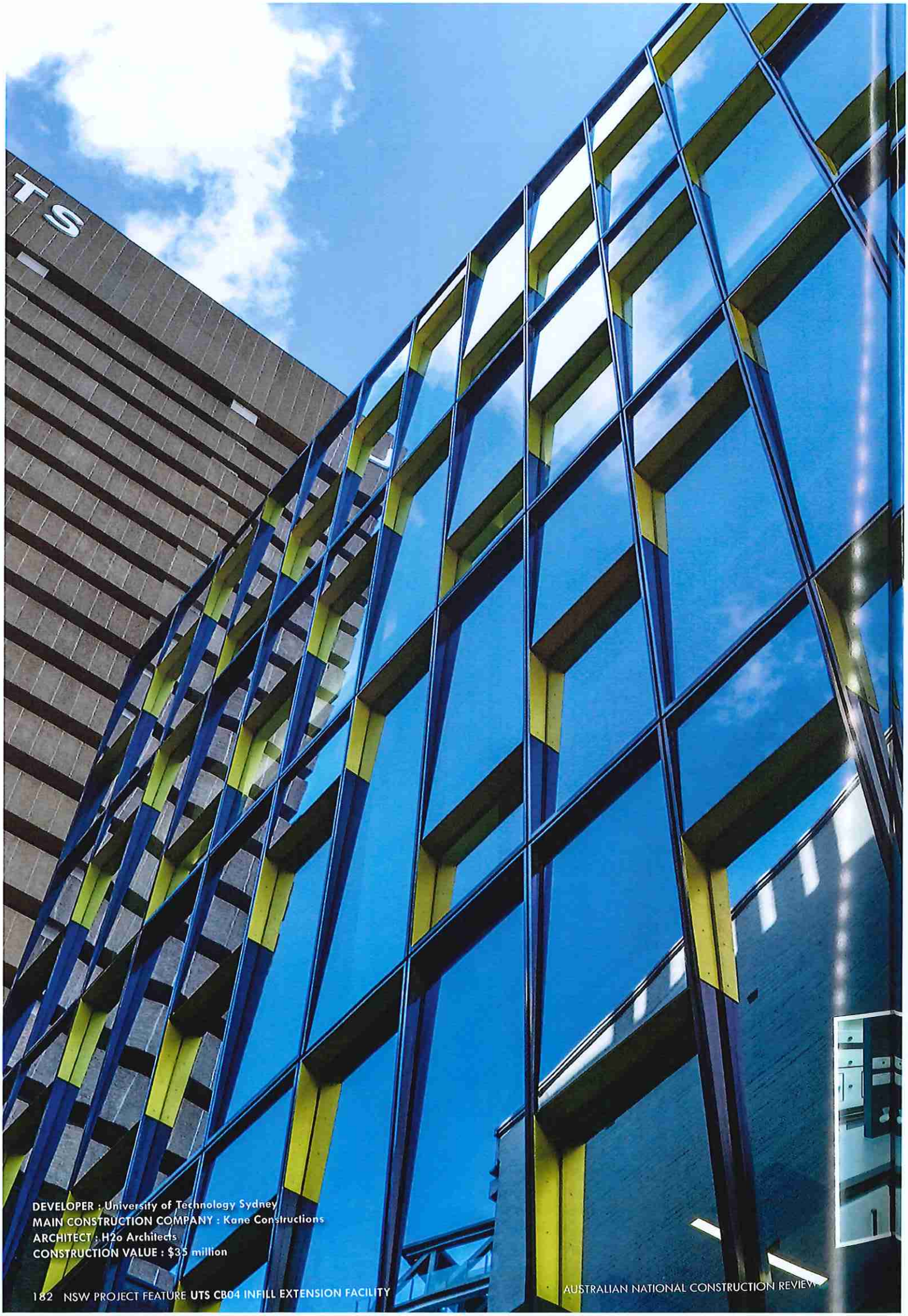


DEVELOPER : University of Technology Sydney
MAIN CONSTRUCTION COMPANY : Kane Constructions
ARCHITECT : H2o Architects
CONSTRUCTION VALUE : $35 million

BIG THINGS IN SMALL PACKAGES

The University of Technology Sydney (UTS) CB04 Infill Extension involved the demolition of University Hall and construction of a new state-of-the-art research facility building as an addition to Building 4. It connects seamlessly with the existing Science building, creating 7-levels of specialist labs which facilitate world class research and are themed around particular scientific methods.

Awarded the construction contract in November 2018, Kane delivered the bold new campus development project ahead of schedule via their wealth of expertise and personnel which provided ongoing improvements and innovation throughout the duration of the build.

"Our scope for UTS was to demolish the existing University Hall and construct a 7-level infill building offering a state-of-the-art research facility," said Kane Project Manager, Steven Browne.

"Demolition and excavation commenced in January 2019, with the first concrete slab being poured in September 2019. The facility was completed in July 2020 – 11 weeks ahead of the original contract date for practical completion," Steven explained.

With a focus on creating a cutting edge facility to nurture and foster research excellence, the building had to be equipped with the latest technology, while being flexible enough to adapt and update with future ingenuity. Kane went beyond their remit as main construction company to provide invaluable design ideas to enable this broad scope.

"We challenged ourselves and our subcontractors to come up with improved designs, material and equipment selections and methodologies to build better, smarter and safer," Steven said. "Consultation with the stakeholders throughout the design finalisation and shop drawing stage ensured the product being delivered at the end met the user's requirements. At UTS we took the stakeholders on the journey with us to ensure when they walked into the laboratories upon handover, there were no surprises."

Kane carefully selected key subcontractors who had strong design capabilities to assist with ensuring the smooth integration of the old and new. One of the key moments was when Kane determined early in the project there would be significant benefits in developing services shop drawings in 3D instead of 2D.

"This assisted in coordinating the huge number of services being reticulated through the ceiling spaces which were restricted in areas due to adjoining floor levels and existing structural elements," Steven said.

The improvement of spatial coordination and integration provided substantial cost savings for UTS and had a positive effect on building function, safety and quality.

"Risks and opportunities were identified early on to provide the client with adequate time to consider and adopt changes. This approach resulted in improvements to safety aspects within the design and a significant reduction in risks associated with predicted thermal movement in the façade."

They tackled all challenges head on, as Kane prides themselves on undertaking complex projects that other construction companies turn away from. Site access and its associated logistical concerns had to be addressed throughout the landlocked build.

"The project was bound on three sides by existing buildings, with the remaining side the façade, abutting a pedestrian bridge. The floor plate of the new infill building is entirely new labs, with no stairs or lifts directly feeding the work area, making personal access through operating teaching and PC2 certified labs an immense challenge," Steven said.

"Access for deliveries and concrete pours was also limited to a main arterial road with time restrictions, only five hours a day."

Working on scientific laboratories meant extra precautions and safety measures were employed, such as engagement with the lab certifier to assist with training of workers and the installation of hoardings equal to PC2 with all joints sealed.

With a core team of around 10 staff, peaking at 75 during the build, the success of the highly complex development is a testament to Kane's balanced approach to journey and delivery.

Awarded National Construction Master Builder of the Year 2019, the positive input and contribution Kane provided to the final design, improved the building function, safety and quality, whilst at the same time providing substantial cost savings back to the client. The final outcome is a research facility which embodies collaboration and industry leading technology.

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 JPS fitted out five state-of-the-art laboratories at UTS CB04 Infill Extension Facility for medical gases.

When you mention the word plumbing, you immediately think all manner of water based work: bathrooms, kitchens, laundries and drains. The team at JPS Plumbing covers all of that, and are also specialists in providing the pipework for gases.

Since kicking off his business in 1998, Owner Joe Stojkovic, has completed commercial plumbing work all across Sydney, but has now turned his focus towards gas installation, working largely in this area for the past six years.

The JPS team's work on the state-of-the-art laboratories at UTS CB04 Infill Extension Facility included fitting out five labs over as many floors.

"We worked on providing the framework for medical gases for the labs," Joe explained. "Our team installed all the pipework, the manifolds for the bottle stores, all the gas pipework to all the outlets in the labs, plus we hooked up all the benches and fume cupboards."

Copper and stainless steel piping was used to set up the framework for the use of gases such as ammonia, high purity helium, nitrogen, high purity oxygen, argon and high purity argon.

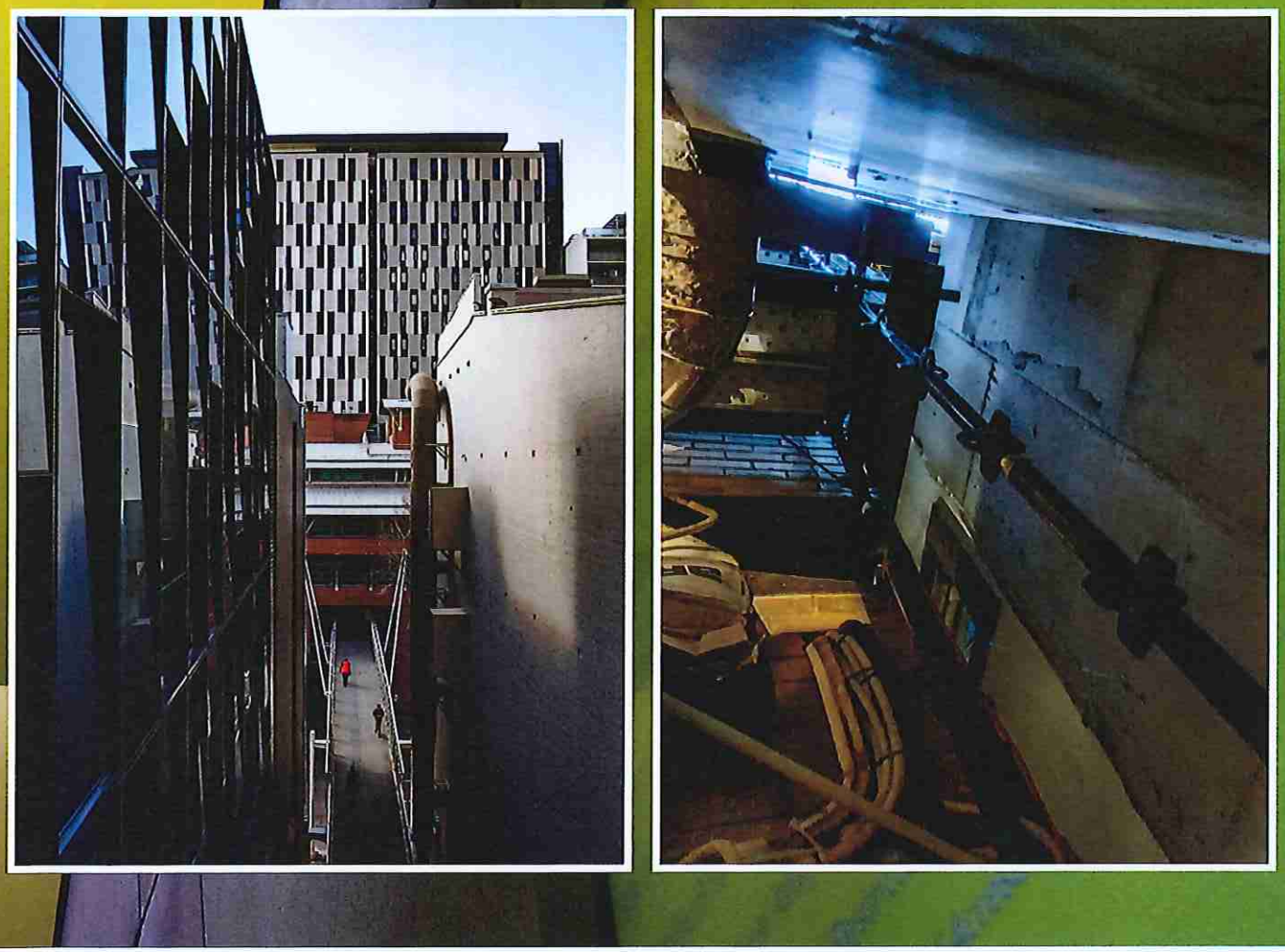
The team of three worked onsite from January 2020, with handover happening in the July, and completed all installation and welding themselves.

While time and space were tight, no corners were cut throughout the process to ensure the highest levels of biosafety and security. "We orbital welded all the stainless steel and most of our pipework had to be manually bent – we didn't want to use elbows as less welding means fewer leaks and it looks cleaner. We take pride in our work," Joe said.

While this is one of the bigger developments they have been involved with, their reputation for quality has seen them hired for projects at the Williamtown RAAF base, and upcoming work at Murrurundi Hospital and Newcastle University.

For more information contact JPS Plumbing Services, phone 0418 698 409

Below EA & Associates delivered a high level of temporary works design solutions to several areas of the project.



EA & Associates (EAAE) are a team of consulting engineers who have been providing structural engineering solutions for temporary works since 1985. EAAE have an excellent track record for service, delivery, and expertise. EAAE are listed as preferred designers and peer review engineers for all types of temporary structures for Multiplex, Lendlease, Watpac, Built and Hutchinson Builders.

On the impressive UTS CB04 Infill Extension Facility, EAAE were contracted by lead construction company Kane Constructions to deliver a high level of temporary works design solutions to several areas of the project. "Our scope included the perimeter scaffold and block wall bracing design," said EA & Associates Principal, Sam Ebeid. "Our team regularly collaborated with the site crew to ensure that access and temporary works structures are being built safely."

From August 2019, the company had a team of four staff involved in the project from the initial concept stage, through to the scaffolding being dismantled in March 2020. They relied on their extensive experience and industry knowledge, along with the latest digital ingenuity, to tackle the project. "We used Finite Element Modelling Programs and produced shop drawings in AutoCAD for efficiency" Sam said.

The location of the building site was challenging with confined spaces and existing surrounding buildings. "In several areas we had to adopt a creative approach – tight spaces and protruding adjacent buildings created obstacles to work around," Sam explained. "We were working to tight deadlines, reacting to modifications required frequently and urgently and actioning work with the constraints of gear available and challenging conditions onsite."

With the majority of their work focused in Sydney Metropolitan Area, EA & Associates also have offices in Brisbane and Melbourne, providing their clients with a wide range of services in structural, façade repairs and remedial engineering. They have been entrusted to work on many high profile projects. "In Canberra we worked on sophisticated access design solutions for the replacement of the glass skylights on top of Parliament House. In Sydney we were deeply involved with the temporary works onsite at Barangaroo Towers 1, 2 and 3, Crown Casino, Darling Harbour and the WestConnex projects. Currently we're working on the One Sydney Harbour redevelopment and undertaking development work at the Opera House."

For more information contact EA & Associates Consulting Engineers, phone 02 9475 0610, website www.eaae.com.au