

TTW

Campbell's Stores and Campbell's Promenade, The Rocks
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SYDNEY | MELBOURNE | CANBERRA | JAKARTA

Civil

Your Partner in Engineering

Civil with TTW

Our Civil Team have been helping our clients to shape the built environment throughout Australia and the Asia Pacific region for the last 30+ years.

Our reputation is built upon long-term relationships with local and state governments, architects, landscape architects and developers, and the delivery of high-quality projects.

We provide civil engineering services from feasibility through planning, design and construction - with ongoing management and advice where requested for the operating life of a project.

We have **EXPERIENCE IN ASPECTS OF CIVIL DEVELOPMENT** including industrial, commercial and residential, and civil master planning of development precincts.



Kings Avenue Overpass



Anzac Memorial Centenary Project

“ Our whole team just loves engineering. Civil design involves working out a lot of conflicting criteria – strength and safety, cost efficiency, functionality and aesthetics, tight schedules. There is great satisfaction in working out good solutions, the end results are there for the whole community.

Marten Eddy
Director



We embrace the responsibility to deliver sustainable projects to the community and encourage a proactive approach toward sustainable design which allows us to contribute to a holistic green vision for the construction industry.

Through our expertise and **IN HOUSE SUSTAINABILITY LEAD**, our designs are aimed to incorporate recycled and reused materials, water reuse, improved water

quality treatment and structural forms that enhance the environmental performance of developments.

Our team prides itself in promoting research in sustainable initiatives that can be realised in practice. We continually investigate ways of reducing our ecological footprint through reducing resource consumption and applying innovative recycling initiatives, so we are always working towards a more sustainable future.

“TTW has a culture that is willing to help our clients. We will find a pragmatic solution that has the balance of the innovative, economic requirements and statutory compliance that will solve almost any construction problem.”

Stephen Brain
Technical Director



Expertise

- Pavement design and geometric layout, optimising design for significant cost savings,
- Master planning stages considering; stormwater, roads, flood protection, pedestrian access and service corridors,
- Urban drainage design including the provision of detention and water quality treatments systems and sustainable water reuse systems for numerous private and public developments,
- Residential and industrial subdivision design including the servicing of blocks,
- Modelling of stormwater catchments using MUSIC, TUFLOW, RAFTS, DRAINS, HECRAS,
- Arterial road and pavement designs for highways, main road underpasses, transport interchanges/depots and major intersections for new developments,
- Industrial, commercial and residential development design,
- Car parking, bus and heavy vehicles facilities for public, commercial and shopping mall developments,
- Streetscape design and documentation for site works, pavements, bridge structures, underpasses, stormwater drainage and other facilities.

“Our work is only as good as the minds behind it.”

Dick Taylor
Founder of TTW

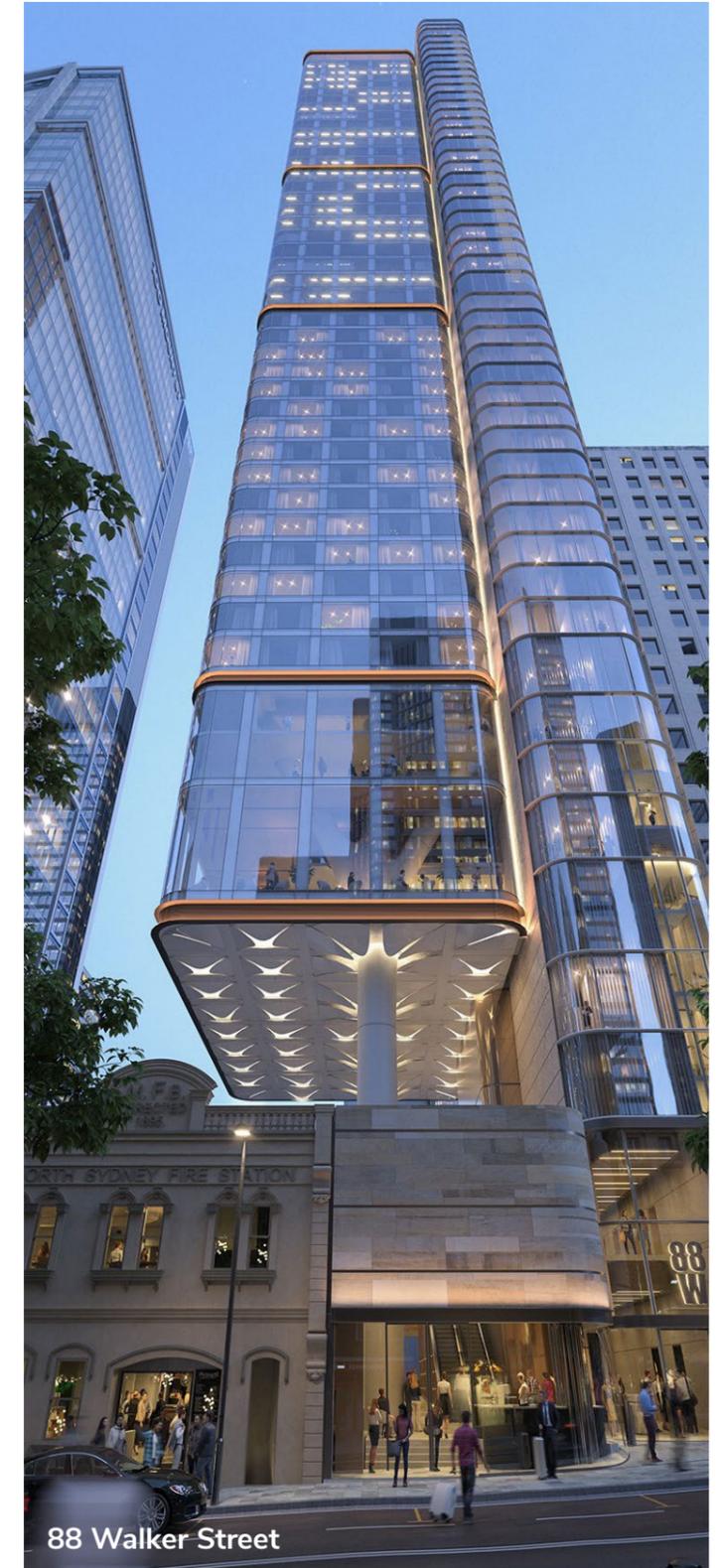
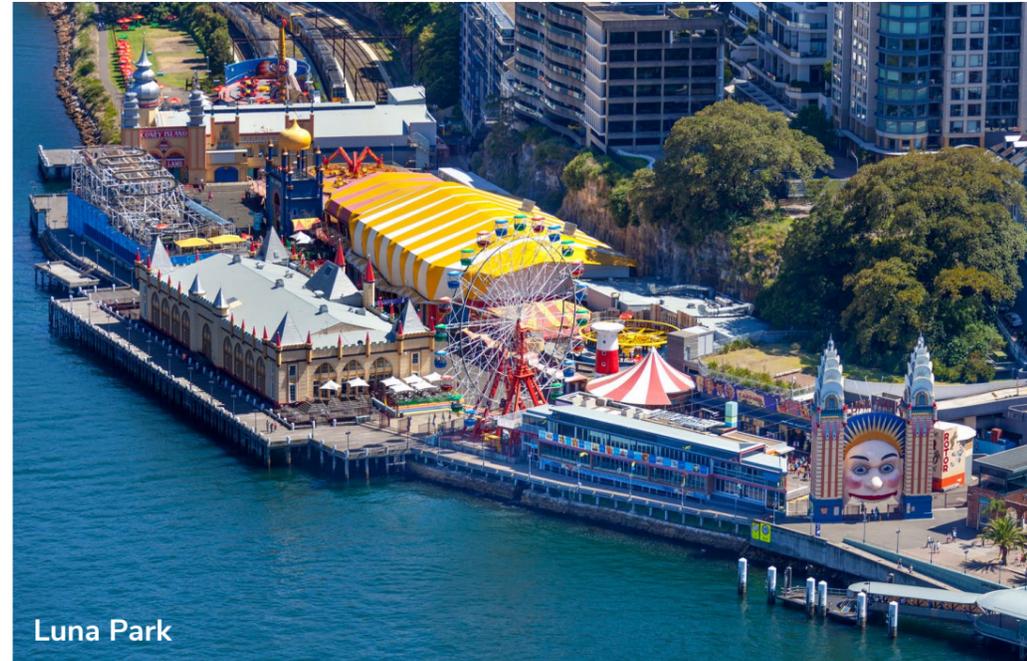


White Bay Cruise Passenger Terminal

Sectors

We are **DELIVERING DIVERSE AND TECHNICAL PROJECTS ACROSS ALL SECTORS** and understand each one comes with its own complex challenges, budget, design and construction constraints. Our understanding of sustainable and economical buildability has seen our Civil Team deliver numerous award-winning projects across key sectors, including:

- International Master Planning,
- Education,
- Health & Research,
- Transport & Infrastructure,
- Government & Public,
- Retail,
- Commercial,
- Arts & Culture,
- Heritage Sites,
- Hotels & Residential,
- Roads & Pavement,
- Industrial,
- Sports & Leisure,
- Bespoke Roofs.



Analysis & Design



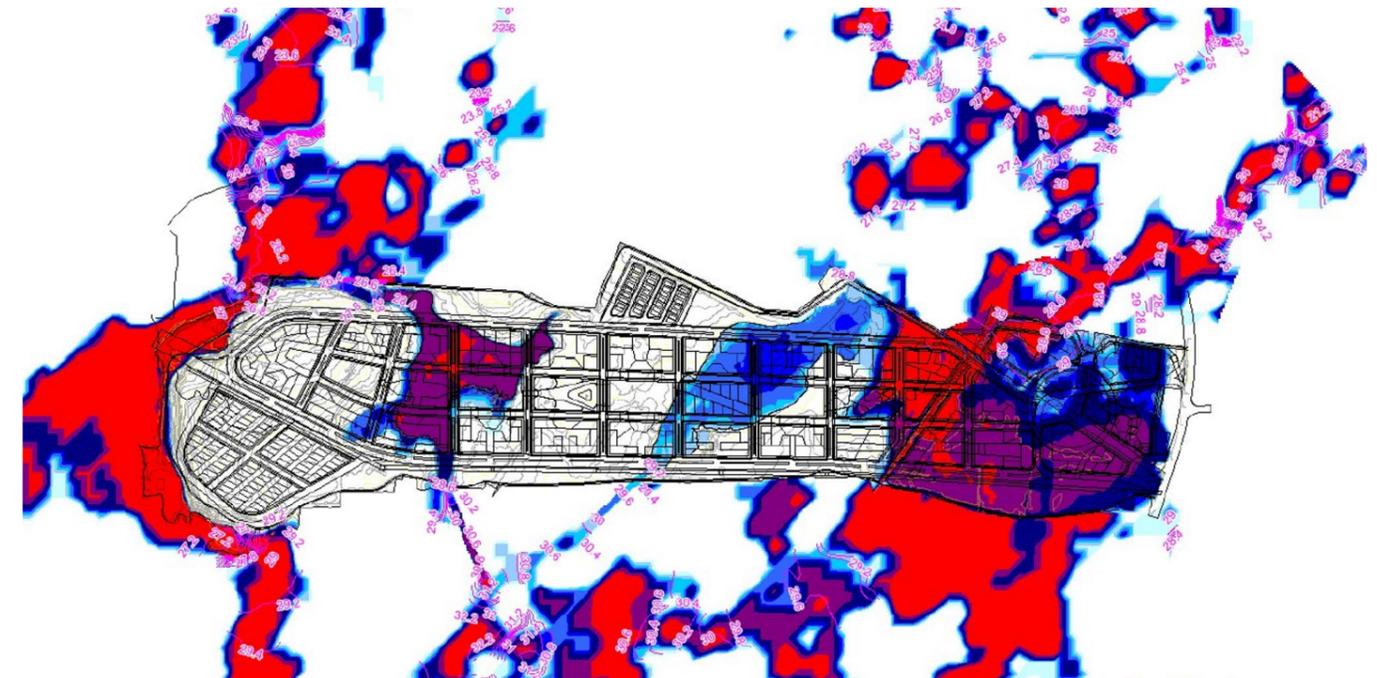
We integrate flooding solutions into our civil designs to guide the built form of a development.

We utilise leading hydrology and 1d/2d hydraulics software such as TUFLOW, DRAINS, XP Rafts, SMS and HEC-RAS combined with Civil 3D and 12D terrain mapping to create flood extents and consequences.

Working closely with the development team, **WE HELP PROVIDE COST EFFECTIVE SOLUTIONS FOR OUR CLIENTS.**

Our flood services include:

- Development of Flood Impact Studies (Flood Modelling),
- Flood Emergency Response Plans,
- Road Hydraulic Studies,
- Water Sensitive Urban Design, including Retention and Detention Systems,
- Site Risk Management Plans,
- Open and Closed Channel, Culverts and Bridges, Hydraulic Studies,
- Creek and Channel Rehabilitation, Diversion Analysis and Design,
- Storm Water Trunk Analysis.
- Analysis of Flood and Stormwater Mitigation Options
- Assessment of Flood Risk for Insurance Purposes



An Entire Campus

We work to provide learning precincts that are ongoing award-winning examples of **INFRASTRUCTURE THAT EMBEDS ITSELF IN THE HEART OF COMMUNITIES** and the fabric of student life.

Our goal is to bring to life the vision of the client and architect using ingenuity, applied learning, advanced technology and experience.

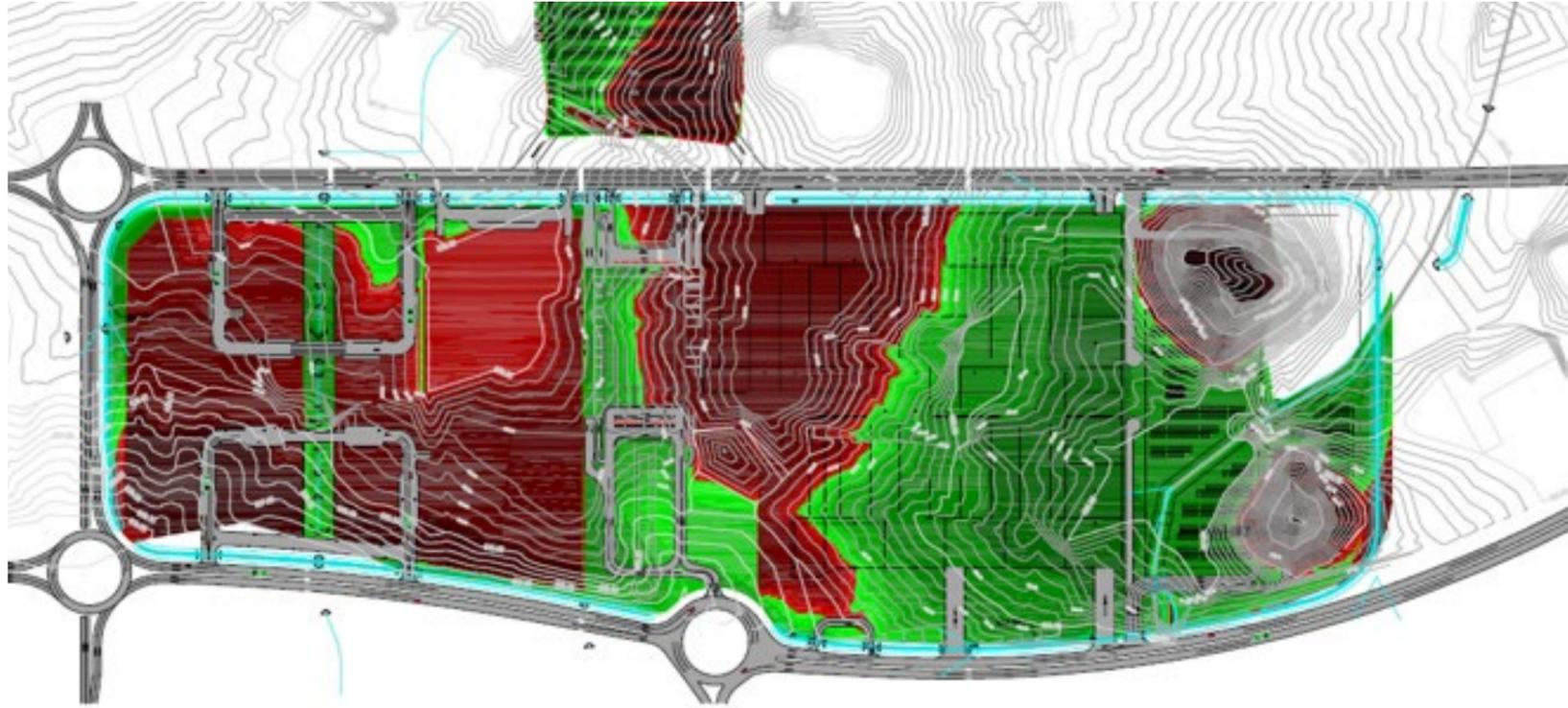
We have completed numerous aspects of the Macquarie University Precinct, including:

- MU Civil Assessment for Master Plan,
- Gateway Design,
- Crossing Design,
- University Avenue Diversion,
- MU Library,
- MU Hearing Hub Civil Works,
- MU Law Building,
- 2 University Avenue Site assessments,
- University Creek Flood Study and Geomorphic Corrections to the creek system,
- Mars Creek Flood Study,
- Macquarie Central,
- Macquarie Shopping Centre Flood Risk Assessment, loading dock ramps, shopping centre extension stages.



Macquarie University Precinct Redevelopment covers an area of 110ha with a value of \$300M.

Master Planning



Hydrabad Earthworks Analysis



Our experience in **MASTER PLANNING** has supported the delivery of high quality and sustainable solutions to meet our client's requirements and maximise our client's investment by providing flexibility for the future.

With **A FOCUS ON EFFICIENCIES AND SUSTAINABILITY**, our specialists can provide advice on a range of engineering services such as,

- Feasibility Due Diligence,
- Strategic Planning and Scheduling,
- Operations Reviews,
- Water Resource Master Plans.

We advise clients on investing in reliable systems and proven infrastructure by recommending the best strategies to employ when beginning a project.

Redefining Health

42 major healthcare projects in the last 10 years.

We provide civil engineering solutions within Hospitals, Aged Care & Research sectors. We see the success of our projects as a result of smart engineering, cutting-edge technology, functionality and aesthetic design.

Our honest and personal approach when partnering with leading healthcare consultants has led us to design some of **AUSTRALIA'S LARGEST HOSPITALS AND RESEARCH CENTRES.**

Maitland Hospital Redevelopment saw us deliver a substantial civil works package to ensure site access, roads, parking, and drainage from the site.

We were responsible for undertaking the design of all civil works, including all internal roads and car parks, along with the upgrade of an existing external intersection to a two-lane roundabout. The works included the design of:

- Internal roads, roundabouts and patient drop off,
- Loading docks,
- Separate ambulance access road and ambulance dock,
- Car park in excess of 600 marked spaces,
- Upgrade the existing intersection at Metford Road and Chelmsford Drive to a two-lane roundabout.



Major Health & Research

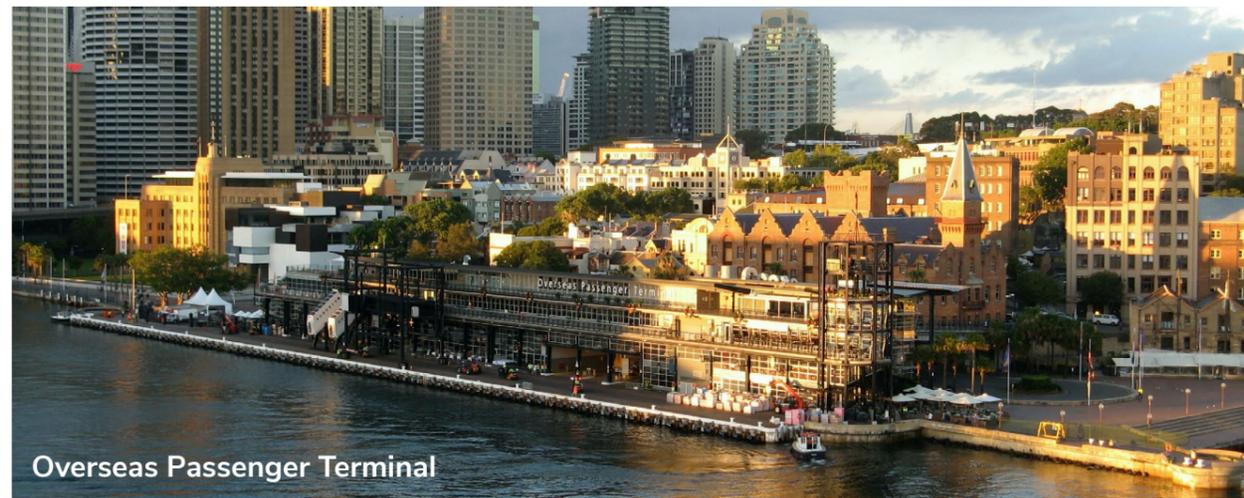


Destination Developments



Atlassian Sydney HQ

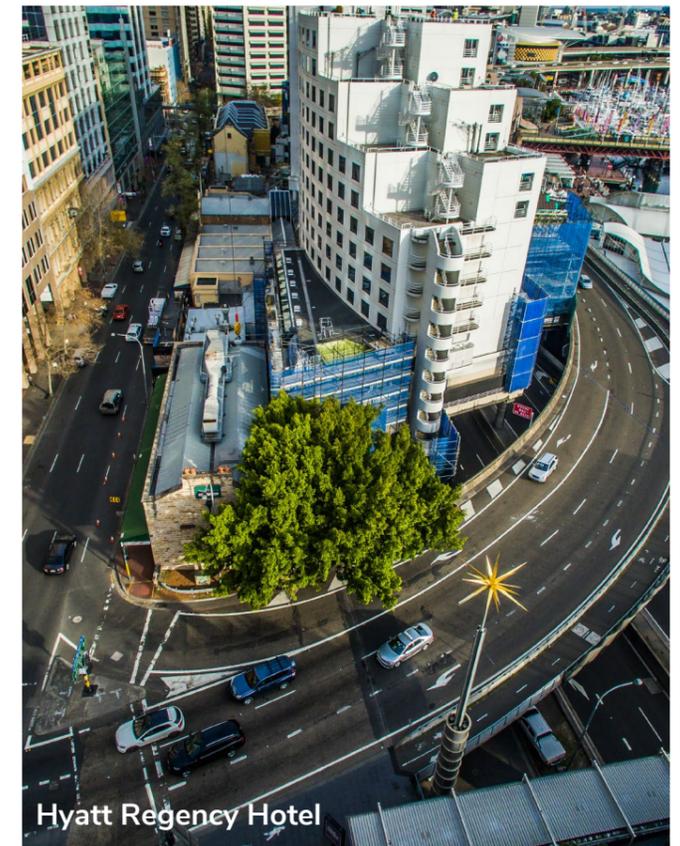
The role of Transport & Infrastructure is to generate connections between geographically separated locations for both commercial and individual needs, while also promoting economic growth and globalisation.



Overseas Passenger Terminal

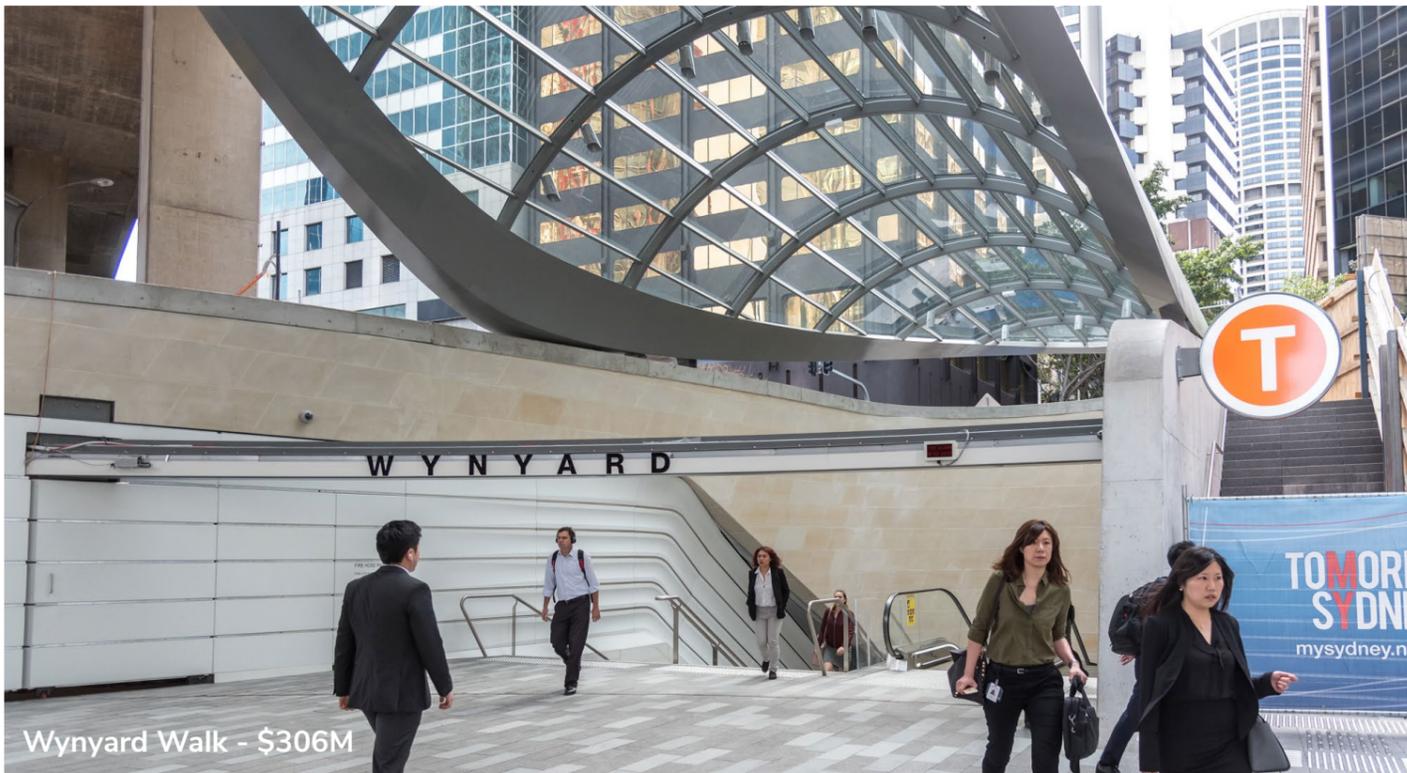
Communities require **SMART INTEGRATED TRANSPORT SYSTEMS COMBINED WITH SUSTAINABLE PLANNING** that last for generations to come. To support this goal, we deliver projects with an integrated approach from our Civil, Structural and Construction Engineering teams.

With careful evaluation of the environment, developing innovating solutions, collaborating with key stakeholders, while often working in sensitive environments, our teams have successfully delivered major projects across train station construction, bridges and roads, tunnels and airports.

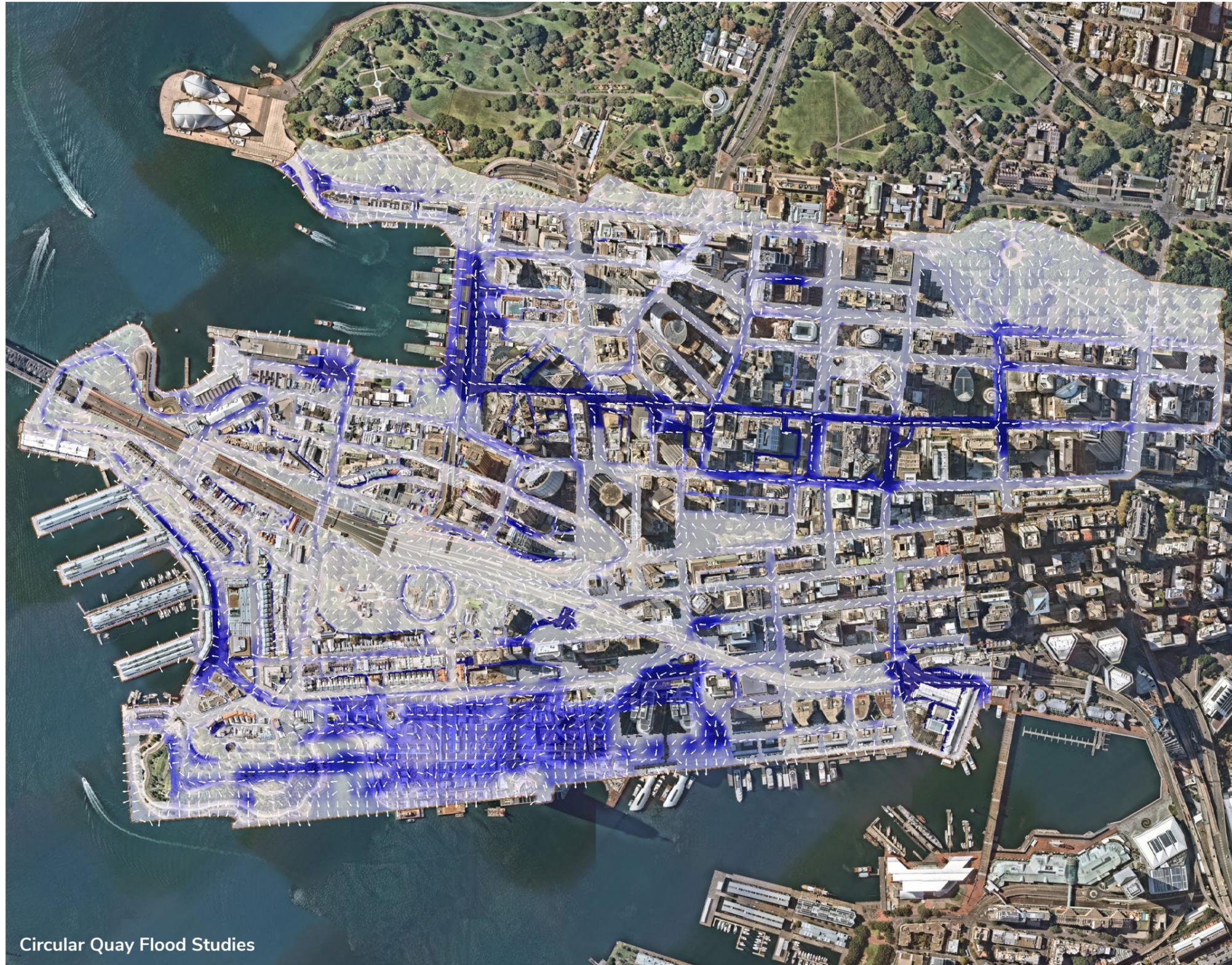


Hyatt Regency Hotel

Award Winning Terminals

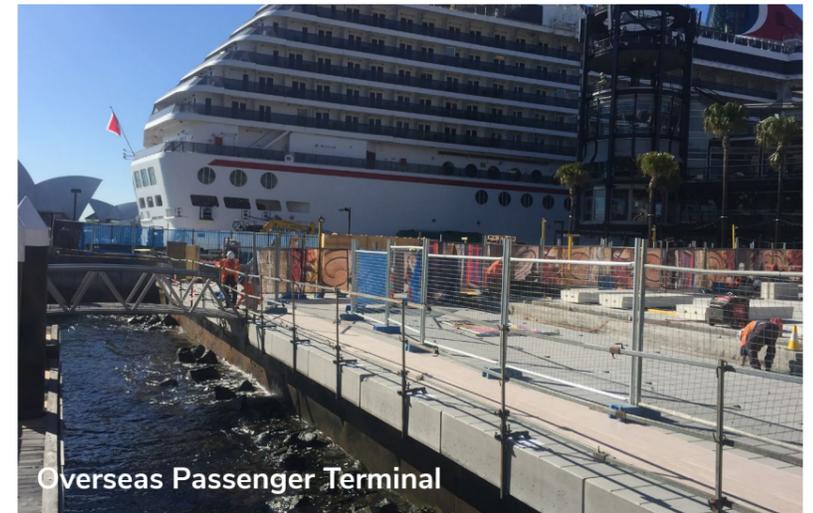


The Rocks Expansion

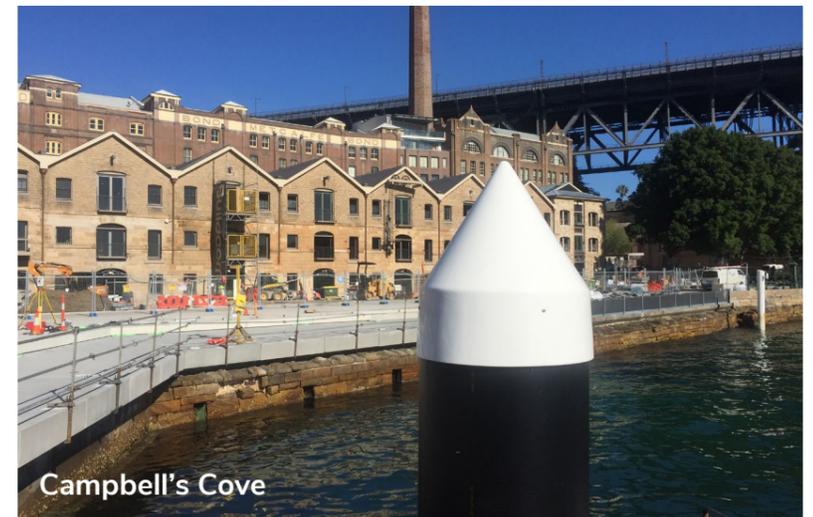


Circular Quay Flood Studies

We have a **LONG TERM PRESENCE IN THE DEVELOPMENT OF THE ROCKS AND CIRCULAR QUAY** precincts. We have helped develop several stages of the Overseas Passenger Terminal, the restoration of Campbell's Stores and the redevelopment of Campbell's Promenade. We have also been involved in stages of the Park Hyatt development and reviews of work methodologies for the Opera House Forecourt.



Overseas Passenger Terminal



Campbell's Cove

Retail Partnerships



The Canopy

Our teams have provided innovative, pragmatic, social and sustainable solutions to projects within urban development and renewal.

The retail facilities we design enable our clients to push the conventions of traditional urban centres. We take into consideration the community needs and surrounding environment to deliver vibrant and unique full-service destinations for the use and enjoyment of the whole community.

OUR LONGTERM AND VALUED INDUSTRY PARTNERSHIPS HAVE LED US TO DELIVER REWARDING RETAIL PROJECTS ACROSS THE ASIA PACIFIC REGION AND BEYOND.



Craigieburn Central



Stockland Green Hills

A major expansion of an existing retail centre in East Maitland - Stockland Green Hills expansion comprises about 38,000m² of retail floor and 1600 new parking spaces.

Complex Pathways



Successful road infrastructure is critical to the economic development, growth and social development of a nation.

Our expertise ranges from **RURAL ENVIRONMENTS TO COMPLEX INFRASTRUCTURE**. We understand the specific complexities, risks and challenges, and designing to construct in an operational environment, ensuring the successful delivery of all projects.

As experts in pavement design and geometric layout, we undertake the analysis design and documentation for construction, rehabilitation and strengthening of pavements. Our pavement optimisation strategy provides the optimum solution to meet performance and quality.

Our services cover pavements for local roads, bridges, major freeways, highways and more.



Earthworks & Retaining Walls



IKEA Alam Sutera, West Jakarta

Unique retaining walls being built to international standards.

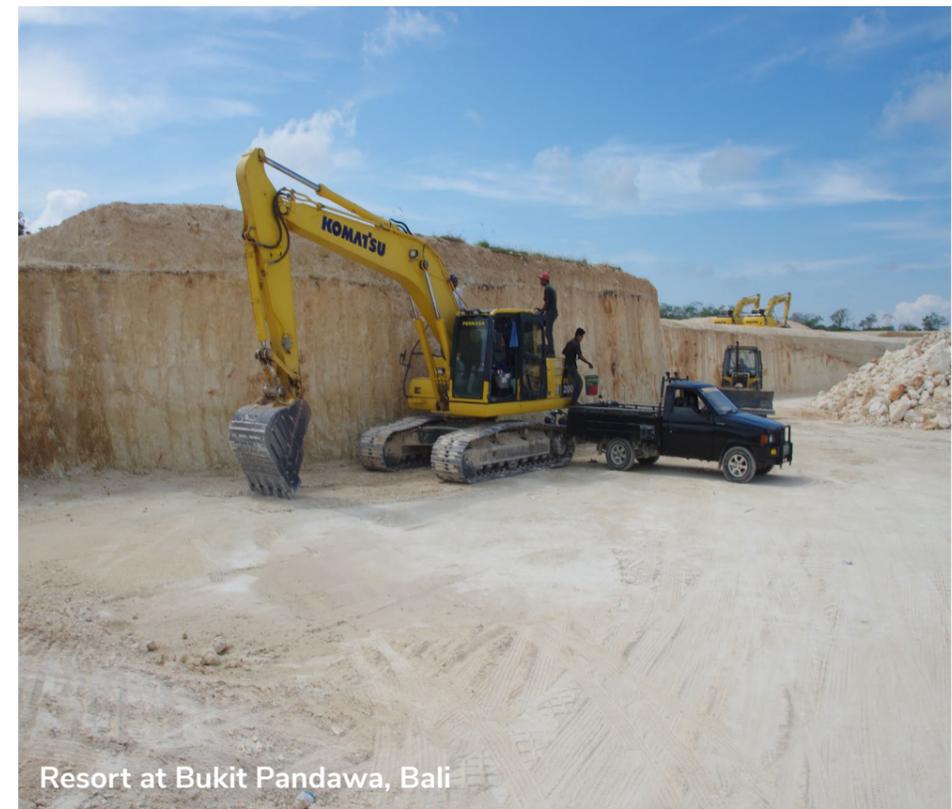
Our team has **LOCAL AND INTERNATIONAL EXPERIENCE** in the design of retaining walls ranging from landscape style walls, through to engineered retaining walls and reinforced soil structures up to 7m in height. This includes retaining walls made up of concrete blockwork, reinforced concrete, keystone and massblock, and natural stone walls.



Macquarie University



Swinbourne Street



Resort at Bukit Pandawa, Bali

Large Scale Industrial

Innovative industrial solutions come to realisation.

Our engineers understand the key challenges of smart and efficient Industrial design and have a proven track record of designing efficient solutions to suit the complex requirements of modern warehousing and logistics.

The automated supply chain revolution is already here, with more and more clients seeking to **OPTIMISE EFFICIENCIES IN SUPPLY CHAINS**. Warehousing and distribution centres are getting smarter and more complex, with an increase in cold storage and temperature-controlled facilities.

The Logos Metrolink development in East Jakarta involves over 200,000m² of logistics floor and access ramps/driveways over 3 storeys. Our scope of work included stormwater and pavement design, stormwater retention, and flood studies and traffic management controls for a key tenant.

IKEA KBP is Indonesia's third new-build IKEA, and involved 3 above-grade retail stories with high quality exposed concrete floors over a single semi-basement parking level. For this project, our team completed the structural, stormwater drainage and pavement design, earthworks and retaining design.



IKEA KBP, West Java



Logos Metrolink Distribution Centre, Jakarta

Wolgan Valley Region

Multi award winning ultra-luxury resort boasting majestic views of the Blue Mountains.

Our advanced design methods and in-depth knowledge is paramount to overcome the challenges of operating in live and new urban and rural environments.

Our engineers' **INTERDISCIPLINARY EXPERIENCE** encompasses the design and development of refined Hotel & Residential accommodation, both in Australia and internationally.

By addressing our client's needs and aesthetic desires we've delivered multiple award-winning projects including Emirates Wolgan Valley Resort and Spa, NSW and the new Cranbrook School precinct.



International Roofs

We have carried out roof drainage hydraulic assessment and designs for our long-term partner Chadwicks. This includes many **INTERNATIONAL TRANSPORT AND EXHIBITION FACILITIES AROUND THE GLOBE.**

Our roof analysis has helped finalise designs for major developments such as Hong Kong Exhibition Centre, Incheon Airport in Seoul, Bangkok Airport extension, Abu Dhabi Airport, Dubai Stage 2 Airport and the new Hong Kong T2 Airport extension.



We support the growing demand for International travel through sustainable designs and advanced technology.

Government & Public Spaces



Australian Embassy, Bangkok

Award winning Australian Embassy in Bangkok was a site prone to local flash flooding. We developed an innovative site surface stormwater gravity drainage system to ensure the site will not be inundated when streets flood.

Our team are dedicated to our client's vision and are focused on project specifications, which has resulted in a portfolio of multi-award-winning Defence, Government & Public buildings.

Be it purpose-built infrastructure for our dynamic justice system and international embassies, or constructing iconic public walkways, elegant libraries and significant community memorials, our engineers are involved from the early design phase to help transform the most creative ideas from our clients.

We have experience in all facets of public spaces revitalisation from traffic reporting and strategic framework development through to detailed design and construction phase services. Often engaged to provide **STRATEGIC ENGINEERING CONSULTANCY SERVICES TO UPGRADE AND REVITALISE PUBLIC AREAS**, we focus on pedestrianisation, traffic management and intersection improvements.



Australian War Memorial, ACT

Great Outdoors

As fans of all things sporting, our award-winning projects have set the bench mark across the Sports & Leisure sector. We deliver important social function and exercise space for our wider community, including training spaces for the army and leading athletes.

We rely on our long-term relationships with schools, councils, local authorities and government bodies to build state of the art, globally renown and functional sporting and swimming spaces.

Focusing foremost on our client's goals, our engineers seek out cost efficiencies and sustainable options, consider live

environments and existing infrastructure, including reviewing the emotional impact of the space for future visitors.

Covering 34 hectares of land, Westleigh Park, the Centennial Park of the north will house **MULTI-USE SPORTING FIELDS** adapted for various organised sports and provide **MULTIPLE AMENITIES, GRANDSTANDS AND MAINTENANCE SHEDS**. The scope of works also includes new access roads and car parking including a new link between Quarter Sessions Road and Sefton Road, play facilities for active and passive recreation, including mountain bike, and walking trails.

A significant recreational and sports precinct for both the local and Greater Sydney community.



Civil Pipeline

Our team are keeping busy with ongoing local and international large-scale civil projects.

