A new residential tower that occupies the airspace above South Yarra railway station, constructed with modular components made of panelised bricks, could achieve multiple sustainable design objectives, according to a Melbourne-based architect.

Rowan Opat Architects' brick tower scheme could be built above railway stations anywhere in Australia or around the world, reducing the need for car journeys and car-parking, curbing urban sprawl by building close to existing infrastructure and services and reducing construction waste by producing building elements off-site for easy and fast installation.

The 29-storey residential tower sits above three levels of parking (optional on any scheme according to council requirements and local demand), a large public square and a crèche. It comprises one, two and three bedroom apartments which slot together using modular elements that create a patterned and textured façade.

"We are trying to personalise brick tower systems, to create a great sense of address and amenity, in an area that is surrounded by new developments, the bulk of which are rendered or painted precast concrete," Opat says. "We used brick to make this project in South Yarra stand out from what's around it and to create a residential tower that's unique."

"The use of different colours, textures and patterns in the brickwork makes this unlike any other system," he adds. "Also, we like the fact that the maker's mark is left on the brick – both at the level of the brick and the way it's laid."

Brick offers other advantages, particularly in relation to acoustics – an important consideration given the tower's location over a railway line – and as a solar shield and by creating thermal mass.

The use of 1.8m wide x 3m high brick panels also provides efficiencies in the building process. "There is a cost benefit and it also opens up opportunities for an infinite array of complexity in pattern and texture," Opat says. "If a brick panel is being produced within a factory environment, the makers can template a pattern or texture via a paper or projection system and one person can lay the bricks on the panel at ground floor level, where they can be reproduced much more easily than at the 29th floor of a tower."

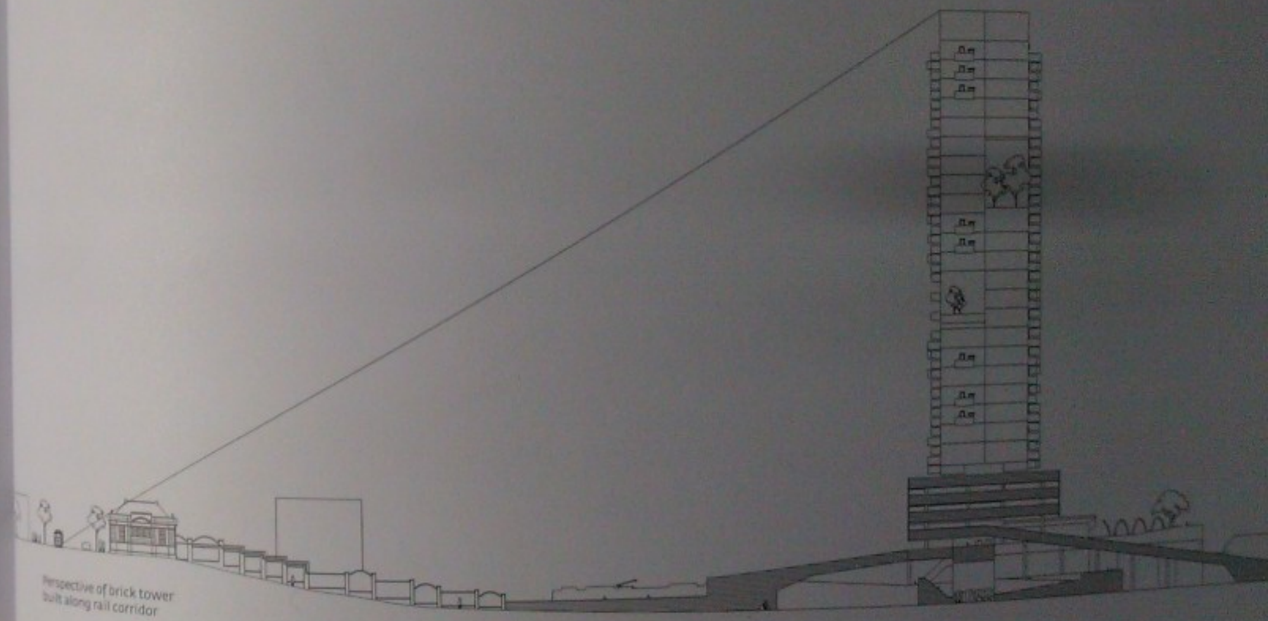
"Structurally the brick tower is totally feasible. Engineers have confirmed that the system would work over large train lines," Opat says. "We already have some successful examples of these types of projects in Melbourne – including Federation Square and Southern Cross Station, which were both built over existing train networks using different types of prefabrication and formwork systems that were installed during the night when trains weren't running."

Opat says his proposed tower is globally applicable to any site above railway lines.

"These rail corridors are now considered prime land," he explains. "They are the last remaining development areas within existing cities and there is a 15-year history of people looking at building in these air spaces, but property values and innovative new building systems mean that they are now becoming viable."

Pattern and texture
Rowan Opat Architects

Materials *brick panels (1.8 x 3m high)*
Year 2008



Perspective of brick tower built along rail corridor

Below (top)
Interior view showing residential apartment

Below (bottom)
Exterior view showing patterned arrangement of balconies on brick tower

Right
Drawing showing brick scheme built above railway station