

Timber skyscrapers: when the structure captures more CO₂ than it emits

A Michael Green TED talk frames certified timber as a structural material for tall buildings, with a carbon balance that reverses the logic of concrete and steel.

In a TED talk barely ten minutes long, architect Michael Green sets out one of the central challenges facing the construction industry in the age of climate change. The projected growth of cities calls for a large number of new homes, and that demand runs straight into the need to cut emissions: nearly half of all greenhouse gases are linked to the construction sector. His proposal is direct: timber skyscrapers capable of absorbing CO₂ while housing large numbers of people.

A material burdened by prejudice, backed by data

The idea may sound risky given the weight of prejudice that timber carries as a structural material. Innovation in the sector, however, already makes high-strength, solid structures possible at height. Green presents passive houses and ecological construction not as a marginal alternative but as the inevitable future of building. At PAPIK Group this is precisely the premise behind the [Eskimohaus](#) system: certified timber as a first-order structural element, not a decorative finish.

The carbon balance, in figures

The environmental case rests on the cycle of the raw material. Producing timber absorbs more CO₂ than is later needed to put it in place. The talk illustrates this with a single twenty-storey building resolved two ways. Built with cement and steel, manufacturing those materials emits 1,200 tonnes of CO₂. Built with timber, the production of the raw material captures 3,100 tonnes of CO₂, which according to Green leaves a net difference of 4,360 tonnes in timber's favour. This is also known as dry construction.

Conserving the forest stock

The first predictable objection is the risk of deforestation: building with timber at the scale future housing demand requires seems incompatible with the health of forests. The answer Green offers turns the argument around. The timber used in construction is certified with the FSC seal, which guarantees that no forest stock has been lost and that it is kept healthy. And a healthy forest absorbs more CO₂ than an abandoned one: a forest of old trees, exposed to fire and pests, can release more CO₂ than it absorbs. Active forest management, in this framing, is not an environmental cost but an added benefit.

Green's thesis aligns with the foundation of the industrialised timber construction we apply in our homes, and with the environmental logic of any intervention aimed at reducing the footprint of building. The video remains a clear entry point into the debate.

When a building's structure captures more carbon than it costs to raise, timber stops being an aesthetic alternative and becomes an environmental decision.