

RED STAG TIMBER - REMAN BUILDING (CONSTRUCTED)

WAIPA STATE MILL ROAD, ROTORUA

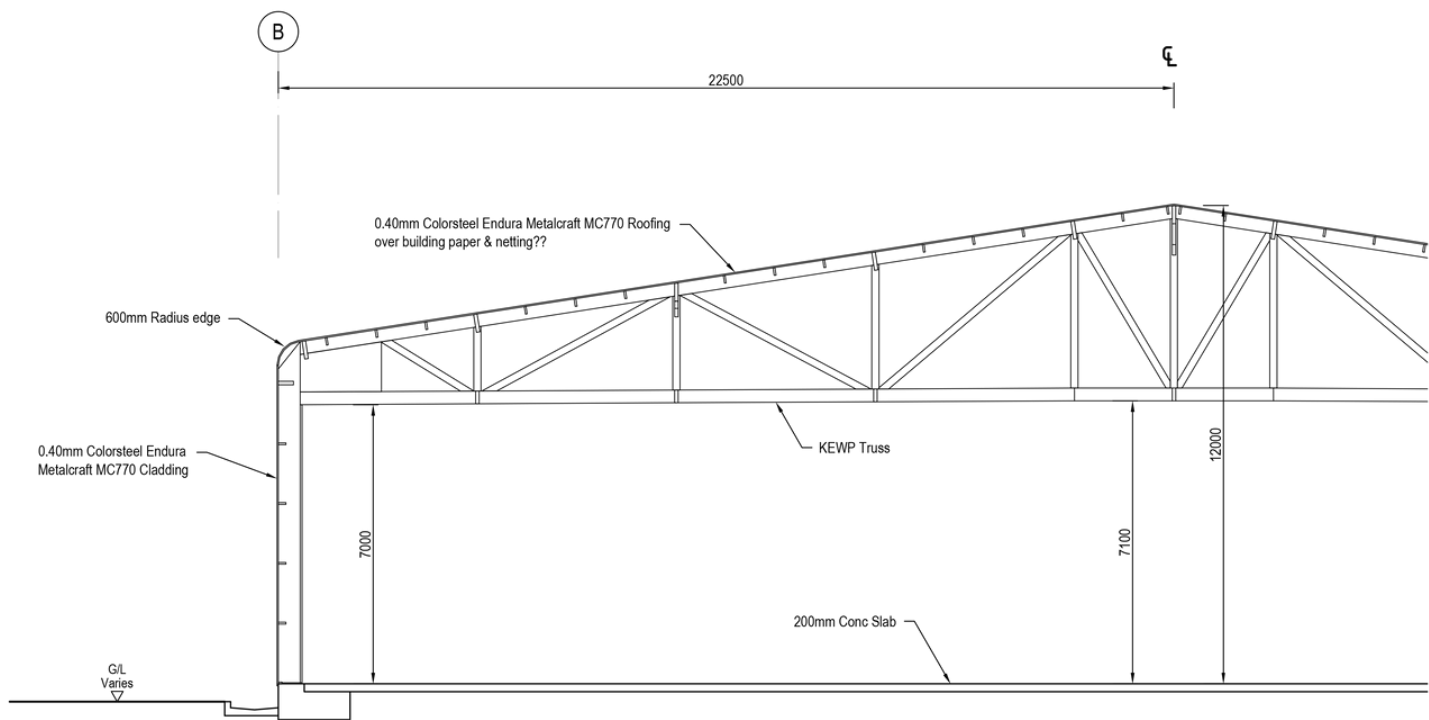
CASE STUDY



Ministry for Primary Industries
Manatū Ahu Matua

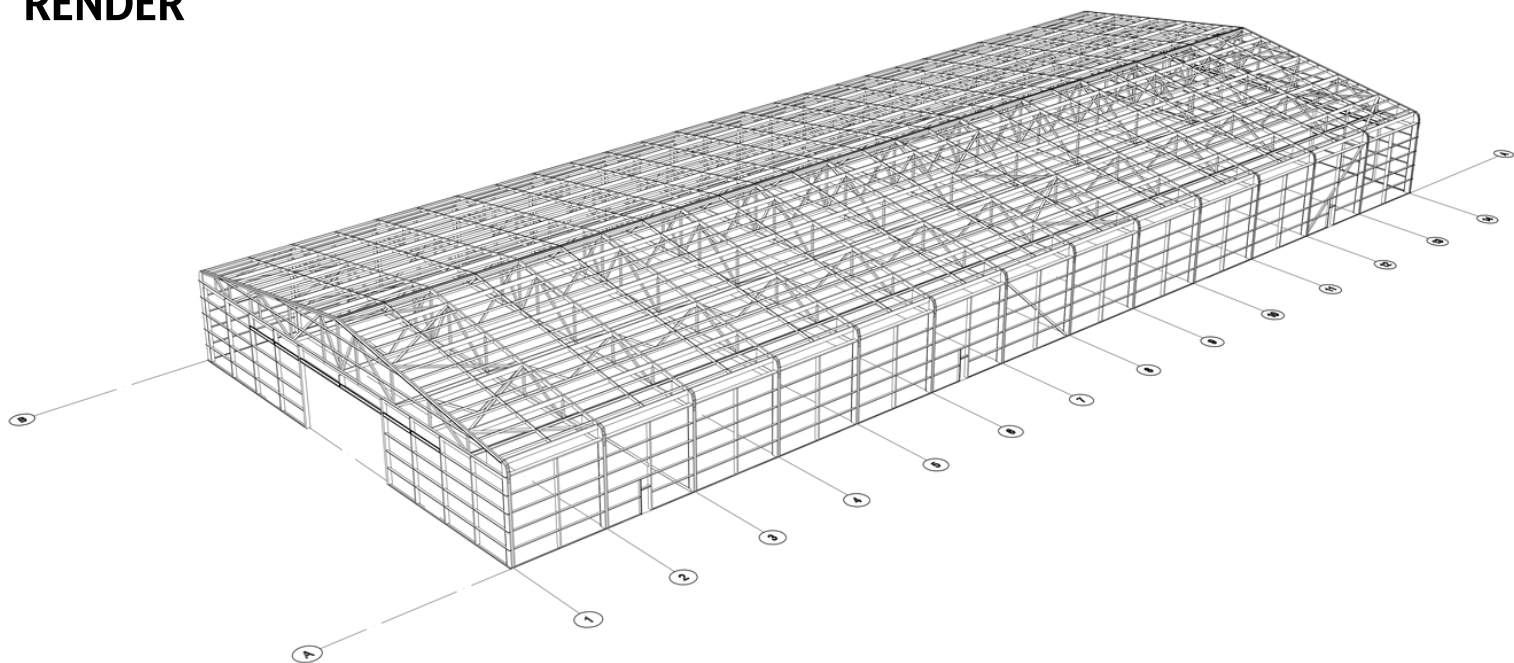


CROSS SECTIONAL DRAWING



PART TYPICAL SECTION
1:100 at A3

RENDER



MASS TIMBER MATERIALS USED, AND WHERE

Building Info:	Red Stag's Remanufacturing building converts timber that does not make 'structural' grade into high-value engineered timber for products such door cores and windows. Defects are scanned and cut out, with the remaining 'shook' then finger-jointed and glued back together again. The building is 111m by 45m clear span.
Year built	2011
Dimensions (L/W/knee/apex)	111m/45m/8.5m/12m
M3 internal area	34,965 m ³
Build Cost	\$2.68 million
Build Cost /m²	\$536
Portal columns	2 ea 550x90 GL8
Portal beams/truss	Single chord Glulam truss, top 320x130 glulam, bottom 320x130 glulam
Girts	190x45 MSG8
Purlins	450x90 GL8 main purlins, 270x60 GL8 intermediates and 190x45 MSG8 purlins
End wall columns	350x120 GL8

DESIGN/CONSTRUCTION TEAM

Engineer	Structural Concepts
Architect	Structural Concepts

V-QUEST ANALYSIS

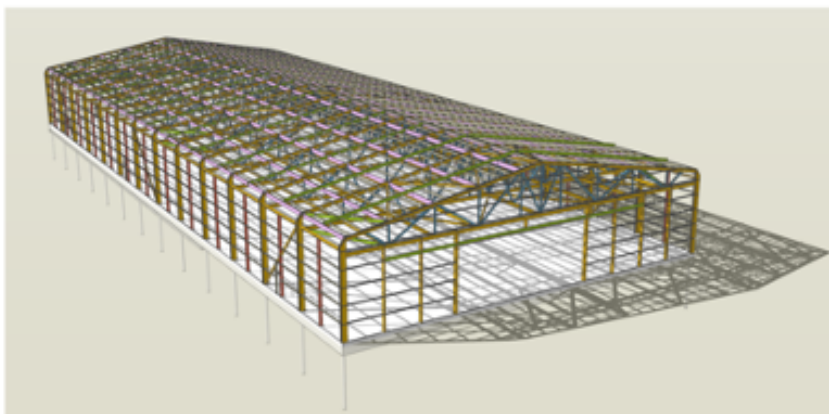


	Mass Timber	Hybrid	Concrete/Steel **
	\$	\$	\$
Cost	\$4,139,239		\$4,809,619
	Kgs	Kgs	Kgs
CO2-e	14,188		911,249
Weight	2,884,808		3,108,342

- 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



FLY-OVER LINK



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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