



Te Wharehou O Tuhoë uses world first TTT MultiPole structural components in the new iwi and civil defence headquarters located in Taneatua, New Zealand. This project utilised TTT MultiPole Uglie foundation piles, and TTT MultiPole UniLog columns, diaphragm floor panels, and post-tensioned shear wall panels.

Designed by Jasmax, built by Arrow International, with the structural design provided and completed by mlb Consulting Engineers – specialists in timber structure design. This is the first project built in New Zealand in accordance with the North American Living Building Challenge – the most stringent sustainability criterion that can be applied to buildings. The timber structural systems were designed to minimize embodied energy and carbon emissions. The design was to have minimal structural damage under a large seismic event and provide emergency shelter to the surrounding community.

TTT Products Limited met the design challenge and developed innovative products, equipment and machinery to enable manufacture of the world leading MultiPole structural components used in the project:



TTT MultiPole Uglie Foundation Piles

MultiPole Uglie piles are naturally tapered, de-barked poles, with a hollow core, that provide greater skin friction during installation. 216 pieces ranging from 200-300mm SED and up to 12.0m long, were vibrated through the silty, sandy liquefiable top layer then 2m into the gravel layer. Reinforcing rods were then grouted into the hollow core.

TTT MultiPole UniLogs

The TTT MultiPole is an incredibly versatile pole due to its' unique hollow core. UniLogs are uniform diameter, machined poles. TTT MultiPole UniLogs are a combination of a machined pole with a hollow core.



TTT MultiPole UniLog Structural Columns

MultiPole UniLogs 180-350mm diameter and up to 8.0m long, were used as structural columns.

TTT MultiPole UniLog Diaphragm Floor Panels and Post-tensioned Shear Wall Panels

The MultiPole UniLog floor panels were made from 240mm diameter components in panels up to 4.4m long x 3.0m wide. The MultiPole UniLog shear wall panels were made from 180-225mm diameter components in panels up to 6.5m high x 6.0m wide. The floor and wall panels were constructed with components using our unique shear key scallop system.



Additional Components

TTT also manufactured MultiPole Entrance Struts (tapered UniLogs), and a separate photovoltaic structure.

TTT manufactured each column, floor and wall panel uniquely, with all the rebates, scarfs, cuts, shaved edges, and pre-drilled holes completed before delivery to site. All components were dried, treated as required with either Boron or Micronised Copper Azole (MCA), coated with a temporary protective coating, and then wrapped to maintain the moisture content. TTT also installed the foundation piles, structural columns, floor and wall panels, and additional entrance struts and photovoltaic structure.

Revolutionary timber pole solutions

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SED Poles, Uglies, MultiPoles, Utility Poles, Marine Poles, Proof Tested Poles

Uniform diameter machined poles