



TOP OF THE CLASS

DEVELOPER : Macquarie University
 MAIN CONSTRUCTION COMPANY : Lipman
 ARCHITECT : Budden Nangle Michael & Hudson Architects, and Architectus
 STRUCTURAL ENGINEER : TLB
 CONSTRUCTION VALUE : \$110 million

The recently completed \$110m Macquarie University Arts Precinct Project was a transformational project that consolidated 10 of 12 Art faculties into one space, also including a new museum and office building, which was connected with 25 Wally's Walk (formally known as W6A and W6B) via a new atrium made up of unique roofing "cushions".

As part of the 10 year Campus Master Plan, the Macquarie University Arts Precinct project will play a major role in shaping the University's future as a place where learning opportunities are amplified through interaction and collaboration.

The Arts Precinct project centralises 10 of the 12 departments within the faculty of Arts into a single precinct that showcases the unique and varied focus areas of each department. The project includes an upgrade and expansion of the existing buildings at 25 Wally's Walk and the construction of a new 4,800m2 museum and office building, as well as a new atrium between the buildings with surrounding areas landscaped.

The development will highlight the faculty's ongoing work, research, and achievements and allow greater engagement with the wider

community. The new museum space consolidates a range of existing collections and the atrium features innovative roofing "cushions" that provide weather protection while flooding the space with natural light.

The complex nature of the project and particularly the interface between old and new elements presented some challenges for the construction. "The floor-to-floor height of the existing building was really low," said Angus Darling, Group Manager – Business Development. "This posed a challenge for services coordination during the refit works."

The project had a range of different workfaces with the wider university campus. "We had to work around the normal operation of the university, minimising noise impacts on lectures," said Angus. "Keeping the surrounding campus services live while we were

making our connections was also a huge challenge requiring us to communicate shutdown periods and coordinate them with university stakeholders."

When it came to coordinating the construction works with the wider campus, Lipman's prior experience at Macquarie University proved invaluable. "We had a good knowledge of the university and who the major stakeholders were," said Angus. "During the tender stage, we did a detailed stakeholder analysis, looking at the risks and impacts associated with each of them along with mitigation plans. The site team has executed it well which has been a key part of our success."

Lipman has previously built an innovative mass timber prefabricated building, "The Incubator", at the University which was a fast tracked project delivered in only six months. "Prefabricated construction and offsite manufacturing is a real focus for us," said Angus. "We've been in a process of visiting factories and suppliers around Australia and overseas to see how it can improve quality, deal with



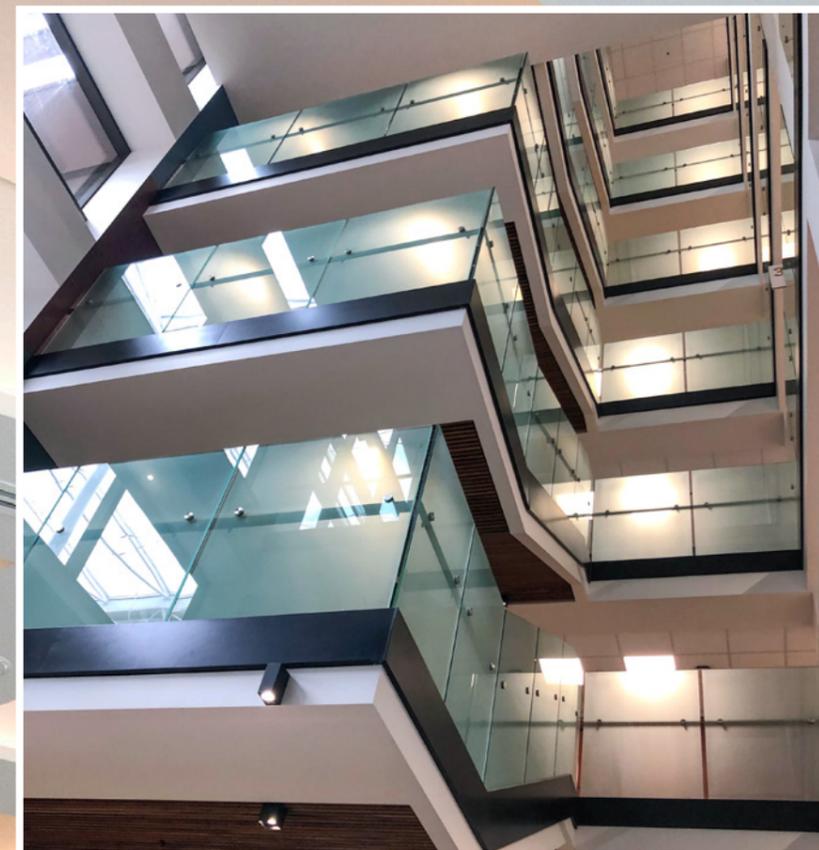
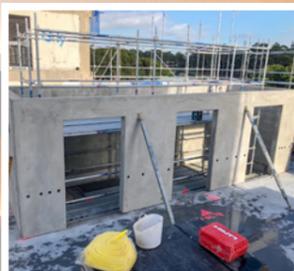
issues around availability of trade skills, and ultimately add value to developments."

For Lipman, the project has presented an opportunity to deliver a project that grows their already strong reputation. The original company vision of "cooperative contracting" remains both relevant and apparent in the way they operate today. "We are a safe pair of hands in tertiary education," said Angus. "We have been operating for 54 years and we are still privately owned. We have been around that long because we build well and we care about quality."

For more information contact Lipman, L6, 66 Berry Street, North Sydney NSW 2060, phone 02 9955 7000, email lipman@lipman.com.au, website www.lipman.com.au

Below Fine Form Precast Solutions completed 7-levels of precast concrete lift shafts and a further 4-levels of stairwells.

Below BNMH Architects are responsible for the design for the Macquarie University Arts Precinct founded on interaction and visibility.



Fine Form Precast Solutions manufacture and stock precast concrete components ranging from the smallest products to large bridge and civil components.

The company were appointed by Lipman, the lead contractor for the Macquarie University Arts Precinct, to supply and install seven floors of precast concrete lift shafts and four floors of stairwells to the project.

“We have an ongoing relationship with Lipman,” said Jukka Ylinen, Owner of Fine Form. “For a project like this in Sydney we knew the logistics would be challenging but our relationship gave us confidence that it would be a good project.”

The use of precast concrete brought a range of benefits to the project including better quality from the controlled factory environment and reduced time onsite. “We can install a stairwell or lift shaft in a day whereas to cast it onsite would take a week or more,” explained Jukka.

Fine Form’s expertise in precast concrete construction also allowed them to improve the design. “Originally cast in connecting bars were specified but it made the panels difficult to transport,” Jukka said.

“We suggested the use of Ancon connectors which have no protrusions. Our team cast the connectors into the precast panels, then we attached the starter bars onsite.”

With major projects coming up, the future looks bright for Fine Form. “When Kristy and I started 10 years ago it was just with an apprentice,” said Jukka. “Now we have two apprentices, 10 staff and are expanding all the time.”

Based in Woolgoolga New South Wales, there is no secret to their success. Fine Form are focused on customer service, making sure that they deliver on time with the best quality products possible.

For more information contact Fine Form Precast Solutions, 37 Bosworth Road, Woolgoolga NSW 2456, phone 0413 302 381, email admin@fineformprecast.com.au, website www.fineformprecast.com.au

The new Macquarie University Arts Precinct is a reimagining of the Faculty of Arts which is set to enliven the educational and research experience. The precinct includes a new 4-storey Museum and Languages building with an extensive roof garden, the re-planned and re-facaded 8-storey academic tower and 3-storey tuition and seminar complex along with a range of circulation and gathering spaces.

BNMH, a boutique architectural firm located on Sydney’s North Shore, were engaged as the lead architect for the precinct. BNMH has an expert team applying over 100 years of experience to deliver outstanding projects within the educational, medical, commercial and multi-unit residential sectors. “BNMH are one of the state’s most recognised practices in tertiary education,” said Practice Principal, Ray Hudson.

The Macquarie Uni Arts Precinct design, founded on principles of social interaction, promotes improved interfaces and enhanced visibility between students, researchers, academic staff and the wider community.

The design concept is echoed in the twin wall façade to the north elevation. “The twin walls enable views in and views out while glazed

internal walls provide further visual connections,” said Ray. “We used louvres in the glazed façade to meet the energy efficiency requirements. It’s a quite innovative façade and only the second in Australia to use this technology.”

The new and existing buildings are linked by a collaborative hub space and an associated atrium with a unique ETFE polymer membrane roof.

“It creates a spectacular and innovative atrium space that helps define the arts precinct and this will be an existing and interactive complex that weaves together study and research into a collaborative, interactive and exciting new community for the Faculty of Arts,” said Ray. “It goes hand in glove with the Faculty of Arts’ strategic vision as well as providing tremendous new spaces for Macquarie University,” said Ray.

For more information contact BNMH Architects, 17/130 Pacific Highway, Greenwich NSW 2065, phone 02 9906 5599, email info@bnmh.com.au, website www.bnmh.com.au

Below Gunlake Concrete supplied around 5,000m³ of ready-mix concrete to the Macquarie University Arts Precinct.



Below Tonkin were engaged to complete the structural design of the refurbishments and new elements of the project.



Gunlake Concrete is a leading supplier of concrete with cutting edge automated mixing processes set to meet all technical specifications from material selection to mix design. For the Macquarie University Arts Precinct they supplied ready-mix concrete.

“We have a good working relationship with the Lipman Group as we have completed several projects with them previously. So we are able to service their jobs to the standard they require,” said Paul Abdilla, Area Manager at Gunlake Concrete. “We supplied around 5,000m³ of concrete in total.”

Key to meeting this service standard was Gunlake’s commitment to accurate pricing. “We review all the structural specifications, concrete notes and any special requirements of the project thoroughly at the tender stage with Lipman’s estimating team. This ensures we are providing competitive prices for the correct mixes required on the project, so they can stay within budget,” said Paul.

One challenge was the need for low shrinkage concrete to stitch together new and existing structure. “The specification required us to use a shrinkage reducing additive in the mix,” Paul said. “However, they also required a high early strength so they could sit precast panels

on the suspended slabs the following day. The hard part was achieving both requirements at the same time, yet still provided a workable mix.”

The project has been very smooth for Gunlake. “The project manager and site team were professional and well organised,” said Paul. “It made our job a lot easier so we can focus on getting the concrete to the pump at the required rate and to the desired quality.”

The Gunlake Group are a proudly Australian owned, family company spanning four generations in the quarrying and concrete industry in Australia. Their advanced plant technology and cutting edge vehicle fleet sets them apart from their competitors. With their growing capacity and strong reputation, they are well placed to continue leading the industry into the future.

With four operational concrete plants, another plant under construction in Sydney and a hard rock quarry in Marulan, Gunlake are strategically located to handle projects of all sizes in Sydney and surrounds.

For more information contact Gunlake Concrete, 2/53 Cross Street, Double Bay NSW 2028, phone 1300 857 091, email info@gunlake.com.au, website www.gunlake.com.au

As one of Australia’s leading providers of engineering, environmental and related services, Tonkin has the expertise and capability to deliver intelligent solutions in a range of sectors. They provide consulting services to clients including developers, construction firms, councils and government departments.

Tonkin was engaged directly by Macquarie University in 2017 for the structural design of the new build elements and refurbishments of the Arts Precinct project. Tonkin were then novated directly to the builder, Lipman, to see the project through construction.

Tonkin were able to leverage their prior experience at Macquarie University as well as their successful track record with Lipman. “We work well together with Lipman in finding ways to make the design more efficient to deliver more value to the client,” said Tim Ennis, Business Development Manager.

The project includes some distinctive features including one of the largest ETFE membrane roofs to be used on an educational building in Australia and a link bridge with a highly visible supporting structure. Tonkin worked closely with the project architect to design members that were structurally efficient and aesthetically pleasing.

One major challenge was caused by the existing services crossing the site. These had to be carefully identified and surveyed prior to below ground works commencing.

The project is a major milestone for Tonkin who are experiencing rapid growth in the eastern states. “Tonkin is 65 years old and still a major firm in South Australia,” said Tim. “But we are now growing in Sydney, Brisbane and regional locations. That growth has been successful so far and shows no sign of letting up.”

Tonkin are now an accomplished consultancy, having just won the Consult Australia Medium Firm of the Year award in October 2019, with a national footprint. They are continually learning, diversifying and taking on new challenges. For Tonkin, this spirit of innovation is key to fulfilling their vision of being Australia’s infrastructure consultant of choice.

For more information contact Tonkin, Level 6, 1 James Place, North Sydney NSW 2060, phone 02 9409 3300, email sydney@tonkin.com.au, website www.tonkin.com.au



Below AGI Formwork were responsible for the conventional formwork system used on the project.



With highly experienced staff and the latest formwork technology, AGI Formwork have built a strong reputation as industry leaders in concrete placement, reinforcement fixing and formwork. They provided the formwork for the Macquarie University Arts Precinct.

AGI Formwork used a conventional formwork system including a pre-climbing shaft system which allowed the core walls to be formed at low level before being lifted up by the crane. The company benefited from their prior knowledge of the site having delivered the formwork for the recent E7A project, also on the Macquarie University campus.

“It was a challenging site with tight access and limited areas for materials handling,” said David Amorim, Business Development Manager. “This made the logistics challenging and deliveries needed to be at a certain time. Through proper planning with the team we were able to resolve these issues. We have worked with Lipman before and they are very good to work with.”

AGI Formwork provide a range of value added and turnkey solutions to clients including foundations, foundation bored piers, formwork,

steel fixing, finishing, pump hire, waffle and raft slabs, suspended slabs and retaining walls.

The company is a family owned serving the Sydney region. They have delivered a range of projects for many of Sydney’s premier builders covering all project sizes and are specialists in education and aged care.

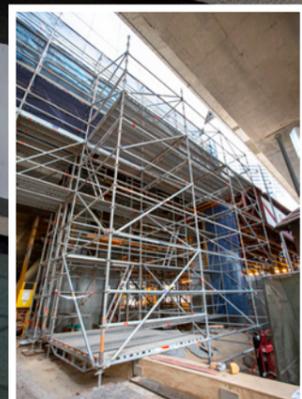
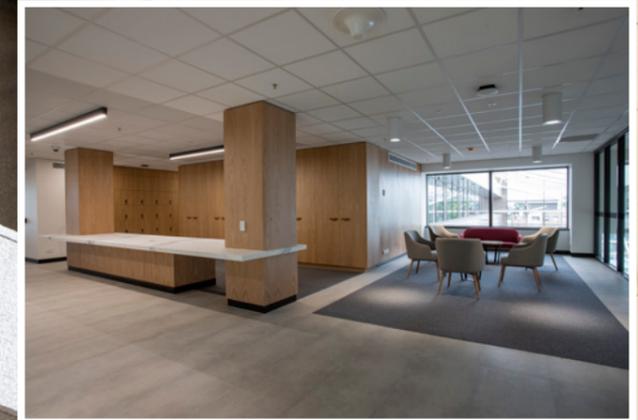
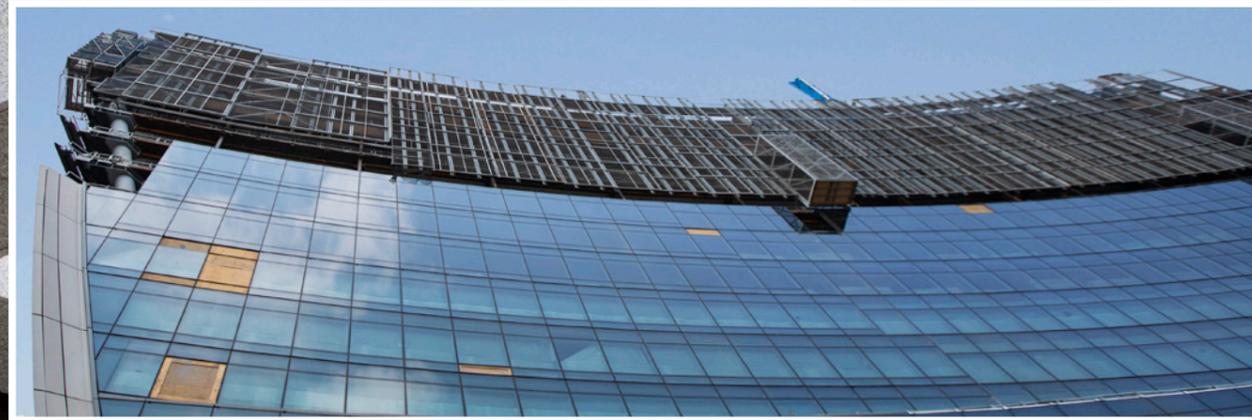
On all their projects, AGI Formwork apply their inhouse developed risk assessment process and quality systems to give clients the confidence in knowing that the company is low risk and professionally run. Their focus on occupational health and safety and comprehensive induction processes allow them to achieve the highest quality standards.

With their market leading combination of leading technology, processes and experience, AGI Formwork aim to achieve total customer satisfaction.

For more information contact AGI Formwork, 38 Saggart Field Road, Minto NSW 2566, phone 02 9603 3388, fax 02 9603 3377, email mail@agiformwork.com.au, website www.agiformwork.com.au

Below Skyworkers Group designed, erected and maintained the scaffolding used for the Macquarie Uni Arts Precinct.

Below St Marys Joinery supplied custom made joinery aspects including glass display cabinets, lockers and office credenzas.



Skyworkers Group is a well established company bringing together a highly experienced team of specialist staff who have been involved in scaffold construction for Tier 1 contractors on some of Australia's biggest and most complex builds.

For the Macquarie Uni Arts Precinct, Skyworkers Group were appointed to provide a comprehensive service encompassing design, erection, maintenance and assembly of the scaffolding on the project to provide safe access for all trades working on the site.

Skyworkers Group undertook two separate phases of work on the project. "Our first appointment was for the demolition where our scaffolding provided access, fall protection and also protection from falling debris thanks to our fire retardant mesh," said Matt Thomas, Operations Manager. "We then dismantled and installed a new scaffold as per engineered design for all trades to access the site and complete their works safely."

"We worked continuously onsite during the project supporting any requests that were issued by the builder," said Matt. "We prepared our Safe Work Method Statement (SWMS) that we are bound to comply with and regularly review it with the lead contractor.

Every week the scaffold is inspected and tagged to confirm it's 'fit for use' and the safe weight allowance that can be placed on it."

Safety is of the utmost importance to Skyworkers Group. Their work is governed by established safety and legislative requirements and they pride themselves on being compliant to all Australian Standards.

Skyworkers Group specialise in using both the Layher Allround scaffold system manufactured in Germany and Pro Scaff Ring Lock System which also complies with Australian Standards. "It's lightweight and versatile. It provides a higher load rating across its working platforms than any competitor and can deliver diverse applications that basic scaffolds simply cannot."

With extensive expertise and the most innovative equipment, Skyworkers Group pride themselves on team work, consultation, education and delivering superior builds that stand out.

For more information Skyworkers Group, phone 0478 044 090, email info@skyworkersgrp.com.au, website www.skyworkersgrp.com.au

St Marys Joinery provided a wide range of furniture and fitout services for the Macquarie Uni Arts Precinct including wall linings, column cladding, lockers, tea points, office credenzas, bathroom mirrors, whiteboards, glass display cabinets, conversation booths and reception counters utility benches and storage cabinets.

All items are custom made and delivered to site by St Marys Joinery who are also undertook installation works. "The works went through our factory," said Matt White, Director. "There were some challenges as the timescales were short but our highly skilled team was on top of it. The site team have been great and we have had good communication and collaboration with them."

St Mary's Joinery provides joinery for projects including schools, aged care, hospitals and commercial developments. "We have worked on various projects at Macquarie University before," said Matt. "In fact we have just wrapped up a small project there."

Based in Windsor, New South Wales, St Marys Joinery serves the Sydney region and surrounding areas. "We've worked as far afield as Port Macquarie, Bathurst, Nowra and even Canberra," said Matt. "We are happy to go where the work is."

"We have been growing recently and we are also expanding our factory a bit," said Matt. "We're investing in new machinery and automation and also going through a recruitment drive."

"Some of our team have more than 20 years of joinery experience. We have a lot of experience here, a real powerhouse of skills." St Marys Joinery have in excess of 30 full time staff and the capacity to tackle commercial joinery projects up to \$3 million.

The Macquarie Uni Arts Precinct is set to further strengthen the company's reputation. "This will be a real signature project for us," said Matt. "After it is finished it will be great to be able to put up our hands and say we did that."

For more information contact St Marys Joinery, 7 Speedwell Place, South Windsor NSW 2756, phone 02 4577 4254, fax 02 4577 4381, email matt@stmarysjoinery.com.au