the construction process, which means they charge rates comparable to steel and concrete buildings.

"We thought it was going to be a lot cheaper than traditional steel methods," says Wolstenholme. "It's not, partly because the big contractors are still getting used to using it."

Bottom-line benefits will surely be the biggest driver of take-up, but the sustainability upsides are likely to be a further incentive. Timber construction

creates less noise and requires fewer deliveries to site than traditional office builds, which minimises the impact on the surrounding area. That can be especially useful on sites that are bordered by homes. It is also a lighter material, which makes it ideal for schemes above train or tube stations.

Its main environmental benefit is that it slashes the carbon footprint of the building because the wood acts as a natural carbon store. Lendlease's Deck estimates that using timber cuts the size of a building's carbon footprint in half.

WTA's Waugh says that developers need to start recognising the importance of their building's carbon credentials. "I'm no environment champion - I don't live in a tepee - but I do understand that all of us need to start thinking about our impacts on the planet," he says.

"Climate change should affect every decision we make, but construction and architecture seem to think of themselves as exempt from that. If we built 10% of our buildings in timber, we'd get a quarter of the way through our Paris agreement."

Those environmental benefits could have positive knock-on effects elsewhere. Waugh argues that sustainable credentials help when dealing with planners and says it is "inevitable" that the government will slap a 'carbon tax' on the industry - something that building with

timber could help developers avoid.

Trilogy's Wolstenholme adds that investors are increasingly concerned about sustainability, too. He cites BlackRock chief executive Larry Fink's recent assertion that large companies need to begin making a "positive contribution to society".

"The money, the equity that people need to attract is increasingly insisting on it," he continues. "Not only is it about sustainability; it's about social impact, and that whole topic is moving more and more to the forefront of people's minds."

Construction challenges

But despite all the benefits associated with timber, it is no construction panacea. Using the material presents a number of challenges. As with modular construction, designs and plans must be finalised early because it is difficult to make changes once construction has begun.

"All the timber is designed and built off site," says Ethical's Peberdy. "It comes and you screw it in. You don't have quite the same flexibility as the programme goes on to make tweaks and changes, so you have to be clear about what you're going to do at the beginning."

Technical challenges include getting used to timber's thermal properties, meeting stringent fire regulations and the need for different acoustic

treatment of floors. The main limitation is that timber is not as strong as steel and concrete, so developers currently only build to a limited height using CLT. However, work has already begun on the design of timber skyscrapers in many cities, including London, and some developers are combining steel and timber to be able to increase height in the short term.

As these examples demonstrate, developers are working to overcome the obstacles to timber usage, primarily because they believe it is what occupiers want. James Finnis, director in JLL's office agency team, believes that most timber development in the next few years will be driven by pre-lets from occupiers keen to lease a sustainable building in order to attract the best staff.

"Top of any occupier's list is the right employees, and to get them you've got to be in the cool, attractive new building," he says. "Sustainability is a key part of what occupiers want. If you're sitting in a building that has a wood frame and you can say to your staff that it's carbon negative for a long period of time, that will help you attract the right socially aware employees."

The next couple of years will be the litmus test. The hope among advocates is that as more timber offices spring up, more occupiers and investors will become aware of its benefits and that, in turn, more developers will recognise wood is good, too. ■