



CAPABILITY STATEMENT



**TRUSTED LEADERS IN THE CIVIL CONSTRUCTION,
MINING & TUNNELLING INDUSTRY**

PROJECT MANAGEMENT | TUNNELLING | MINING | ENVIRONMENTAL | GEOTECHNICAL ENGINEERING | SURVEYING



ABOUT US

JDK Geotech (JDK) provides leading engineering and project management solutions for large-scale projects. Our success is built on mutual trust, consistent delivery standards and professional responsibility across all levels of our organisation.

As a leading engineering & technical services delivery firm, we deliver unparalleled support and innovative solutions in Australia and internationally. JDK was established in 2016 to provide professional engineering and project management services tailored to specific project requirements. Today, we are proud to represent government agencies, tier one construction companies and work alongside management consulting firms throughout Australia.

Specialising in the seamless delivery of large-scale infrastructure projects, both short-term & fixed contracts, JDK have built a strong reputation across multiple sectors. Our suite of geological, geotechnical, environmental and project management solutions are delivered by highly experienced professionals, well regarded throughout the industry.

The JDK team offers technical advice for myriad domestic and international sectors, including the civil construction, tunnelling, mining and environmental industries. Our mandate to listen to your needs and place your requirements at the core of each project is what underpins every service we provide.

OUR CULTURE

Our core values uphold the importance of personal customer service and professional responsibility. Our services management team prioritise effective communication aligned to the JDK vision and values aimed at delivering positive working culture. Our culture supports strong collaboration in teams fostering innovative thinking.

VISION

JDK's vision is to help Australia thrive by meeting and exceeding the expectations of all our stakeholders. As an Australian owned organisation, our engineering solutions support a positive future for the country and is up held by every JDK team member.

MISSION

JDK's mission is to deliver consistent & effective engineering and project management services to benefit communities throughout Australia.

WHAT WE DO

At JDK, we provide a range of engineering solutions that assist Australian infrastructure & mining sectors to create a better Australia. From analysis to execution, we help our clients build value and support communities through innovative engineering and construction services. We specialise in project management, geotechnical engineering and geological design, rockfall remediation, mining and environmental management.

WE COMBINE INSIGHT WITH EXPERIENCE TO DELIVER RESULTS

We respect your business

At JDK, we focus on our customers at all times. We listen to your goals, understand your needs and respect your vision. We believe in building strong relationships based on trust and professional responsibility. Our clear communication and mutual respect are key to delivering consistent and high-quality results.

We support your success

Our consulting team supports your vision and helps to drive your success. We have the proven professional expertise needed to work with our growing client base and a proven record of delivering innovative solutions across industries and disciplines. Our experienced and highly professional team solves complex problems and delivers professional solutions for every project we approach.

We respond to your needs

At JDK, we believe in strength through flexibility. We can respond to your changing needs over time to deliver relevant solutions based on real-world conditions. Our team is proactive, adaptive and highly motivated. We understand and respect altered project scopes and address changing requirements quickly without adding unwanted complexity.

Our expertise

1. Since our inception in 2016, our engineering team has specialised in the delivery of technical services & project management of mining, construction and infrastructure projects for Australian and international clients
2. JDK offers diverse geotechnical engineering solutions for large-scale public and commercial projects. Our ability to meet project specifications, exceed best practice guidelines and deliver exceptional geotechnical engineering and project management solutions are due to the calibre, ethics and experience of our people.

Our capabilities

SECTORS	ENGINEERING DESIGN	MANAGEMENT SOLUTIONS	TECHNICAL SCOPE	TESTING SERVICES
INFRASTRUCTURE	Tunnel design	Construction management	Project engineering	Compaction and deflection testing
MINING	Feasibility studies (mining, civil and environmental)	Project management	Geotechnical engineering	Nuclear density testing
POWER (HYDRO)		Owner Representative	Mining and exploration	NATA approved testing & reporting
TRANSPORTATION	Tunnel design analysis and design review	Waste water management	Geology environmental engineering	SPT & CPT testing
GOVERNMENT	Third-party design review	Environmental management	Surveying	Hazardous material assessments & characterisation
	Geotechnical interpretative and baseline reports	Systems engineering management	Quality	Asbestos assessment's & clearance certificate
	Blast design, PPU Testing	Quality management	Assurance and quality control (QAQC)	
	Foundation design	Occupational health and safety	Structural assessments	Proctor compaction testing
	Rock cut and tunnel design			

PROFESSIONAL SERVICES

PROJECT/CONSTRUCTION MANAGEMENT

- Project set up and delivery.
- Quality assurance/quality management implementation.
- Due diligence reporting.
- Compliance scoping, pre-feasibility, and feasibility studies.
- Change management and project improvement strategy.



GEOTECHNICAL/GEOLOGICAL ENGINEERING DESIGN

- Pile inspections/vibration monitoring, PPU testing.
- Roped access for geological mapping geological outcrops.
- Groundwater studies.
- Construction inspections & reporting.
- As-built condition documentation.
- Drilling investigation and core logging. Soil classification and laboratory testing review.
- Instrumentation installation and monitoring



ROCKFALL REMEDIATION

- Stability analysis and design review.
- Rockfall analysis, remediation and prevention.
- Design of rockfall protection systems and support.
- Construction inspections; As-built condition documentation.
- Landslide analysis, 3D modelling and forecasting.



TUNNELLING

- Geotechnical assessments and rock characterisation.
- Tunnel stability analysis and support design review.
- Preparation of baseline and interpretative geotechnical reports.
- Feasibility studies and mine roadway alignment studies, longwall design.
- Planning and execution of geotechnical site investigations.
- Review and design drawings for construction.
- Borehole drilling, core logging and geological mapping of cabins, tunnels and portals.



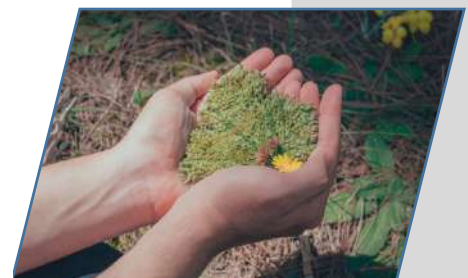
COAL AND HARD ROCK MINING

- Project management/coordination of longwall move and take off.
- Site inspections and field mapping review.
- Drilling investigation and core logging
- Support design and review of existing mines workings.
- Evaluation and design of primary and secondary support requirements.
- Insitu stress monitoring/ground movement monitoring.



ENVIRONMENTAL INVESTIGATION

- Environmental site investigation reports.
- Slope remediation and reclamation design.
- Environmental remediation advice.
- Site inspections and mapping review.
- Contamination sampling, analysis and air monitoring through our



SURVEYING

JDK Surveying can complete detailed land surveying procedures to ensure each project areas' foundations.

We review each survey carefully and take all necessary steps to guarantee your project's stability and safety. We specialise in the following survey types:

Drone Aerial Surveys:

- High-resolution aerial photography, videography, and photogrammetry
- Generation of large scale geo-rectified orthomosaics and digital terrain models (DTM)
- Aerial videography for scouting or promotional purposes
- Precondition and postcondition aerial surveys for documenting environmental impacts and minimising disputes
- Trimble RTX DGPS system for the absolute accuracy of 4 cm for orthomosaics and DTM models
- Rapid data collection and analysis
- No environmental footprint
- Advanced processing using state-of-the-art "Pix4D" Software
- CASA qualified remote pilot

Ground Magnetic Surveys:

- Rapid data collection and analysis
- On-board GPS receiver to eliminate expensive gridding procedures
- No environmental footprint
- Advanced processing
- Compact, robust, easy-to-assemble field kit
- Works together with a magnetic susceptibility reader
- TMI, DEM, RTP, and 1VD

DRONE AERIAL SURVEYS

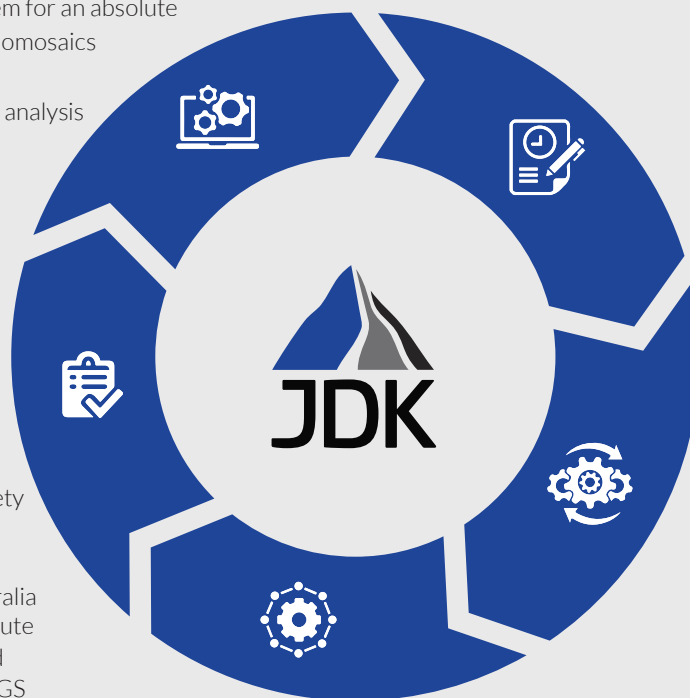
- High-resolution aerial photography, videography, and photogrammetry
- Trimble RTX DGPS system for an absolute accuracy of 4 cm for orthomosaics and DTM models
- Rapid data collection and analysis
- Advanced processing

DATA MANAGEMENT

- Microsoft Project
- Microsoft Excel
- Microsoft Database
- SQL
- Python
- Bluebeam
- Quora
- ASITE

AFFILIATIONS AND ACCREDITATIONS

- Engineers Australia
- Australian Tunnelling Society ATS
- AUSIMM
- Geological Society of Australia
- Project Management Institute
- Bowen Basin Underground Geotechnical Society BBUGS



GROUND MAGNETIC SURVEYS

- Rapid data collection and analysis
- Advanced processing
- Compact, robust, easy-to-assemble field kit
- Works together with a magnetic susceptibility reader
- TMI, DEM, RTP, and 1VD

INTERGRATED MANAGEMENT SYSTEM

- ISO 9001 Quality Management
- ISO 45001 OH&S
- ISO 14001 Environmental Management



INTEGRATED MANAGEMENT SYSTEM

JDK strives to ensure our management standards are proficient with industry best.

Our integrated management system is compliant with the following workplace standards:

- ✓ Quality Management to ISO 9001
- ✓ Occupational Health and Safety Management to ISO 45001
- ✓ Environmental Management Systems to ISO 14001



JDK's streamlined, integrated management system aims to provide high-quality outcomes delivered in a safe and efficient manner. Our specialist management team can provide the know-how to ensure your project complies with all regulatory requirements.

Quality assurance

Each project is an opportunity to build on our knowledge. JDK sets and follows project-specific guidelines that always meet and often exceed project specifications. We never compromise on standards and follow a strict work ethic based on professional accountability and attention to detail.

Workplace health & safety

JDK is dedicated to all aspects of workplace health and safety.

We make the following commitments to the people who define our success:

- We provide valuable employment opportunities for emerging professionals
- We encourage education and professional connections through industry conferences and functions
- We pride ourselves on consistent training to ensure continuous improvement
- We meet and exceed all occupational health and safety guidelines
- We promote ongoing performance improvement through management and risk mitigation
- We are committed to personal health and safety at all times

JDK observes occupational health and safety systems aligned to ISO 45001. We are committed to ongoing reporting, health assessment and workplace evaluation of HIRAC (Hazard Identification, Risk Assessment and Control process) protocols to eliminate work-related injuries.

NOTABLE PROJECTS

WARRINGAH FREEWAY UPGRADE



Client	CPB & Downer Joint Venture
Expertise	Geotechnical engineering
Sectors	Infrastructure, transportation, government
Location	Sydney, NSW

Project Description

The Western Harbour Tunnel and Warringah Freeway Upgrade is a major transport infrastructure project that will make it easier, faster and safer to get around Sydney. By creating a western bypass of the Sydney CBD, the Western Harbour Tunnel will take pressure off the Sydney Harbour Bridge, Sydney Harbour Tunnel, Anzac Bridge and Western Distributor corridors to improve transport capacity in and around Sydney Harbour.

Approach and Innovation

JDK provided construction phase services for the project, focusing on daily geotechnical/geological data capture. We assisted the sub-contractor Alliance full-time in project management and geotechnical delivery to the Client CPBDJV. Currently, JDK's consultants are working full-time on geotechnical assessments, compliance, inspections, and geological defect mapping and monitoring.

SYDNEY METRO WEST - WESTERN TUNNELLING PACKAGE



Client	Gamuda Australia and Laing O'Rourke Consortium (Alliance)
Expertise	Geotechnical engineering
Sectors	Infrastructure, transportation, government
Location	Sydney, NSW

Project Description

Sydney Metro West will support a growing city and deliver world-class metro services to more communities. This new underground railway will connect Greater Parramatta and the Sydney CBD.

The Gamuda Australia and Laing O'Rourke Consortium is delivering the Sydney Metro West - Western Tunnelling Package. The contract includes the delivery of twin nine kilometre tunnels between Sydney Olympic Park and Westmead, the excavation of two new metro stations, a stabling and maintenance facility at Clyde, and a precast facility at Eastern Creek.

Approach and Innovation

JDK provided full-time engineering services to Gamuda and Alliance during the ground investigation phase. Their primary role was to deliver the anchoring scope and provide support to the excavation and shotcrete team. They ensured compliance with technical specifications, managed subcontractors, maintained quality documentation, provided design recommendations, and worked with multiple teams to meet program targets.

NOTABLE PROJECTS

SYDNEY METRO WEST (CTP) - CENTRAL TUNNELLING PROJECT



Client	Acciona Ferrovia Joint Venture (AFJV)
Expertise	Project Management, Project Engineering
Sectors	Infrastructure, transportation, government
Location	Sydney, NSW

Project Description

Acciona Ferrovia Joint Venture (AFJV) was awarded the contract to design and construct the Sydney Metro West – Central Tunnelling Package. The contract includes the delivery of twin 11-kilometers tunnels and the excavation of five station boxes at Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays.

Approach and Innovation

JDK provided engineering services to AFJV during the excavation phase, primarily delivering anchoring scope and aiding the excavation and shotcrete team. Responsibilities included ensuring compliance, managing subcontractors, maintaining quality documentation, assisting in cost control, providing design recommendations, and reconciling claims and developing programs.

M6 PROJECT - STAGE 1



Client	Coffey - A Tetra Tech Company
Expertise	Geotechnical engineering
Sectors	Infrastructure, transportation, government
Location	Sydney, NSW

Project Description

The M6 Stage 1 will deliver the missing link from Sydney's south to the wider Sydney motorway network.

- Twin four-kilometre tunnels linking the M8 Motorway
- Ramps between the main motorway tunnel and the surface intersection at President Avenue
- Tunnel stubs for a future connection to extend the M6
- A new intersection at President Avenue
- Provision of new shared cyclist and pedestrian pathways

Approach and Innovation

JDK was engaged to undertake geotechnical site investigations under the management of Coffey. Our organisation was able to apply the systematic capture of geotechnical and geological information to suit the current AS1726 and was able to work autonomously in conjunction with the effective management of site safety and documentation protocols.

NOTABLE PROJECTS

NORTHCONNEX



Client	LendLease Bouygues Joint Venture LSBJV
Value	\$3.72 Billion
Expertise	Project management, QA/QC
Sectors	Infrastructure, transportation and government
Location	Sydney, NSW

Project Description

The NorthConnex project provides a multi-lane motorway that links the M1 Pacific Motorway at Wahroonga NSW to the M2 Motorway at West Pennant Hills, NSW. This project features twin motorway tunnels around 9 km in length and a height clearance of 5.30 m. The Sydney tunnels were constructed with three-lane capacity in each direction, including two lanes and a breakdown pull off-lane.

Approach and Innovation

JDK Geotechnical Team was engaged to systematically capture geotechnical and geological information to the final installation of support. The JDK team interacted with several client teams across disciplines, providing extensive geotechnical expertise to help manage and control tunnelling risk, add value across critical areas of the project.

WESTCONNEX M4-M5



Client	Acciona Samsung Bouygues Joint Venture ASBJV
Value	\$3.2 Billion
Expertise	Geotechnical engineering
Sectors	Infrastructure, transportation and government
Location	Sydney, NSW

Project Description

The WestConnex 3A project consisted of constructing the M4-M5 Link twin mainline tunnels between the M4-M5 to the Rozelle Interchange. The WestConnex is Australia's largest infrastructure project to date.

Approach and Innovation

Under the direction of senior ASBJV management, JDK was responsible for providing extensive geotechnical expertise to interpret the practices used to manage and control tunnelling risk. JDK's geotechnical vast knowledge coupled with stakeholder communication enabled the efficient capability of our deliverables to the ASBJV team. JDK was able to utilise industry best practice to ensure geotechnical risk was identified, captured and communicated.

NOTABLE PROJECTS

SYDNEY METRO (TSE)



Client	John Holland CPB Ghella Joint Venture (JHCPBG)/Pells Sullivan Meynink (PSM)
Value	\$11.5 Billion
Expertise	Project engineering, geotechnical engineering
Sectors	Infrastructure, transportation and government
Location	Sydney, NSW

Project Description

The Sydney Metro City and Southwest project aims to provide rail tunnels and associated transportation infrastructure to Sydney's commuters and surrounding communities. The Sydney Metro project is Australia's second largest infrastructure project to date.

Approach and Innovation

JDK was engaged to work on the Sydney Metro City & Southwest project, communicating successfully with multiple stakeholders and providing extensive geotechnical expertise throughout the project. The implementation of monitoring controls was completed at the highest quality and no client issues, or damage to existing infrastructure. Innovative data collection methods were employed by JDK throughout the project to deliver high-quality data capture for future works.

SYDNEY METRO CENTRAL WALK PROJECT



Client	Laing O'Rourke and Tunnelling Solutions
Value	\$955 Million
Expertise	Tunnelling, geotechnical engineering, project engineering
Sectors	Infrastructure, transportation and government
Location	Sydney, NSW

Project Description

The Sydney Metro Central Station Main Works (CSM) – Central Walk contract included the Central Advanced Adit tunnel and the adjacent Central Walk project providing an underground concourse to Australia's busiest train station.

Approach and Innovation

JDK was engaged in applying their systematic capture of geotechnical and geological information and expertise to control tunnelling risk for the Central Adit Tunnel project. After completing the Central Adit project, JDK was re-engaged to provide project engineering services delivering industry best reporting and reviewing methodology to systematically capture project requirement information to the client based on the design.

NOTABLE PROJECTS

SYDNEY GATEWAY PROJECT



Client	Coffey - A Tetra Tech Company
Expertise	Geotechnical engineering
Sectors	Infrastructure, transportation, government
Location	Sydney, NSW

Project Description

The Sydney Gateway is a major road interchange between the WestConnex and the airport terminals of Sydney Airport. Construction began in early 2021 and is expected to open in December 2024. The Sydney Gateway will provide a high-capacity connection from Sydney Airport and Port Botany to the new Westconnex St Peters Interchange once completed. Sydney Gateway is part of the NSW Government's vision to complete the missing links in the motorway network, improve traffic flow and reduce travel times.

Approach and Innovation

JDK was engaged in the geotechnical site investigation work under the management of Coffey. JDK was able to undertake geotechnical investigation work autonomously alongside site safety and documentation management protocols effectively streamlining the delivery of Stage 2 of the investigative works of the project.

TRANSPORT ACCESS PROGRAM – REDFERN STATION



Client	Novorail and RedHill Civil Project
Expertise	Project management, Project Engineering
Sectors	Infrastructure, transportation, government
Location	Sydney, NSW

Project Description

The transport access program is an initiative to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure. The project at Redfern Station is a major suburban railway station (6th busiest station in NSW) with an estimated patronage of 70,000 on an average workday (2018 figures). Redfern resides within the local government area of City of Sydney.

Approach and Innovation

JDK was able to package a suite of onsite roles to help reduce the overall project cost. JDK delivered project management, estimating, quality, programming and construction administrative services to fit the needs of the client.

NOTABLE PROJECTS

SYDNEY METRO (CSM) - CENTRAL STATION MAIN WORKS



Client	Laing O'Rourke (Sydney Metro / TfNSW)
Expertise	Geotechnical engineering
Sectors	Infrastructure, transportation, government
Location	Sydney, NSW

Project Description

Sydney Metro platform upgrades were delivered by Laing O'Rourke (LOR) underneath the landmark Central Station - Central Walk - a new underground pedestrian concourse to help customers get around Sydney's busiest railway station. Major construction work has now been completed and is mostly open to the public. The renewal of Central Station was designed to cater to growing passenger numbers and improve accessibility.

Approach and Innovation

JDK delivered the scope of work effectively, ensuring the Client did not damage sensitive surface rail infrastructure or disruption to the rail network. The implementation of systematic data capture and project management under the supervision of our client LOR was delivered effectively. Geotechnical capture through industry-best technology initiated through JDK's experience on similar infrastructure projects aided in a streamlined information transfer to the principal contractor to ensure they fulfilled the design requirements.

CENTRAL SUBWAY PROJECT



Client	San Francisco Municipal Transportation Agency (SFMTA) / JACOBS
Value	\$1.57 Billion
Expertise	Tunnelling, geotechnical engineering
Sectors	Infrastructure, transportation and government
Location	San Francisco USA

Project Description

This large-scale project adds two new underground tunnels and four subway stations providing, a direct rapid transit link between downtown and the existing train line. The third Line Route on 3rd Street will vastly improve transportation from some of the city's busiest, most densely populated areas once commissioned.

Approach and Innovation

Acting as the clients representative, JDK effectively engaged with multiple contractors to safely and effectively deliver the project's geotechnical reporting and instrumentation requirements. Through a systematic review of each project methodology, JDK was able to help achieve project outcomes on time and within budget effectively.

NOTABLE PROJECTS

NARROWS INLET HYDRO PROJECT



Client	BluEarth Renewables / MPMSI
Value	\$287 Million
Expertise	Project coordination, engineering services, tender management (procurement)
Sectors	Infrastructure, government, power and water
Location	British Columbia, Canada

Project Description

The project included the delivery and installation of the following infrastructure:

- Three hydroelectric generating stations with a combined design capacity of 33 megawatts.
- Chickwat Creek – Conventional run-of-river hydroelectric generating station with a design capacity of 19 megawatts.

Approach and Innovation

JDK's professional interaction with relevant stakeholders, extensive geotechnical expertise and interpretation of the methodology used to manage and control risk proved highly successful. JDK completed all work safely, within budget and on time while meeting the requirements of the contract's design. Our precise inferences of ground conditions allowed the client to adhere to their deliverables schedule and utilise their resources efficiently.

CULLITON CREEK HYDRO PROJECT



Client	Tetra Tech
Value	\$4 Million
Expertise	Project management, geotechnical engineering
Sectors	Infrastructure, government, power and water
Location	British Columbia Canada

Project Description

The facility involved the construction management and geotechnical rock-cut design in allowing the installation of a 3.20km long penstock (1.48m diameter buried pipe both HDPE and steel). The project boasted two 7.5 MW vertical axis Pelton turbines supplied by rainwater and 13km of 69 kV transmission lines.

Approach and Innovation

JDK was able to utilise industry best practice for project deliverables effectively. The efficient implementation of blast design, rock anchor support design and rockfall remediation allowed the client to deliver the project on time and within budget. The technical expertise and construction management allowed the successful implementation of the project.



WHY CHOOSE US

Our knowledge and experience will drive your project forward with confidence.

- ✓ Value delivered through expertise
- ✓ Proven track record across industry sectors
- ✓ Complete high-quality project solutions
- ✓ Commitment to health and safety
- ✓ Access to industry-leading executives and teams





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