

KOWHAI FALLS (UNDER CONSTRUCTION)

WOODCOCKS ROAD, WARKWORTH

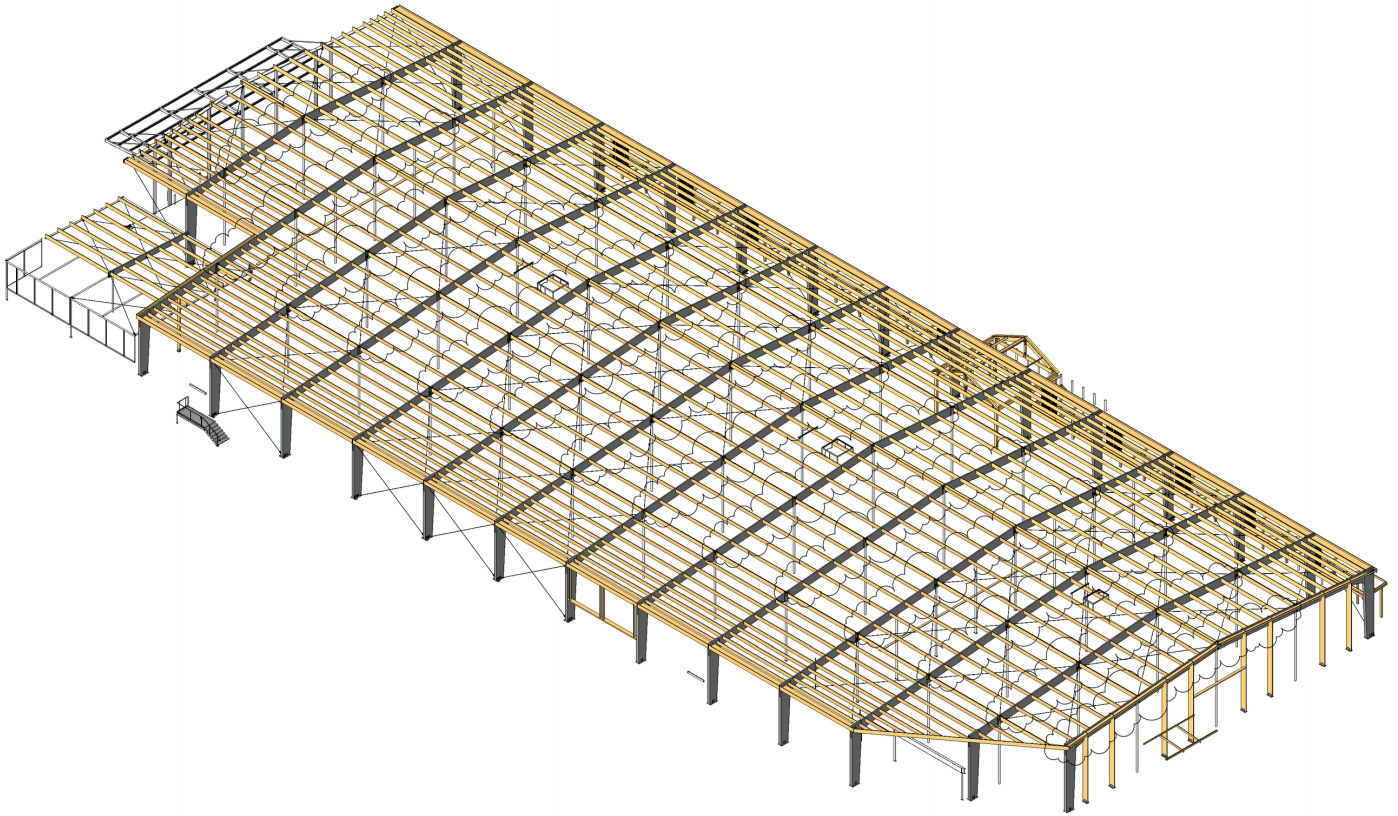
CASE STUDY



Ministry for Primary Industries
Manatū Ahu Matua



RENDER



IMAGES



ABOUT THE BUILDING

Kowhai Falls Retail Centre's innovative and eco-friendly design includes the use of a mass timber structure made from New Zealand pine, including LVL (NelsonPine) and Glulam (Techlam). These materials significantly reduce the building's carbon footprint to less than 30% that of a concrete and steel equivalent*. The building's energy-efficient design also includes Metalcraft's new PIR insulated panel (R4.8), solar panels, and a super-smart HVAC system to ensure an extremely low energy footprint over its 50-year design life. Live feedback from solar energy generated vs power consumed in the building will also be displayed in real time for shoppers to see.

*see V-Quest Analysis below

"We've built plenty of high end residential as well as standard steel commercial and industrial buildings so this was really a combination of the two. We were a bit apprehensive about using mass timber for the structure of such a large building but once we had some new systems and processes in place and understood how the LVL can change with weather we're very happy with the final product to the point we are moving ahead with stage 2 using the same timber structure. There is more work in the build but the product just looks so much nicer."

Bevan Morrison, Project Manager, Dobbyn Builders.

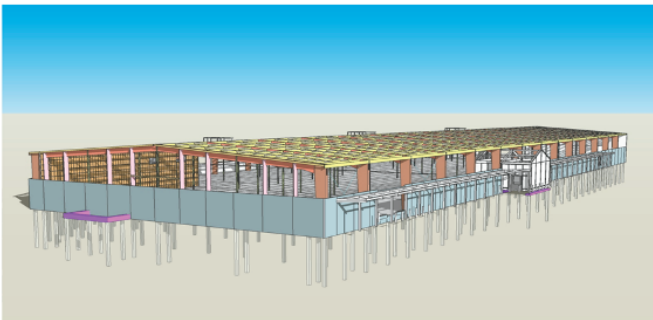
V-QUEST ANALYSIS



	Hybrid - as-built	Hybrid - Steel Portals	Concrete/Steel
	\$	\$	\$
Cost	6,667,010	6,699,257	6,821,256
	Kgs	Kgs	Kgs
CO2-e	262,553	611,063	853,517
Weight	3,227,704	3,221,504	3,222,794

- 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

- Pilling has not included in the assessment (no major weight variation between options)
- Costs reflect core structure including foundations, frame, roof frame, structural walls and upper floors. P&G is also included
- Variance between options includes adjustments to frame and roof frame only



FLY-OVER LINK



<https://www.youtube.com/watch?v=IHB1gWVtEmQ>

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