



TE WHARE NUI O TUTEATA

The name 'Te Whare Nui o Tuteata' was gifted by
Ngā Hapū e Toru, Ngāti Hurungaterangi, Ngāti Taeotu me
Ngāti Te Kahu o Ngāti Whakaue.

The name acknowledges the mana of their tupuna Tuteata, from
whom Ngā Hapū e Toru descend and their connection
to the whenua, Tītokorangi.





Design and construction facts

Te Whare Nui o Tuteata, a three-storey, 2000 m² building, is believed to be a world first for a wooden diagrid structure of its size.

Diagonal grid structures (diagrids) are an efficient way to provide strength and stiffness and require less material than traditional structures.

Engineered timbers have been used for their physical properties, sustainability and environmental performance.

- The diagrid frames and entry canopies use Glulam and laminated veneer lumber technology
- The floor beams and roof trusses have been manufactured from laminated veneer lumber
- The floors, lift shaft panels, suspended staircases and meeting room bracing is made from cross laminated timber (CLT)

Performance and safety. The connections between the diagrid units include a component designed to deform during severe earthquakes to protect the building. These components are replaceable.

Stored carbon. The 454 m³ of structural wood in the building stores approximately 418 tonnes of CO₂-e. This is equivalent to the emissions from 160 people taking return flights from Auckland to London. New Zealand radiata pine forests can regrow this amount of wood in 35 minutes. Over the building's expected life, the building is carbon neutral.

Features. The atrium ceiling was inspired by the structure of the radiata pine genome. The atrium ceiling lights are positioned to reflect the Matariki star cluster. Traditional tukutuku weaving inspired the design on the double-skin glass façade, which provides heat recovery in winter and regulates thermal gains in summer. Other energy saving features include natural ventilation, solar shading and LED lighting.

Kōwhaiwhai designs

The kōwhaiwhai designs were gifted to Scion by Ngāti Hurungaterangi, the haukāinga or local people of the marae, people of this whenua. The designs come from their wharenuī at Hurunga Te Rangi Marae, Ngāpuna.

The puhoro design on the middle peak represents speed and agility. It is often found on waka where it can symbolise a speedy journey.

The mangōpare design on the outer peaks represents the hammerhead shark, showing strength and power. For Ngā Hapū e Toru, the mangōpare also represent kaitiakitanga. The mangōpare is also depicted on entry doors, the ceiling of the mahau/entrance way, and throughout the building.

The team

Architectural design – RTA Studio, Irving Smith Architects;
Structural engineering – Dunning Thornton Consultants;
Engineered wood fabrication – TimberLab/XLam;
Construction – Watts & Hughes;
Project managers – RDT Pacific;
Exhibition design and installation – The Gibson Group;
Electrical engineering – Professional Consulting Services;
Mechanical and hydraulic design – eCubed;
Fire engineers – Cross Fire.

For further information on Te Whare Nui o Tuteata visit www.scionresearch.com/te-whare-nui-o-tuteata



Prosperity from trees - Mai i te ngahere oranga