



## No downside to precast flooring, says builder

East Perth's restaurant and café precinct boasts a new hotspot thanks to the recently constructed eight story apartment building, located in Wellington St. The development of Vibe Apartments reflects the inner suburb's increase in popularity, offering 60 apartments, mostly one and two bedrooms. The building will also have five two-storey penthouses, a gym, pool, and two levels of parking, as well as a rooftop garden, outdoor theatre and viewing deck to make the most of the location.

As well as manufacturing 736 precast wall panels, 75 upstands and 28 precast stairs for the project, National Precast member Austral Precast's Austral Deck floor system was also incorporated in the design.

### FLOORING OFFERS LIGHT, FAST, SAFE SOLUTION

Like other precast flooring systems, Austral Deck (also known as Transfloor or other proprietary names when supplied by other manufacturers) offers a lightweight, fast, safe, flexible and economical flooring solution. In this particular case, 533 flooring planks were supplied for the project and, combined with the other precast elements that were supplied, they offered a significant boost to the project's progress.

According to Austral Precast's General Manager Andrew Nearhos, precast flooring offers a superior suspended flooring solution in every regard.

"Conventional suspended concrete floor slabs are cast in situ on a formwork base, sometimes timber or often a metal 'tray,' which is supported at frequent intervals by a forest of props. The formwork is then fitted with reinforcement mesh, and concrete is poured and screeded to the finished height. It's a simple and basic process, which, is slow and in turn costly. By contrast, our flooring system combines the speed of precast elements with the considerable structural qualities of a monolithic floor slab," Mr Nearhos said.

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## THE PROCESS EXPLAINED

The precast concrete planks are manufactured in lengths up to 12 metres and a standard width of 2.5 metres. Thicknesses vary from 60mm to 75mm and 90mm, to suit the required loading specifications. Like all precast concrete products, each unit is custom made, with dimensions to specifications. The plank is reinforced and also has multiple rows of triangular truss reinforcement (steel lattice girders) following the length of the plank. These are embedded into the precast plank and significantly increase both the strength and the unpropped span of the flooring.

Mr Nearhos says that like other precast flooring systems, cast-in items, such as ferrules, conduits, and other service fittings and penetrations, can be incorporated during manufacture. "This is a great benefit on site, because the majority of the work is done in the factory. As well, void formers can be placed and secured on top of the planks, which reduces the concrete required for the in situ pour, typically by 30 per cent," he said.

After curing, the flooring planks are then transported to site and craned into position, instantly creating a strong, safe working surface that will easily carry the load of trades and their materials. A layer of reinforcing mesh is then positioned and tied, and a layer of concrete poured and screeded to the finished height. The result is a strong, composite floor slab, with the structural benefits of a conventional monolithic slab.

## BUILDER SINGS PRECAST'S PRAISES

Rodney Naef of Ren Construction has a wealth of knowledge when it comes to building with precast, both walling and flooring.

"It's quick," he said, "very quick." Mr Naef describes the preparation required for a conventional in situ monolithic slab as "time consuming."

"Basically, we'd be up there for three weeks trying to deck it out," Mr Naef said.

"With this flooring system we'd be back-propping for a day, maybe a day-and-a-half, and the next day you've got a whole level covered."

According to Austral, an average of ten flooring deck planks covering an area of 150 square metres can be installed per hour. The flooring planks then create a safe new workspace to continue construction. "You've got a nice, clean, safe working deck straight away for everybody to start working on," Mr Naef said. "On this job we have floorplates of about 900 square metres each and we are doing a floor level basically every eleven working days. So it goes in fast."

From his experiences, Mr Naef does not see any downsides to using this kind of flooring. "Do you know what, I can't think of any, to be honest," Mr Naef said. He said it's a little more costly on a material per square metre basis than a conventional in situ slab, but that is quickly recouped in time and speed. "I can't really give a negative on the system," he said.

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