

RED STAG TIMBER - PRESSURE TREATMENT PLANT 2 BUILDING

WAIPA STATE MILL ROAD, ROTORUA

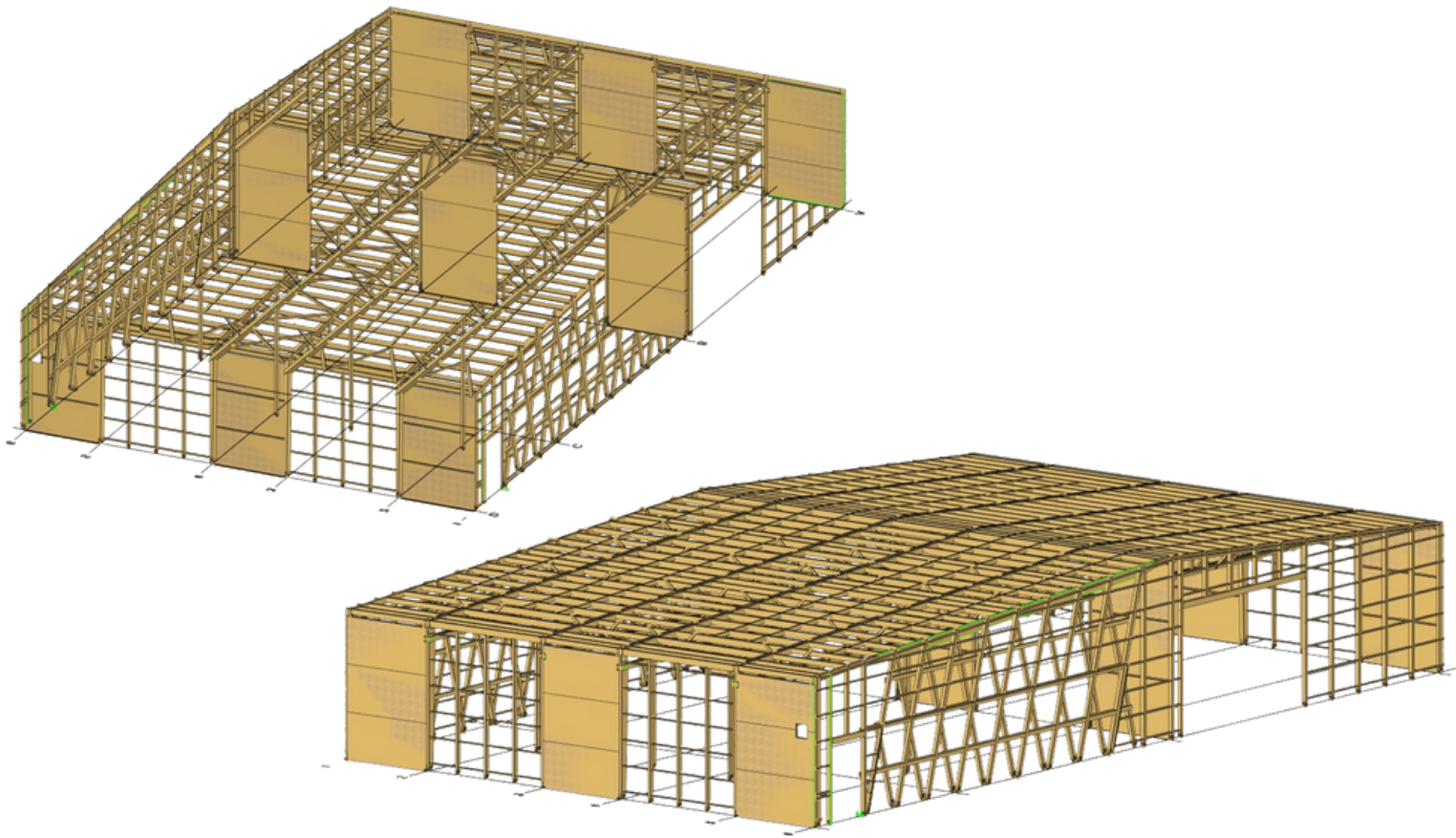
CASE STUDY (UNDER CONSTRUCTION)



Ministry for Primary Industries
Manatū Ahu Matua



RENDERS



IMAGES



MASS TIMBER MATERIALS USED, AND WHERE

Building Info:	
Year built	2022
Dimensions (L/W/knee/apex)	70m/40m/10.5m/12.73m
M3 internal area	25,200 m3
Build Cost	\$6.7 million (current forecast)
Build Cost /m2	\$2,392
Portal columns	Glulam
Portal beams/truss	Double chord GL8 trusses, Top 405x135, Bottom 360x135
Girts	290x45 MSG8, 225x65 GL8
Purlins	450x88 and 360x88 GL8
End wall columns	315x180 GL8
Dado Panels	CLT 3/144
Positive Environmental Impact	Estimated Sequestered Carbon: 23.4 tons of Carbon and 86.1 tonnes of Carbon Dioxide.

MATERIAL SUPPLIER OF MASS TIMBER

Portal columns	Techlam
Portal beams/truss	Techlam
Girts	Red Stag Timber
Purlins	Laminated Beams
End wall columns	Techlam
Dado Panels	Red Stag TimberLab - redstagtimberlab.co.nz

DESIGN/CONSTRUCTION TEAM

Main contractor	Watts and Hughes
Engineer	Tiaki Engineering Consultants Ltd
Architect	PG Rose/Insight

V-QUEST ANALYSIS

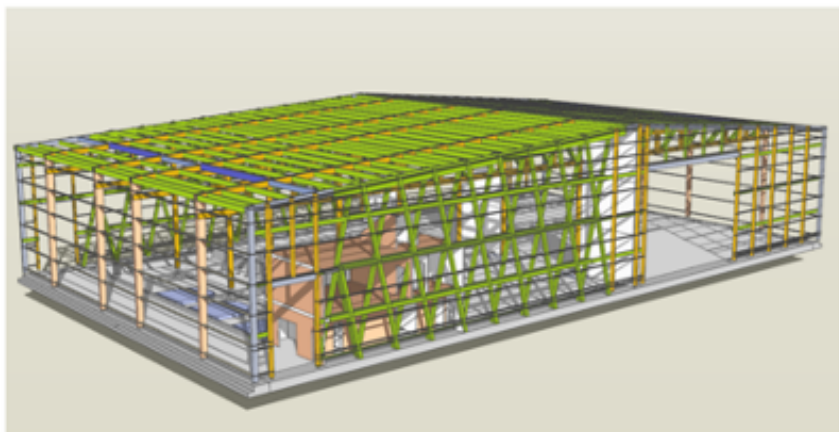


	Mass Timber	Hybrid	Concrete/Steel **
	\$	\$	\$
Cost	3,916,766		3,830,772
	Kgs	Kgs	Kgs
CO2-e	-7,068		729,186
Weight	2,357,088		2,234,379

- All Carbon data based from Branz CO₂NSTRUCT
- CO₂ calculated for LCA modules A1 - A3 only
- Costs and carbon include all impacts associated with the core structure material selection, including connections, foundations, slab, piles, cladding, girts and purlins, and an allowance for the P&G difference associated with construction speed.
- All costs are exclusive of GST

* For structural reasons hybrid options were limited in this case

** Assumes steel superstructure



ABOUT THE MID-RISE WOOD CONSTRUCTION PROGRAMME

Mid-Rise Wood Construction is a six-year partnership between the Ministry for Primary Industries (MPI) and Red Stag Investments Ltd. The aim of this \$6.75 million programme is to encourage widespread adoption of precision-engineered timber in mid-rise building construction. Since its inception in 2018, the programme has assembled a pool of New Zealand professionals experienced in mid-rise wood building design and construction to help share and grow knowledge and expertise with the broader industry.

Engineered timber is not only naturally beautiful but also provides a very strong, low carbon and comparably low-cost alternative to steel & concrete. It is easy to transport, relatively light, and has outstanding earthquake and fire resilience. The use of prefabrication can decrease construction time by as much as 30 percent, and reduces costs compared with traditional building methods. Combining cross-laminated timber (CLT), laminated veneer lumber (LVL), glulam and panelised framing timber creates a cost-effective, fast, resilient and sustainable system for mid-rise construction.

For more information, go to www.midrisewood.co.nz