

COVER STORY

NSW PROJECT FEATURE ARC BY CROWN GROUP

Hutchinson Builders / Sydney



THE CROWNING JEWEL

DEVELOPER : Crown Group
MAIN CONSTRUCTION COMPANY : Hutchinson Builders
ARCHITECT : Koichi Takada Architects
CONSTRUCTION VALUE : Circa \$100 million

The Arc by Crown project is a unique and beautifully designed structure comprising of two residential towers offering luxurious studio, one, two and three bedroom apartments as well as five extraordinary penthouses. The apartments will have artfully designed interiors to complement the panoramic views. Subtly coloured, muted tones and rich textures are offered by the luxuriant carpet and polished tiles. The indulgent apartments feature amenities such as a spa, gym, reflection pool and rooftop courtyard on the penthouse level.

Hutchinson Builders, established as a family business in 1912, is today the largest privately owned construction company in Australia. Currently running over 250 projects nationwide, Hutchinson Builders work across a range of commercial, residential, education, health, civil, infrastructure and hospitality projects.

Hutchinson Builders started work on the Arc by Crown Group development in Sydney's CBD in November 2015. The project comprises two 29-storey buildings, each 88m tall, with a through link connecting Clarence and Kent Streets.

The link consists of a 9-storey void between the two towers with retail outlets and outdoor eating areas. The development includes 221-apartments, spa, gym and a rooftop courtyard along with 105 car spaces spread across five basement levels.

The Arc building has a number of steel hoops rising from Level 28 to create a distinctive arched rooftop that reflects the curving forms of Sydney icons the Harbour Bridge and the Opera House. At ground level the Arc pays homage to early Sydney high rise structures with intricate face brickwork and decorative archways.

Due to their vast experience on large construction projects, Hutchies were able to recommended changes to the original design of Arc that improved the building process and the look of the building. Hutchinson Builders proposed a curtain wall to replace the documented window wall systems in order to achieve a quicker and neater installation.

Decorative brickwork, arch and lintels, originally specified to be of precast concrete, were changed to conventional brickwork to match the older brick buildings in Kent and Clarence Streets. Work onsite starting in

February 2016 with just over 300 workers onsite at peak periods.

"A key feature of the through site link is the glass and structural steel lift shaft running through the centre of the buildings. As opposed to the usual concrete core lift shaft some careful detailing was required to maintain a neat and clean aesthetic across 9-levels," said Hutchies Team Leader, Lloyd Grigg.

"The sheer size of the structural transfer beams linking the two building masses was a consideration as well. The 3m deep steel beams pushed the tower crane to its capacity. We also had to make allowances for an underground rail tunnel preserved for future use by Sydney Trains, next to the tunnel we used specialised fixings and vibration isolation for the basement structure," said Lloyd.

With 17 locations across Australia employing 1,700 staff Hutchinson Builders have completed over 7,000 projects to a value of more than \$32 billion. The company offers

project finance, facilities management, cost planning services, green star rated designs and heritage restoration services. The company runs all their own plant and equipment including tower and mobile cranes, hoists and scaffolding available for any project.

In 2011 Hutchies completed the contract for a \$96 million project, The Residence, a complex design and construct conversion of the former police headquarters building in Darlinghurst. The refurbishment project for 87 luxury apartments comprised a major demolition sequence, the lift core at the back of the building was demolished and a new core constructed in the centre the building. An existing slab required strengthening and major work was carried out underpinning the footings for 3-levels of car stacking parking.

For more information contact Hutchinson Builders, 23 Dunning Avenue, Rosebery NSW 2018, phone 02 8344 2400, email sydney@hutchinsonbuilders.com.au, website www.hutchies.com.au



Below XL Precast supplied and installed 4,247m² of precast panels to the façade of the Arc by Crown Group development.

XL Precast specialise in the manufacture, supply and installation of precast concrete walls and floors. XL Precast also offers design and drafting services as well as transport solutions for its precast elements. For the Arc by Crown Group project XL Precast supplied and installed precast concrete panels for the façade.

XL Precast supplied and delivered the precast concrete panels for the façade of this project. In total, XL Precast used 935m³ of concrete to fabricate the 4,247m² of panels installed on the two towers of the Arc building facades. The lower level panels were manufactured to the height only able to be transported using their patented trailers. "The project was basic by nature and it was fantastic to work with Hutchinson builders," said Operations Manager, Alessandro Bentancur.

XL Precast was evolved from ADY Concreting, a placing and finishing concrete contractor established in Sydney in 1994 by Danys Bentancur and built a reputation for delivering large commercial concrete works. During the late 1990's, the company phased its operations into precast and by 1998, operated solely as a precast concrete contractor.

In 2000 under the banner of ABBY Precast, the company installed Australia's first automated precast manufacturing plant at their 15,000m² custom built site in Lidcombe, New South Wales.

In 2001, ABBY Precast acquired Australia's first Inenladers, German's purpose built for transporting overheight precast panels. Both these acquisitions in the early 2000's made ABBY Precast the most innovative precast company in Australia of that time.

In the mid 2000's, the company was acquired by Hanson Australia and therefore ceased their manufacturing business operations under the ABBY Precast banner.

In 2011, XL Precast was established, now operating out of Brisbane, Townsville, Perth

and Sydney, where their national headquarters is located.

The business also manages international offices in Uruguay and the Philippines, where all of their drafting services are operated from.

XL Precast is now an international business, with 75 direct employees and dozens of indirect employees. The company is able to manufacture in excess of 500m² of precast daily out of their Perth and Brisbane operations, after recent expansions of their New South Wales operations, their new custom built facility allows for the manufacture of 1,500m² of precast daily.

The design team of XL Precast has 11 years of combined experience in providing tailored precast solutions for any project, construction drawings and value engineering services for their products. XL Precast also offers internal transport and storage solutions. Storing precast panels onsite means there are less vehicles entering the site contributing to a simpler and quicker installation process on crane day.

Keeping true to the innovative company ethos, in mid 2018 the XL Group welcomed the first delivery of their volumetric concrete mobile batch plants. This has allowed the company the advantage of batching their own concrete product and supplying their mobile batch plants as a service. These mobile batch plants are currently being utilised throughout RMS projects in greater Sydney, however are applicable for usage in all sectors.



For more information contact XL Precast, 1 Norrie Street, Yennora NSW 2161, phone 02 8724 5100, fax 02 9681 7499, email sales@xlprecast.com, website www.xlprecast.com



Below Gencom designed a tailored communication system for the Arc by Crown project using Motorola software.

Specialising in two-way radio onsite communications, evacuation and safety systems Gencom is the fastest growing company in the Hunter Valley. On the Arc By Crown project Gencom provided a two-way radio system for communication workers, from top to basement on the site and back to the site office. They also provided the site safety system with emergency site evacuation and ability to communicate with nurse call boxes all over the site, giving immediate notification of emergency to first aid.

Gencom's Sydney team of 35 designed the communications system and carried out the planning and implementation of the technology for the radio. This included designing a system especially tailored to the needs of construction workers on the Arc site using the RF Network – an emergency safety system that uses Motorola software.

In late 2015, a group of three Gencom technicians supplied and installed a radio set up at the site office, monitoring the equipment up to the end of construction period. Motorola Mototbo Repeater and distributed antenna systems was installed onsite providing site coverage with multiple channel for workers.

As the job progressed Arc by Crown had 52 nurse call boxes, issued on all 29-levels and 40 portable radios were issued onsite. The nurse call points are fitted with a push button that connects to emergency operations onsite, identifying the location for a more rapid response. All communications are then recorded for future analysis of safety and emergency procedures.

Initial training on the emergency procedures and site communication was provided by Linda McRae of Gencom. Passionate and committed to providing the use of new technologies and understanding the clients requirements so procedures can be incorporated into the site induction and carried out by site first aiders.

“Access was difficult,” said Martin McLeod, Managing Director of Gencom. “Construction sites are ever changing and a hazardous environment, awareness moving around site requires diligent attention.”

Gencom supplies equipment that caters to the specific needs of the construction

industry including radio to radio, or more complex repeater based solutions for increased range and coverage. “Gencom provides two-way radio systems for evacuation and safety communications as well as for security, transport logistics, operations, people movement and everything in onsite communications,” added Martin.

The company supplies the Roads and Maritime Services with their communication system and portable radios on the Sydney Harbour Bridge as well as at many Sydney luxury hotels. Taronga Zoo has 300 radios supplied by Gencom and the company works at Sydney Airport and the huge shopping complex Westfield Miranda.

Gencom also offers sophisticated solution telemetry – remote monitoring and control systems that can read and send status commands to remote equipment or environments, 24 hours a day. The company also distribute a large range of high performance and high quality CB Radio equipment for the marine industry and provides its equipment for rent, for small events or long term projects with full training, all spare parts, accessories and maintenance.

Gencom have offices in Sydney, Newcastle, Gosford, Mudgee and Singleton and have been operating in the mining industry in the Hunter Valley since 1982. For the mining industry Gencom supplies a robust and dependable communications technology that can be integrated into a phone or computer network. Throughout the Hunter, Gencom provide radio communication solutions to coal, hard rock and gold mines.

A major project for Gencom was the upgrading of Lydell and Bayswater power stations in the Hunter Valley for AGL, upgrading radio communications to a digital system. Digital communications are by nature very secure – use of digital encryption can enhance security further and prevent scanning by unauthorised listeners.

Currently Gencom is working on alongside the Sydney building boom with its communication systems working across most CBD construction sites.

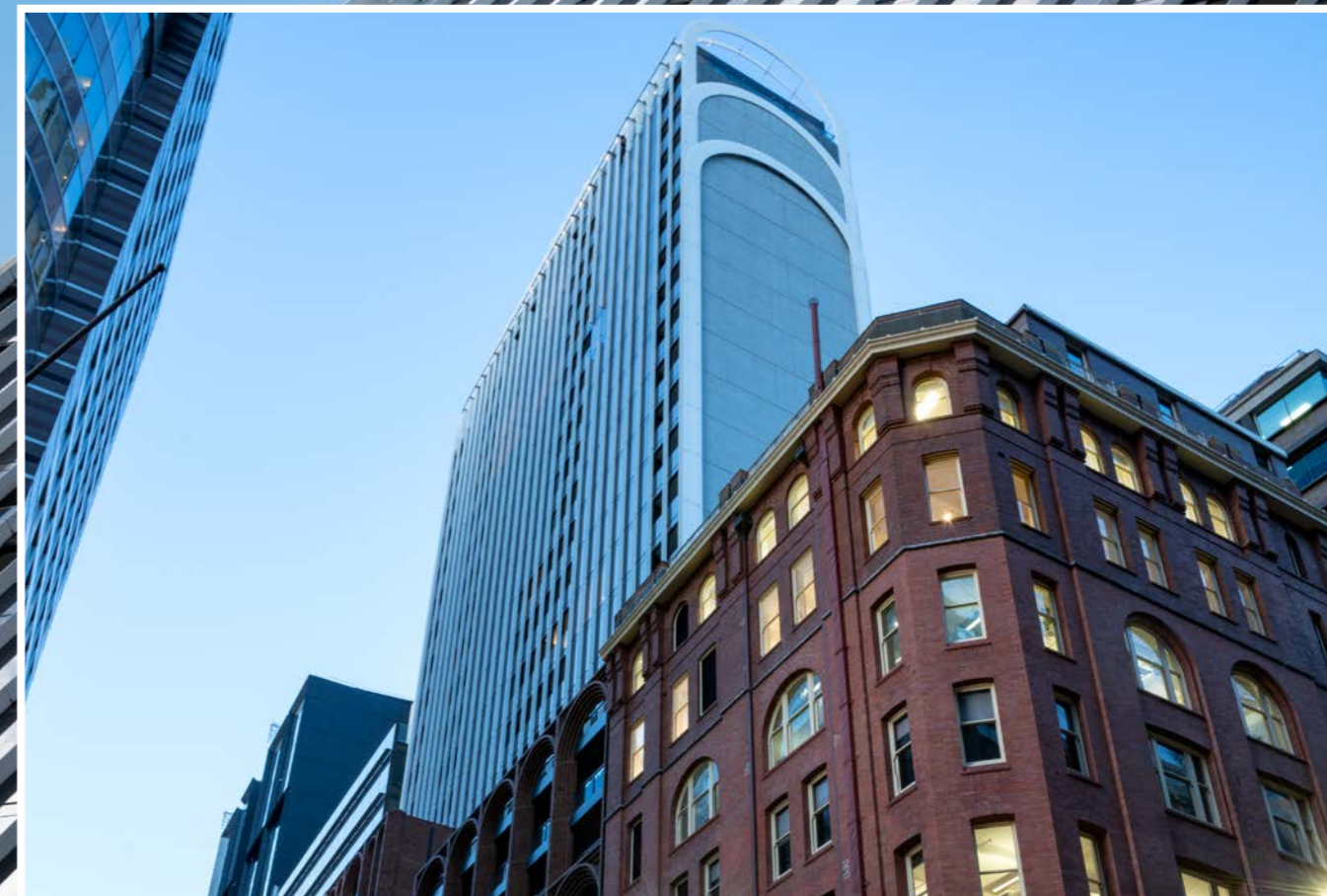
For more information contact Gencom, 1/42 Canterbury Road, Bankstown NSW 2200, phone 02 9790 6305, website www.gencom.com.au



Below Baratech supplied and installed Arc by Crown with the air conditioning and mechanical ventilation services.



Arc by Crown Group, Sydney



Baratech provides design, installation, project management and maintenance services for mechanical ventilation and air conditioning systems, working across residential and commercial developments, hospitals, age care facilities, schools, data centers and infrastructures.

In 2015, Baratech was awarded a design and construct contract for the mechanical ventilation and air conditioning services at Arc by Crown Group. The three design engineers at Baratech created mechanical ventilation and air conditioning systems for the base building, residential apartments, serviced apartments, common areas, basement areas, car park, retail tenancies, plant rooms, and the swimming facility.

Over the following 36 months, Baratech procured and installed the necessary equipment, refining the design to fit the progress of the building project.

Baratech provided Mitsubishi water cooled heat recovery VRF systems for the apartments and a poolpac AHU with heat recovery to recover energy and control temperature, humidity and condensation in the swimming pool area. For the carpark, a mechanical ventilation system was installed to monitor carbon dioxide levels and automatically

activates the ventilation fans to clean the air when necessary – a more energy efficient system resulting in increased energy cost savings. Baratech also supplied a cooling tower, plate heat exchanger, boiler and water treatment facilities to serve all the water cooled refrigeration condensers on the floors for their heat dissipation and absorption. An energy proportional management system has been installed to monitor energy consumption of the shared refrigeration condensers by the residential apartments for billing purpose. The air conditioners for the serviced apartments are smartly controlled by the installed BMCS using simplified time schedule, reed switches and PIR sensors etc. The communication between the BMCS and equipment travels through the building infrastructure – BAS system.

“The challenges at Arc by Crown involved standardising the design of each apartment, coordinating across different disciplines and integrating the different systems, so they could be installed, operated and maintained easily and efficiently,” said Managing Director, Luis Lu.

For more information contact Baratech, 9 Sefton Road, Thornleigh NSW 2120, phone 02 9875 3088, www.baratech.com.au