

# TE WHARE-ITI

Prefab NZ SNUG Competition Entry

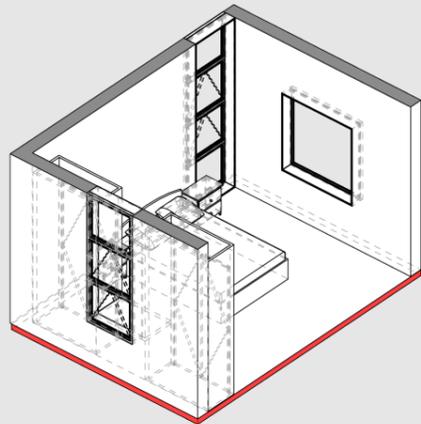
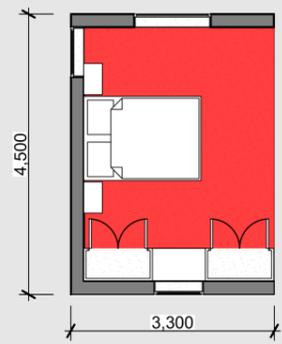


// Typical North elevation in suburban yard setting: Indoor and outdoor living space

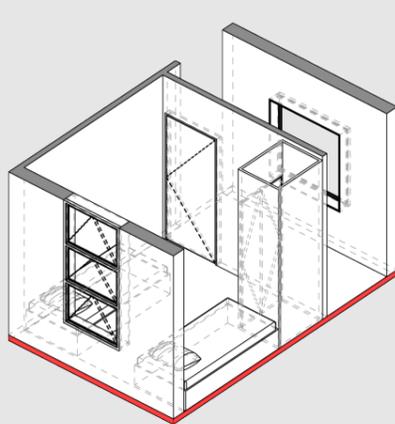
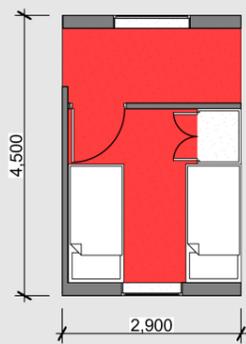


// Twenty Te Whare-iti plan variations within 30 - 65 m<sup>2</sup> size range. - Every plan has a mirrored option

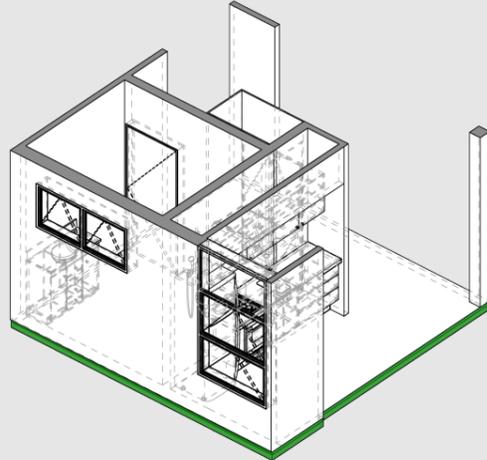
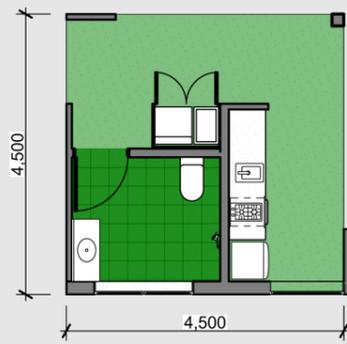
# Te Whare-iti Modules



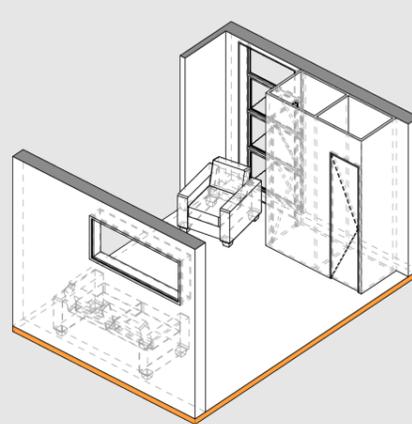
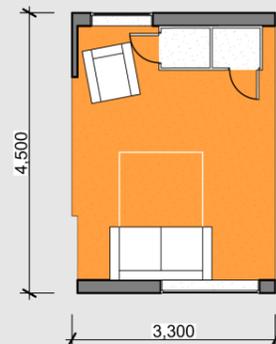
**Large Bedroom Module**  
Area: 15 sqm



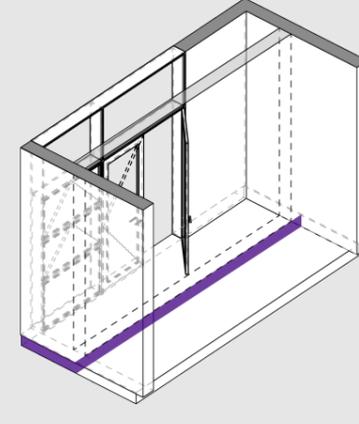
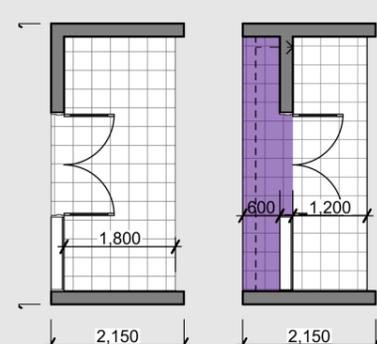
**Small Bedroom Module**  
Area: 12 sqm



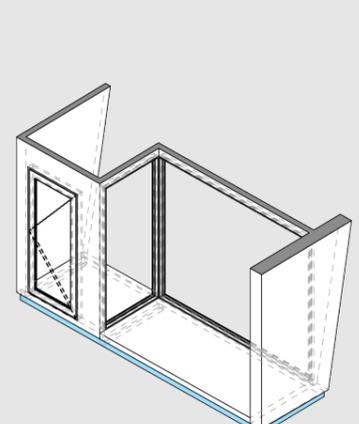
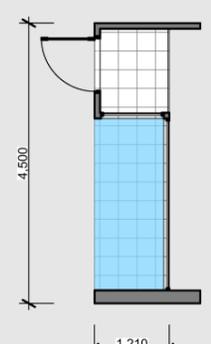
**Services Module**  
Area: 20 sqm



**Multi-use Module**  
Area: 15 sqm



**Expansion Module**  
Area: 9 sqm



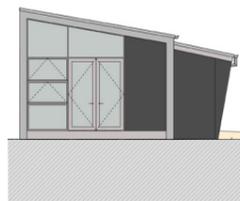
**Sun-space Module**  
Area: 4 sqm



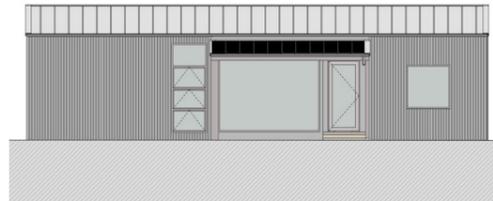
**TWI 15**  
Area: 54 sqm



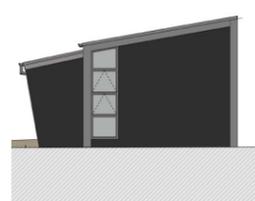
S or E Elevation



N or E Elevation



N or W Elevation



S or E Elevation

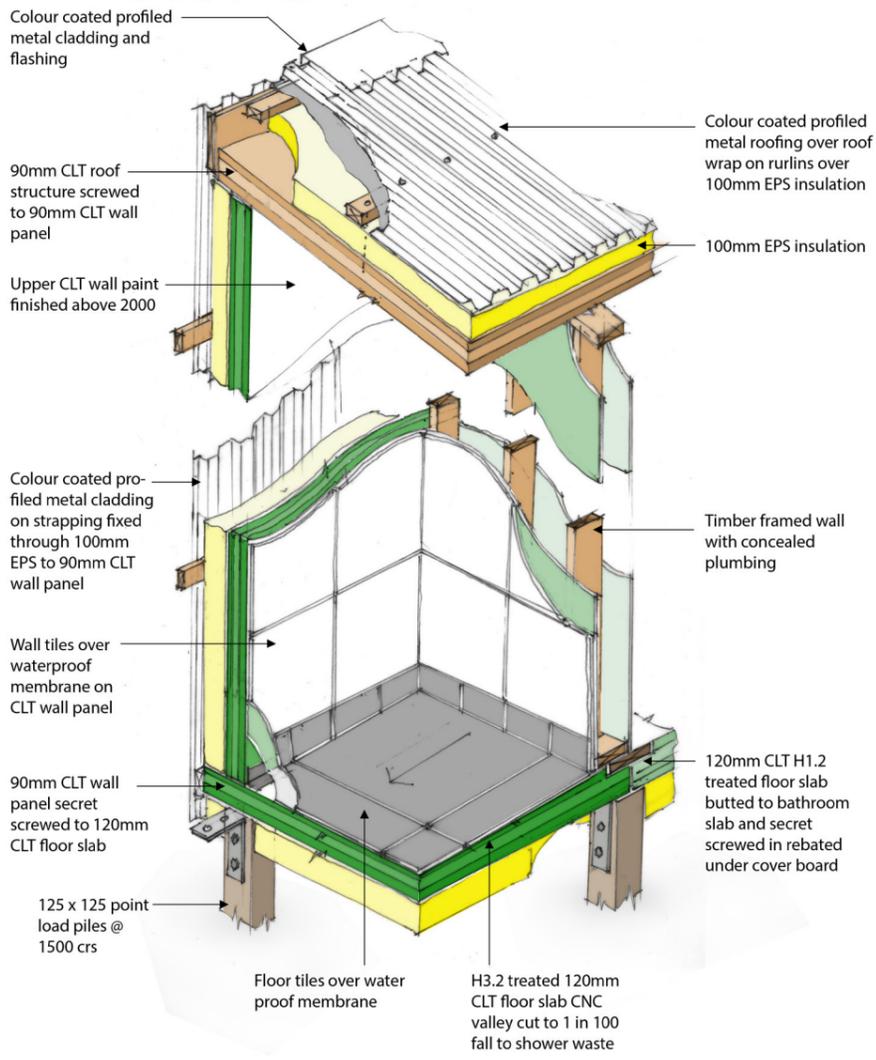


// Kitchen and multi-use living / bedroom adjoin but can be divided at night if guests arrive.

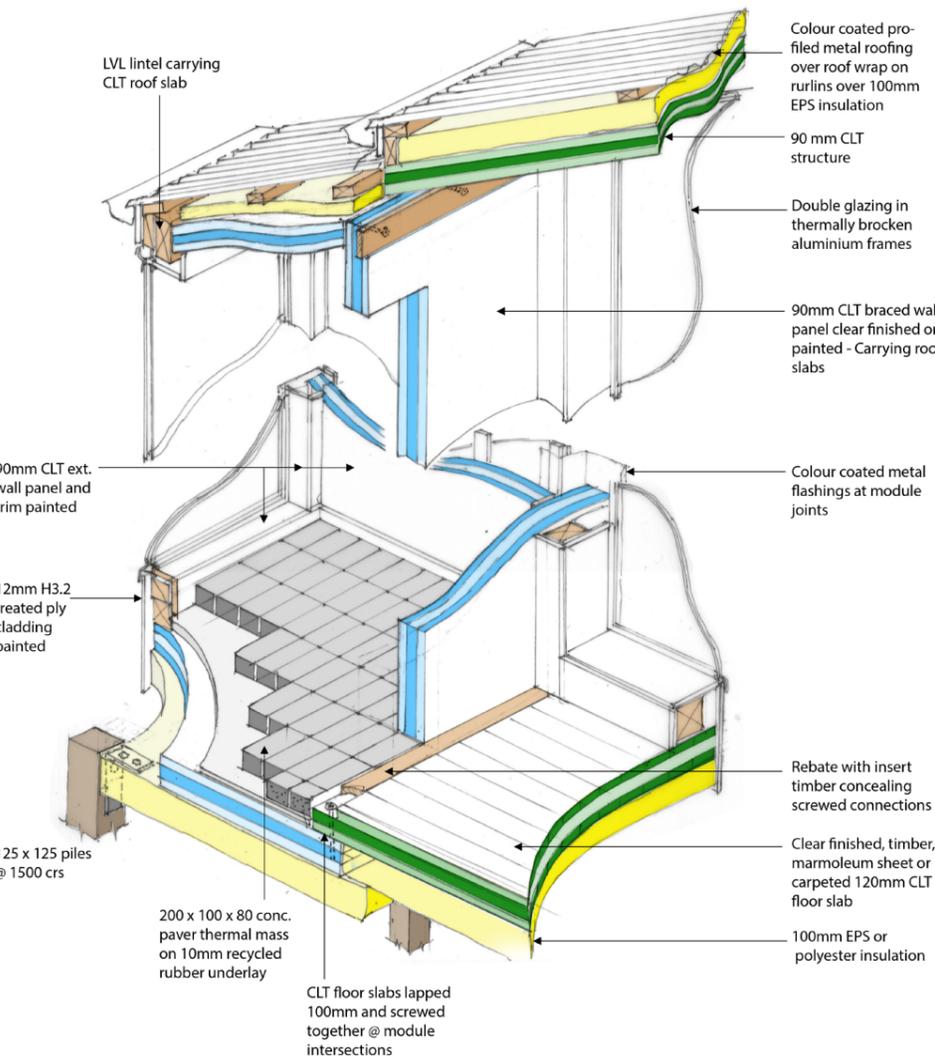
# Essential Qualities of Te Whare-iti Houses

<p><b>Construction/Buildability</b></p> <ul style="list-style-type: none"> <li>Houses completely prefabricated, allowing showroom type purchase and eliminating weather delays.</li> <li>4.5m standard module width allows easy transport to site.</li> <li>All Te Whare-iti (TWI) variants can be craned over existing houses from street or yard in one or two lifts.</li> <li>Cross Laminated Timber construction gives strength, simplicity and speed of construction.</li> <li>Structure is 100% low-embodied energy NZ grown pinus radiata. Roofing and most of the cladding colour-coated NZ steel, balance of cladding is painted plywood.</li> <li>Our manufacturing partner is a major player in timber product supplies with ample resources and a current programme geared to produce high volume complete buildings.</li> </ul>
<p><b>Regulatory standard conformance/Compliance</b></p> <ul style="list-style-type: none"> <li>Matrix score for TWI 15 facades is 6, which comfortably complies with E2/AS1 acceptable solution.</li> <li>The elongated TWI plans are well suited to back yards and side yards as narrow as 9m while conforming to all Auckland City H3.6 .4 Minor Dwellings bulk and location rules. Can also suit some H4 and H5 Residential settings.</li> <li>TWI passes H1 test for thermal efficiency: roof system R3.88; wall system R2.89; floor system R3.84.</li> </ul>
<p><b>Cost affordability</b></p> <ul style="list-style-type: none"> <li>Our QS estimates the delivered on-site cost per m2 for each pod to average \$2500 except for the highly fitted out services module (SM) at \$3680. These are start up rates. Volume production will progressively reduce costs and the QS calculation shows that TWI houses will sell at 15% less than these figures ie:             <ul style="list-style-type: none"> <li>TWI 00 series eg TWI 01 Studio living sleeping house (SM +multi-use module) (39m2) \$104K</li> <li>TWI 10 series eg TWI 11 One bedroom house (SM + Small bedrm + multi-use module) (51m2) \$120K</li> </ul>                     [Services connection costs on site will vary and are not included here]                 </li> <li>All TWI modules have strong integral CLT shells and whole house retains potential to be craned off site for reuse elsewhere in future, preserving ongoing value of the investment for buyers.</li> </ul>
<p><b>Flexibility/Adaptability</b></p> <ul style="list-style-type: none"> <li>Six standard modules create a family of 40 different house plans (20 layouts + 20 mirrored ones).</li> <li>Buyers can shop online and optimise their plan to suit their backyard views, sun, access direction, privacy &amp; budget.</li> <li>Every module (except services core) is capable of living and/or sleeping and/or occupational use.</li> <li>The kitchen and laundry joinery is modular and standardised to two different cabinet configurations, with options for a range of ply / HPL finishes and appliances.</li> <li>Floor finishes can be CLT polished, carpeted or have resilient sheet marmoleum etc to suit individual preferences.</li> </ul>
<p><b>Functionality/Fit for purpose</b></p> <ul style="list-style-type: none"> <li>TWI 15 has been rated by Lifetime Design Ltd as achieving a 5 star Lifemark rating. Other TWI plans expect 5 also.</li> <li>TWI house CLT floors can be set low over a site flat site slab or rest on piles on a sloping site where at least one of the two possible entrance modules will have a level threshold.</li> </ul>
<p><b>Design/Aesthetics</b></p> <ul style="list-style-type: none"> <li>The simple monopitch form of Te Whare-iti allows a small building to have wall and roof elements comparable in scale and pitch with traditional suburban houses of many eras, despite more contemporary materials and detailing.</li> </ul>
<p><b>Sustainability/Efficiency</b></p> <ul style="list-style-type: none"> <li>Every plan has bays with full height glazing on two adjacent facades for optimising house siting and orientation for passive solar gain.</li> <li>Insulation values for walls, floor and roof exceed minimum standards for Auckland region. Thermal mass pavers, dry laid on site, bring the entry and solar harvesting module floors up flush with balance of CLT floor slabs.</li> <li>Cross-flow ventilation aided by high window remote opener ensures summer comfort.</li> <li>Monopitch roof plane is intended to be oriented between NW and NE and accommodate PV panels for self sufficient generation if preferred.</li> </ul>
<p><b>Innovation/Point of difference</b></p> <ul style="list-style-type: none"> <li>The simplicity of the modules hides a clarity of purpose – they fit together neatly, to create variations.</li> <li>The living expansion module can serve as a complying minimum 8m2 outdoor living space allowing that end of the house to project over a steep backyard slope as an integral deck.</li> <li>Services and structural fixings all concealed in internal walls and on outside of external wall and roof slabs leaving interior spaces clear of clutter and making lining of CLT unnecessary.</li> <li>Apart from the bathroom, CLT interior surfaces will be clear sealed, whitewashed or low VOC acrylic painted.</li> </ul>

# Construction Details



// Bathroom assembly



// Sun-space assembly



// 8m<sup>2</sup> integral outdoor space for steep site.



// Varied functions for multi-use module.