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# SOARING INTO THE SKY: MOTAT AVIATION HALL

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## PROJECT SPECIFICATIONS

### PRODUCTS:

hySPAN®, hyCHORD®

### ARCHITECT:

StudioPacific

### ENGINEER:

Holmes Consulting

### FABRICATOR:

Carters

### CONTRACTOR/BUILDER:

NZ Strong

As custodians of a unique and historic aviation collection, MOTAT needed to provide a storage facility that will house and display their heritage aircraft as well as providing for educational and reception areas within the new space to ensure an outstanding exhibition experience.

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At over 2500 m<sup>2</sup> this was always going to be a big build. Bringing together functionality and form was the vision of Studiopacific Architecture, Wellington. Their decision to use Futurebuild® LVL (laminated veneer lumber) in a portal frame building allowed a column free display space and brought "a warmth and grace to the interior," says architect Marcellus Lilley. "This is what a natural, long-lasting material brings to the overall look".

A sustainable design has been integral to the approach of this project. Paramount to their presentation to MOTAT was an independent analysis Studiopacific had access to that was able to demonstrate an Futurebuild LVL structure had less impact on the environment than a steel structure.

Mindful also of how the building offered itself back to the street meant literally thinking inside, and outside, the box. "If you consider that the box interior on its own could have been a completely enclosed building; that would have been very shed-like from the exterior. It wouldn't make a positive contribution to the wider neighbourhood which is why we built a gallery on the northern side of the building that is visible. In using the Futurebuild LVL range we were able to express the cohesiveness of the timber structure as a means of generating the scale and intricacies of the building," Marcellus explained.

### CHALLENGE

"We needed to build a structure to articulate the interior. If we'd used a steel structure it would have had a very different feel to it, quite utilitarian, and we would have had to work a lot harder with other materials to give it natural warmth. Using Futurebuild LVL has been fundamentally important to how we present the building

and means we didn't have to spend money in other areas to try and generate another aesthetic to work with."

The internal open floor area is the largest clear span timber portal frame structure in New Zealand. Prefabricated Futurebuild LVL box beams enabled a span of 42 m. The footstep of 50 m by 50 m and the 15.8 m vertical height will allow aircraft to be moved within the hall and will safely accommodate the aircraft tails and wingspan.

### SOLUTION

Working closely with structural engineers Holmes Consulting Group allowed them to resolve how the Futurebuild LVL structure would work as an efficient way of creating strength, said Marcellus. "Once we had a sense of that we could integrate it into the architecture of the build. In this case we've actively pulled through the structure as the key means of articulating the building."

The roof space has been split into two components with the building book-ended; the hanger door and entry at one end and a large glazed screen on the other northern side.

With the overhanging roof having reference to flight, there is a link to older aircraft technology that originated in a skinned timber structure. "If you look at construction of early aircraft wings and fuselages it was typically timber construction," says Marcellus. Although, most of the exhibition at MOTAT is post that particular time it is a connection that brings together old and new, past and present.

### RESULT

Initially, the Aviation Display Hall was simply a series of large measurements on paper. Studiopacific have created a building that will function on many levels yet is as majestic as the aircraft it will contain.

