

# Building for Today and Tomorrow



Large-Scale Engineered  
Timber Construction  
Systems



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Presently there is considerable interest in the construction of large-scale projects utilising timber. Timber is an ideal alternative to current construction methods with considerable environmental advantages, such as the storage of Carbon and Recyclability.

The primary reason for building in timber is the speed of assembly. Timber has been found to be quicker to construct and easier to work with, not to mention considerable advantages in weight reduction with comparable strength alternative materials.

Considerable interest is focusing on Cross Laminated Timber (CLT). CLT is increasingly growing in popularity with extensive media attention on the viability and market acceptance of timber as an alternative commercial construction material. However, there exists a number of complementary products that accompany CLT. These include: LVL ribbed panels, LVL box beams, LVL open box beams, Cassette Modular Flooring Systems, Glue Laminated beams and Post-Tension Laminated Veneer Lumber (LVL).

## Designing with Timber - The Significant Difference

Those wishing to produce a structure in timber will find that construction methods are different. First and foremost it is imperative that Project Developers collaborate at the onset of a project with Architects, competent Timber Structural Engineers, experienced in mass wood systems and Services Engineers to ensure a process of education occurs. This educational process shall eliminate considerable problems occurring down the track. This is where the Tilling SmartStruct system comes in.

## Trusting Your Project to Tilling

Tilling has formed a Worldwide consortium to ensure a tailored Design, Engineering, Supply, Delivery and Installation service to the Australian market.

Employing a consultative approach, solutions are designed in accordance with the scope of works in a collaborative process ensuring the most viable and cost effective solution is found and implemented.



## SmartStruct Kerto-Panel

SmartStruct Kerto-Panel is an efficient and high performing wooden building system brought to you by SmartStruct Aust. (a division of the Tilling Group of Companies) in partnership with MetsaWood from Finland.

SmartStruct Kerto-Panel combines the performance of LVL with certified structural gluing technology, developed and implemented in Europe by MetsaWood since the 1990's.

SmartStruct Kerto-Panels are fabricated on the state of the art automated CNC assembly machine at Tilling Timber manufacturing facilities.

**Design Service**

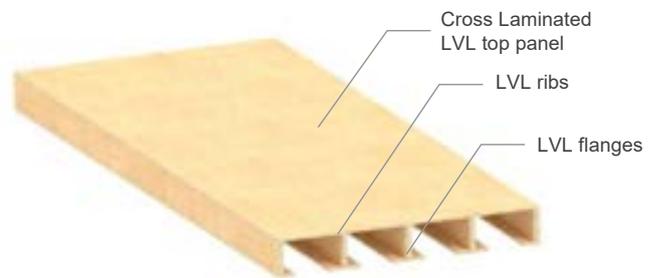
**On-site Labour Saving**

**Chain of Custody Certified**

**Thermal Acoustic**

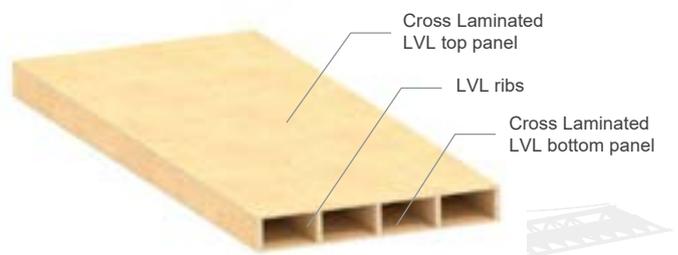
### SmartStruct Kerto-Panel OPEN

Light, strong, cost efficient and flexible, can be closed by wood panels or plasterboards for fire resistance or aesthetic issues, can easily be insulated with all kind of material either for acoustic or thermal performance. Holes and integrations can still be achieved on site if the slab is not completely finished and closed. Ideal for floors from 5-8m span or roofs from 10- 12m preferably for light and medium loads.



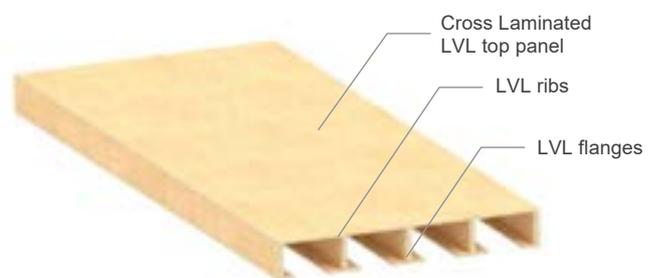
### SmartStruct Kerto-Panel BOX

Glued ribs with plates on top and bottom. Kerto-Panel Box offers the highest performing combination of stiffness and span, within a minimum height. The Cross Laminated LVL plate underneath has a calculable fire rating and can provide an aesthetic finish. It can also be covered and can be insulated inside. SmartStruct Kerto-Panel Box elements are often chosen for roof elements, but achieve excellent results as a floor.



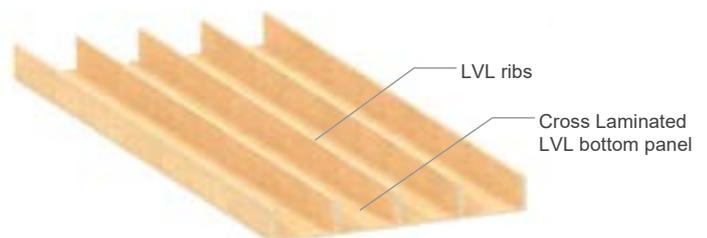
### SmartStruct Kerto-Panel OPEN BOX

SmartStruct Kerto-Panel Open Box combines advantages of Kerto-Panel Open and Box. This means gluing on both edges of ribs to reach a great rigidity, long spans and low height, still open underneath to allow services integration. In Viiki (near Helsinki, Finland) 103 apartments were designed and erected with this type of floor. Acoustic tests on site confirmed the excellent performance of the complex, reaching one of the highest European comfort standards.



### SmartStruct Kerto-Panel UPSIDE-DOWN

SmartStruct Kerto-Panel Upside-Down offers the same advantages as the Kerto-Panel Open. Installing it upside-down allows calculable fire resistance directly from the bottom Cross Laminated LVL plate. The Cross Laminated plate can stay visible underneath allowing installation of prefabricated elements on site. Whether for floors or roofs, the panel can be closed with other standard products. For residential use, a range of suitable products have been tested, and achieved excellent acoustic properties.





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