



TŪHOE  
TE URU TAUMATUA



# Introducing Te Kura Whare

- **Key Partners** – Arrow International, Jasmax, Davis Landon, Jasmax.
- **Key Consultants** – BECA (Services), MLB Engineers (Timber Structure), Marshal Day (Acoustics)
- **Project Statistics**
  - 55% of all Companies were locally based
  - 50 – 60% Tuhoe workforce. Workforce peak 120 people per day



































# The Living Building Challenge



# More 'Green' Stuff




- Solar System (98,000kwh system),
- Onsite wastewater plant,
- 100% Site controlled storm water,
- Native timber façade, Library and Archive facilities
- Native Timber - 100t of dead and down native, manufactured onsite for construction. Matai, Rimu and Totara
- Pine Timber – sourced from Kaingaroa totally constructed using FSC certified timber



# \$1m worth of IP

## Which Suppliers are Truly Green?

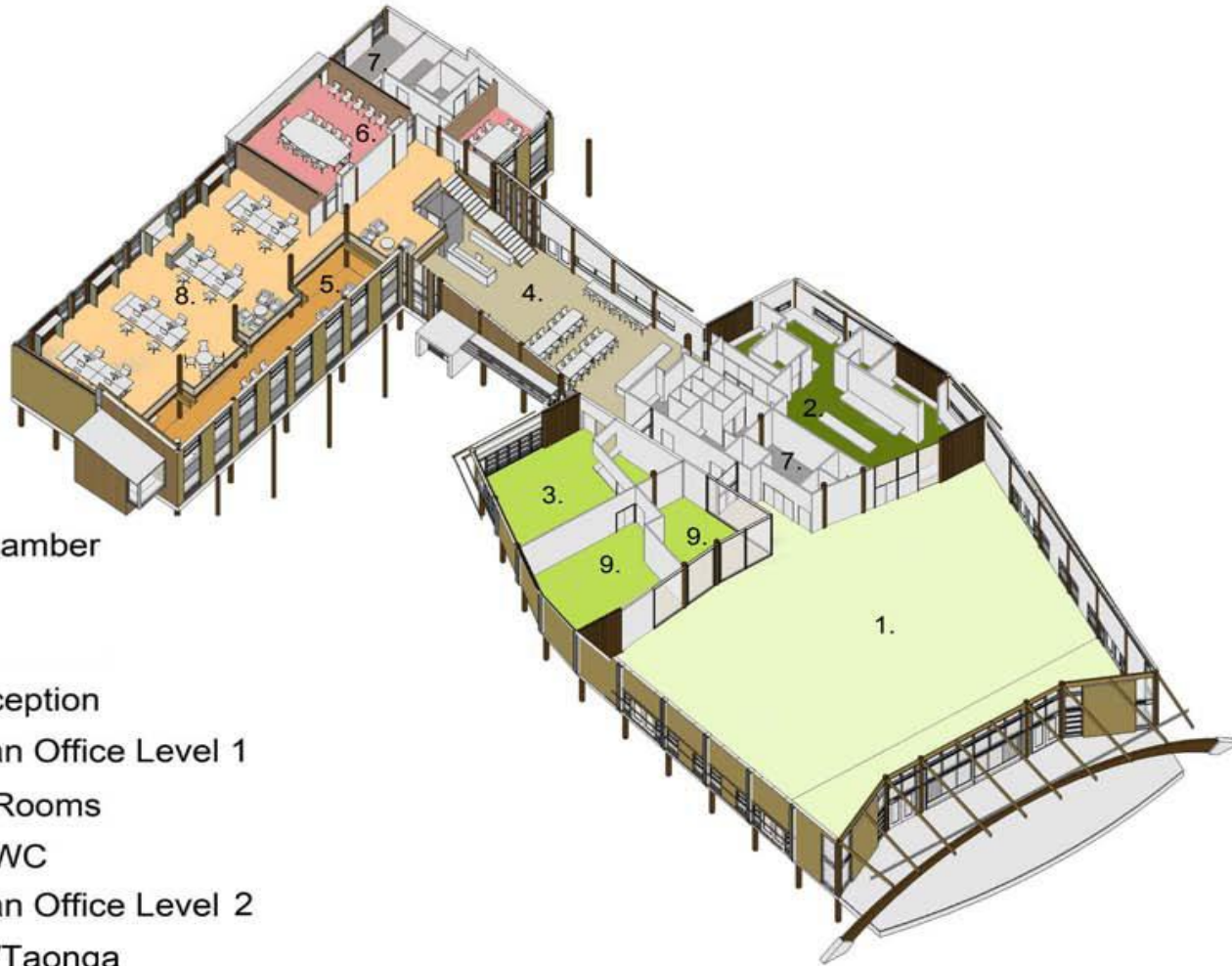


Name	Why	Example
 <p>Electrical parts, switches, panels, lighting</p>	<ul style="list-style-type: none"> <li>• Transparent with contents of all working parts</li> <li>• Forthcoming with supplementary information backing there product materials</li> <li>• PVC free plastic products</li> <li>• Have removed lead based products from there supply of parts and materials</li> </ul>	<ul style="list-style-type: none"> <li>• Supplied PVC free products</li> <li>• Do not use lead in the products</li> </ul>
 <p>Timber</p>	<ul style="list-style-type: none"> <li>• Renewable timber sources</li> <li>• One point contact for all timber requirements</li> <li>• Guaranteed and demonstrated FSC certified supply chain</li> </ul>	<ul style="list-style-type: none"> <li>• Whole of process management of FSC certified timber to site</li> </ul>
 <p>Golden Bay Cement</p>	<ul style="list-style-type: none"> <li>• Provided special mix to Firth concrete mix</li> <li>• Created Tuhoe specific recipes to order</li> </ul>	<ul style="list-style-type: none"> <li>• Unique mix – only mix compliant company in NZ for LBC. All other companies used imported materials</li> </ul>
<p>PCP - Spacer reinforcing for concrete</p>	<ul style="list-style-type: none"> <li>• Removed formaldehyde from product</li> <li>• Removed going forward on all products, ingredient used but not needed.</li> </ul>	<ul style="list-style-type: none"> <li>• Removed formaldehyde from products</li> </ul>
<p>Terralana – Pipe insulation</p>	<ul style="list-style-type: none"> <li>• NZ based replacement to Earthwill – insulation, well-known brand (imported insulation).</li> </ul>	<ul style="list-style-type: none"> <li>• Sourced locally instead of imported supply</li> </ul>
<p>Bay Form Tauranga – Wastewater</p>	<ul style="list-style-type: none"> <li>• PVC items for wastewater redesign from reused waste material steel</li> </ul>	
<p>Tuakau Timber – Supply multiple structure</p>	<ul style="list-style-type: none"> <li>• Designed poles which would traditionally be steel and concrete for building of type</li> <li>• New and revolutionary design</li> <li>• Open with process of manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>• All timber structure 1800m2</li> </ul>

# Bad!

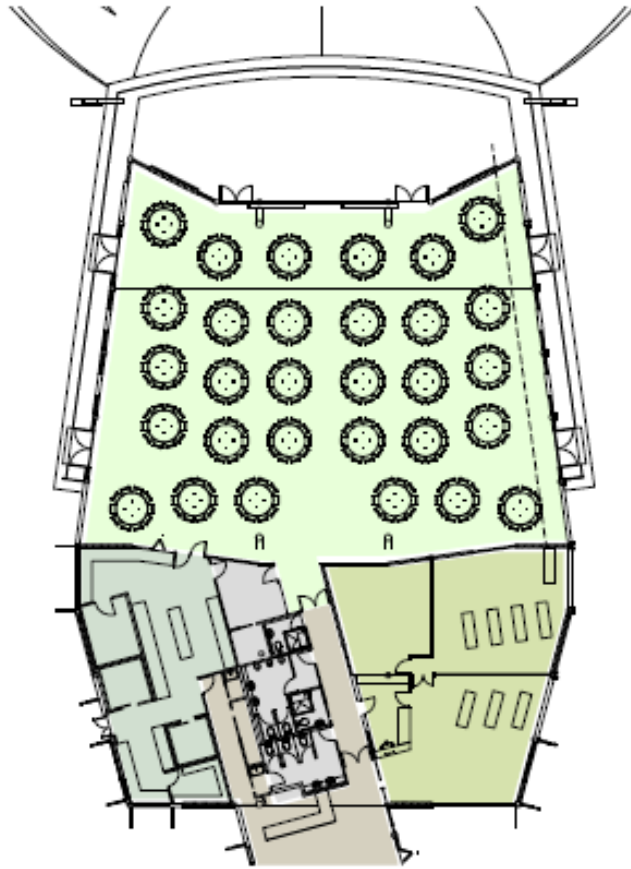
Name	Why	Example
<p><b>Tyco</b></p> <p>Supplier of Fire Equipment to Wormald</p>	<ul style="list-style-type: none"> <li>Resisted providing ingredient/material information</li> <li>Low enthusiasm for LBC and green philosophy – One internal email referred to LBC as ‘Green bullshit’</li> <li>Many products did not comply</li> <li>Many products needed redesign solutions to be applied by subcontracts</li> </ul>	<ul style="list-style-type: none"> <li>The sheathing of fire wiring did not comply. Arrow enforced a change of product to ensure no cadmium with the use of clear sheathing.</li> </ul>
<p><b>HR Cement</b></p>	<ul style="list-style-type: none"> <li>Considered product to be too sensitive</li> <li>Would not disclose ingredients</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
<p><b>Hymes – Precast concrete</b></p>	<ul style="list-style-type: none"> <li>Waiotahi preferred provider. Said materials complied, required significant investigation at cost of project to prove product. Risk to project</li> </ul>	<ul style="list-style-type: none"> <li>Used, but very slow on providing compliant documentation</li> </ul>
<p><b>Fire Sense – Fire cabling</b></p>	<ul style="list-style-type: none"> <li>Needed to sign confidentiality agreement</li> <li>Not forthcoming with info</li> <li>Fire cabling went in by Wormald (who did not report)</li> </ul>	<ul style="list-style-type: none"> <li>Did not meet LBC requirements. required an exemption</li> </ul>

# Te Wharehou – Level 1

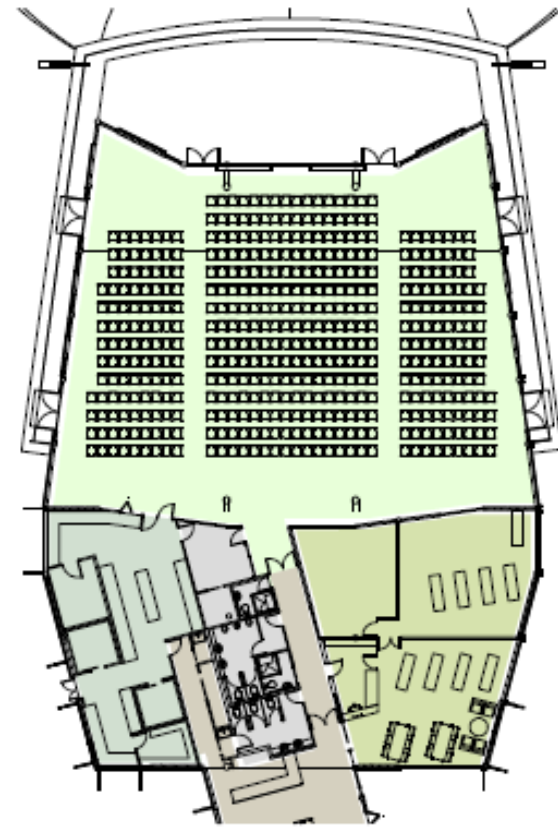


- 1 Tribal Chamber
- 2 Kitchen
- 3 Library
- 4 Cafe/Reception
- 5 Open Plan Office Level 1
- 6 Meeting Rooms
- 7 Storage/WC
- 8 Open Plan Office Level 2
- 9 Archives/Taonga

# Te Wharehou – Cultural/Community



LEVEL 1 DINING PLAN - Iwi Consultation



LEVEL 1 SEATING PLAN - Iwi Consultation



# Te Wharehou – Site Layout

## AREAS KEY



Stormwater and wastewater treatment systems and storage



Productive landscapes: orchard, kitchen garden, rongoa, harakeke collection, edible natives, nursery



Driveway, parking and turnaround with overflow for events



Contemplative areas: te maha rongoa, taonga, pa harakeke



Noise mitigation and atea mounds



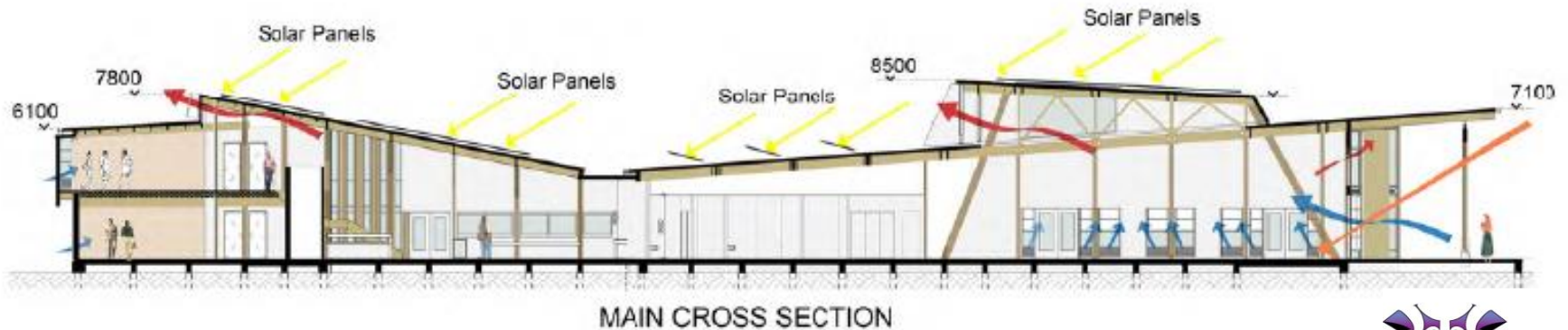
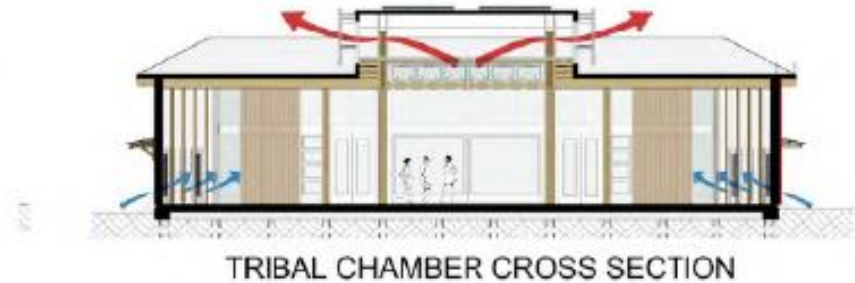
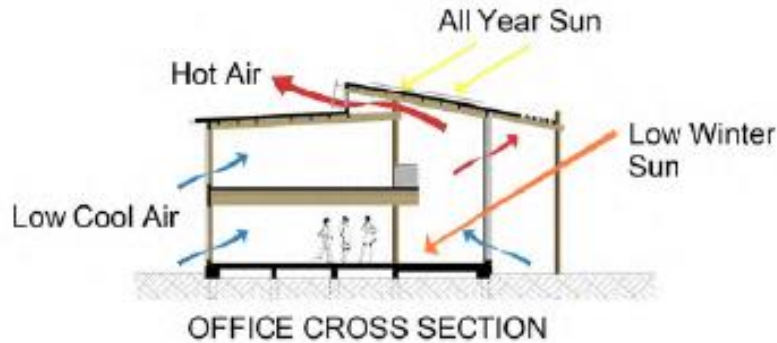
Ceremonial spaces: atea, open space for ahurei



Photo voltaics



# Te Wharehou – Site Layout



# Was it worth it?



