



Mass Timber construction is different...

Mass Timber applies the principles of 'Design for Manufacture and Assembly' (DfMA) to provide unique opportunities to eliminate on site risks, rapidly accelerate build programs, deliver constructions with millimetre accuracy, and embed sustainability into the very DNA of structures.

Mass Timber construction is transforming our industry because it is a whole new building process, not just a new product.

Mass Timber construction is different...and so are we.

DfMA

Having the support of an engineering team that understands DfMA is fundamental to delivering a successful Mass Timber project.

Mass Timber is produced by highly accurate manufacturing processes that allow for the rapid assembly of structures on site. Mass Timber + DfMA takes prefabrication to the next level.

So, what is DfMA?

Design for Manufacture and Assembly addresses all the processes and inputs required to assemble a Mass Timber structure, and places these considerations at the heart of the design.

Manufacturing is considered, reducing costs and working to the strengths of the supplier. Logistic constraints are accounted for. Panelisation and connection details factor in site issues and optimise for rapid installation.

The result...

Builds with higher quality, less risk, faster programs and (when used in combination with Mass Timber) achieve far more sustainable results.

Elegant outcomes from simple building blocks.



Technically, different.

Our technical capabilities draw on training and experience from both the local industry and the European market.

We are deeply versed in key design areas such as the local timber code, Eurocode, fire design, global robustness, and complex timber connections. We have world-leading timber design software and resources at our disposal.

But this is what you should expect from any engineer working in Mass Timber...

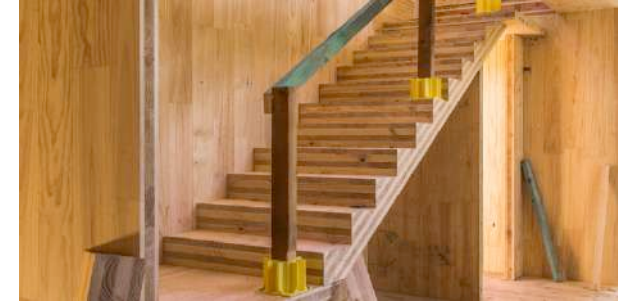
So what makes our technical capabilities different? It is how we apply them.

Our extensive experience across the complete process of delivering a Mass Timber project means we don't just achieve compliant designs, we go beyond to deliver projects that have been deeply considered, integrating the manufacturing and assembly processes to achieve better project outcomes.

We strive to deliver documentation and technical support that results in benefits across the entire construction program.

We proactively collaborate with the project team to solve problems through design, not through variations on site.

This is what DfMA is all about.



Manufacture and installation processes have a huge impact on the costs and risk profile of a Mass Timber project.

It is very difficult for an engineer to design prefabricated structures and building elements cost effectively without having seen and understood these processes firsthand.

Our team's experience working both with manufacturers and install teams mean that our technical capabilities are complemented by our comprehensive understanding of these specific project phases.



Difference, documented.

For Mass Timber, the structural documentation is the heart of the project.

Costings, shop drawings, co-ordination, manufacturing and program sequencing all rely on structural documentation being more than just 'OK'. They need to achieve a level of clarity, logic and order.

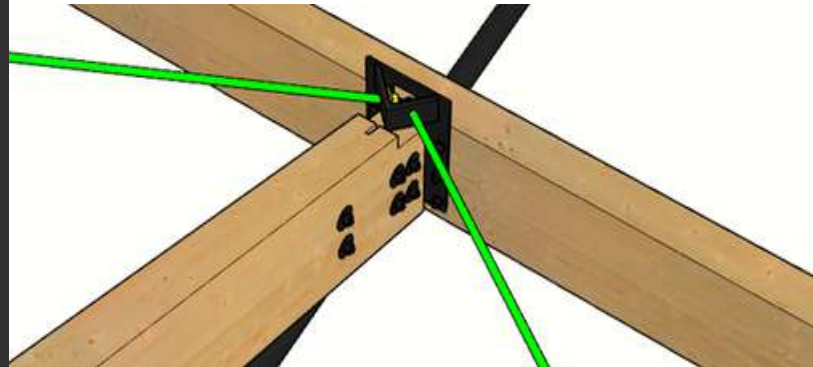
As the industry moves drafting towards overseas outsourcing and an over-reliance on standard details, fewer and fewer engineering firms have the capability or experience to deliver documentation to the quality required.

Vistek's structural documentation is recognised as the benchmark in the local Mass Timber market.

Vistek takes documentation a step further, developing complete 3D models right down to the 'nuts and bolts'. These resources support the project from the design phase through to the completion of installation.

They aid activities such as program planning, take offs and clash detection. They are an essential tool for the installer and facilitate quick and clear communication of complex details and which expedite the assembly processes.

For DfMA, construction documentation is about much more than just getting a building permit.



The single most effective way to reduce risk on a Mass Timber project is to get the documentation right.

When you do, costings will be accurate, coordination will be simplified and ultimately, the assembly should be seamless.

This is why we are so passionate about the quality of our documentation...and why so many Mass Timber stakeholders recommend us...because they know that if we are on the project, they will get the information they need to do their jobs right.

Collaboration done differently.

Collaboration is critical, and it is not something you can simply 'switch on' when a project starts.

At Vistek, collaboration sits at the core of everything we do.

Over the years we have formed deep relationships with key international suppliers; we have visited their plants, met their people, and taken the time to understand their processes. This commitment to collaboration extends to our relationships with local suppliers, fabricators, installers and industry bodies.

We have invested heavily in understanding all aspects of Mass Timber – such as moisture control, acoustics and fire design – and have built solid relationships with the key people in these fields.

We ensure we talk to everyone, from the CNC controller, to the supply truck driver, to the crane operator. We appreciate everyone has a different perspective on a project, each of which is integral to a successful end result.

When you collaborate with us, you are collaborating with the whole Mass Timber industry.



Vistek visits KLH Austria

For a Mass Timber engineer to do their job well they should have a good understanding of all the design issues on a project... manufacturing, assembly, acoustics, fire, moisture, etc.

To truly collaborate, the structural engineer should anticipate the needs of other disciplines and stakeholders right through the project lifecycle, and factor these into the design and service.



Shane Morrison – VicBeam

St Clemente Glulam Beam



Chris Wood – Standstruct

Iron Creek Bay Tasmania

A different level of service.

Our understanding of Mass Timber goes beyond the structural design.

Mass Timber engineering is about so much more than just the structural analysis.

Our passion and experience means that we support our clients beyond simply the design and analysis of structures.

With Mass Timber still in its infancy in Australia, we see this as something that is critical to help the local market grow, and an opportunity where we can add real value to our clients' projects.



Mass Timber projects can need support for services beyond just structural engineering. Vistek can provide assistance in:

- Fire testing and product compliance: advice on developing fire briefs, overseeing the process and understanding the results.
- Construction support: lifting design, program sequencing, temporary structures and loading reviews.
- Tender support: preparation of tender requests and reviews of tender responses.
- Value engineering: revising designs to better leverage off DfMA principals, thus reducing project costs as well as exposure to risks.
- Support for Early Contractor Involvement (ECI): builders can collaborate with us at the start of the project to help identify design opportunities and develop firm costings.



Our work...



55 Southbank

55 Southbank is currently the world's tallest Mass Timber vertical extension and is one of the tallest Mass Timber buildings in Australia.

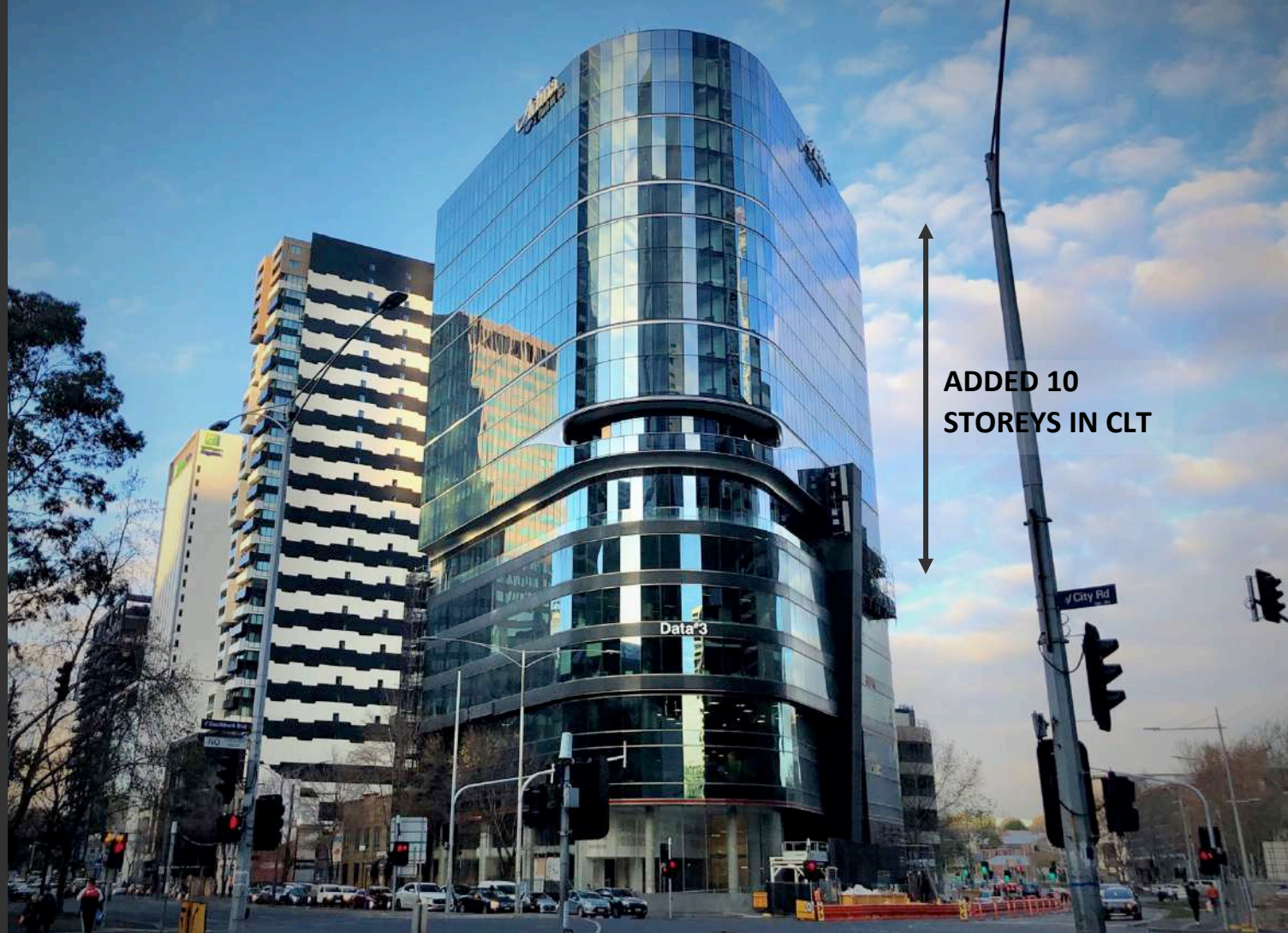
By using CLT (a comparatively lightweight material), the design was able to add ten storeys on top of the existing six storey building. This was an increase of four additional storeys from what could have been achieved using a concrete structure.

The final design delivered 220 serviced apartments, installed in the tight inner-city location while the building below remained occupied. Using around 1,850 CLT panels, the build sequestered approximately 2,800 tonnes of CO₂.

The project also boasted other construction innovations such as prefabricated bathroom pods.

Architect – Bates Smart
Builder – Atelier Projects
CLT Supplier – KLH (Austria)

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Ceres House

Ceres House is a unique and innovative rural home. Glulam structural portals, CLT floor and roof panels and load-bearing walls enable its dynamic and complex geometry. Far from a conventional build in every respect, the building is formed of separate 'pavilions' joined by CLT walkways.

The design champions sustainability and connection to the local environment. The Mass Timber building envelope reduces heat loss, with the thermal mass of the concrete base further stabilising temperatures. Sourced from locally grown, renewable plantation timber, both the Glulam and CLT have low-embodied energy, ensuring an ethical and eco-friendly structural solution.

Innovative epoxy rods were used to achieve concealed connections, meeting the desired architectural intent while simplifying assembly through a 'quick connect' solution. Vistek also worked closely with the builder to support the planning of the complex installation process.

Architect – level AK
Glulam Supplier – Hyne Timber
CLT Supplier – XLAM

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Oakleigh Childcare Centre

The Oakleigh Childcare Centre is a perfect example of how well Mass Timber works for educational projects.

The centre won the 2018 MBAV Award for Best Sustainable Project, but the benefits of Mass Timber go far beyond the sustainable credentials.

Firstly, the Mass Timber structure was installed by a small team in just eleven days.

Then there is the biophilic finish, with over 2,000m² of exposed Mass Timber creating a calming interior conducive to learning.

Finally, there is the high performance of the building envelope. Coupled with double-glazed windows, the structure has very little heat loss in winter, and the timber naturally regulates heat and humidity in summer.

Architect – Insite Architects
Builder – Atelier Projects
Glulam Supplier – Hyne Timber
CLT Supplier – XLAM

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CLT House

CLT House champions the aesthetic and structural possibilities of Mass Timber. An ambitious CLT bridge connects a new two storey CLT extension to the renovated existing house and gardens.

Mass Timber was made a central element of the architectural design from the project's inception. CLT allowed for the wide span of the timber bridge, which serves as a living and work space as well as a passage through the building.

The design leaves the surface, structure, and screw connections exposed. It highlights the simple beauty of the precisely crafted timber and joins.

FMD Architects, the builders, the CLT suppliers (Stora Enso) and Vistek Engineers worked closely together to realise this inventive use of a Mass Timber sustainable construction system.

Architect – FMD Architects
CLT Supplier – Stora Enso

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Photo credit: Dianna Snape



More of our Mass Timber highlights...

1. Ballarat GovHub: Vistek provided Value Engineering services and third-party Certification, assisting Kane and Aecom.
2. Adelaide Oval Hotel: delivering the detailed design of the CLT sections of the structure.
3. St Clements Sports Hall: working closely with Vicbeam, Vistek designed the massive 1.1m deep glulam beams, including epoxy connections - an Australian first.
4. Orygen Parkville: delivering the detailed design for the intricate glulam façade system.
5. Union St: the Austin Maynard designed building is an Australian first for inner city application of CLT.
6. Anglesea: the first structure built from Australian-made CLT.
7. Barry Street: working closely with KLH Austria to deliver the design for the CLT structure of these 21 townhouses by Fieldwork/Milieu.
8. Yardstix: a chic CLT cabin concept.
9. Nunawading Sports Centre: design of exposed glulam trusses.

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Thank you...

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