AFR | Thursday 4 November 2021
www.afr.com | The Australian Financial Review
commercialrealestate.com.au

Commercial Real Estate.com.au

Property   35

The 40-storey building has a concrete core but will use timber as the structural material on its floors.

Inside Atlassian's carbon conscious building

New build At $546 million, getting rid of carbon is not cheap.

Michael Bleby

Atlassian's new 40-storey office will have half the embodied carbon of a conventional equivalent in its construction, consume half the normal energy during its operation and be fully powered by renewable energy.

And it will cost $546 million to build.

The price is hefty and project director Bronwyn Zorgdrager is glad that her tech company – even though it has brought on Dexus as co-owner of the 75,000-square-metre tower - is not trying to eke out a standard commercial return from the project.

"We have got a little bit more leeway in what we are doing there and are grateful for that because this building is ambitious," Zorgdrager told a *Fifth Estate* online audience last month

"It is way more expensive than your typical project would be... We do have financial metrics we have to deliver within but we are not looking at it as a speculative development pushing the boundaries on things but then having to make sure we hit that typical developer margin."

An artists impression of the inside of the building near Sydney's Central station.

It is way more expensive than your typical project would be.
Bronwyn Zorgdrager

With buildings and construction accounting for 36 per cent of global final energy use and 39 per cent of energy-related carbon dioxide emissions, Atlassian's ambitions with Tech Central, as the tower adjacent to Sydney's Central Station will be known,

are world-leading. The project raises the question of how realistic these goals for developers more constrained by commercial realities, who may not be developing officer towers for a community of "Atlassians", as Zorgdrager describe her fellow-employees at the Nasdaq-listed company.

There is low-hanging emissions fruit to pick by measuring the embodied carbon of a building early in its design phase, says Tom Dean, a director of quantity surveying firm Slattery, which is not involved with Tech Central.

"[A reduction of] 5-10 per cent you can get without a cost premium," Dean

tells *The Australian Financial Review.* "Ten to 20 per cent will be a cost and after that it's getting quite expensive."

A 10-20 per cent reduction would boost overall construction costs by between 3 and 10 per cent, he says.

And with Atlassian's ambition more than double the 10-20 per cent reduction in embodied carbon that the most advanced projects in Australia are currently attempting, this shows how forward-thinking it is.

"The ambition of 50 per cent is really industry leadership," Dean says.

Development in Australia is lagging the lead set by the industry in the UK and Europe.

"We're starting to catch up, but we are behind", Dean says.

It's not even standard industry practice yet to measure the embodied carbon at the initial design stage of a project, says Brett Mason, whose construction company Built is building Atlassian's tower.

"In three years' time we'll move ... from random acts of measuring embodied carbon, to it being a given on every project," Mason says. "We'll have a standard way of doing it and we'll do it together."

Going further is difficult.

"The 50 per cent reduction in embodied carbon is the really difficult one," Zorgdrager says.

Atlassian's tower has a concrete

core, a steel framed exoskeleton and eight "habitats" or communities separated by concrete slabs. These elements of "superstructure" as they are collectively known, account for almost half of the embodied carbon in a building and Tech Central is using lower-carbon concrete for these.

"We're looking to try and pull out material where we can and also look at green procurement opportunities as we move through this as well," she says.

Built says it is quite possible to reduce the highly energy-intensive cement content of concrete by 30-40 per cent without adding cost. Greater reductions of 50-60 per cent are possible, but add to costs in research and development, the company says.

Atlassian's building, designed by SHoP Architects and local firm BVN Architecture, will use timber as the structural material for the floors sandwiched as habitats between the concrete slabs. And while timber can be an expensive input, it can also lead to some savings, says Matt Williams, the principal of engineering firm LCI Consultants.

"You can typically use less of it because the lightweight nature of the building means it's naturally going to be thinner than a concrete equivalent," Williams told the *Fifth Estate* webinar. "With some of these things the levers are not just the price you pay."