

shiro architects

INTRODUCTION

For a startup only 18 months in age, Shiro Architects has joined an exclusive club.

If only a small number of architectural practices ever gets invited to participate in a significant design competition, it is a considerably smaller group that gets paid a handsome fee to do so.

Fewer still participate on the basis of "design excellence" for a major urban site under the sponsorship of its local metropolitan authority.

We've joined that club, as underdogs, third on the ticket to two other extremely well-established and well-known firms, participating in early October, 2015, in a design excellence competition hosted by Parramatta City Council for such a site, a 23-storey residential tower to be developed by the well-established western Sydney developer, Dyladam.

OK, Shiro didn't win. Yet, in a competition ultimately decided by a council jury, Shiro's principal architect, Hiromi Lauren, once again proved her ability to get a better yield on built space than a majority of designers.

In her hands, Shiro Architects' submission comfortably exceeded the requirements of the brief by designing in 173 apartments on a challenging site, against a requirement for only 150 units.

Jury feedback

While in this, our first significant competition, the honours went to perhaps the best-established rival, and the one on whose masterplans the terms for the competition had originally been based, we nonetheless received notable commendations.

"This [Shiro Architects'] proposal addresses the corner and Jubilee Park with two different geometries – a curved tower addressing the corner and a rectilinear stepped building addressing the park."

"The ground level is spatially exciting, with double storey heights and large retail floor areas ... the strength of the sculptural response to the corner site is very impressive and distinctive amongst the entrants."

"... the Jury made a number of positive comments regarding

the form and sculpture of your scheme which was distinctive from the other entrants and outside of the norm for a lot of the designs that we are seeing in Parramatta."

"All competitors put in such strong submissions, yours was distinguished by its bold and sculptural approach to the site which was refreshing – Harry Seidler would have been proud of you!!"

"All the competitors did well, as it was a constrained building envelope with a lot of floor space. Even with those constraints, your design had spatial volumes and articulated external forms."

The brief

The Parramatta City Centre LEP requires that under certain circumstances an architectural design competition be undertaken, and we were happy to compete on design excellence on this mixed-use development, comprising retail and residential components, at 5-7 Parkes Street, Parramatta.

Within close proximity of Parramatta CBD, at approximately 300 metres' walking distance, the site adjoins Jubilee Park to its east.

The land is the subject of a planning proposal that increases the height and FSR applicable to the site, and the key established planning features of the proposal allowed for the design of a tower up to 23 storeys and 72 metres tall, with active frontages to Parkes Street, Anderson Street and Jubilee Park.

The approximate allocation of floor space would be:

- 7.4:1 FSR
- 14,918m² gross floor area
- 937m² GFA retail/commercial (6%)
- 13,981 m² GFA residential (94%)
- Circa 140-150 apartments:
 - 30% x 1-bed
 - 65% x 2-bed
 - 5% x 3-bed

A key consideration in determining the appropriate height and FSR controls was the need to ensure that Jubilee Park retains sunlight during key points of the day.

PARRAMATTA VISION

Parramatta City Council's landscape team conceptualises a 4km-long green parkland loop surrounding the city, improving pedestrian and cycle links to further civilise the metropolis, as part of its Design Parramatta scheme.

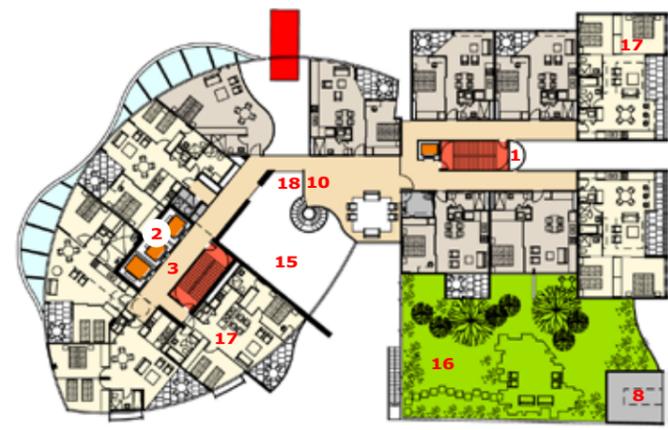
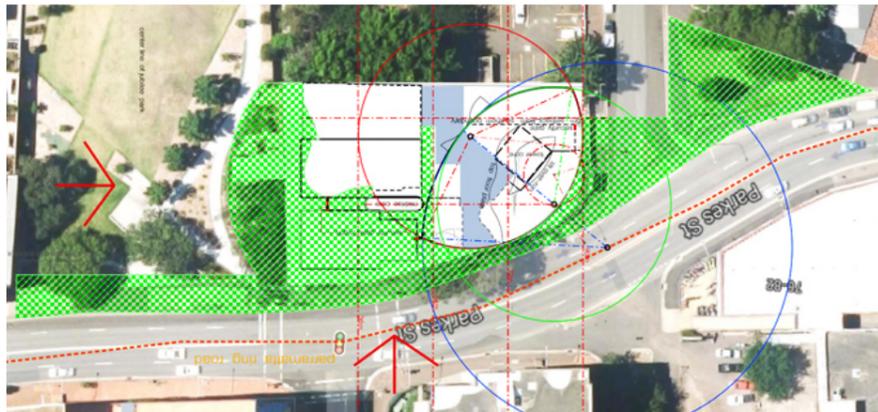
The Clay Cliff Creek Parklands proposal provides a concept for managing Clay Cliff Creek and adjacent parklands and will expand Jubilee Park, which sits next to and east of the Dyladam competition site.

The proposal's intention is to provide the precinct with a new recreational focus, encouraging urban habitat, reducing heat island effects and making connections with other parklands within Parramatta City.

Incorporating a design approach described as "urban by nature", the parks are designed as a series of urban wetlands, with tree-lined avenues defining pedestrian and cycle access to create a positive transition between the adjoining buildings and green spaces.



Pedestrian-friendly ring road



First floor



LEGEND

- 1 Fire stair
- 2 Lifts
- 3 Lift lobby
- 4 Residential lobby/flood evacuation
- 5 Reception
- 6 Mail room
- 7 Fire control room
- 8 Possible sub-station
- 9 Fire escape
- 10 Potential commercial (gym/child care)
- 11 Retail commercial
- 12 Courtyard/garden
- 13 Arcade
- 14 Wheelchair access
- 15 Atrium
- 16 Roof terrace
- 17 Apartment
- 18 Spiral stair
- 19 Green wall
- 20 Land contribution
- 21 Landscape slope to park
- 22 Vehicular access
- 23 Main switch room



Ground floor



Within Parramatta City Council's vision for the city, the Parramatta Ring Road on which the Parkes Street site sits is intended to become a "distinct city entrance".

Against this, we presented an imposing, modern residential building that met the expectations of its highly visible location.

Having worked as an associate at architects Harry Seidler and Associates for just under 20 years, and doing so at such close proximity to Seidler himself, it is perhaps unsurprising that many of the lessons of his work influence this example of Shiro Architects' building design.

Seidler was a pupil of the Bauhaus school, whose ideal is standardisation, and this attitude likewise informed our proposal, which came in two building forms.

As the Parramatta DCP demands that on a significant corner site a building's shape should follow that of the corner, at the site's western end, wrapping around the intersection of Parkes and Anderson Street, we introduced a slim, curved 23-storey tower.

We took as our example in meeting this requirement lessons in built geometry Hiromi learned from Seidler, in whose work the exploration of curvilinear forms is a well-known design principle. The theory of the Seidler geometry works almost perfectly on our tower's curved configuration, giving it a uniform curvature.

Top floors project this curvature to allow greater spaces for more expensive units, while on the tower's levels two to six, all floor plans are identical.

To the site's east, its low-rise apartment block steps from seven to 10 to 12 storeys.

Viewed from Jubilee Park and Parke Street east, it is a taut, white geometric box somewhat in the mould of Le Corbusier.

Stepping up every three to four levels, with generous balconies to the park and external blade walls, the low-rise comprises two structures sandwiching the core to provide every apartment with cross-ventilation.

At every level, each apartment plan flip-flops on the apartment beneath to create chequer board elevations to north and south sides, when viewed from the street and park.

It follows a sober, hard-lined aesthetic favoured by European rationalists from Walter Gropius to Le Corbusier, who sought an architecture based on mass-produced materials and standardised forms.

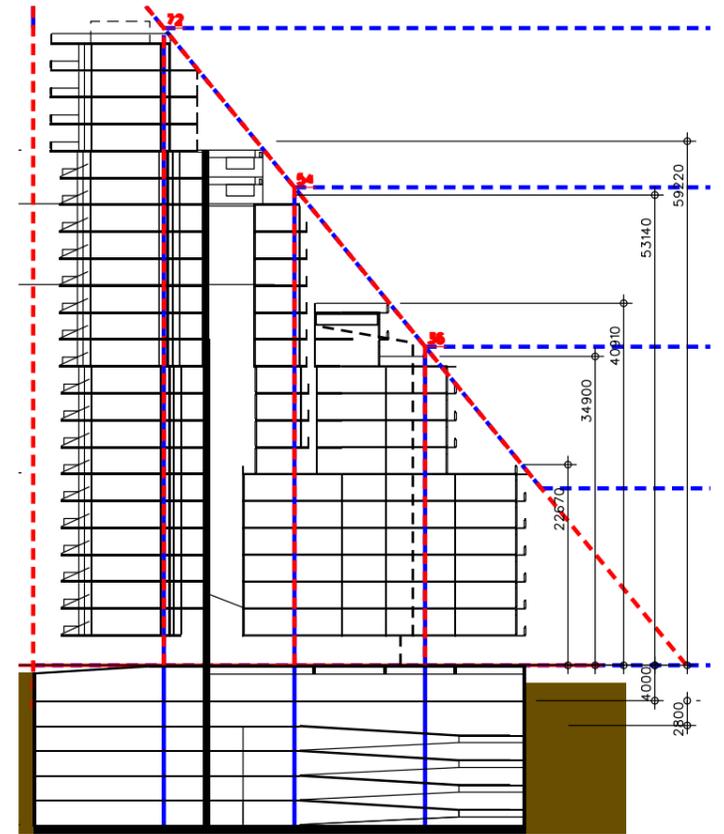
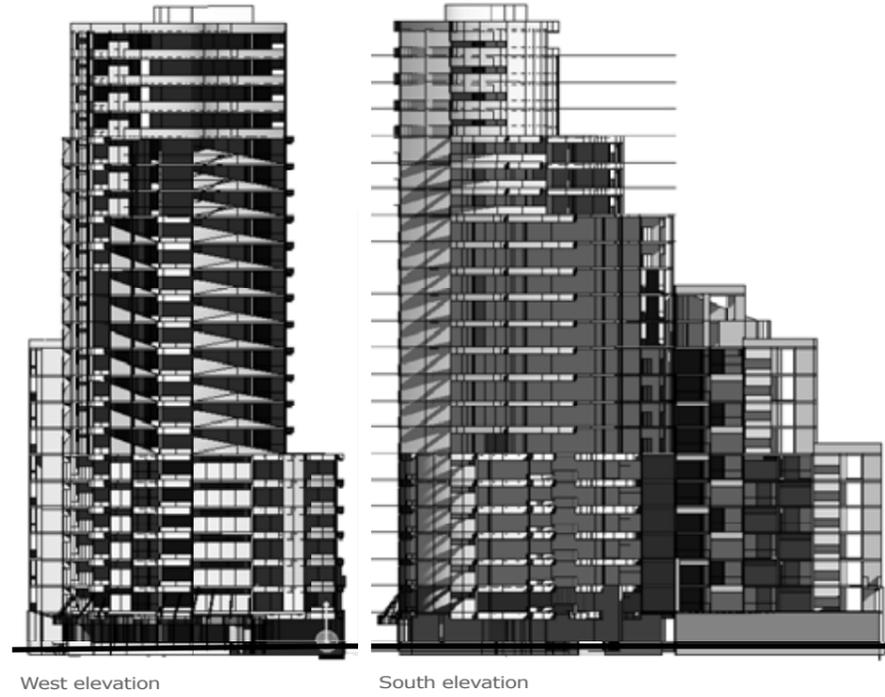
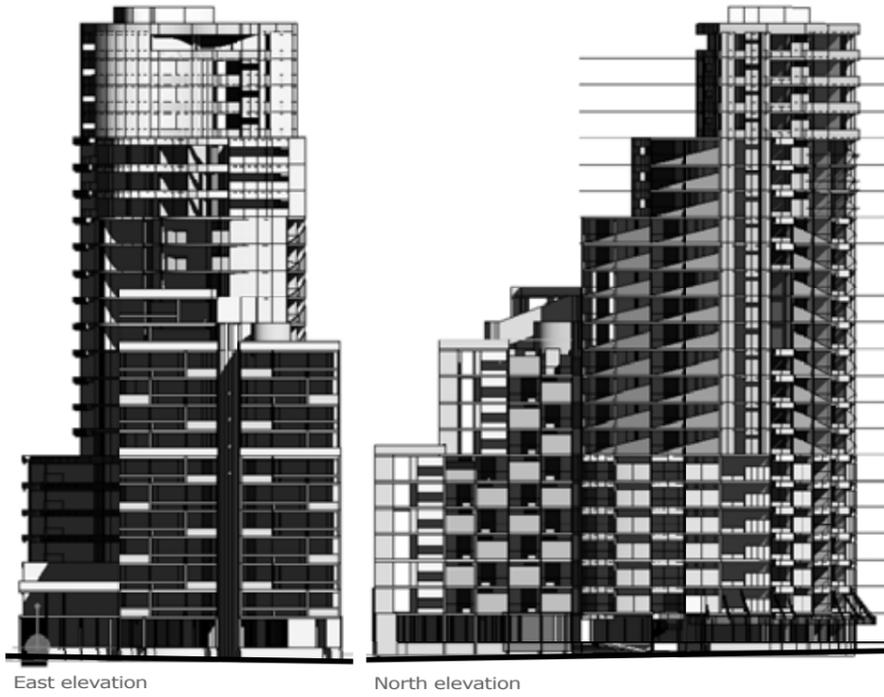
From Parkes Street west, the tower and low-rise building are connected structurally, but not visually from the street.

Our design aimed to innovate within the site boundaries, providing an aesthetically distinctive and conceptually clear architecture, exploring alternative designs for ventilation, wind screening, light, solar access, assembly, planting and materials.

We paid special attention to the general ensemble of streets and interaction with public places such as a pedestrian arcade and parks.

Our building's setbacks as it rose provided roof spaces for lush landscaping and outdoor-indoor living experiences for residents, entangling and softening the analytical clarity of the modern architecture itself.





To cater for the need not to obscure Jubilee Park to the site's east from access to the sun, in designing the height and mass of the building, we used previous studies already accepted by Parramatta City Council, and created by established building professionals.

Within each of those schemes' envelopes, there had to be two to four buildings to maximise FSR.

One had a 72-metre tower plus three other slim towers, while the other had a 60-metre tower with a bigger floor plate plus a low, large podium building.

We decided on a low-rise building setting back in the east, with a tower on the west, also with setback to maximise the volume within the sun access line.

The design challenge here was how the two buildings could be joined physically but separated aesthetically, while still expressing mutually reinforcing harmony.

The two buildings are connected up to level seven, but this connection can only be seen from the south.

When viewed from the street, their separation is completely hidden.

The tower's core is located within the 72-90-metre height limit area of the site, and the tower hits the ground without changing shape.

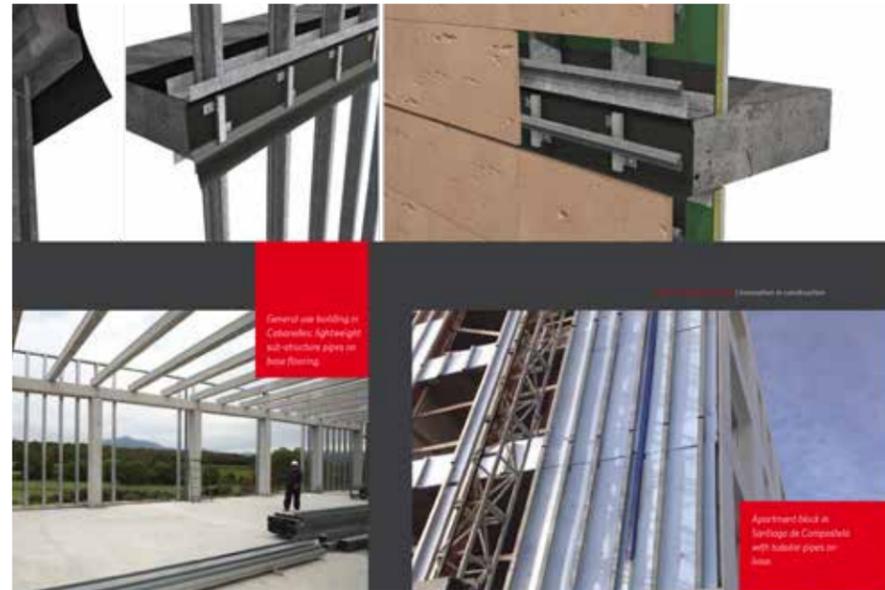
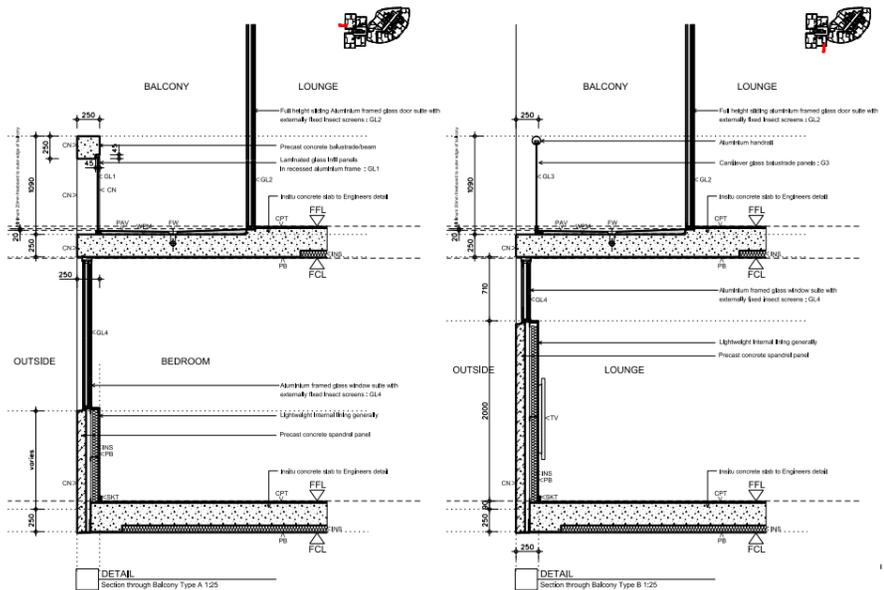
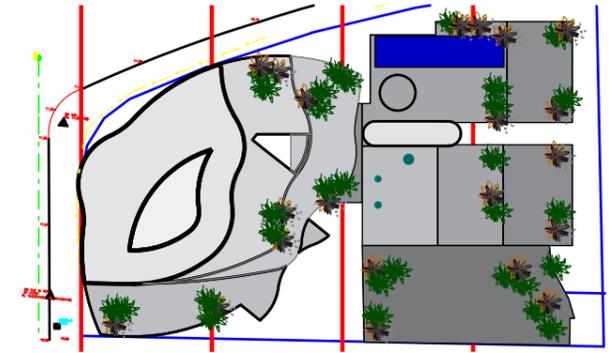
The DCP for residential flat buildings and mixed use requires that a minimum of 10m² of communal open space per dwelling is to be provided.

But it allowed that communal open space may be provided on the rooftop, where it would not adversely affect visual and acoustic privacy, or safety and security.

A six-metre setback from the southern boundary allowed for a roof garden with a view to the park.

As it is above the height of the neighbouring Holiday Inn, we placed a garden on the roof of level seven, and repeated this each time the tower set back as it went up, as seen at levels 11, 16 and 19.

At levels 16 and 19, the height of these open, communal spaces should allow for their users to view the Sydney New Year's Eve fireworks to the east.



REALISABLE GREEN INITIATIVES

Our scheme for 5-7 Parkes Street wasn't designed to attract a Green Star rating, but eminently achievable sustainability undertakings could be put in place at low cost in its design to improve environmental performance and enhance saleability.

Building information

Apart from the initial environmental impacts of materials selection and construction, any building's greater effects on the environment come in its operation after occupation, and we suggested the following.

By the time the Parkes Street building would be occupied, Parramatta should be, or be very close to being, serviced by the National Broadband Network (NBN).

High-speed data cabling for every room, with pervasive supporting back-up wi-fi on each floor would enable the building's condition and the energy efficiency of individual units to be monitored through a web-based portal usable by building managers and occupiers alike. This could connect to the building's information-management system (or BIM model), enabling closer modelling of location-independent energy performance throughout.

A web portal shared by occupiers would enable those concerned not just to monitor the relative performance of their own units, but also provide a common space for those most concerned in matters of sustainability to make suggestions for improvements. Human awareness, interest, vigilance and, ultimately, behaviour applied to create a culture of "mindful occupation" is the most potent ingredient in enhancing building performance and waste minimisation over time.

Energy

To minimise the building's operational waste, we would augment its energy design by installing an array of high-performance solar panels on its roof. These technologies are advancing so

quickly that by the time the Parkes Street building's construction was complete there would be new models with greatly enhanced efficiency to provide highly economical off-grid power to individual residences, common areas and shared facilities, such as the pool.

We advocated installing in the garage storage cage for each apartment a Tesla battery to store energy for use at times when the sun isn't shining (http://www.teslamotors.com/en_AU/powerwall). At under \$10,000, this cost could easily be recovered within the sale price of each apartment.

To minimise transport-related emissions of greenhouse gases, we also advocated installation of a Tesla Supercharger station, or similar, in the loading bay, first as a facility to raise money for the body corporate, but potentially also as an attractive sales option per unit as an incentive for owners to switch to electric vehicles.

Glazing and insulation

We suggested that any glazed surfaces, including all sun-facing windows, balustrades and awnings could be made from Onyx Solar's integrated photovoltaic glass to capture solar energy.

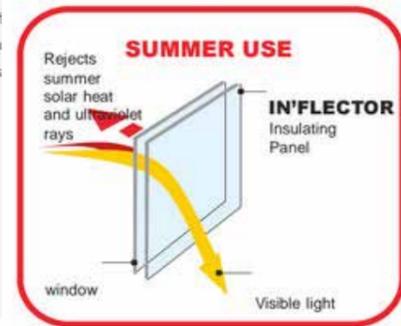
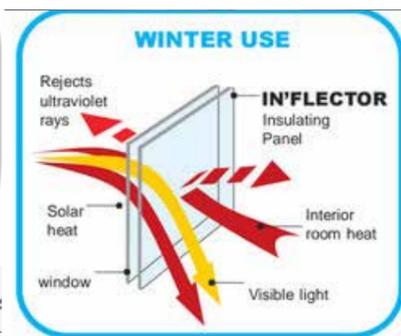
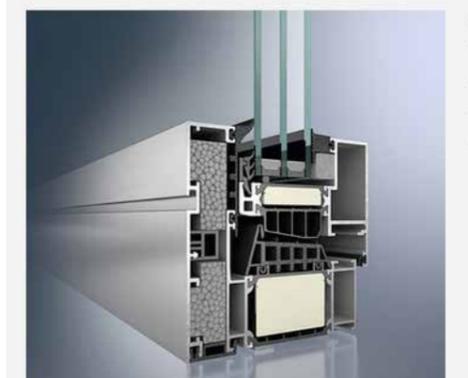
We also recommended as an energy-saving solar measure "Inflector" blinds (<http://www.energyneutral.com.au/>) that deflect unwelcome heat from coming into units in the summer and provide added insulation that prevents heat loss in the winter.

These would contribute to residents' visual and thermal comfort year-round.

As architects, we recognised that we had little control over the final selection of materials but proposed to use whatever low-impact, third-party certified building products that could demonstrate sufficient sustainability credentials to ensure the building performed well during operation and to enhance its marketability.



Entry



Residential lobby (evacuation area)