



OUT TO DISCOVER

CLIENT : Australian Museum
 MAIN CONSTRUCTION COMPANY : Kane Constructions
 ARCHITECT : Neeson Murcutt Neille and Cox Architecture
 CONSTRUCTION VALUE : \$57.5 million

Australian Museum has repurposed existing space to significantly expand the touring exhibition halls to 1,500m² across two-levels, allowing the hosting of either one major exhibition or two exhibitions simultaneously. The expansion included the creation of new education facilities, a new museum shop, a second café, and expanded Members' Lounge, allowing more of the Museum's collection to be displayed while attracting world class touring exhibitions.

Accomplished and multi-award winning builder Kane Constructions has completed the stunning expansion and refurbishment of the Australian Museum. The complex and heritage sensitive build was accomplished with great success, a tribute to the skills and capabilities of the Kane Constructions team and the specialised trades working on the project.

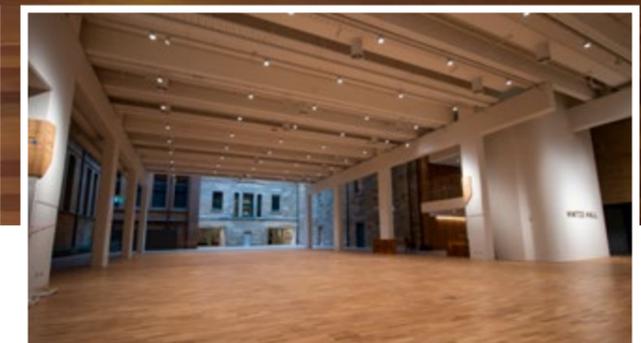
The transformation of the Australian Museum, called Project Discover, saw the creation of a new flexible Great Hall across two-levels to allow for major exhibitions to be held. The redevelopment also significantly improves the visitor experience with the creation of new education facilities and museum shop, a second café, expanded members' lounge, cloakroom and amenities.

Construction work was across all nine-levels of the Museum, spanning 7,200m² in floor area. Kane initially undertook major structural demolition works involving an existing fire stair across six-levels, a structural mezzanine slab in the Great Hall and major structural

opening works throughout the Museum. The new ground floor Great Hall had a suspended post tensioned slab installed on top of the existing slab which allowed for the existing columns in the basement to be demolished. With a significant amount of sandstone and concrete in the building, all major items were saw cut and crushed by robotic demolition equipment to avoid vibrations and dust.

The Museum was a 'live' site, with all Museum staff continuing to work in the non-construction areas of the building. "In addition, we had to be cognisant of the very valuable collections in the Museum which needed to be protected during the building programme. So we had vibration monitors set up throughout the building, constantly monitoring the impact of demolition and other activities," said Thomas Taylor, Kane Constructions' Project Manager.

The location on a very busy CBD corner at 1 William Street created challenges for the delivery of materials. A tower crane positioned on William Street lifted materials and demolition material in and out of



the building through roof spaces into the ground floor Great Hall area and also via a retractable roof installed above the feature stair. The Museum's goods lift was also utilised.

"We also had to cope with the impact of the pandemic which added complications in the procurement of required materials and managing people safely onsite," Thomas said. "At the peak of the construction, we had 180 workers onsite daily."

In keeping with the heritage values of the building, a significant amount of natural timbers were used throughout the refurbishment, including recycled timber flooring in the basement, lower ground timber flooring, ground floor parquetry and lobby timber cladding. Sandstone elements were also renovated throughout. Heritage Architect, Peter Phillips provided valuable guidance to ensure all aspects of the project were sympathetic with the historical elements of the Museum.

The design and construct contract was awarded to Kane Constructions by Create NSW in August 2019. This was a fully documented project and due to the complexity of existing services at the Museum, many

of the incumbent services subcontractors were used. Kane has had previous experience at the Museum, completing the Crystal Hall at the front entry in 2015.

Thomas said Kane Constructions had a high level of experience with complex heritage projects and can add real value to clients' projects. "On the Museum project, our people dedicated significant time and resources to ensure sufficient support was provided to the client's design team to achieve all the desired outcomes."

NSW General Manager, Brett Moore, highlighted that a highly collaborative relationship was established with the Australian Museum and Create NSW Teams from the outset, and it was this proactive and professional approach to dealing with day-to-day challenges that allowed the project to achieve many critical milestones, all culminating in a great final outcome for all stakeholders.

For more information contact Kane Constructions, 2 John Street, Waterloo NSW 2017, phone 02 9930 5555, email nswcontact@kane.com.au, website www.kane.com.au

Below Sterland Roofing & cladding installed a range of high end roofing and cladding products to blend with the existing heritage building.

Sterland Roofing & Cladding is a roofing and cladding specialist providing the highest quality services across a range of products including copper, zinc, stainless steel and Colorbond.

Sterland's successful track record on projects with unusual and demanding specifications made them the company of choice to work on Project Discover at the Australian Museum in Sydney.

The iconic heritage listed building's redevelopment project has been designed to repurpose existing storage space and significantly expand the touring exhibition halls to 1,500m² across 2-levels. New education facilities were added along with a new museum shop, a second café, expanded Members' Lounge, cloakroom and new amenities.

The new work had to be blended with the existing building which introduced a number of complexities.

"As the existing building was constructed well before current building codes and fire regulations came into force, we had to upgrade a lot of the older roof area as well as bring new cladding aspects into the fold. There was considerable repair work to tie the old roof in to the new one," explained Matt Sterland, Director. "The other factor we had to take into account related to the Government's own regulations and standards for one of its own buildings."

The key to the project was selecting the right products for the required application.

"All products used were high end to meet the exacting specifications set by Kane Constructions and Cox Architects for the Museum. For example, sections of new copper roofing were merged into the existing copper roof. KME 0.7 gauge natural finish material was used with a standing seam sourced from Prestige Roofing & Cladding Supplies."

One of the most challenging parts of the project was the need to protect artefacts stored in the Museum during the roofing process. One section of 400m² was done under the threat of rain. Sterland Roofing organised a team of 15 roofing specialists who worked from 2pm one afternoon and finished under lights at 9.30pm ahead of the forecast rain.

"We used Stramit Speed Deck Ultra with concealed fixing on steel purlins, along with the roof razor system," Matt said. "To meet the high level of acoustic and thermal regulations we laid a 130mm Anticon insulation blanket under the roofing. It was an incredible effort but was essential to ensure security for the valuable artefacts."

VMZinc wall cladding was also installed using 1mm gauge interlocking panels for the link way walls which wrapped into 1mm stainless steel mirror finish panels leading to the Crystal Hall entrance way.

For most of the project, Sterland Roofing used a team of four to five, who had been specially trained for the high end roofing and cladding work required.

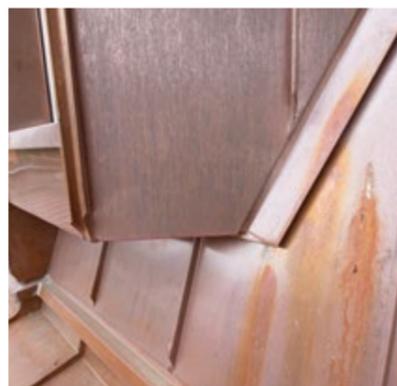
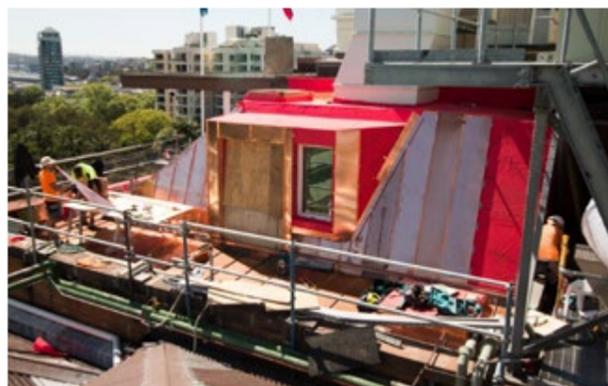
All the specialist roofing and cladding products were sourced from Prestige Roofing & Cladding Supplies who could supply the products in the profiles required.

The company has completed many other complex commercial projects including the Ultimo Dome elliptical VMZinc roof in standing seam curved panels, a VMZinc wall cladding project for Billbergia at Wentworth Point Marinas, Rhodes and the warrick lane Blacktown project for A W Edwards.

The wide ranging industry expertise of Sterland Roofing & Cladding means that they can provide professional advice on any project, from the planning and design stages through to completion.

"Our precision roofing and cladding delivered with the highest standards of workmanship suit any project," Matt said. "We are very proud of our work at the Australian Museum. The quality of the roofing work completed by Sterland will protect the building, its priceless contents, its staff and visitors for decades to come."

For more information contact Sterland Roofing & Cladding, phone 02 9939 0841, email matt@sterlandroofing.com, website www.sterlandroofing.com



Below Ergo Group were selected by Kane Constructions to deliver the contract for the design and construct of all electrical and communications requirements on Project Discover.



Ergo Group is a highly accomplished electrical and communications contracting company with special design and construct capability encompassing electrical installations, communications networks, audio visual systems, automated lighting control, security systems and dry fire systems.

Ergo Group have a reputation for careful risk assessment on all projects and a proven ability to work in live environments, which was a critical requirement for Project Discover at the Australian Museum.

The Australian Museum is a highly valued heritage building and so required careful focus in all aspects of this project. "As well as ensuring the existing building itself was not damaged in the course of the installation of lighting, power and communications networks, there was the major consideration of protecting the 18 million artefacts and collections stored throughout the building, including DNA freezers containing irreplaceable samples that had to be maintained at minus 80° throughout the work," explained Ergo Group's Managing Director, Oliver McGarvey.

One of the major tasks completed by Ergo Group was relocation of the main communications room for the entire Museum campus. The relocated communications room was designed by Ergo Group's specialists who have skills in Wi-Fi systems, optical fibre, telephone systems and installation of structured cabling networks.

The museum was also a live site with 350 staff continuing their work throughout construction. "This obviously makes our work more challenging than with a new build," Oliver added. "We pride ourselves at Ergo Group on our ability to deliver projects in live environments. Our detailed attention to risk assessment and safety ensures all work is carried out with great care and personal protection. We also arrange night shift work to avoid disturbing staff in the day-time when required."

made up engineers, estimators, electrical and data technicians, service crew and project managers.

Ergo Group have a proud reputation in delivering practical, high quality cabling and installation solutions at competitive industry rates. "We work alongside some of Australia's leading construction companies and institutions and always ensure we develop trusted relationships through our commitment to high quality work completed on time and to budget," Oliver said. "Working with Kane Constructions at the Australian Museum was very rewarding, with sound communication and cooperation throughout the project."

Ergo Group is an approved vendor and nominated contractor for the New South Wales Government and has undertaken many projects with them including the recent refurbishment of the Sydney Opera House Function Centre.

"We have completed many projects in the New South Wales Public Education space, with over \$100 million in construction value to date," Oliver said. "We also have an ongoing maintenance contract for over 120 locations in New South Wales."

In 2019, Ergo Group were awarded the BICSI South Pacific award for Excellence in ICT Infrastructure Installation for their work on Architect's BVN's ground breaking head office in Sydney.

Currently, Ergo Group are working on a wide range of projects spanning the hospitality, health care and commercial sectors including the Gucci flagship store in Sydney and Alex Avenue Public School.

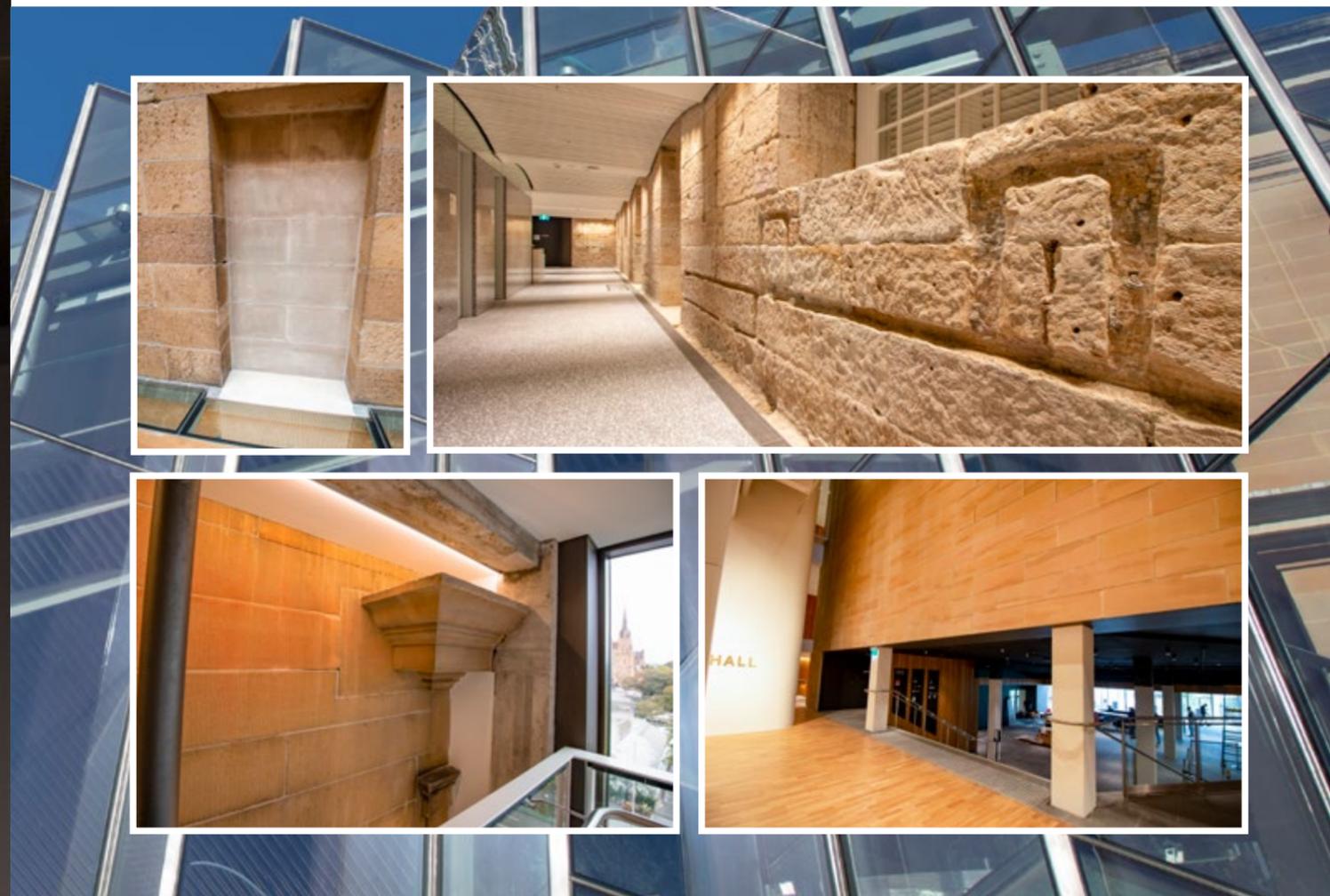
"Ergo Group's multiple repeat business with our clients is testimony to our success in fostering long-standing relationships," Oliver said.

For more information contact Ergo Group, Unit 25, 17 – 21 Bowden Street, Alexandria NSW 2015, phone 02 9519 1179, email accounts@ergogroup.com.au, website www.ergogroup.com.au



Australian Museum - Project Discover, New South Wales

Below Sydney Stonemasons worked with the heritage stone to ensure seamless transition from old to new, and preserve the existing stone in the building.



Sydney Stonemasons is an award-winning specialist in heritage restoration projects and was contracted by Kane Constructions to undertake complex restoration work on the Australian Museum 'Project Discover' Redevelopment.

The Australian Museum has been on its present site since the mid-1800's. The handsome sandstone structure and the priority in the redevelopment work, was to ensure that all modifications fitted seamlessly with the existing sandstone structure. This is where the extensive experience and skilled craftsmanship of Sydney Stonemasons was so invaluable.

Director Roscoe Hannagan, said that as well as ensuring existing sandstone features were not damaged in any way, there was also priority given to protecting all the exhibits throughout the Museum. "Our work was all inside the building, so we had to follow safe practices which took all these factors into account."

Sydney Stonemasons' Master Mason Dennis, was called into carry out numerous mortar repairs where he achieved a perfect colour and texture match to the existing stone. Dennis had the task of grinding off the silicon and cement which was stuck to the surface of the stone

once the roof had been removed. Once complete the stone was then bush hammered to create the same surface texture, before colour matching to the surrounding stone.

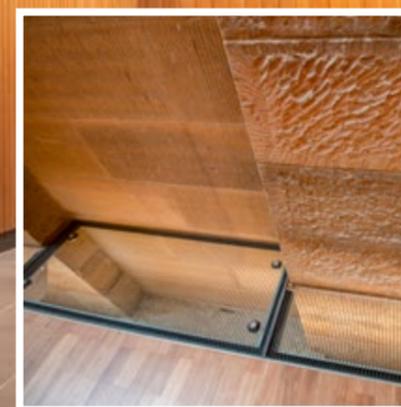
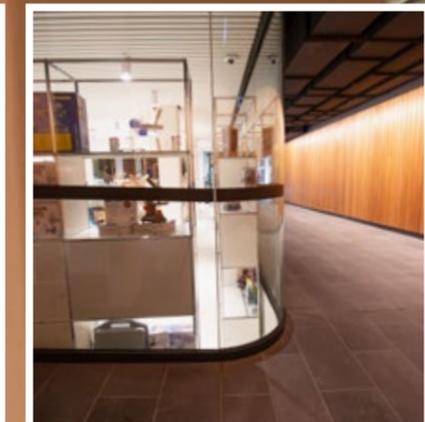
The restoration work completed by Sydney Stonemasons included opening new doorways to suit the changes to the Museum layout. "We used sandstone from within the building itself to make the new doorways. Any extra stone that we needed was sourced from the Public Works stockpile," Roscoe said.

Sydney Stonemasons has a total staff of 25, all with the specialist skills of working with sandstone as a construction material. "As one of the few companies to specialise in heritage restoration, we have a commitment to detail and are always meticulous in our craftsmanship which earns us regular repeat business," Roscoe said.

For more information contact Sydney Stonemasons, 55 Smith Street, Hillsdale NSW 2036, phone 1300 075 544, email info@sydneystonemasons.com.au, website www.sydneystonemasons.com.au

Below Crane Contractors installed a tower crane with a crew of three to handle material lifting for the site.

Below Tamar Windows installed AlSpec architectural aluminium framing for a new glass curtain wall at the museum's entrance and curved glass internal shop walls.



Crane Contractors is renowned throughout the building industry for their integrity, experience and crane operation knowledge that is second to none.

Crane Contractors supplied the tower crane and operations crew at the expansion and refurbishment of the Australian Museum being undertaken by Kane Constructions. During the project, a team of three from Crane Contractors worked the tower crane for all materials handling over 40 weeks. The installation and final recovery of the crane involved a team of 10, with the support of 15 trucks and a 400 tonne mobile crane, all owned by Crane Contractors.

The tower crane was positioned on a static base using ballast instead of expensive non-recoverable rock anchors, producing a significant cost saving as it eliminated the expense needed to reinstate the grounds to pre-work conditions.

"The installation and recovery of the tower crane was particularly difficult as we needed to conduct all works from within the site boundaries due to road permit restrictions on William Street," said David Crane, Owner and Managing Director. "The restrictions made it impossible to undertake the critical works within the permit

time allowed, so the tower crane installation work was completed over four nights. A different strategy was employed when dismantling the crane, with work being completed over a weekend during daylight hours and again avoiding traffic diversions on William Street."

Servicing the Sydney and Newcastle construction markets for 30 years, Crane Contractors supplies a complete range of modern electric luffing and saddle jib tower cranes, diesel powered tower cranes and the necessary ancillary equipment for all materials handling requirements.

Crane Contractors enjoys repeat business from satisfied reputable leading building companies. Recent assignments have included the Opera Residences in Circular Quay and Gosford Hospital for Richard Crookes Constructions. On the M5 upgrade, Crane Contractors supplied a 400 tonne capacity mobile crane, three large tower cranes and experienced crews to allow all equipment to be worked 24 hours per day 6 days per week.

For more information contact Crane Contractors Pty Ltd, 7 Park Road, Seven Hills NSW 2147, phone 02 9620 9133, mobile 0448 994784 email mpechey@crane.net.au

What matters most to Tamar Windows is total client satisfaction.

The team at Tamar Windows strive for perfection in the design, fabrication and installation of premium quality glass and aluminium windows and doors for every situation. Over the last five years, Tamar Windows has worked closely with Kane Constructions on various exciting projects including the manufacturing and installation of bespoke, sophisticated, world class windows for the renovation and expansion of the Australian Museum – Project Discover.

"Innovation, obsession with detail and an unrelenting commitment to quality were the main drivers for the selection of windows and glazing for the project," said General Manager of Tamar Windows, Richard Beasley. "Externally, we structurally designed, supplied and installed a new multi-level glazed curtain wall adjacent to the main entry. We used Alspec 150mm Hunter Evo double flush glazed framing, which we also applied to the new external windows. All new and replacement glass was structurally glazed into steel framing."

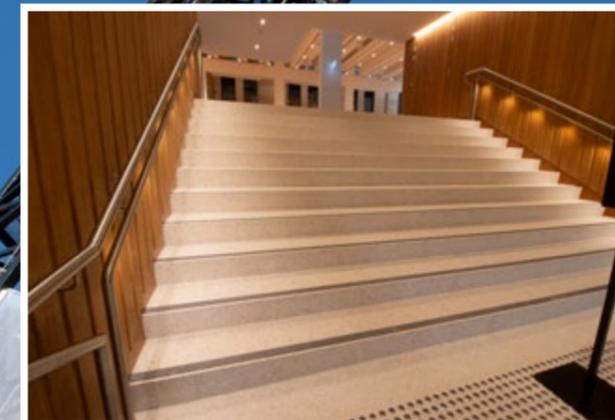
"Internally, Alspec 100mm Hunter Evo single flush glazed framing was applied to all new window partitions. New toughened glass partition assemblies were glazed into either aluminium or fabricated stainless steel channel framing," Richard said.

"The Australian Museum project was special in every way requiring pioneering design, fabrication and installation skills to ensure our new generation, state-of-the-art product was applied seamlessly to this unique landmark and heritage listed building," said Chris Sutherland, Tamar Windows Senior Project Manager. The special attention to design and detail was significantly tested with the same level of quality and innovation required for special areas including curved glass assemblies. Tamar Windows also supplied and installed a frameless glass operable wall and a feature structural floor made from Viridian DécorFloor™ glass panels in fabricated stainless steel framing.

"We were delighted to be involved in this flagship project with Kane Constructions. We never took for granted our long and substantial history with Kane Constructions which includes the Mt Druitt Police Station, Vega Headquarters complex, Rainbow Public School, Elgers Residential Apartments in Glebe, Stella Maris College in Manly, Magnolia Residential Apartments in Lane Cove to list a few," said Richard.

For more information contact Tamar Windows, 1/158 Newton Road, Wetherill Park NSW 2164, phone 02 9729 0061, email sales@tamarwindows.com.au, website www.tamarwindows.com.au

Below CDA Building completed a range of unique formwork requirements for the Project Discover refurbishment.



Formwork is the specialty of CDA Building, with capabilities ranging from standard projects through to complex and unusual off-form requirements. Kane Constructions engaged CDA Building to undertake all the formwork required for a major transformation of the iconic Australian Museum.

“The entire team was engaged on the Australian Museum project. We were involved onsite for around four months,” said CDA Building Director, Mohd Safi.

“We had to deal with complicated and unique formwork requirements which incorporated existing work and the new extension. The building design required a number of different angles and curved walls. By blending our experience and technical formwork knowledge we were able to achieve the desired result.”

Established three years ago, CDA Building places the highest priority on the safety of their staff, other onsite personnel and the general public during all work, with all team members comprehensively trained in all aspects of safety. “We guarantee the quality of all our work and focus on building long term relationships with all our clients,” Mohd said.

CDA Building has established a very strong working relationship with Kane Constructions. The company has previously been contracted by Kane on a number of projects including the Glebe Social Housing Development, a project that required considerable off-form concrete feature designs. Currently, CDA Building is working with Kane Constructions at the Loyalty Business Park, North Rocks.

CDA Building is also involved with Project Coordination for their project at St Marks Coptic College, Wattle Grove and Hutchinson Builder at Somerset Rise, Narellan.

For more information contact CDA Building, 8 Deloraine Close, Hinchinbrook NSW 2168, phone 0414 799 925, email admin@cdabuilding.com.au