

# MAKING A SPLASH



DEVELOPER : Maroondah City Council  
MAIN CONSTRUCTION COMPANY : Kane Constructions  
ARCHITECT : Peddle Thorp Architects  
PROJECT MANAGER : Davis Langdon Australia Pty Ltd  
PROJECT VALUE : \$52.2 million

Aquanation is a new \$52.2 million regional aquatic and leisure centre located in Ringwood, Victoria, within the City of Maroondah. The state of the art facility features a 66.5 metre 10 lane pool and diving facilities; a warm water, dedicated learn to swim, large toddler and children's play pools; a large gym with three separate group fitness rooms; child care facilities and a café.

**Maroondah City Council appointed Kane Constructions to build Aquanation, with construction commencing in August 2013. The two year build saw the facility open to the public on Monday 17 August, 2015.**

The facility was designed by Peddle Thorp Architects, recognised for innovative and landmark aquatic and recreational buildings. The unique design was a result of extensive consultation with key stakeholders and user groups, including the Ringwood Swimming Club and Ringwood Diving Club who would call Aquanation home.

In addition to good passive sustainable design considerations such as building orientation and protection of glazing from excessive solar gain, the building also includes a range of environmentally sustainable

design initiatives across the Mechanical & Electrical, Hydraulics, and Building Materials inclusions.

Utilising 10 of its 250 strong personnel, Kane Constructions delivered the project under the project management of Davis Langdon and Council's appointed Client Liaison Manager. Kane Constructions provided input into the RFI and shop drawing process and utilised new construction products including Kingspan's KingZip panels for the profiled, curved roof. These panels were able to be manufactured on site, allowing for faster construction of the roofing, while also providing a continuous weather tight roof and protection for all weather conditions.

The \$52.2 million Aquanation project includes Victoria's first dedicated dry diving training centre which allows divers to perfect

their techniques in a controlled environment. When the divers take to the water, there is a 10 metre diving tower, built to FINA standards and with direct access from the dry diving training area.

The 66.5m, 10 lane pool is also a stand out feature of Aquanation. Built to FINA standards the pool has a unique set of twin booms which allows the pool to cater for different water activities including lap swimming, swimming carnivals, club training and competition, diving, water polo, synchronised swimming and other programmed activities. A separate learn to swim pool, a play pool with beach entry and splash play, and warm water pool have also been included. Aquanation is fully accessible with ramp access to all bodies of water.

The inclusion of two large waterslides to the north western section of Aquanation is a major highlight of the centre. The slides measure 12.2m high with one slide covering 90.7m, and the other 61.5m. These can be used year round due to the entry and exit points being contained within the facility, and the fact that both slides are fully enclosed.

To complete Aquanation, there is a 1,000m<sup>2</sup> gym with mezzanine level, and three group training rooms suitable for a range of group fitness and recreation programs; a child care facility and a café with outdoor seating. In addition there is seating capacity for 800 spectators (with 500 permanent grandstand seats) and parking for over 400 cars. With a regional catchment of more than one million people, it is expected that Aquanation will have more than 800,000 visitors per year, catering for people of all ages and abilities.

Kane Constructions will move on to other new projects, one of which is the new \$8 million GP Super Clinic at Caboolture, having been announced the successful tenderer. Designed by Wilson Architects, the project is a new two-story building consisting of doctors consultation suites, procedure rooms, related services and tenancies.

**For more information Kane Constructions**, Level 1, Building 1, 658 Church Street, Richmond VIC 3121, phone 03 8420 1200, fax 03 8420 1201, website [www.kane.com.au](http://www.kane.com.au)

**Below** Westkon Precast installed a pre-cast 10m concrete diving tower and two separate dive platforms.

**Below** SKC Engineers performed structural inspections of the concrete and steel structures for the duration of the project.



**Westkon Precast has used its innovative precast products on the \$52.2 million Aquanation project in Ringwood, Victoria.**

With experience spanning 28 years, Westkon Precast has developed into one of the leading concrete precast companies in Australia. Westkon has built its reputation by its ability to offer full design and construct packages for complete precast structures, in civil, commercial and general construction projects.

When it came to Aquanation, Westkon Precast carried out work on the diving tower, a significant feature. It was during construction of the 10m high tower that Westkon's experience came to the fore. It became apparent during this phase that the original in situ design was not going to be practical due to the immense size of the structure.

Westkon then proceeded to convert the original in situ design and constructed and installed a precast 10m diving tower adhering to strict FINA standards in the process.

The monolithic tower consists of 5 platforms, set at 1, 3, 5, 7.5 and 10 metre heights. The mere size of the tower presented a few challenges along the way, due mostly to its statuesque height, weight and shape.

For every step of the construction process, Westkon precast used their skill to ensure that all platforms and handrails met the strict height requirements required for FINA's competition standards.

Current projects Westkon Precast are working on include the construction of precast concrete beams, barriers and parapets for the new elevated road and multi-level car park structure at Melbourne Airport. Epworth Hospital in Geelong is also benefiting from their skills and products, as are various apartment towers and buildings in Melbourne such as the Prima Pearl Tower, Upper West Side Tower 3, Melbourne One, Tower 2 at Collins Square and Concavo.

*For more information contact Westkon Precast Pty Ltd, 133-199 Ferris Road, Melton VIC 3337, phone 03 8746 1300, fax 03 9747 3088, email info@westkon.com.au, website www.westkon.com.au*



**Having worked in the building industry for over 30 years, Shan Kumar of SKC Engineers was involved in the \$50 million Aquanation project from the very early stages.**

A one man outfit, the senior structural and innovation engineer formed Shan Kumar Consulting Engineers in 2013, and engages the services of experts in other fields as required. In the initial stages of the Aquanation development, SKC Engineers were commissioned by Maroondah City Council to review the condition of the old Ringwood Aquatic Centre in Ringwood.

Shan was then asked to continue working on the project, providing advice during the concept stage and producing feasibility studies on keeping the existing structure with a view to structurally strengthening and modifying this for the new aquatic facility.

SKC Engineers performed structural inspections of the concrete and steel structures for the duration of the project on behalf of Maroondah City Council's building surveyor, ensuring that Council complied with all the structural aspects of building construction. This was vitally important due to the size, and the immense volume of water that the building would be housing.

Whilst Shan operates SKC Engineers, he also shares his expertise with Hickory Group, working 3 days a week as their Senior Structural and Innovation Engineer. Here he further uses his talents to develop and build prefabricated modular structures.

Designing a number of small to medium rise buildings, Shan is also working on the tallest prefabricated building in Australia, standing at 44 storeys high. Other projects that have benefited from Shans proficiency include Crown Casino, Eureka towers, Etihad stadium, Etihad Towers in Abu Dhabi.

A senior lecture and honorary fellow at The University of Melbourne, Shan Kumar lectures final year engineering undergraduates, sharing his vast knowledge and experience with these engineers of the future.

As a Past President and current Committee Member of Concrete Institute Australia (CIA) Victorian Branch, he services the Engineering community by conducting ongoing lecture evenings, seminars and exhibitions.

*For more information contact SKC Engineers, 35 Grantham Terrace, Mulgrave VIC 3170, phone 0458 253 982, email skcengineers@bigpond.com*

**Below** Total Noise Control installed over 3,000m<sup>2</sup> of their Sorbalight EXEL FP panels at Aquanation.

**Below** Brenair Mechanical Services designed and installed the mechanical ventilation, air conditioning and heating systems.



Sorbalight EXEL FP panel with protective covering before installation.

**Total Noise Control Pty Ltd manufacture a range of sound insulation and noise reducing products and has representatives in every state of Australia.** It's Sorbalight range of absorption products utilises the latest in fibre technology as well as fibre orientation to produce products with superior absorption and structural properties.

With over 40 years of acoustic knowledge and experience behind them Total Noise Control was selected to provide their specialised products in Aquanation, Victoria's state-of-the-art aquatic and leisure centre. Utilising their acoustic knowledge and expertise Total Noise Control developed a special panel and supplied over 3000m<sup>2</sup> of their Sorbalight EXEL FP product to this project.

Sorbalight EXEL FP is constructed from a combination of a metal supporting components as well as from 100% recyclable polyester fibres utilising over 70% of recycled fibres making these panels one of the most eco-friendly acoustic absorption products on the market.

Sorbalight EXEL FP can span up to 2.4m without extra support and are mounted magnetically allowing for re-location if required and are water resistant and easily cleaned including the use of a high pressure hose.

Sitting 200mm below the hard reflecting ceiling allows the panels to enhance their overall acoustic properties creating extra sound absorption (a Noise Reduction Coefficient > 1.0) To cope with the variable distances between the projects exposed ceiling purlins to which the panels were to be mounted was a challenge easily met by the EXEL FP panels as they were efficiently made to suit the varying required sizes.

Due to the structure of Sorbalight Total Noise Control have the flexibility to create a significant range of products never previously seen on any market.

They are moving forward with new designs with a new product launch imminent. With multiple product lines and leading edge technology Total Noise Control will continue to offer specialised products to suit the changing market as well as meeting the needs of innovative architects and designers.

*For more information contact Total Noise Control Pty Ltd, Factory 2, 12 Sir Laurence Drive, Seaford VIC 3198, phone 03 9786 6088, fax 03 9786 6077, email info@totalnoisecontrol.com.au, website www.totalnoisecontrol.com.au*

**Since its establishment in 2006, Brenair Mechanical Services has been providing a comprehensive range of services in the air conditioning, heating and ventilation, pipe work installation and plant and equipment installation fields.**

Brenair Mechanical Services specialised staff include qualified mechanical engineers, project managers, refrigeration mechanics, electricians, sheet metal workers, welders and plumbers, all of whom have the common goal of excelling in their field and providing exceptional customer service to their clients.

It was these expert skills that Brenair Mechanical Services took to the Aquanation project in Ringwood, Victoria. With a team of 8 of his 12 staff behind him, Director Patrick Brennan worked with Kane Constructions to construct and install the mechanical ventilation and air conditioning and heating systems for the new aquatic and leisure centre.

In addition to this, the Brenair Mechanical Services team were responsible for the heating hot water systems, as well as the chilled water systems throughout the complex which consists of not only a variety of pool facilities, but a gymnasium, child care facility, dry

diving training room and change rooms. Adiabatic Condenser water systems were also installed by the team to assist in removing heat energy from the centre. Adiabatic Cooling units were installed in an external plantroom at Aquanation.

Brenair Mechanical Services work also included wall mounted sweep fans, kitchen exhaust and makeup air systems, electrical works and a custom Building Automation System to control all aspects of the mechanical, pool-plant and electrical systems.

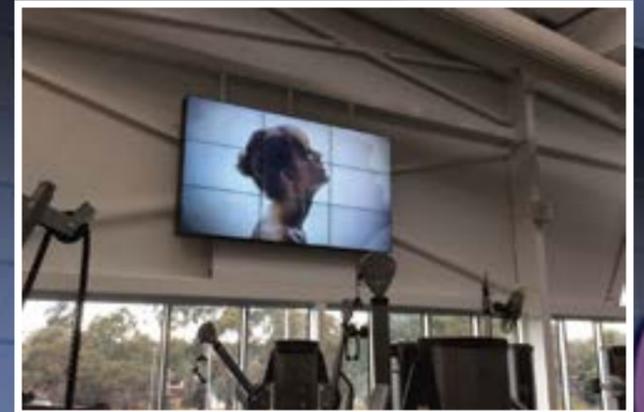
With all large projects come challenges, and the main ones when working on Aquanation were the space constraints within the plant rooms, and the installation of the fabric duct, due to height of the complex.

Brenair Mechanical Services will continue to work on projects simultaneously throughout Victoria, ensuring that these are completed both on time and within budget.

*For more information contact Brenair Mechanical Services, 4/6 Vesper Drive, Narre Warren VIC 3805, phone 03 8790 6999, fax 03 8790 6222, email admin@brenair.com.au*

Below IES Group completed extensive electrical works on the Aquanation project.

Below AV Media Systems supplied and installed extensive audio/visual systems throughout the Aquanation complex.



For the past six years, IES Group has been providing a range of services in the commercial and industrial electrical, electrical refrigeration and electrical testing and safety maintenance fields.

Specialising in large scale apartment constructions, IES Group have also completed work in hospitals and nursing homes, large scale warehousing, mechanical plant works and large recreation and aquatic centres. It was due to their expertise in the latter that they were appointed by Kane Constructions to perform electrical work on Aquanation, the state of the art regional aquatic and leisure centre in Ringwood, Victoria.

With 12 of its 100 employees working on Aquanation, IES Group performed a myriad of electrical services on the project. These included general lighting; power installation including floor boxes, general power and specialised power for the gymnasium, and a Data Structured Network, featuring a category 6A structured network and a fibre optic back bone network.

An Inner Range Integrity security system was installed along with a CCTV Mobotix Camera, access control, and a public address system comprising cabling infrastructure for both IPTV and MATV. The

full zoned PA system was interfaced with the building Emergency Warning System.

Equipotential earthing for aquatic equipment; pool plant wiring, and a fire system with full VESDA air sampling system and smoke and thermal detection were also installed.

Working in a highly chlorinated environment also had its challenges, yet the dedicated IES team overcame these by selecting appropriate materials that could withstand the corrosive surrounds. Dealing with the architectural intricacies of the building meant that customised brackets had to be constructed to supply large flood lighting to pool areas, and special attention was paid to concealing cables in the open spaces of the facility.

Recently merging with ASI Electrics, IES Group continue to provide quality electrical services to major projects in the Melbourne area.

For more information contact IES Group, Unit 3, 993 North Road, Murrumbena VIC 3163, phone 1300 437 476, fax 03 9578 6302, website [www.iesgroup.net.au](http://www.iesgroup.net.au)

With offices in Melbourne, Sydney, Brisbane and Perth, AV Media Systems provide innovative audio visual system designs, solutions and services both nationally and globally. Working in a range of industries, AV Media Systems use their expertise to connect people with technology.

Known as leaders in the industry for their aquatic work, AV Media Systems were appointed to design and install audio visual equipment on the Aquanation project.

Their work on the project included the public address system for the entire complex, which is controlled from the front desk via an Ipad, allowing staff to address individual zones or the entire centre simultaneously.

Utilising 46" NEC High Brightness panels, a 3m x 3m video wall was constructed in the main gymnasium. A giant LED video wall was also installed in the main indoor pool area measuring 3.65m x 5.49m.

To ensure protection from the aquatic environment, this equipment has an IP66 rating and is fully sealed and corrosion proof with fully sealed componentry.

The multi purpose rooms were also fitted out with 2 x 10" EV Sub-woofers and 10 x 8" ceiling speakers, each room individually powered by EV Power Amps and a London BLU audio processor, with individual iPad controls for each room.

A 10 channel OneLan digital signage system was also designed and installed that modulates to all LED panels in Aquanation over an IP TV network. This system also modulates NightLife Audio and Video Music and Foxtel channels, ensuring that different messages or programs can be played on individual screens throughout Aquanation.

Director of AV Media Systems, Chris Kiskiras is proud to have been associated with Ringwood's major recreational facility. "Our experience in the field of customised design, installation and services for the leisure and recreation industry is recognised nationally among industry and building professionals, associated organisations and our customers alike, and that's something we're always very proud of."

For more information contact AV Media Systems, 16/45 Normanby Road, Notting Hill VIC 3168, phone 03 9543 6525, fax 03 9543 6772, email [info@avsystems.com.au](mailto:info@avsystems.com.au), website [www.avsystems.com.au](http://www.avsystems.com.au)