

Benefits of Wood in Construction

Construction Procurement Guidelines

November 2019 v1.1

Sustainability benefits of using wood in construction

This is a summary of some of the benefits of using wood in construction, provided by the Ministry for Primary Industries, incorporating industry feedback.

- Wood is sustainable, renewable, and generally less energy-intensive to process compared to other construction materials, including concrete and steel. Wood is an available resource that is biodegradable and easy to dispose of.
- Through its ability to store carbon, wood is essential in transitioning New Zealand to a carbon-neutral economy. The long-term locking away of carbon dioxide in the form of buildings is recognised in international climate agreements for carbon accounting. This means the more trees New Zealand can convert into buildings, the greater our contribution to climate change targets will be.
- Timber sourced from New Zealand's plantation estate and private indigenous forests meets industry environmental standards and is sustainably managed. Most of the commercial estate has third-party environmental certification, where companies work to audited sustainability criteria¹.
- In addition to its sustainability benefits, wood in construction can be more cost-effective than other products due to its ability to be a relatively quick² construction method, being comparatively light and easy to transport, and versatile.
- Engineered timber products can perform as well as other building materials in fire (mass timber) and acoustics. Research done internationally, most recently in Australia³, has demonstrated the health and wellbeing benefits of using natural materials such as wood (biophilic design⁴) in workplaces, schools, hospitals and homes.
- Wood technologies provide opportunities for off-site pre-fabrication, which reduces waste and construction times. Off-site manufacturing is also safer for the construction industry's labour force.
- Wooden buildings using engineered timber have high seismic resistance, and are not only survivable, but can be brought back into use, rather than having to be demolished⁵.
- The opportunities for using wood have increased significantly with developments in engineered timber products such as cross-laminated timber (CLT), laminated-veneer lumber (LVL), and glue-laminated beams. New Zealand has a growing number of fabricators, engineers and architects who are using engineered timber in their designs and construction of mid-rise buildings.
- Choosing domestically-processed wood products for construction also supports regional economic development as forestry, domestic processing and associated infrastructure are located regionally, providing significant local employment.

¹ <https://nz.fsc.org/en-nz>

² <https://hnzc.co.nz/news/latest-news/healthier-homes-quicker-for-those-who-need-them-most/>

³ <https://makeitwood.org/documents/doc-1624-pollinate-health-report---february-2018.pdf>

⁴ Design that incorporate elements such as natural light, plants, nature views and water features.

⁵ <https://www.canterbury.ac.nz/engineering/schools/cnre/research-groups-and-partnerships/timber/research/> and https://link.springer.com/chapter/10.1007/978-3-319-16964-4_13