

VIC PROJECT FEATURE BELL TO MORELAND

Level Crossing Removal Project / Northern Program Alliance

Image supplied by Level Crossing Removal Project



LEVELLING UP AT THE LEVEL CROSSING REMOVAL PROJECT

DEVELOPER : Level Crossing Removal Project
MAIN CONSTRUCTION COMPANY : North West Program Alliance
DEVELOPMENT VALUE : \$542 million



The Bell to Moreland project involves the removal of four dangerous and congested level crossings at Bell Street, Munro Street and Reynard Street in Coburg, and Moreland Road in Brunswick by raising the rail line over the roads. New stations at Coburg and Moreland have been built while existing heritage-listed station buildings have been restored and repurposed, along with new community spaces, and improved east-west connections.

Melbourne's Level Crossing Removal Project is overseeing a transformation of the city's rail and road networks on behalf of the Victorian Government.

A total of 75 dangerous and congested level crossings are being removed across Melbourne by 2025, with 46 already removed. The project is providing the people of Melbourne with the additional benefit of significantly enhancing the public amenity through extensive parks, cycle paths and pedestrian paths.

One of the recent successes of the project has seen four level crossings removed at Bell Street, Reynard Street and Munro Street in Coburg and Moreland Road in Brunswick. The rail line was elevated for 2.5km and new stations were built at Coburg and Moreland which are now in operation. The heritage-listed station buildings were retained and landscaping and other ground works under the rail line will continue in the coming months.

The Bell to Moreland project was undertaken by the North West Program Alliance headed by John Holland Group in alliance with

Kellogg Brown and Root, Metro Trains and the Level Crossing Removal Project.

In order to remove the four level crossings quickly and efficiently, a 3 month rail line closure was commissioned from July to November in 2020 on the Upfield line in Melbourne's northern suburbs. This was the longest rail line closure the Level Crossing Removal Project had seen in its 5-year history. Extensive planning was undertaken to ensure passengers could continue to get to their destinations using replacement buses and nearby trams.

A major challenge for the project arose with the Melbourne lock-down due to the COVID-19 pandemic. Many residents were at home 24 hours per day along the narrow 2.5km rail corridor. The Communications and Engagement team worked tirelessly to communicate the purpose of the works. Relocation was offered to many people directly affected by the noise from the construction work.

Matt Thorpe, Program Director, Bell to Moreland Level Crossing Removal Project, said the project has been a real game changer.



"Under very difficult circumstances we closed a rail line for three months, removed four level crossings, constructed 2.5km of new rail line, and built new stations at Moreland and Coburg. This was an immense effort by everyone involved."

Matt added that throughout the project, new ways of getting the job done more efficiently were sought wherever possible. "We used innovations on the project such as 4G tracking technology to monitor deliveries in real time. Delivering over 400 concrete segments including L-beams, piers and headstocks was a huge logistics exercise."

"To ensure they arrived onsite on time, the 4G tracking technology was used. This technology was also helpful to team members unable to be onsite due to the lockdown as they could see in real time how the deliveries were progressing each day."

Another innovation on the project was the use of two new custom built 90 tonne gantry cranes from the USA. These cranes were around 18m high and 17m wide with rubber tyres. Being highly manoeuvrable,

they assisted in the efficient placement of the concrete segments in the narrow corridor in which the contractors were working.

New open spaces underneath and alongside the elevated Upfield rail line will open in mid-2021 and will cater for all ages and abilities. The project will deliver three half-size basketball courts, playgrounds, a dog park, table tennis tables, skating and parkour area, plus exercise equipment for the community to enjoy. The open space is designed to improve east to west connections and provides an upgrade to the Upfield bike path, including separated cycling and walking paths along the rail line and more lighting for safety.

With 46 level crossings now gone from around Melbourne, the Level Crossing Removal team continues work towards their goal of removing 75 level crossings by 2025.

For more information contact Level Crossing Removal Project, phone 1800 105 105, email contact@levelcrossings.vic.gov.au, website www.levelcrossings.vic.gov.au

Below Active Green Services provided arboriculture impact assessments and tree protection management planning.

Active Green Services is a dedicated environmental consultancy utilising state-of-the-art technology to protect and enhance the environment.

With a national footprint of highly qualified and experienced inhouse and external experts in arboriculture, ecology and environmental science, Active Green Services offers an integrated and complementary portfolio of consulting and reporting services focused on the challenges of sustainability, urban greening, bushfire mitigation, tree management, habitat restoration, erosion control, water and air quality.

The expertise of Active Green Services (AGS) is regularly sought by local councils, Tier One construction companies and state government authorities, particularly on large infrastructure projects. In Melbourne, AGS has had an involvement in several projects for the Level Crossing Removal Programme, including the crossings at Maroondah Highway Lilydale and Manchester Road Mooroolbark, the Abbots Road Cranbourne upgrade, the Cherry Street Werribee crossing and Aviation Road Laverton upgrade.

AGS consultants provided arboriculture impact assessments and tree protection management planning, including supervision of tree protection techniques on the projects. "Tree retention in urban areas is always important, but the size and scope of infrastructure development can make it very difficult," said Lead Environmental Scientist with AGS, Bryan McMullan.

"We actively manage this challenge through close collaboration with the client's construction teams, supplying a number of alternatives within our reporting so

construction teams can plan around all eventualities and select the most efficient methods and approaches."

The innovative approach of AGS is illustrated by the pioneering work they have done to develop Active Tree Canopy Measurement methodology (ACM) which maps and measures canopy gain or loss over time using satellite imagery.

ACM acquires high resolution satellite imagery on or about December 1st each year. They then assesses 100% of the area using artificial intelligence to interpret and determine temporal canopy cover. The AI assessment of mapped coverage is visually inspected by a qualified arborist and adjusted if required. After confirmation, the data is compared with the various local government areas and changes caused by canopy growth and loss calculated.

The ability of local councils and major projects to facilitate positive change and actively manage tree canopy cover is greatly enhanced by ACM as 100% of areas are mapped and geospatial identification and positioning of all canopy gain and canopy loss is provided. This removes variability caused by limited area sampling or human misinterpretation.

AGS also utilises the latest technology and software to facilitate integrated data collection, storage and reporting via business intelligence platforms, including data captured from geospatial and drone aerial inspections.

The approach AGS takes when contracted for arboriculture and ecological impact management for government or private

sector projects is to initially conduct a survey for flora and fauna inventory purposes, then to prepare impact assessment reports that identify vegetation removal and retention. Our reports are structured to inform clients on best case work practices that will bring about impact avoidance and minimise ultimate impacts on flora and fauna.

Protection plans are prepared for each specific site. AGS consultants will meet with work teams to discuss protection measures and to assist with supervising habitat protection and management during the construction activity.

The team at Active Green Services is passionate about its mission to keep communities safe and green. "We pride ourselves on delivering operationally and commercially informed answers to our clients about the environmental challenges they encounter. We build long term relationships with our clients, evidenced by the level of repeat business we experience."

Active Green Services continues to work on sections of the Level Crossing Removal Programme for both the Western Programme Alliance and the South East Programme Alliance.



For more information contact Active Green Services, 53 Jersey Road, Bayswater VIC 3153, phone 1300 130 287, email info@activegreenservices.com.au, website www.activegreenservices.com.au

Offices in Sydney, Melbourne, Adelaide and Brisbane.



Below CKI Industrial undertook non-destructive digging, service locating, vacuum loading, de-watering services and ultra high pressure waterjetting.



CKI Industrial is a young but rapidly growing Australian company providing an extensive range of Industrial Services throughout Australia. CKI Industrial's service offering includes: high velocity vacuum loading, high pressure and ultra high pressure water jetting, non-destructive digging, waste handling and management, tank cleaning, cold cutting electrical services and emergency response.

Clients of CKI Industrial have access to a team with decades of experience backed by a technologically advanced fleet of EPA licensed, purpose built equipment and vacuum combination units. CKI Industrial's team have worked on large scale contracts for heavy industrial clients as well as in the civil, municipal and government sectors.

"Our professional experience and modern fleet ensure customers are provided with the most cost effective and safe solutions for their projects," explained Tom Mitchell, CKI Industrial Managing Director.

A recent assignment for CKI Industrial has been on the Bell to Moreland stage of the Melbourne Level Crossing Removal Project, involving the removal of dangerous and congested level crossings at Bell Street, Munro Street and Reynard Street in Coburg and Moreland Road in Brunswick.

CKI Industrial undertook non-destructive digging, service locating, vacuum loading, de-watering services and ultra high pressure waterjetting, including concrete demolition. At any time, around 15 of CKI Industrial's team were engaged on the project. The client often required teams and equipment to be mobilised at very short notice, including weekend and night shifts.

"The nature of our business is that we have to be nimble and responsive on any project, juggling personnel and equipment to meet the immediate needs of our clients. We have structured the CKI Industrial business to be able to respond to these situations."

The pandemic added extra challenges and in order to meet social distancing requirements, extra vehicles had to be added to the fleet to transport teams to and from job sites, as all equipment deployed from the depot each day.

"The health and safety of all our staff and the customers we interact with on a daily basis is our highest priority," Tom said. "All of our management and supervisory staff are accountable for health and safety and the response from our whole team in dealing with COVID-19 protocols was exemplary."

CKI Industrial's rapid growth in the Civil Infrastructure market has also seen significant involvement to Tier 1 contracts, including Melbourne Metro Tunnel, the Rod Laver Arena Redevelopment as well as many other Level Crossing Removal works.

"In terms of turnover and equipment utilisation, we now have a near 50/50 split between our civil clients and our traditional core business in the industrial sector, where we service the manufacturing and petrochemical market. This has been a pleasing result for us, as it helps in diversifying our capabilities and gives our business exposure to a much wider customer base," said Tom.

The environment is a priority for CKI Industrial, with a large part of the company's work is assisting customers with overall management of non-hazardous or hazardous waste, both solid and liquid. CKI Industrial has a broad spectrum of EPA licensed waste vehicles and personnel, ensuring that they are involved in the entire waste life cycle, from collection to final treatment and disposal.

Tom attributed the growth in the CKI Industrial business to the company's obsessive commitment to customer service. "We apply a very blue collar mentality to our work. We recognise that each job requires a tailored solution and we always aim to integrate into our customers projects in a seamless manner, acting in a partnership. Our supervisors and managers are operationally visible on our jobsites every single day of the week."

CKI Industrial recently moved to a new purpose built headquarters at Williamstown North in order to accommodate their expanding business and to better service its wide customer base.

For more information contact CKI Industrial, 48 Macaulay Street, Williamstown North VIC 3016, phone 1300 CKI 300, website www.ckiindustrial.com.au

Below Cool Logic installed HVAC and mechanical services to the new stations constructed at Coburg and Moreland.



Cool Logic is a highly regarded provider of technologically advanced heating, ventilation, and air conditioning systems. The Cool Logic team specialises in unique and challenging projects across Australia in all construction sectors.

Cool Logic has successfully completed several HVAC projects at the new Melbourne rail stations as part of the Level Crossing Removal Programme. One of their latest assignments was on the Bell Street, Coburg to Moreland Road, Brunswick section of the programme, where Cool Logic supplied and installed all HVAC and mechanical services to the new stations constructed at Coburg and Moreland.

The company also supplied HVAC systems to the smaller heritage station buildings which have been preserved as part of the overall project.

Variable Refrigerant Flow (VRF) reverse cycle ducted and High Wall units were installed for the new stations. "The equipment is able to withstand heavy duty use for both heating and cooling. Combined with BMS it can deliver high performance with optimum efficiency," said Cool Logic Director, Robert Rondi.

The services were delivered and commissioned in record time to meet the critical programme, over a three to four month period, around 10 members

of Cool Logic's team were involved, sometimes around the clock, in design, sourcing, installation and commissioning of the HVAC systems.

An interesting challenge (Cool Logic in Collaboration with KBR Consultants) had to meet was to design and implement a 'smart' design system which included BMS control and monitoring. "This was specifically designed and installed to meet the rail operator (MTM) requirements, to remotely monitor the status of the mechanical equipment and support any preventive/reactive maintenance activities that will produce a positive overall outcome for MTM to maintain the equipment functionality and life," Robert explained.

Cool Logic regularly deals with requirements for smarter systems. "Traditional building management systems typically have standalone applications with separate monitoring and control stations for HVAC controls, energy metering and power management, central plant equipment and lighting," Robert said. "While each application is beneficial on its own, the real power lies in managing them as one, intelligent solution."

Cool Logic has successfully completed a diverse range of technically challenging solutions, including critical care facilities, comfort environmental control for both in situ construction sites as well as complex modular built constructions.

Operating across Australia, Cool Logic specialises in unique projects which require flexible, reliable and energy efficient air conditioning, such as exclusive architecturally designed commercial buildings and high end residential construction. The company has also completed HVAC projects in Numerous schools, Public buildings, Air Force Live-In Accommodation, Retail, and high rise residential developments.

The growth of the family owned business reflects the valuable relationships Cool Logic has established with builders, developers, suppliers, and consultants, providing competitive and efficient solutions for all heating and cooling requirements.

Cool Logic has a focus on four elements – operational efficiency, project management, quality control and attention to detail on all projects. "This focus ensures we are competitive, delivering HVAC systems to a high standard of workmanship and service without compromising on design. We can provide the latest solutions for industrial and commercial systems to meet the needs of any size space, designing and delivering bespoke solutions with an emphasis on energy efficiency, practicality and commercial viability."

Cool Logic offers cost effective 2D/3D design and drafting services for all mechanical and HVAC applications, transforming client ideas into actual 2D/3D designs, bridging the gap between conceptualisation

and final product design. Cool Logic also has a team of experienced air conditioning service personnel, available to service perform essential maintenance work on everything from single units to an entire building system.

Delivering 100% customer satisfaction is the aim of every member of the Cool Logic team, whether it is in design, engineering, installation, or maintenance. "We are committed to ensuring that our clients have the latest innovative products that are designed to optimise healthier indoor air quality and comfort levels combined with efficiency in energy consumption." It's Logical – Cool Logic.



For more information contact Cool Logic, phone 03 9775 0125, email info@coollogic.com.au, website www.coollogic.com.au

Below CSA Specialised Services completed educting, CCTV inspection, drain cleaning and utility locating/mapping on the Level Crossing Removals.



CSA Specialised Services has earned a deserved reputation for innovative, competitive and cost effective turnkey solutions that take care of all aspects of waste removal for Victorian businesses including documentation, disposal and risk management. CSA's specialised environmental services are continually in demand by Victoria's infrastructure, construction, underground utilities and industrial sectors.

CSA's services were contracted on the largest section of the Melbourne Level Crossings Removal Programme undertaken so far, which was the removal of four crossings from Bell Street, Coburg to Moreland Road in Brunswick. The rail line was elevated above the road, involving the construction of a bridge 2.5km long. New parks, open spaces and walking and bicycle paths were constructed underneath the elevated rail line.

CSA undertook hydro excavation, industrial sweeping, educting, CCTV inspection, drain cleaning and utility locating/mapping on the project. Work proceeded around the clock, so the CSA team worked on a roster to ensure their equipment and qualified operators were always available, enabling the project programme to be maintained.

CSA has the most innovative and technically advanced equipment available, including hi-rail and standard non-destructive digging (hydro excavation) units, eductor trucks, street sweepers, locating utes, heavy vacuum trucks and CCTV vans, all of which were utilised on the project.

"We apply the latest digging methods and utility locating services which have the least environmental impact compared to traditional techniques. We regularly perform NDD around critical infrastructures such as sewer lines, power cables, gas lines, signals, substations and telecommunication cables so we were well placed to handle this project," said CSA Project Manager, Wes Miller.

Subsurface Utility Engineering (SUE) is a specialty service provided by CSA, offering a full range of services related to utility infrastructure. The foundation of CSA's SUE business is the collection of accurate, reliable utility data in accordance with AS5488-2013

Subsurface Utility Information. Services include utility mapping, pipe and cable locating, ground-penetrating radar, concrete scanning, utility coordination and surveying.

CSA has a workforce of 120 skilled personnel, many of them being veterans in the waste management business. All team members hold appropriate licences and qualifications to undertake project assignments, including qualified civil drainage and construction workers, carpenters, electricians, asbestos supervisors, plumbers, surveyors and utility locators.

The team at CSA is well known for its response to any emergency situation at any time, day or night and prides themselves on being able to mobilise emergency teams and equipment within one hour. They are often called out to unblock major drains during periods of heavy rain and to prevent run-off from chemical or oil spills entering sensitive waterways. On several occasions, CSA has been called out to protect waterways from contamination during bushfires and industrial fires.

For over a decade CSA has worked with many of Australia's largest private corporations and semi-government authorities, allowing them to develop, refine and deliver a range of sophisticated waste management solutions. CSA's extensive client base includes John Holland, Laing O'Rourke, ACCIONA, Melbourne Metro, Melbourne Water and municipal councils. CSA is currently working with the Southern Program Alliance on further level crossing removals and for the Metro Tunnel Project.

In their 15 years in the waste management business, CSA has completed over 250 projects. The outstanding success of CSA's solutions has resulted in CSA being recognised as a genuine leader and innovator in the field of waste and asset management. With a passion for excellence and pride in the quality of their work, CSA's greatest reward is client satisfaction and the knowledge that their work preserves and protects the Victorian environment, particularly waterways.

For more information contact CSA Specialised Services, 7 Pascal Road, Seaford VIC 3198, phone 1300 859 829, email info@csaspecialised.com.au, website www.csaspecialised.com.au

Below Daly's Constructions (Australia) completed the electrical relocations on the Bell Street, Coburg to Moreland Road, Brunswick section of the removals.

Daly's Constructions (Australia) is a family owned enterprise established in 1971, when Gabe and Mary Daly started the business to install cables in new estates throughout growing metropolitan Melbourne.

Today, Daly's provides specialist design, civil and structural works, cable installation, jointing and terminating services to the energy infrastructure industry across Australia and New Zealand.

Daly's were engaged by John Holland and the North West Programme Alliance to undertake electrical relocations on the Bell Street, Coburg to Moreland Road, Brunswick section of the Melbourne Level Crossings Removal Programme.

Daly's scope was to relocate underground electrical assets to enable the rail works to proceed. The works comprised of conduit installation, concrete and structural works, cable hauling, substation installations, earthing, jointing and terminating. Management to Jemena's standards and processes, including commissioning the new assets during limited power outages, was a key deliverable.

Due to the age of the local areas, works were required on a number of old cables including paper lead steel wired armour cables. "Transition jointing of new XLPE cables onto paper lead steel wired armour cables requires a high level of skill that can only

be developed with experience," explained Operations Manager, Alex Anderson. "We are very proud of our team and what they bring to every project we undertake."

The company operated under tight time frames as the electrical relocations had to be completed to schedule otherwise other work on the programme would be held up. "We had to be conscious of other works underway on the site, ensuring we did not restrict the movement of plant and people," said Alex.

"Having to deal not only with the challenges of the work but also having to work under restrictions imposed by the COVID pandemic was difficult. Working with Tim Synan and his team at John Holland was a pleasure as they are very proactive and cleared the path for us so we could come in and be efficient."

All of Daly's staff are Victorian Electrical Supply Industry trained. Mandatory training is undertaken annually, including first aid, CPR, manual handling, safe approach distances as well as specific industry and customer required training and development. "We are proud that our workforce are all full time direct employees. We value their training and development."

Other recent Melbourne projects undertaken by Daly's include the West Gate Tunnel Project (WGTP) for CPBJH JV and Metro Tunnel for John Holland. On WGTP Daly's undergrounded existing overhead 66kV

subtransmission lines, while on Metro Tunnel, Daly's relocated existing 66kV circuits, including jointing of oil filled cables.

The company is currently working on the North East Link Early Works for CPB to relocate electrical assets in Greensborough Road, Lower Plenty Road and Watsonia Station.

As a specialist in major subtransmission and transmission design and construct underground projects, Daly's Constructions' reputation reflects their capability and performance. The company has a strong value system based on principles that includes a commitment to safety, quality of service, integrity in their relationships and client satisfaction.

"We regard our people and their expertise as our greatest asset. We have staff who have been with the company for over 50 years," Alex commented. "Investing in our people and a strong focus on customer service enables us to deliver to a very high standard. Our experience allows us to develop innovative solutions that are practical and work on site to save time and cost without risking quality."

For more information contact Daly's Constructions (Australia), 20-26 Cyanamid Street, Laverton North VIC 3026, phone 03 9360 9485, email cable@daly.net.au, website www.dalysconstructions.net.au



Below Hitch Group installed the combined services route (CSR), as well as completed road profiling on four crossing removals.



Hitch Group is renowned throughout the civil construction and infrastructure sectors for the delivery of high quality workmanship, excellent service and safe work practices.

Since their establishment in 2007 by Joe Hitchcock, Hitch Group has experienced dynamic growth, achieving a leading position as one of the most progressive civil and rail companies in Victoria.

The family owned Australian company has been singularly focused on meeting the total requirements of companies working on civil and infrastructure projects through the provision of qualified trades personnel and fully compliant plant and equipment.

Based on their experience and reputation, Hitch Group has been regularly subcontracted to work on various sections of the Melbourne Level Crossings Removal Programme.

One of their latest contracts was on the project removing level crossings at Bell and Munro Streets in Coburg and Moreland Road in Brunswick. The four crossings were removed in November 2020 by elevating a 2.5km section of rail, with two new stations built at Coburg and Moreland, with open space created under the rail bridge.

Hitch Group was actively engaged throughout the project which proceeded over 90 days, allocating up to 40 of their total employee complement of 60 to the assignment at various times. The scope of works included the installation of the combined services route (CSR), profiling, installation of access roads and tracks, construction of the hardstand for the crane pad, the manufacturing and delivery of site safety boxes, piling and heavy haulage.

Dealing with the COVID-19 pandemic and consequent restrictions impacted all contractors on the project including Hitch Group. Director Joe Hitchcock said the company's priority was the safety of all their employees and the other stakeholders with whom it interacted. "We implemented stringent company guidelines and procedures, fully cooperating with the other participants on the site. This enabled us to continue our activities in a safe and efficient manner."

One of the specialist services that Hitch Group offers is steel manufacturing. The Emergency Response Stations for the Bell to Moreland project were actually manufactured by Hitch Group and then delivered to site. The Group also repairs, maintains and modifies their own plant and attachments, along with other small manufacturing projects.

Hitch Group offers an extensive range of plant and equipment for hire on a wet or dry basis as an additional service. The range includes excavators in a range of capacities, crane trucks, tipper trucks and skid steers. All equipment is regularly serviced and maintained to a fully compliant standard to ensure reliability and a high level of performance.

Hitch Group has strong relationships with Tier 1 contractors involved in Victorian infrastructure programmes.

"Relationships have always been the key to our past success and will continue to be so in our future," Joe said. "Our ongoing list of projects with Tier 1 contractors is testimony to the trust they have in our ability to perform with diligence, professionalism and safety."

Projects include work for the South Eastern Program Alliance on the Manchester to Maroondah line, the Rail Infrastructure Alliance at Calder Park and Kensington, substation upgrades across Victoria for Metro Trains Melbourne and several upgrades for the Southern Program Alliance and the North West Program Alliance.

On all their projects, Hitch Group always provides high calibre personnel that are well trained and experienced in working within a civil works and rail environment, including those adjacent to live rail services.

"All our clients can have full confidence in the quality of work performed by the Hitch team, including technically challenging work," Joe said.

For more information contact Hitch Group, email info@hitchgroup.com.au, website www.hitchgroup.com.au

Below Douglas Partners completed geotechnical design and verification of the railway bridge piles, retaining walls and station buildings.

Below Arbor Survey supervised the tree management to ensure a number of established trees were protected while work was being undertaken.



Douglas Partners is a specialist engineering consulting firm in the fields of geotechnics, environment, groundwater, rock mechanics, geophysics and earthworks. Douglas Partners provided geotechnical services on one of the largest projects to date in the Melbourne Level Crossings Removal Programme.

The scope of work on the Bell to Moreland project included geotechnical design for the railway bridge piles, associated abutments, retaining walls and station buildings, as well as verification during construction to confirm geotechnical design assumptions.

Piling for the bridge was a critical part of the project and Douglas Partners worked on site to ensure the piles met the design requirements, while at the same time shortening piles wherever the ground conditions allowed, thereby speeding up the bridge construction programme.

“It was a challenging project as work was undertaken during a rail occupation on a 24 hour a day basis for seven days a week. Our team worked on a rotating basis for three to four months,” said Per Henrikson, Geotechnical engineer and Senior Associate of Douglas Partners.

“The site works were undertaken at the peak of the second lockdown in Melbourne. Sourcing staff from interstate locations was impractical. A total commitment by our Victorian team members enabled our work to be completed ahead of the project schedule.”

Owned and managed by its employees, Douglas Partners is one of the most experienced and innovative geotechnical consultants in Australia. The skills, experience and professionalism of their employees and the application of state-of-the-art technology are the foundation of the company’s success. With over 500 employees located in 20 branches and 15 NATA registered laboratories across Australia, Douglas Partners has contributed to major projects around the country and in the Pacific region.

For more information contact Douglas Partners, 231 Normanby Road, South Melbourne VIC 3205, phone 03 9673 3500, email melbourne@douglaspartners.com.au, website www.douglaspartners.com.au

Arbor Survey Pty Ltd provides expert arboricultural advice and analysis to protect and enhance the urban environment. Arbor Survey’s professional arborists have together had over 30 years of experience in tree management and protection plans, large scale tree surveys, construction impact assessments and tree safety issues.

Arbor Survey has the expertise to manage projects from inception to completion. “We use the initial discussions with a client to determine the detailed requirements, then survey the trees to determine the best trees suitable for retention. This information is then fed into the design and once agreed we execute the tree management plan through to completion of the project,” explained Managing Director and Founder, Mark Reynolds.

Arbor Survey was engaged to supervise tree management on the Bell Street to Moreland Road, Brunswick level crossings removal project. A number of established and iconic trees had to be removed or protected while work was being undertaken at the rebuilding of Moreland and Coburg stations. There were a number of species involved including Indigenous River Red Gum and some significant exotic species such as Canary Island Date Palms, Peppercorns and Elms.

The team provided advice and supervised contractors on the site on ways to avoid damaging trees while working close to them or digging trenches for power and water services. “There was a large amount of landscaping involved in the project, so ensuring tree protection zones were observed and movement around the trees was done in a way to minimise potential damage was our objective,” explained Mark.

Arbor Survey Pty Ltd has been involved with a number of the level crossing removal projects, including design work at Preston, Glenroy and Pakenham. The company has also been involved in a number of innovative projects to protect trees on development sites, as well as large scale tree survey projects for golf courses, educational institutions, local government and private land holdings.

“We use the latest technology in all our project designs and our fully qualified arborists provide accurate, researched and knowledgeable advice. We don’t just write reports, we project manage solutions from inception to completion,” Mark said.

For more information contact Arbor Survey Pty Ltd, 37 Arbor Way, Carrum Downs VIC 3201, phone 03 8521 4966, email office@arborsurvey.com.au, website www.arborsurvey.com.au

Below Rangedale completed hydro excavation (Non-Destructive Digging NDD), to expose underground services, mitigating risks.

Below CPE Construction fabricated and installed structural steel trident stairs at Coburg and Moreland stations, with aluminium cladding.



Rangedale Drainage is a leading multi-skilled company providing a wide range of industrial and civil services to major infrastructure projects and other market sectors. Rangedale provides a holistic service approach with expertise, capability, resources and scale to deliver on projects of any size.

Rangedale provides its valued customers with a comprehensive service providing turnkey solutions utilising inhouse services. With vast industry knowledge and expertise, Rangedale offers services such as utility locating, mapping and survey, non-destructive digging, CCTV, drain cleaning, bulk liquid waste management, disposal and recycling, saw cutting, asphaltting, along with other Civil services of relining, manhole rehabilitation and traffic management.

As a long term service provider to the North West Program Alliance, delivering successful outcomes for Melbourne's level crossing removal projects (LXRP), Rangedale have been integral in the success of the Bell Street Coburg to Moreland Street Brunswick section, recently providing services through a history making 90 day occupation. A major component of the project was service locating and survey, hydro excavation and proving of services. "We also managed contaminated and non-contaminated mud slurries, along with other

waste streams of Bentonite and polymer slurries arising from drilling and boring activities," said Mick Polwath, Business Development Manager for Rangedale. Other tasks carried out included drain cleaning and CCTV inspections of storm water systems and sewer systems. Rangedale also provided some bespoke relining during the life of the project.

"In collaboration with the Alliance, all project tasks were undertaken with a community first focus to minimise disruption," Mick said. "Other challenges included the tight working space of the rail corridor and overhead electricity amongst others. We also had to be conscious of the needs of the local community in terms of noise levels and hours of work."

Rangedale Drainage has a highly trained labour force of around 250, with up to 40 at peak stages of the project. The company also utilised their specialised fleet of hydro excavation combination drain cleaning units, sealable mud slurry bins, semi-tankers and specialised CCTV and relining equipment.

For more information contact Rangedale Drainage, phone 03 8368 8888, email info@rangedale.com.au, website www.rangedale.com.au

CPE Construction fabricates and erects structural steel for large buildings and infrastructure projects across Melbourne and regional areas in Victoria and southern New South Wales. Under the leadership of Owner and Director Damion O'Callaghan, a qualified civil engineer with 20 years experience in the building industry, CPE also provides construction management services.

Highly regarded by John Holland, principal contractor with the North West Program Alliance, CPE Construction was engaged to undertake a range of services on the Bell Street to Moreland Road level crossing removal project.

The CPE team fabricated and erected structural steel trident stairs at Coburg and Moreland stations, with aluminium cladding to the structure. CPE also provided fabricated steel structures for ancillary signalling facilities and walkways.

"There was a degree of complexity involved in installing the trident stairs due to the cantilevered design which had to be erected in a confined space," CPE's Project Manager, Chris Keys said. "The finished product now provides a safe, wider access for the thousands of people who use the stations every day. Throughout

the project, CPE delivered end-to-end structural steel and cladding solutions across multiple disciplines and requirements."

CPE's work on the Level Crossing Removals Programme continues, with contracts on the Bell to Preston line and the Frankston line. They also worked on the Ballarat line upgrade.

The CPE Construction workshop in Cobram in regional Victoria excels in technically difficult steel fabrication for architect designed commercial work, producing highly competitive, flawless, precision fitted steel. The company also fabricates for general commercial, industrial and large domestic project, offering a complete service including technical paint systems and a full onsite erection team.

CPE Construction has a prime focus on developing close working relationships with their clients. "We are there to help our clients achieve their aspirations and objectives, within their budgetary parameters and time frames," said Damion.

For more information contact CPE Construction, 3718 Murray Valley Highway, Cobram VIC 3644, phone 03 5872 2156, email admin@cpeconstruction.com.au, website www.cpeconstruction.com.au



**PROVIDING
SPECIALIST CIVIL AND
ELECTRICAL DESIGN
AND CONSTRUCTION
SERVICES THROUGHOUT
AUSTRALIA & NZ.**

About Daly's

DALY'S CONSTRUCTIONS AUSTRALIA ARE A FAMILY OWNED AND OPERATED ENTERPRISE ESTABLISHED IN 1971.

We provide specialist design, civil works, cable installation, jointing and terminating services to the energy infrastructure industry across Australia and New Zealand, specialising in major sub-transmission and transmission design and construct underground projects.

**OUR REPUTATION
REFLECTS OUR
CAPABILITY AND
PERFORMANCE.**

Our company has a strong value system based on principles that include commitment to safety, quality of service, integrity in our relationships and client satisfaction.



Our Key Services

- CABLE SYSTEM, ELECTRIC AND HYDRAULIC DESIGN
- CABLE INSTALLATION
- XLPE AND OIL FILLED CABLE JOINTING AND TERMINATING
- CIVIL AND STRUCTURAL DESIGN
- CABLE AND ACCESSORY PROCUREMENT AND LOGISTICS
- TESTING AND COMMISSIONING
- TRENCH EXCAVATION AND CONDUIT INSTALLATION
- DIRECTIONAL DRILLING AND BORING
- REINFORCED CONCRETE JOINT BAY CONSTRUCTION
- TERMINAL AND ZONE SUBSTATION CIVIL WORKS
- REINFORCED CONCRETE AND STEEL STRUCTURE CONSTRUCTION
- DISTRIBUTION HIGH AND LOW VOLTAGE UNDERGROUND RETICULATION
- PROJECT MANAGEMENT
- STAKEHOLDER AND CUSTOMER MANAGEMENT
- PUBLIC LIGHTING

