



## ON THE RISE: Pryda Floor Truss sets stage for open-space living in mid-rise building project using timber



More flexible, cost-effective, environmentally friendly, and tradies like working with it. Timber is winning fans in mid-rise construction projects. Pryda's Longreach and Pryda Span Truss options, using timber and metal webs, deliver long-span capacities for modern open-space building project.

"Spans this large provide the freedom we need to work with. We used to consider six metres as the benchmark. Now we're looking at seven-plus metres. It's a massive jump, perhaps the biggest single difference in the last 10 years. The units look vast – it's the way people like to live."

– Steventons Construction Group

Adelaide-based Steventons Construction Group – a specialist in medium-rise apartments and townhouses – loves building with timber.

They've seen enough of both concrete and timber to understand the merits of each material. However, a recent project involving the construction of 20 four-storey apartments for the South Australia Housing Trust opened their eyes wider to the benefits of timber in mid-rise construction.

### PUTTING THE WOOD ON CONCRETE

Growing interest world-wide in the use of timber in mid-rise buildings follows concerns about sustainability, and advances in engineering and design that solve historical problems related to fireproofing and acoustics.

Timber's sustainability appealed to Steventon's view of the world. Like so many businesses, the builder isn't trying to turn the world 'green', but still worries about carbon footprints. "If we can build structures that are more carbon neutral that's a good thing," Steventon's said, further explaining that every cubic metre of concrete creates a tonne of carbon emissions.

However, what came as surprise during the Churchill Road project was timber's cost effectiveness – by Steventon's estimate over 10 per cent cheaper than concrete.



They also liked the idea of keeping more local people in jobs, with timber involving local truss and frame fabricators – Keith Timber Group for this project – and more hands-on support in logistics and construction.

### **SETTING THE STAGE OF OPEN-PLAN LIVING**

As baby boomers enter their golden years, research suggests more of them plan to age-in-place rather than stump up for pricier options, such as assisted living and senior living communities. The emerging trend asks builders and accommodation providers to rethink building design to make homes safe and comfortable for their aging inhabitants.

As the principal builder on the Churchill Road project, Steventons worked with client South Australian Housing Trust (SAHT) – an independent statutory authority established by the Government of South Australia to provide low-cost rental housing to working people and their families.

The brief called for open-plan living, providing large circulation spaces for wheelchairs and other mobility aids, and generous radiuses to move

around furniture. The design ethos necessitated fewer walls.

Pryda's LongReach Truss delivered large cantilevers for the job, offering long span capacity – up to 7.7 metres – to eliminate interior support walls, timber, and steel beams.

“Spans this large provide the freedom we need to work with,” said Steventons. “We used to consider six metres as the benchmark. Now we’re looking at seven-plus metres. It’s a massive jump, perhaps the biggest single difference in the last 10 years. The units look vast – it’s the way people like to live.”

### **WHAT ABOUT FLOOR BOUNCE AND FLANKING NOISE?**

People living in multi-story wooden buildings often complain about bouncy floors and flanking sound (sound transmitted between spaces, often floor voids). Steventons knew those risks increased with longer trusses. However, they said floors in the finished units were stiff – rock solid – with zero bounce, attributing unflinching rigidity to truss design, and gluing and screwing 75mm Hebel flooring panels to the top chord of the truss. The combination also blocked sound transfer.



Another key benefit of Pryda's truss system is open web configuration that eliminates potentially damaging building practices, such as cutting out sections for services or drilling large holes. Large rectangular ducts up to 500mm wide fit within the standard design.

Though not directly benefiting this project – with design instead opting for compartmentalisation (floor-to-ceiling fire sealed units), which situates ducting in a bulkhead – Steventons said generous duct spacing designed into Pryda's truss system benefited other services, including NBN pathways, electrical cables, traps, and pipes.

“Running cables is just a breeze – electricians love it,” Steventons said. “Plumbers, too, because there's plenty of room to run traps and pipes, with adequate falls, and affix a fire collar underneath flooring.”

He said the setup also made it quick and easy to check tradies' work, including adequacy of falls, and fire collars. “When it's hard for people to work you're unlikely to get a good result,” said Steventons. “High trusses and big open voids make it easy for everyone to do a good job.”

## FRAMING UP THE PACKAGE

Keith Timber Group supplied timber framing, engineered wood products, and floor and roof trusses to the project. One of South Australia's most enduring timber merchants, the company each day delivers multiple truckloads of roof and floor trusses from its manufacturing facility located in Keith to the whole of South Australia and Western Victoria.

Company sales and marketing director Trent Lines said large building projects presented significant logistical challenges to truss packaging and delivery.

Prefabricated floors are typically delivered ready-to-go onsite. However, with individual unit blocks at Churchill Road covering 800 square metres of floorspace – comprising approximately one-and-a-half kilometres of Pryda floor trusses, per floor – the floor trusses were delivered in sections. By staging deliveries and working to the builder's programme, Keith Timber could deliver trusses to the right position on site, saving time and avoiding manhandling.

Lines said the truss detailer, with help from Pryda experts, produced a floor system that made things easier for the builder. “We certainly pushed it on this project,” he said. “But engineering trusses is easier than you think – and cheaper. The perception among architects and engineers is that building with timber is more expensive, when fire-proofing, insulation and acoustics are taken into account. However as a project team, between Steventons and Keith Timber, we found a better, cheaper and more efficient solution in timber.”



## PROJECT SUMMARY

### PROJECT:

Churchill Road town houses

### CLIENT:

South Australia Housing Trust

### BUILDER:

Steventons Construction Group

### FABRICATOR:

Keith Timber Group

### SPECIAL FEATURE:

Open-plan living for age-in-place accommodation

### KEY ENABLER:

Pryda's Truss systems, offering long span capacity – up to 7.7 metres – to eliminate interior support walls, timber, and steel beams

### CONCLUSION:

Timber proves 10 per cent cheaper than concrete in mid-rise construction project

