



Alice Springs Aquatic and Leisure Centre's intertwining water slides. Each slide passes through a fully glazed external wall twice before reaching an internal splash down tub located adjacent to the access stair. Images courtesy of Adrian Boddy Photographer.

# Red Hot: Red Centre

Michael Davies, Nick Karaiste and Geoff Ninnes outline how the Alice Springs Aquatic and Leisure Centre can serve as an example of best practice in design, construction and energy efficiency.

In the heart of Australia's semi arid desert centre, the recently opened Alice Springs Aquatic and Leisure Centre is making the most of the Northern Territory's most abundant free resource - the sun.

Part of the Federal Government's Alice Solar City project, the Centre is using the sun, and associated radiant energy, to heat four of its pools. Extracting solar energy through 320 roof-mounted Heliocol solar panels, which take up an area nearly equal to the total surface area of the pools that are being heated, the installation is the second largest of its type in Australia

While Alice Springs is renowned for its summer temperatures, which reach an average maximum of over 35 degrees between November and March, winter nights can dip below zero.



Adapting to this temperature range, the 2,556 litre Heliocol solar hot water heating system will, on average, meet 40% of the heating requirements for the Centre's indoor pools, increasing

to nearly 100% of the heating requirement during summer. The Heliocol system will supplement the Centre's natural gas



heating and reduce gas usage by an estimated 30%, saving over 3450GJ natural gas per year - equivalent to 350 tonnes of carbon dioxide emissions a year.

Funded by the Federal and Northern Territory Governments along with the Alice Springs Town Council, the \$14.1 million redevelopment of Alice Springs' former outdoor swimming centre delivered an indoor eight lane, 25 metre swimming competition pool with adjacent seating for up to 200 people; and a beach front leisure pool with toddler area, spa and lazy river that incorporates a four lane 20 metre learn-to-swim section.

Other features include single and double loop water slides along with a new kiosk and café area. The Centre also features new male, female and family accessible change rooms, and an innovative 'shower play tunnel' to encourage bathing before entering the water.

Programs at the YMCA-managed facility include aqua aerobics, school holiday activities and synchronised swimming while the Centre hosts the Alice Aussi Masters Swim Club, the Alice Springs Swimming Club, the Alice Springs Canoe Polo,



Alice Springs Triathlon Club and learn to swim classes.

The first stage of the redevelopment of the former swimming centre included provision of an outdoor learn-to-swim and toddlers pool and began with the Council's appointment of Geoff Ninnis Fong & Partners Pty Ltd (GNFP) as aquatic engineers.

In March 2008, the Council commissioned TompkinsMDA Architects to design, document and oversee the construction of stage two, the indoor centre.

TompkinsMDA Architects' design had to be sensitive to a number of important indigenous cultural protocols and also incorporates major indigenous art works as part of the building fabric.

The design concept was to provide a larger pool hall space over 70 metres long and 35 metres wide with a north oriented mono-pitch roof as a single, simple, large, glazed, rectangular architectural form and then to 'plug in' the smaller scale, more complex, typically solid elements comprising change rooms, water treatment plant room, mechanical

services plant room, entry element, kiosk element and the waterslide tubes.

Colour is particularly important in Alice Springs and the general approach has been to adopt the reds, browns and ochres of the desert as a palette for the built environment. This wasn't the case at the new Centre where primary colours of red, yellow and, to a lesser extent, blue were used to articulate particular functional elements and surfaces, thus



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emphasising the sculptural and compositional nature of the design. The colours have also been used to further emphasise that the Centre is a fun place to be.

The wet deck indoor pools, designed for a 50 year design life in reinforced concrete, were built by Crystal Pools and are fully tiled for a 30 year lifespan with Agrob-Buchta tiles from Melbourne-based Ceramic Solutions. (See page 64).

The cooperation between the aquatic engineers and the architect resulted in the gas chlorine room and the water treatment plant room being centrally located at a minimum distance to all pools, ensuring minimum balance tank length and reduced supply and pipework for maximum efficiency.

Each pool has a separate water treatment and heating plant, supplied and installed by Trisley Hydraulic Services, with filtration provided by Atlas Stainless Steel Precoat DE filters by Fulham Fabrications and Prominent high intensity medium pressure UV. The Atlas plant optimises the effectiveness of the UV disinfection system and this has resulted in a facility



with virtually no chlorine smell due to the chloramines in the atmosphere. It has also delivered sparkling clear water with minimum combined chlorine, resulting in minimum irritation to the eyes. Sanitisation

is by gas chlorine with soda ash for pH control.

The main pool hall space is heated and ventilated by three heat recovery air handling units located in the mechanical plant room at the western end of the Centre. Two of the units supply air to a masonry plenum located beneath the floor and discharge warm air vertically over the predominantly glazed north and east walls via a grille located at floor level. The third



unit supplies air to a similar under floor plenum which discharges vertically over the lower glazing in the south wall and via an exposed fabric duct extending the full length of the pool hall serving the glazing at the higher level. Air is

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returned to the units via three large round wall mounted grilles at the western end of the pool hall. Externally, all ventilation and return air ducts are exposed and are painted bright red, mimicking the 'plug-in' aesthetic of the building as a whole.

Pool excavation began in November 2009 with sub structure construction taking place through Alice Springs' hottest months which presented some very specific project challenges.

From a pool building perspective, the construction of the initial blinding layer during the Northern Territory summer was a major challenge. The dimensionally accurate blinding layer provided a sound platform, which allowed all subsequent works to proceed smoothly.

The result has been a Centre that Alice Springs's population of over 27,000 can be proud of, and that demonstrates contemporary best practice in design, construction and energy efficiency.

**Michael Davies is the Principal of TompkinsMDA Architects who specialise in the design aquatic, recreation and sport buildings.**

**Nick Karaiste was Crystal Pools' Site Manager during the construction of the Alice Springs Aquatic and Leisure Centre.**

**Geoff Ninnes is the Principal of Geoff Ninnes Fong & Partners Pty Ltd, aquatic engineers.**



## Alice Springs Aquatic and Leisure Centre Design Team

### Architects and Design Managers:

TompkinsMDA Architects Pty Ltd - 1300 884 336

### Structural & Aquatic Engineers:

Geoff Ninnes Fong and Partners - 02 9332 5100

**Building Services:** Vos Group - 02 9956 8101

**Building Surveyors:** Tecon Australia - 08 8228 1606

**Project Manager:** CAT Projects - 08 8959 6242

### Suppliers / subcontractors

**Builder:** Sitzler Bros Pty Ltd - 08 8959 5000

**Pool structures:** Crystal Pools Pty Ltd, 02 9875 4555

### Water Treatment and Filtration:

Trisleys Hydraulic Services Pty Ltd, 02 8566 3666

**Solar Panelling:** Heliocol Solar, 1300 132 968

### Water Slides:

Australian Water Slides and Leisure Pty Ltd, 02 6658 9407

### Pool and general tiling (see page 64):

Ceramic Solutions Pty Ltd, 03 9545 5322.

*While it is recognised that other companies contributed to the successful completion of this project, these condensed acknowledgements focus primarily on the aquatics component and its delivery.*

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