CASE STUDIES

Te Oro
Glen Innes Music & Arts Centre

Summerset Retirement Village
Ellerslie

SEP 2018
CHALLENGE:
CREATE A UNIQUE ARCHITECTURAL BUILDING SHAPE USING A FIT FOR PURPOSE STRUCTURAL SOLUTION.

SOLUTION
Consultation with local iwi and the community uncovered a recurring theme that would become the driving aesthetic for Te Oro - the intrinsic connection we have with our natural environment. “The building was conceptualised as an arboreal canopy, under which learning and creativity could occur with interiors strongly linked to the natural world and Futurebuild® Laminated Veneer Lumber (LVL) suited this concept perfectly”, explains Lindsay Mackie, Principal Architect from Archimedia.

Comprising three pavilions interlinked by two glazed transitional areas, the numerous sound, art and performance spaces are housed within a series of hoop-like ‘ribs’ that support LVL rafters. The ‘ribs’ were formed by portal frames, each prefabricated from Futurebuild LVL to form a unique shape.

PRODUCTS AND SERVICES:
Initially specified as a steel portal structure, the Futurebuild Commercial Preliminary Design Service gave the architect the confidence to change to Futurebuild LVL. Lindsay Mackie elaborates “We wanted to use timber – a sustainable product that locked up carbon, and the warm tactility of timber was more sympathetic to the users and their activities”.

Futurebuild supported the development of the final structural solution with design advice and software based design tools. Karl Dawe explains “Structurally, LVL was easy to incorporate into the design with the help of the computelT® software”.

ENGINEER:
BGT STRUCTURES
ARCHITECT:
ARCHIMEDIA
BUILDER:
HAWKINS CONSTRUCTION
CHALLENGE:
PROVIDE A LIGHTWEIGHT STRUCTURAL FLOOR SOLUTION WITH INHERENT ACOUSTIC AND FIRE PROPERTIES.

SOLUTION
Timber Concrete Composite (TCC) floors provide the advantages of both Laminated Veneer Lumber (LVL) beams and a concrete screed/slab, combined using defined connection methods to provide composite action. The use of TCC floors gave Summerset Group Holdings an acoustic and fire rating already incorporated in a structural floor solution. The ability to provide the TCC floor system in prefabricated modules allowed the majority of the fabrication work to be completed off-site. The floors were then delivered by truck in 2.7m wide modules and lifted into place, ready for placement of mesh and concrete screed. The lightweight nature of the TCC floor systems allowed the supporting structure to be completed with Futurebuild® LVL framed walls, in lieu of more expensive support structures.

PRODUCTS AND SERVICES:
Initially sized and scoped using Futurebuild Commercial Preliminary Design Service, the engineers at Silvester Clark were able to use the TCC floor design module in computeIT for Beams to optimise a fit for purpose structural solution, using the Futurebuild LVL range of products and available section sizes.

ENGINEER:
SILVESTER CLARK
ARCHITECT:
SUMMERSET GROUP HOLDINGS
BUILDER:
SUMMERSET GROUP HOLDINGS
Information contained in these Case Studies relates specifically to Futurebuild® Laminated Veneer Lumber manufactured by Futurebuild and must not be used with any other LVL manufacturer’s product no matter how similar they may appear. For technical literature or further information contact us on 0800 808 131 or visit www.futurebuild.co.nz.