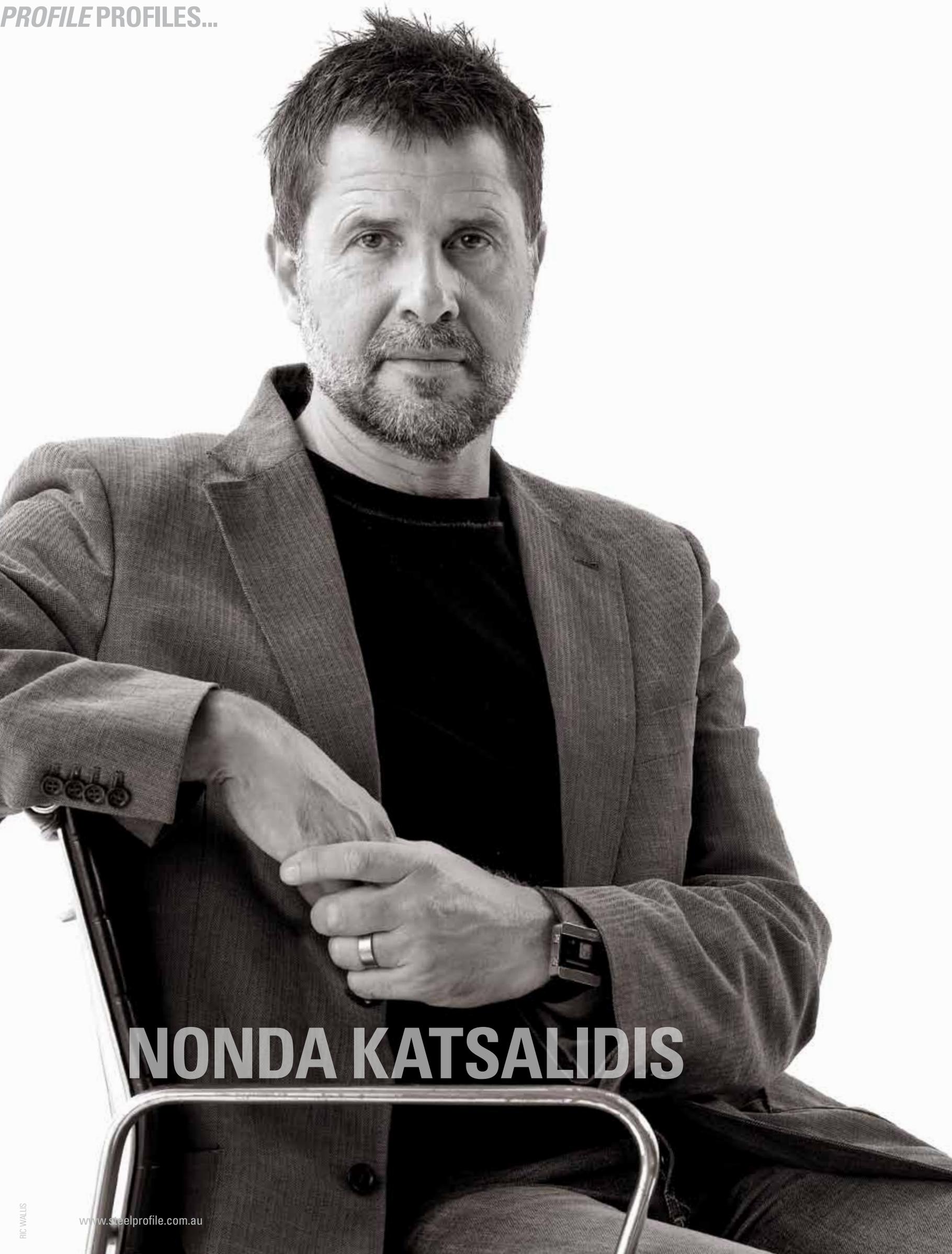


PROFILE PROFILES...



**NONDA KATSALIDIS**

A new prefabricated steel building system – designed by Melbourne-based architect Nonda Katsalidis – aims to revolutionise offsite construction in Australia, and is already delivering significant benefits. Words **Rachael Bernstone**  
Photography **Ric Wallis (portrait)**

**W**ith four projects complete and more in the pipeline, the recently unveiled Unitised Building system is already delivering on its promise of reducing construction risks and cutting construction timeframes thanks to the controlled factory conditions that remove many of the variables in the delivery cycle.

The system was designed by Melbourne-based architect Nonda Katsalidis – of Fender Katsalidis Architects – whose signature projects include the city's tallest building, Eureka Tower, and the stunning new Museum of Old and New Art (MONA) in Hobart. It is one of several projects Katsalidis has completed for client, friend and art patron David Walsh at Moorilla Estate, and features some innovative steel elements, including the distinctive weathering steel-clad fortress-like turrets that front the Derwent River.

The museum's main entrance is clad in a stainless steel box that creates a "Tardis-like effect" by disguising the Roy Grounds-designed courtyard house that sits behind it. On the lowest level of the museum, which is excavated deep into the sandstone hillside, a massive steel beam soars overhead between the circular staircase and lift shaft, and the underground bar. "I wanted a

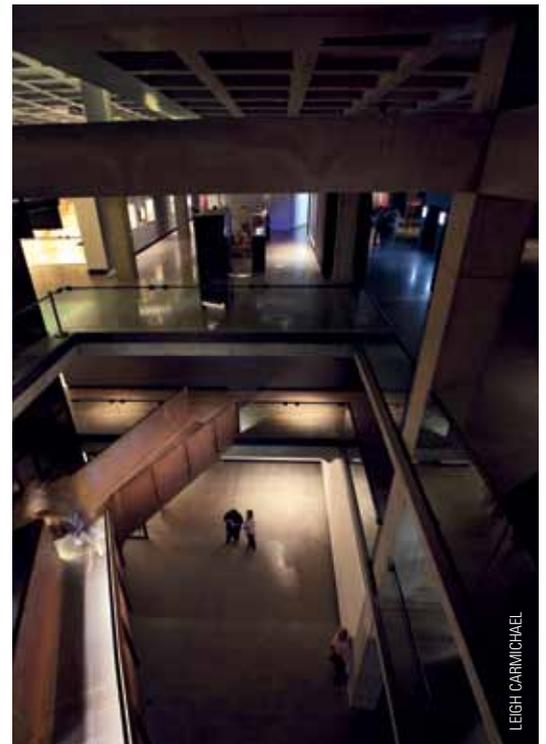
lightweight truss which would have been cheaper, and more importantly, manoeuvrable, but David wanted a bigger piece of steel so we needed a Trojan-style trestle to put it into place," Katsalidis says. "But it's a very nice lump of steel, in the end."

Elsewhere in the gallery – for example the twisting weathering steel staircase that connects two lower floors and the eight pavilions named after famous Australian architects, which provide boutique accommodation onsite – steel fulfils important aesthetic and functional roles.

Katsalidis is also known for his work on several of Melbourne's most lauded apartment buildings, including Melbourne Terrace (1994) – which is credited with kick-starting a residential renaissance in the city's CBD – and Hero in Russell Street (2002), which features a distinctive weathering steel addition on the roof that helped breathe new life into a former telephone exchange and post office.

In recent times, Katsalidis has been recognised by his peers and the community for the quality of his skyscrapers, including the 100m-high Republic Tower (2001) at the corner of Queen and LaTrobe Streets – which critic Norman Day said was "probably the best high-rise architecture to erupt in Kennett Town" – as well as the multi award-winning 90-storey Eureka Tower (2006), designed with partner Karl Fender.

In awarding that project the National Australian Institute of Architects Harry Seidler Award for Commercial Building in 2007, the jury said: ➤



ABOVE: Hobart's Museum of Old and New Art (MONA) features an internal stair made of weathering steel

BELOW: MONA, at dawn

Images courtesy of MONA Museum of Old and New Art, Hobart, Tasmania, Australia

# THE LEADING WAY

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BRETT BOARDMAN



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JOHN GOLLINGS



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BRETT BOARDMAN



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JOHN GOLLINGS

1. Four of the MONA Pavilions named after famous architects: Roy, Robin, Esmond and Walter. Designed in 2008 by Nonda Katsalidis in association with the Antarctica Group
2. Melbourne's tallest building – the 300m high Eureka Tower – was designed by Fender Katsalidis Architects and completed in 2006
3. MONA's Esmond Pavilion was named after influential Tasmanian architect James Henry Esmond Dorney
4. Republic Tower in Melbourne was completed by FKA in 2001
5. Craning a Little Hero apartment module on to site in Melbourne's Russell Place
6. Little Hero contains 63 one- and two-bedroom apartments, whose modules were installed onsite in just 10 days
7. Melbourne Terrace was completed in 1994, and is credited with kick-starting a residential renaissance in the CBD
8. UB's second project – The Nicholson in East Coburg – was designed by DesignInc and completed in August 2011

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MATT HOPPER

“The value of the design is clearly evident in the way the tower has already embedded itself into the mental map of the city of Melbourne, and it provides a vivid reminder of the powerful character of the metropolis and the metropolitan space in which Australians are increasingly choosing to live.”

The Unitised Building (UB) system combines Katsalidis’ expertise in delivering high-quality design that works both at a human scale – resulting in rooms that are a delight to inhabit – and at a civic scale – contributing a sense of presence to the streetscape and neighbourhood. UB is a modular system that manufactures apartment-sized units in a factory in Melbourne’s western suburbs, which are then

## “Structural steel is lighter than concrete so we are able to build significantly bigger structures that can be transported”

transported to site for installation and assembly. The system can be deployed by any architect to deliver projects such as hotels, apartment buildings, student accommodation and hospitals.

While the cost of building with UB is similar to conventional construction methods, the system offers several distinct advantages, Katsalidis says. “We are able to build in a more controlled environment, so the quality and precision is better, and we have a dedicated workforce who know what they are doing,” he explains. “The process is more predictable and reduces construction risk, as we are not exposed to the weather, and we are able to control wastage and therefore improve efficiency. That means the costs are similar but the building delivery is more predictable which is resulting in construction times half what you would normally expect.”

The first UB project was completed in July 2010 and was designed by Katsalidis himself. The eight-storey Little Hero apartment building in Melbourne’s Russell Place comprises 63 one and two bedroom apartments sitting above ground floor retail, cafes and restaurants. It was completed in nine months – with installation of the modules taking just 10 days, and residents moving in just four weeks after their

installation – delivering a six-month time saving in comparison with conventional building techniques.

Little Hero resident Anna Parle says the building is like an oasis in the heart of the city. “It combines beautiful architecture with environmentally sustainable design offering me the best of both worlds: inner city living without compromising on space or quality,” she says.

The modular offsite method of construction also helped to avoid many of the pitfalls associated with building in the city, such as difficult access, noise and pollution disruptions for neighbours, and safety issues that arise from working with heights.

At current production levels, the UB factory in Brooklyn – which employs 200 people – is capable of producing 2,000 apartments a year. Workplace conditions are superior and there is consequently greater employee diversity than might be found on traditional building sites, Katsalidis says. “UB represents improved conditions for construction workers because they aren’t working at heights, they don’t need to wear hard hats, there are more opportunities for women, and it is a great training ground for apprentices,” he says. “The prefabrication system also reduces waste and delays because we are not subject to the weather; we can run the factory 24 hours if need be, so we can catch up or adjust our schedules if circumstances demand it.”

Katsalidis chose steel as the basis for the UB system for its light weight and ease of transport – it results in structures that weigh up to 60 per cent less than their concrete counterparts – and for the fact that the system can incorporate recycled materials and be recycled itself.

“Structural steel is lighter than concrete so we are able to build significantly bigger structures that can be transported,” he says. “We can transport objects that are four to five times bigger than those made of concrete, and they are completely finished. That’s the key to making prefab work.”

Katsalidis asserts that despite 40 years of experimentation and innovation in prefabrication techniques, the construction industry hasn’t yet wholeheartedly embraced parallel offsite and onsite construction. He says that UB – a monocoque system where the structure, internal walls, external walls and connecting columns are all made from steel – aims to change that.

The second project to be completed using UB – The Nicholson in East Coburg – was designed by DesignInc for the state government development agency, VicUrban, and completed in August 2011. The handover was three months later than the original projected timeframe, a delay caused by excessively wet weather conditions which impacted onsite construction processes, Katsalidis says. “We’ve had one of the wettest winters in Melbourne in about 15 years, which delayed the works for the car park and ground level retail onsite,” he says. “We didn’t have any delays in the factory at all.”

One of the reasons VicUrban chose the previously unproven UB system to construct the mix of 200 public and private apartments – which have been privately sold and leased to public tenants under the National Rental Affordable Housing Scheme – was for its sustainability credentials. The apartments come with a six-star energy rating thanks to passive solar design, onsite grey water treatment, solar gas-boosted hot water and drought resistant landscaping. The lower embodied energy and reduced waste generated by the modular construction method were also key selling attributes.

Private developers built the third and fourth UB projects – Centvm apartments designed by BBP Architects in Plenty, and Pegasus apartments designed by Katsalidis in Mitcham, respectively. Katsalidis has plans to take UB interstate in future, initially by transporting modules made in Melbourne to other states, with a view to eventually establishing factories in both New South Wales and Queensland.

While the industry’s uptake has been somewhat cautious to date – “like any new technology it takes a while for it to catch on,” Katsalidis says – he is confident UB is “the way of the future”. Given its advantages over conventional construction, and the completed projects that prove the system works as promised, he may well be right. **SP**

