



Building blocks

AUSTRALIA HAS BEEN COMPARATIVELY SLOW IN TAKING UP PREFABRICATED CONSTRUCTION, BUT THE MARKET IS NOW GROWING AND INNOVATING. AMAL AWAD REPORTS.

Australia has been slower to embrace prefabricated construction than Europe and the UK – regions that have used the technology effectively for more than a century.

Our small population, extreme weather conditions and constrained manufacturing conditions have meant that there have not been sufficient economies of scale to justify major ventures into prefabrication. However, the sector is now ripe for growth, particularly using precast concrete systems in residential development.

Nicholas Bettar, managing director of Baseline Constructions, says demand for prefabrication was driven primarily by economics 15 years ago.

"We were able to price jobs and win jobs 5 to 10 percent cheaper than conventional [construction], and we were also quicker," Bettar says. Quite simply, being able to construct a building more swiftly and cheaply, mainly using precast concrete, while offering "better quality", was Baseline's crucial point of difference.

"It's proven still to have an advantage in terms of time, cost and quality," Bettar notes. "Don't underestimate the pre-planning, but if you do the pre-planning right ... when you actually hit the job site and it's done right, it all comes together rather well. Your time is quicker on the actual site, your costs should be better – at worst, equal – and your quality is a lot better."

With that in mind, it might seem easy to dismiss prefabricated construction as an economic, speedy and simple approach to building. But even a cursory exploration of the space indicates it is a far broader and complex industry. More than a salve to housing and socio-economic woes, the

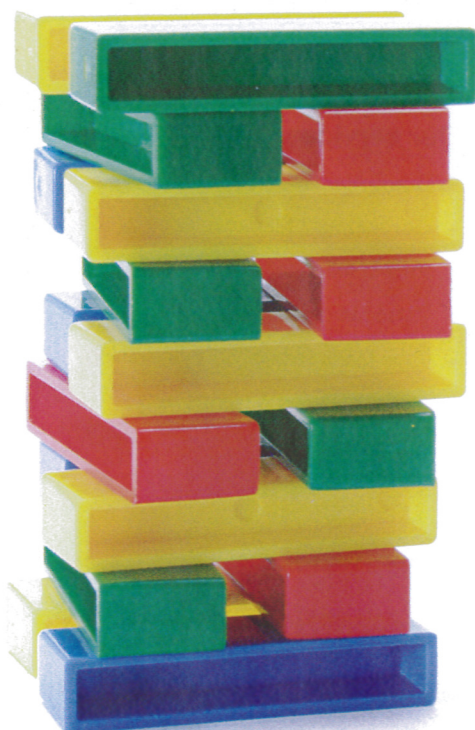
prefab construction universe encompasses numerous options for the cost and space conscious, and is a crucial component of domestic infrastructure works.

The residential and industrial sectors are its primary users, and prefab does not begin and end with shipping containers and wood panels, with precast concrete being a popular option.

Architect Richard Campbell, managing director of Reid Campbell, points to two building types – prefab componentry and prefab modular building.

"One of the things we've been seeing, probably in the past two years, is an increasing demand for modular components being almost a fully kitted-out unit or living quarters ..." he says.

The bulk of these, Campbell notes, are being manufactured in China to Australian standards, using Australian products, such



as plasterboard, plumbing, faucets and other elements for the fitout. More specifically, his firm has looked at a number of student accommodation projects and budget hotel concepts incorporating modular design (up to three-star accommodation).

"There is demand and it is growing. Traditionally, you'd see the fully prefabricated modular system used in things like temporary housing or mining accommodation, where they can be quickly installed, removed and maybe shipped somewhere else. What we're seeing now is that, structurally, these things are a little bit more advanced and they've got a much longer life span, they're guaranteed by the manufacturers," Campbell explains.

Nowadays such modular fitouts can be used for small accommodation units such as student accommodation, single studio or one-bedroom units, or they can be "married" together in blocks – like Lego or Meccano – with the possibility of three- or four-bedroom units. "But they're fairly

simple accommodation, it's not something that would suit the luxury market," Campbell adds.

However, while Campbell sees great potential for modular prefab in short-term accommodation, in medium- to high-density residential development, construction in precast concrete has thrived.

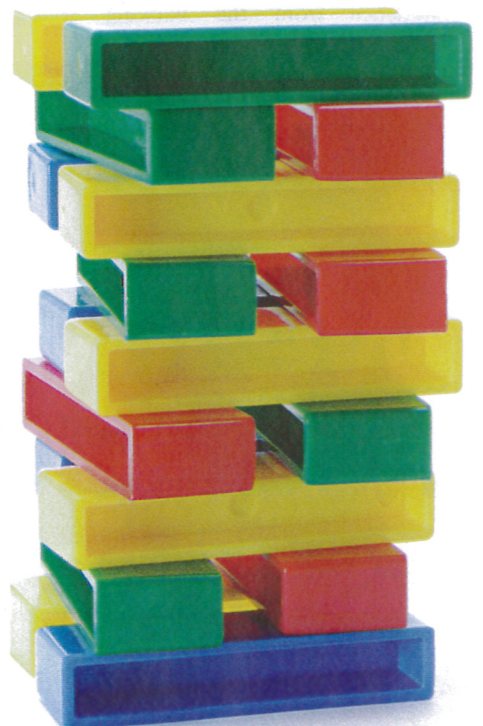
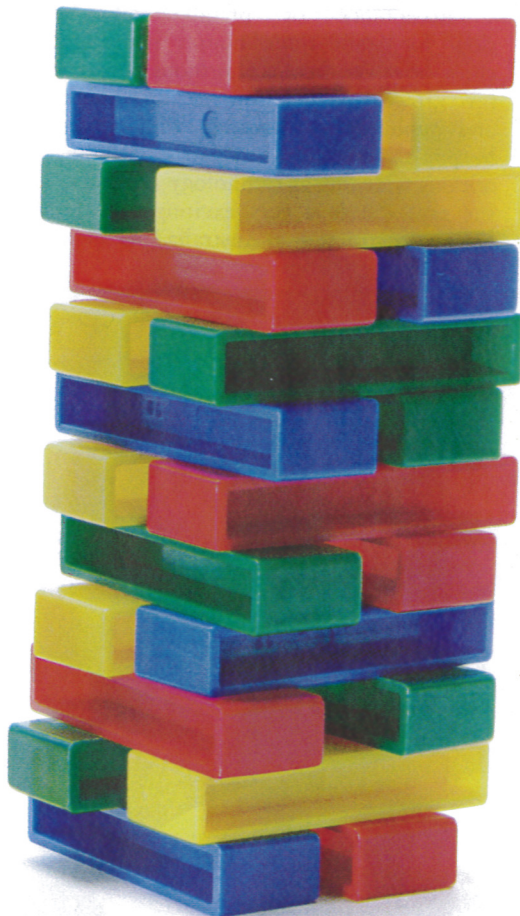
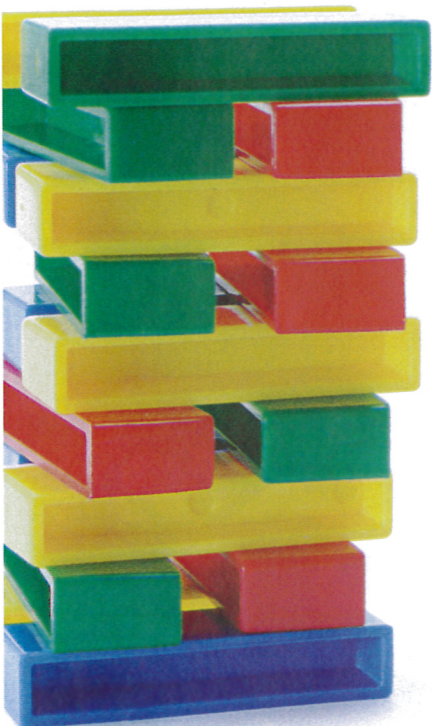
"Concrete has become quite trendy in recent years, and we've seen a lot of the institutional buildings made in precast," says Sarah Bachmann, executive director of the National Precast Concrete Association Australia (NPCAA). "One job that comes

to mind is the John Curtin School of Medicine in Canberra at ANU, and that's just a magnificent example of precast."

Katherine Payne, senior associate and construction sector specialist at law firm Cornwall Stodart, extols Melbourne's use of prefab, and Bettar argues that Sydney is still behind in an increasingly sophisticated segment.

With these advancements increasing efficiencies, Payne notes, prefab has the potential to facilitate the building of large-scale apartment complexes with cost savings and timeframes which were previously unattainable. "This is likely to assist housing shortages in both the private and public sectors, such as for public housing projects. It can also be constructed as a green option, which is likely to encourage governments to increase their use of this approach to construction."

One might expect the more economical prefab to be the saviour of the construction →





design & build

industry following the collapse of global financial markets, and subsequently tighter spending. However, the sector was not exempt from the effects of the economic downturn.

"I think the precast industry was probably like every other industry in the construction sector and was affected ... by the GFC," Bachmann says.

Despite longer periods of difficulty and huge cutbacks in the industry, Bachmann notes "a fair lead time" in precast product manufacture, which allowed a bit of a lag in feeling the effects of the market downturn. Precast, she says, might have experienced the effects six to 12 months later than other construction segments because of this lead time.

With prefabrication a casualty of the GFC, Bettar planned ahead. Even now, he is not highly optimistic about short-term prospects – despite being ripe for growth it's a "long road ahead for construction" – but he does believe the sector will bloom again within a couple of years. In the interim, Baseline, which has been bigger in residential than commercial, has diversified into industrial, commercial and hospitality – a move Bettar says has paid off.

"Where we might have done, say, 75 percent of our turnover in residential and the rest was commercial, industrial and hospitality, we're now doing probably an even split of 25 percent in each sector," he says.

So, despite a considerable boost in confidence from the banking sector,

construction has not completely emerged from its sluggish state.

Yet it is not surprising that companies ordinarily dealing outside of prefabrication are entering the sector wholeheartedly. There is confidence in the sector's future, with companies willing to invest in mergers and acquisitions. Brickworks has made a substantial foray into the precast market, snapping up Sasso Precast Concrete, as well as purchasing Giroto Precast and Gocrete from Boral – and re-branding its precast operations to Austral Precast.

Payne says that while the Australian construction sector may have been slow to take up prefabrication, the situation is changing. "Currently, it is predominantly being best utilised in the residential sector. We're not yet seeing in Australia the architectural feature houses being done by prefabrication, as in some areas in Northern Europe and America, but it is certainly beginning to gain popularity in housing in Queensland and also in apartment design."

On the industrial side, it's also a slow burn, but Payne suggests this may be a potential growth area as prefabrication technology and popularity increases.

"Acceptance of prefabrication may be slow for stand-alone houses in capital cities, however there is enormous potential for growth in relation to apartments and public sector housing, with offices, hospitals and other industrial building options widening as technology advances," she says. "It is a very exciting time for prefabrication construction in Australia." ☐



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