



KEEPING SYDNEY'S RAILWAYS ON TRACK

The Kingsgrove to Revesby Quadruplication Alliance (K2RQ Alliance) was formed in 2007 to deliver the largest and most complex individual component of the NSW Government's Rail Clearways Program, the Kingsgrove to Revesby Quadruplication (K2RQ) Project.

Transport Construction Authority (TCA), the NSW Government agency responsible for developing and delivering major transport infrastructure projects, including the Rail Clearways Program, is part of the K2RQ Alliance delivering the K2RQ Project to improve capacity and reliability on CityRail's Sydney suburban network. The K2RQ Project will provide two additional rail lines between Kingsgrove and Revesby to separate all stops and express services on the East Hills Line. TCA elected to deliver the Project through a pure Alliance delivery model in partnership with Leighton Contractors, AECOM, Sinclair Knight Merz, Ansaldo and MVM Rail.

The scope and scale of the K2RQ Project works are significant and highly complex. They encompass the construction of two additional tracks, approximately 7.5km long, between the existing four track arrangement west of Kingsgrove Station and the existing twin track arrangement west of Revesby Station, to form a dedicated express line. The Project also includes associated civil, rail systems and station works, as well as construction of new rail bridges and modifications to existing road bridges over the rail line. K2RQ Alliance Manager, David Jackson said delivery of these works is particularly challenging given the constraints of operating within one of Sydney's main arterial railway routes and around two major road corridors.

"With around 250 train movements on the East Hills Line each day and road traffic movements on the King Georges Road averaging 65,000 vehicles per day, rigorous planning, design and execution is critical on this project," Mr Jackson said.

Driven to deliver 'the exceptional, not just the acceptable', and upholding values such as health and safety, effective communication and continuous improvement, it is no surprise the K2RQ Project has overcome several challenges successfully. With 95% of the new track to be constructed within 3 metres of the existing operational railway, low impact construction is a vital consideration and challenge for the Alliance.

The K2RQ Alliance was given an unequivocal mandate to ensure no disruption to the operational CityRail network as a result of project activities. This placed constraints on the planning, staging, construction and commissioning program, with critical works largely limited to a relatively small number of trackwork possessions, when trains are not running, established for the purposes of RailCorp's maintenance program. The K2RQ Project's narrow rail boundary also meant that extensive civil works, including bulk earthworks, cuttings, a new power supply and new twin tracks, were required to physically widen the existing rail corridor.

To minimise impact on both the operational rail and road infrastructure through the construction period, the Alliance introduced an innovative phase into the works program – known as the enabling works phase. During this phase around 70 employees worked for almost 12 months, with nine trackwork possessions, to construct a 7.5 kilometre enabling route and relocate and commission 120 kilometres of signalling and communications cables, decreasing the risk of damage from heavy civil works.

"The addition of the enabling works phase meant the K2RQ Alliance was able to resolve many staging issues in a unique manner, designing acceptable working solutions and effective consultative and stringent configuration management processes," Mr Jackson said.

Another challenging works package requiring all disciplines across the K2RQ Alliance to work together was the successful replacement of an existing steel girder bridge at Bonds Road, Riverwood.

This involved the removal of the existing bridge, the demolition and replacement of the supporting structure and the installation of a new composite steel girder and concrete deck – all in less than 48 hours.

"Despite the enormity of the job, through regular planning, reviews and outstanding cooperation, the Alliance team accomplished this feat in a single 42 hour weekend trackwork possession, minimising disruption to local residents and traffic and achieving outstanding results," Mr Jackson said.

In addition, the Alliance has shown a commitment to health and safety, providing high-quality work as well as an edge in terms of not just accepting the norm, but challenging the way things are done within the Australian rail industry," Mr Jackson said. Given the ongoing success and progress of the K2RQ Project, it is without a doubt the K2RQ Alliance partners' successes will be replicated in the future, continuing to make them competitive within the Australian rail infrastructure market.

KINGSGROVE TO REVESBY QUADRUPLICATION

MAIN CONSTRUCTION COMPANY : K2RQ Alliance
(Transport Construction Authority,
Leighton Contractors, AECOM, Sinclair
Knight Merz, Ansaldo and MVM Rail)

COMPLETION : 2012
PROJECT END VALUE : \$790 Million

MAKING WAY FOR THE RAILWAY

Established in Sydney six years ago, Mulgoa Excavations provide a range of earthmoving, excavator and truck hire services to the building and construction industry.

Using the latest equipment and machines to carry out the job, Mulgoa Excavations pride themselves on delivering flexible, cost-effective services to a range of clients and projects, regardless of the nature or size of the particular redevelopment.

With a small, yet professional team, Mulgoa deal mainly with contract work, excavating, dirt and waste removal and truck haulage. The company are also involved in site preparation, land clearing, demolitions, rock walls, dams and removal of fill. Given their extensive range of services and dedicated commitment to reducing the environmental impact throughout the excavation process, it was no surprise Mulgoa Excavations were recently involved on the Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project.

This project involves the construction of a second set of tracks, as well as associated bridge and station works to the Easthills Line. When finished, the K2RQ Alliance Project will incorporate 12 kilometres of new railway track between Kingsgrove and Revesby, 10 new rail bridges, modifications to five existing bridges, as well as construction works to Revesby station. In addition, the entire operation will be interconnected via a mobile data access solution, using 3G Mobile Technology. When complete, the K2RQ Alliance Project will have delivered a physical separation of operating local and express train services, which will lead to decreased travelling and destination times for passengers.

Responsible for the provision of all the tipping trucks and the onsite removal of dirt for the K2RQ Alliance Project, Mulgoa Excavations have consistently ensured their excavation services have contributed to the smooth operation of the redevelopment. As well as the removal of all the excavated dirt from the site, Representative, Tracey Buttigieg from Mulgoa Excavations, said they were also responsible for a number of other facets of the project.

“The dedicated team from Mulgoa Excavations have also been responsible for organising and coordinating all of the tip sites in which to deposit the site wastage,” Ms Buttigieg said.

“In addition, we also needed to organise the large number of trucks the K2RQ Alliance Project required on a daily basis, which at times, did prove to be challenging.

“However, given our expertise within the industry and our close working relationship with the main client and other subcontractors, we were able to successfully coordinate and fulfil these demands, ensuring the project operated within the various time and budget constraints,” she said.

In addition to establishing a professional working relationship with the other companies involved on the K2RQ Alliance Project, the team from Mulgoa Excavations also ensured their specific

tipping services resulted in minimal environmental damage to the surrounding areas.

“We are totally committed to minimising any potential environmental impact that can result from the tipping or excavation process,” Ms Buttigieg said.

“Regardless of the size of the job, we endeavour to ensure that any potential damage to site areas is reduced. Consequently, this ensures complete client satisfaction and a reduction of the overall carbon footprint of the particular project,” she said.

Given their commitment to reducing the impact on the environment that results from excavating, as well as being able to provide specialised and professional excavation and tipping services to building and construction industries throughout NSW, it is without a doubt that Mulgoa Excavations will remain one of the leaders in their profession.

MULGOA EXCAVATIONS

t. 02 4736 1713
m. 04 1827 8009
f. 02 4736 2194
e. mulgoalex@bigpond.net.au



WEBB AUSTRALIA GROUP - LIGHTING THE WAY ON THE K2RQ ALLIANCE PROJECT



Since their establishment in 1973, Webb Australia Group has continued to recognise the influence and importance of modern technologies across all facets of commerce and industry.

Able to offer a range of services based around specialist engineering groups including comprehensive electrical engineering consultancy services & specialist lighting design services, Webb Australia Group is able to provide technical assistance, from the initial concept of a project, through to the final commissioning and implementation.

Furthermore, with diverse project expertise, ranging from small to large-scale developments, Webb Australia Group is able to deliver innovative design solutions, utilising cutting-edge technology for a broad range of clients.

Given their extensive project portfolio, which includes clients such as Leighton Contractors & Abi Group, Webb Australia Group has also worked on the significant Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project in Sydney.

During their involvement, Webb Australia Group's expert team was responsible for conducting the lighting analysis and design for various aspects of the K2RQ Project, including the commuter car park and footpath areas, pedestrian and vehicle underpasses, as well as minor local roads.

Whilst analyzing and designing the numerous car parks, footpath, underpass and pedestrian link areas, Hani Korkis, Associate Director of Webb Australia Group, said that the lighting analysis and design was undertaken in accordance with AS/NZS 1158 Parts 0 – 6 (Lighting for Roads & Public Spaces) and AS4282 (Control of the obtrusive effects of outdoor lighting). The lighting analysis and design included using illumination meters during night time lighting testing as well as using the Advanced Graphics Interface (AGI) software for the documentation of the lighting analysis and design.

"In addition to this cutting-edge approach, the electrical engineering part of the project was undertaken in accordance with AS/NZS 3000-2007, AS/NZS 3008, the NSW Service and Installation Rules and the high standards expected from Railcorp," Mr Korkis said.

"This ensured the design and analysis was conducted in a safe manner, resulting in optimum results for the K2RQ Project," he said.

Throughout their involvement on the K2RQ Project, Webb Australia Group was met with a number of challenges. One of these was the close proximity of the lighting installation to residential and track areas. However, as Mr Korkis explains, they were able to overcome this obstacle.

"The lighting design we documented included modeling of spill light in accordance with AS4282 to ensure that residences near the installations were not impacted by the new lighting," Mr Korkis said.

"Furthermore, our electrical design included documentation of isolation transformers to prevent any stray current issues given the close proximity of the track to the actual lighting installation.

"However, given the fact the design and construction team, client the consultants and the in-house design team all worked closely together and supported each other from design right through until completion,

we at Webb Australia Group believe that it is without a doubt the K2RQ Project will be a success," he said.

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COMMUNICATIONS AUDIO VISUAL

WEBB AUSTRALIA GROUP (NSW) PTY LTD
Level 4, 828 Pacific Highway
Gordon NSW 2072
t. 02 9418 1444
f. 02 9418 1191
e. sydney@webbaustralia.com.au
www.webbaustralia.com.au



THE RAILWAY CONSTRUCTION SPECIALISTS



Having worked on over 350 projects since 1991, Gartner Rose continues to provide project and construction management, design and cost planning services for a range of clients throughout Australia.

A family owned and operated business specialising in rail projects, commercial construction / fit out and heritage restoration, Gartner Rose's team of subcontractors and consultants ensure project completion exceeds client expectations.

With an established reputation and as one of the leaders of their industry in the field of railway corridor construction, Gartner Rose have been involved on the Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project.

Applying their expert knowledge of the intricate requirements of working on the rail corridor and associated areas, Gartner Rose was responsible for the construction of the new traction substation on the K2RQ Project which will replace the existing one which needs to be relocated to allow the freight line to be run through a newly constructed corridor.

Charlie Pidcock, General Manager at Gartner Rose, said that given his team's level of professional and industry expertise, they had been able to fulfill their responsibilities without any obstacles or challenges.

"The complex electrical system that had to be installed required a significant level of detail and extremely tight tolerances in the new the substation.

Additionally, we were able to complete construction in adherence to the client's strict safety, time and budget constraints," Mr Pidcock said.

"Whilst working onsite, we took measures to ensure there was minimal disruption to commuters and the overall construction phase," he said.

Although Gartner Rose have undertaken many projects in the Rail corridor this was their first Alliance contract and they have been thrilled to be involved on such a prolific and smooth-running project.

"We at Gartner Rose have really enjoyed working on the K2RQ Alliance Project and have found Leightons to be one of the most productive and pro-active clients we have ever worked for," Mr Pidcock said.

"As a result, not only has the overall Project run smoothly, but it has also meant we have been able to deliver optimum client satisfaction and outstanding results. In recognition of the efforts of our team we were awarded the Revesby Station Concourse furthering our association with the K2RQ Alliance," he said.

GARTNER ROSE PTY LTD
15b/390 Eastern Valley Way
Chatswood NSW 2067
t. 02 9935 5900
f. 02 9935 5911
www.gartnerrose.com

'ACTIVE-ATING' THE K2RQ PROJECT



Active Steel is an Australian company offering quality steel reinforcement products and services at competitive prices. Established in 1995, Active Steel have supplied to major infrastructure, industrial and residential projects throughout NSW.

With modern manufacturing facilities and cutting-edge equipment, Active Steel's experienced production and transport personnel are able to provide solutions to a range of clients.

Given their expertise within the steel reinforcement industry, Active Steel has also been responsible for the supply of all steel reinforcement, process bar, fabricated pile cages and mesh on the Kingsgrove to Revesby Quadruplication (K2RQ) Project.

The scope and scale of the K2RQ Project works are significant and complex as they encompass the construction of two additional tracks, between Kingsgrove and Revesby stations, to form an express line. The Project also includes associated civil and station works, new rail bridges and modifications road bridges over the rail line.

Commencing involvement in September 2008, Active Steel's team of 30 employees have faced a number of difficulties whilst working on the K2RQ redevelopment.

One of the most challenging obstacles was the number of delivery destinations the steel had to be delivered to throughout the Project.

Terry Stokes, Managing Director of Active Steel, said despite the complexity of these deliveries, they were able to achieve a successful outcome.

"We overcame this particular problem by separating the Project into two sections – Southern and Northern," Mr Stokes said.

"We then allocated two separate scheduling engineers to liaise with K2RQ staff for the programming of the manufacture and delivery to the site," he said.

In addition, the delivery and design of the fabricated pile cages also posed a challenge.

"Basically, due to the risk the overhead live wires posed and limited site accessibility, it meant the majority of the cages had to be made in sections, spliced on site then delivered on trucks with Hi-AB cranes," Mr Stokes said.

However, despite these obstacles, Active Steel was able to ensure the cages were delivered in a safe and time efficient manner, minimising any disruption to the K2RQ Project.

Given their reputation within the industry for providing quality products and outstanding results, Active Steel will no doubt continue to be at the forefront of the steel reinforcement industry.

ACTIVE STEEL PTY LTD
48 Leland Street
Penrith NSW 2750
t. 02 4732 3422
f. 02 4732 3612



RIGHT ON TRACK

With rail safety their foremost priority, Swetha International are committed to providing safe rail working services to a range of worksites within the Australian rail corridor.

With a staff base of over 250 qualified and professional staff, Swetha International has expert knowledge of track possession policy and coordination. In addition, they are also able to supply safe working equipment and vehicles to ensure projects are completed safely and on time.

Having worked on a number of projects, including the Richmond Line Duplication, Hunter 8 and Hunter Alliance Projects and SOLAR Project Sutherland, Swetha International has kept up with the ever-changing face of NSW rail. In fact, as testament to their skills and expertise, Swetha International have also been involved on the Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project since its beginning.

Comprising of the construction of a second set of tracks, as well as associated bridge and station works to the Easthills Line, the K2RQ Alliance Project will also incorporate 12 kilometres of new railway track, 10 new rail bridges, modifications to five existing bridges, as well as construction works to Revesby station.

As part of their involvement, Swetha International engaged approximately 50 Protection Officers and Hand Signallers to provide rail worksite protection.

Whilst working on the project, Mr Challa said Swetha International had worked closely with the other sub-contractors onsite to ensure the smooth running of the Project.

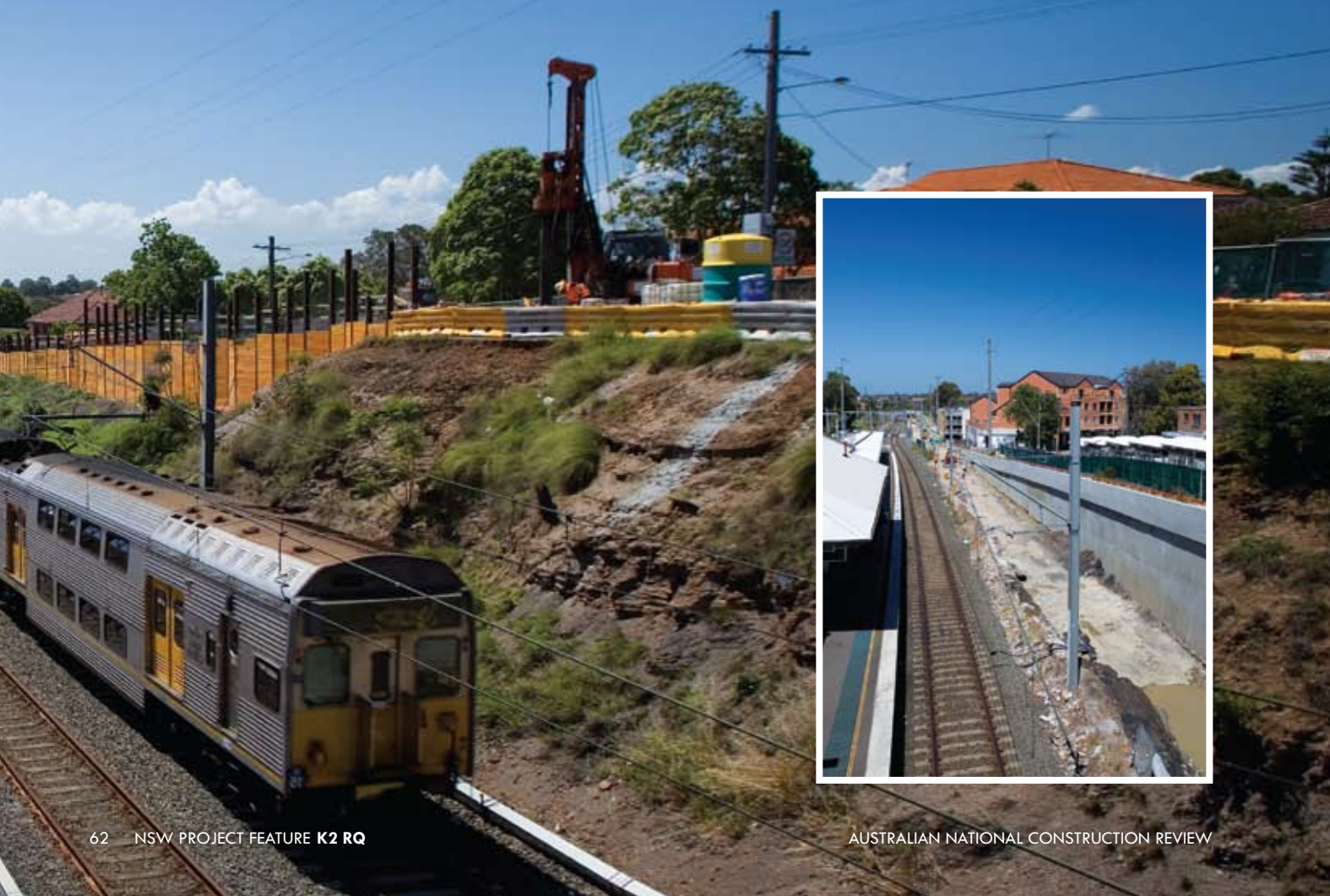
“We have thoroughly enjoyed being involved on such a prolific project and as a result, have upheld a close relationship with Leighton and the Alliance to deliver optimum Project results,” he said.

“In addition to the rail worksite protection services, we have also been providing extensive corridor maintenance services to our clients,” Mr Praveen Challa, Managing Director of Swetha International said.

“These include litter pick up, graffiti and vegetation management to ensure a cleaner and safer rail corridor,” he said.

With such extensive experience within the rail industry, it is without a doubt Swetha International will remain on track as one of the leaders within the Australian rail industry.

SWETHA INTERNATIONAL
Level 3, Suite 23/12 Railway Parade
Burwood NSW 2134
t. 02 9715 2833
f. 02 9815 2844
www.swetha.com.au



THE SAFE WAY TO EXCAVATE



Since 2005, Non Destructive Excavations Australia (NDEA) have been providing vacuum excavation, pit cleaning, posthole digging, service locating and potholing services to the building and construction industry. Specialising in vacuum excavation systems and boasting a fleet of the latest trucks, NDEA are able to provide efficient, cost-effective excavation solutions to a range of projects.

Having worked on a number of projects such as Integral Energy Substations and Leighton's Gleds & LAP Projects, NDEA has also been involved on the Kingsgrove to Revesby (K2RQ) Alliance Project from the outset. Throughout their involvement on the K2RQ Alliance Project, NDEA have been using their specialist vacuum excavation methods and equipment to excavate sites, locate and expose services and EGP prior to the commencement of construction works.

“We have a thorough understanding of the scope of works at K2RQ and the valued role we play in achieving the desired outcomes,” Kim Liddell, NDEA's Director stated. “We have maintained consistent crews on the project who have the utmost respect for the job that they do and the crucial role that non destructive rigs play in safely setting up a project such as this, and for all future civil works”.

“Our teams are experienced and flexible. Their personal capabilities enable them to not only to work in uncompromising situations such as embankments but to vacuum excavate inspection holes and capably dig extensive metres of trenching,” Ms Liddell said. “We welcome the

challenge in varied and interesting situations. Our teams can successfully ‘non destructively’ dig inspection holes to locate the ever present services including signaling cables, electrical conduits and EGP, in preparation for the construction of bridges, sound walls, electrical substations, etc,” she said.

NDEA's fleet of trucks were also used on the K2RQ Alliance Project over rail shutdown weekends, which ensured the Project ran within the required time deadlines. NDEA's purpose - built rigs efficiently and effectively vacuum excavate rail ballast. Their ‘Super Rigs’ have a proven track record in the rail corridor and are a great option for any rail project. NDEA hi-rail trucks are able to access works around railway station platforms for example that are otherwise inaccessible.

NDEA are proud of their performance and will continue to provide an excellent service in order to be the best in the field.



NON DESTRUCTIVE EXCAVATIONS AUSTRALIA PTY LTD
PO Box 522
Baulkham Hills NSW 1755
t. 0411 242 141
f. 02 9674 6090
e. info@ndea.com.au
www.ndea.com.au



PROTECTING SYDNEYS WATER

ROSE ATKINS RIMMER
142 Sunnyholt Road
Blacktown NSW 2148
Western Sydney
t. 02 9853 0200
www.rari.com.au

Established in 2000, Rose Atkins Rimmer is a Sydney based water servicing and design company. Licenced with Sydney Water, Rose Atkins Rimmer are able to fulfill contract requirements and provide expert design solutions to a broad range of clients within the building and construction industry.

Having worked on a number of major projects, such as designing and coordinating water and sewerage infrastructure relocations for the Southern Sydney Freight Line and the Jordan Springs residential development, it is not surprising Rose Atkins Rimmer have also been involved on the Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project. This \$437 million re-development, when complete, will deliver the duplication of rail lines between Kingsgrove and Revesby train stations. It will also encompass ten new rail bridges, modifications to five existing bridges and a new overhead concourse and lift at Revesby station.

Commencing their involvement in late 2007, Rose Atkins Rimmer has been the water servicing co-coordinators, acting as the interface between the K2RQ Alliance and Sydney Water. Responsible for the protection and re-location of Sydney Water's assets affected by the works, Rose Atkins Rimmer have continued to meet with Sydney Water and the developer, Leighton Contractors, to negotiate favourable

outcomes for both parties. In addition, Rose Atkins Rimmer has also carried out construction surveillance of major sewer and water relocation works throughout the Project to ensure the high standards held by Sydney Water have been met. Steve Rimmer, Director of Rose Atkins Rimmer, said that throughout their involvement on the K2RQ Alliance Project, they had faced a number of on-site obstacles.

"There are a number of critical Sydney Water assets across the re-development area, such as the 750mm Beverly Hills water main," Mr Rimmer said. "As a result, we not only had to carry out a great deal of pre-investigation work in regards to these sensitive areas, we also needed to closely liaise with Sydney Water to ensure there was minimal disruption throughout the relocation process," he said.

However, given their extensive experience in dealing with such matters, Rose Atkins Rimmer have been able to successfully fulfill their water servicing coordinator responsibilities in both a fast and effective manner.

"Our team, through consistent liaising, as well as implementing innovative solutions, have been able to ensure the protection of Sydney Water's valuable water mains," Mr Rimmer said.

"We here at Rose Atkins Rimmer have been proud to work alongside Leighton Contractors and to be involved in such a significant project," he said.

With Sydney Water's assets in Rose Atkins Rimmer's safe and experienced hands, it is without a doubt the K2RQ Alliance Project will be an undeniable success.

PROJECT SURVEYORS

Offering a complete range of professional surveying services, Hard and Forester is an independent consulting surveying practice with more than 25 years of industry experience.

Specialising in the provision of solutions to major projects, incorporating a broad range of stages from strategic planning, feasibility assessment, detailed design, construction and asset management, Hard and Forester are committed to using the latest survey technology, systems & techniques to achieve optimum results for their clients.

Having previously been responsible for the provision of survey on many of New South Wales major building and infrastructure projects, such as the Airport Rail Link (Transfield Bouygues Joint Venture), Cross City Tunnel (BBHB Joint Venture) and the Sydney International Airport Terminal 1 Upgrade (Bovis Lend Lease), Hard and Forester were recently appointed as track surveyors for the Kingsgrove to Revesby Quadruplication (K2RQ) Project.

Initially responsible for completing a full detail survey of the rail corridor, survey control installation and assessment of the cadastral boundaries and transmission lines along the length of the K2RQ site,

Hard and Forester utilised the latest software and surveying equipment to produce high accuracy results in minimal time.

Pierre Hartzenberg, Director, Hard and Forester, said throughout their involvement during the initial works on the K2RQ Project, the team of 14 experienced staff ensured the delivery of a 3D Model and other associated data sets whilst staying well within the limited time and budgetary constraints.

"Due to the expertise and dedication of the staff at Hard and Forester, we were able to efficiently complete a wide range of specialised survey requirements often working at short notice," Mr Hartzenberg said.

"As a result, we were able to efficiently complete all surveys without causing any delays to the K2RQ project, thereby ensuring the client's utmost satisfaction," he said.

With over 30 survey field parties operating throughout NSW and a demonstrated ability in providing expert surveying services, Hard and Forester continues to be the building and construction industry's number one choice in satisfying all of their surveying needs.



HARD AND FORESTER
Level 1, 23-25 Frederick Street
Rockdale NSW 2216
t. 02 9597 9700
f. 02 9599 2146
e. admin@hardforester.com.au

CHECK MATE

Founded in 1967, Chess Engineering is a multi-skilled Australian company incorporating four main fabrication, machinery, fitting and design divisions.

With a team of over 100 staff, including professional design engineers, Chess Engineering is able to design and manufacture a range of products, from small machine components to large, industrial systems.

Nurturing a strong culture of workplace safety, as well as a 'can do' attitude, Chess Engineering were recently involved on the Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project.

Given their extensive skill base, Chess Engineering was responsible for a number of Project facets. These included the modification of bridge reinforcing bars, the fabrication and installation of road plates, the design of universal channels and PFC's for the railway extension and the fabrication of slurry bins. Using a team of five 'track' accredited staff, as well as an on-hand 8,000 square metre workshop in Padstow, which was used as the main fabrication and machinery space, Peter Phillpott, Project Manager for Chess

Engineering, said they have been able to successfully carry out these Project responsibilities. "Throughout our involvement on the K2RQ Alliance Project, we've been using cryogenic techniques to fit bushes for the bulldozer, as well as our general engineering, cost effective and welding expertise to repair track machines," Mr Phillpott said. "As a result the K2RQ Alliance Project has been running within the restricted time and budget deadlines," he said.

Although Chess Engineering needed to ensure they matched specific safety quality standards required on the Project, Mr Phillpott said because of their experience in solving mechanical and engineering issues, they were able to meet such requirements.

"Given our commitment to safety, we also appreciated Leighton Contractors strict onsite OH & S standards, ensuring a smooth operating Project and satisfied client," Mr Phillpott said.

Offering a range of engineering services, from the initial design stage to installation and with four decades of servicing Australian industry sectors, it is without a doubt Chess Engineers has the skills, expertise and tools to do the job.

CHESS ENGINEERING
101-103 Fairfield Road
Padstow NSW 2211
t. 02 97722 355
f. 02 97722 318
www.chessengineering.com.au

WHEN, WHERE AND HOW



Strategic Environmental and Engineering Consulting (SEEC) are specialist consultants focusing on soil and water management.

Offering professional, cost-effective consulting services including erosion and sediment control training, SEEC are committed to improving the environmental performance and culture within the building and construction industry. This commitment was recognised by the managers of the K2RQ Alliance Project, who engaged SEEC to train their staff in erosion and sediment control. This includes identifying their legal obligations and recognising when, where and how to employ various erosion and sediment control techniques during construction.

SEEC have provided on-site erosion and sediment control training to numerous organisations including Leighton Contractors, Transport Construction Authority, Wollongong City Council, Fulton Hogan and Built.

Andrew Macleod, Director of SEEC, said his professional team working on the K2RQ Alliance Project site ensured the training was specifically tailored to meet the demands and needs of the project. "During our training sessions, we helped identify and address specific erosion and sediment control issues affecting the K2RQ Alliance Project," Mr Macleod said. "These included lack of onsite space, restrictions on ground penetration, plus limitations on typical sediment control measures. "As a result, we were able to ensure our clients were equipped with strategies to deal with these issues and plan accordingly. This also minimises the risk of any potential prosecution due to environmental violations," he said.

SEEC were also instrumental in planning for soil and water management during bridge construction over Salt Pan Creek, where acid sulphate soils posed a significant environmental risk.

All of SEEC's staff are Certified Professionals in Erosion and Sediment Control, (CPESC), accredited by the International Erosion Control Association (IECA). SEEC staff are RTA-accredited as expert soil conservationists, and they regularly work on major projects such as K2RQ or the Leighton-Contractor-led Tarcutta Hume Alliance to help improve environmental performance.

Whether you need plans prepared to meet government requirements (e.g. NSW Blue Book) or you want to provide training for your staff; if you want help to meet your environmental obligations onsite and minimise the risk of penalties because of erosion and sediment control issues, call the experts at SEEC.

SEEC (STRATEGIC ENVIRONMENTAL AND ENGINEERING CONSULTING)

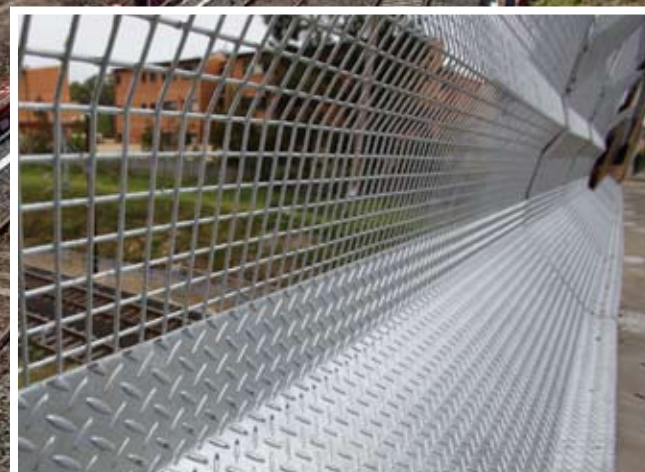
PO Box 1098
Bowral NSW 2576

t. 02 4862 1633

f. 02 4862 3088

e. reception@seec.com.au

www.seec.com.au



ENGINEERED TRANSPORTATION

Established in 1989, Rex J Andrews Engineered Transportation is a family owned and operated transport company, committed to providing high quality transport services using their innovative and specialist equipment and competent operators. Capable of transporting a variety of loads, from standard semi-trailers to large, heavy loads requiring complex multi-articulated equipment, Rex J Andrews' professional team have recently also been involved on the Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project.

This Project not only involves the construction of 12 kilometres of new railway track on the East Hills line, 10 new rail bridges and construction works at Revesby station, but also incorporates an international mobile data access solution using 3G mobile technology.

Throughout their ongoing involvement, Rex J Andrews have been responsible for the entire transportation of the multiple rail bridge sections from Newcastle and Sydney, to various sites of the K2RQ Alliance Project.

Given the fact Rex J Andrews provide one of the largest fleets of specialised trailers in the oversize transport market, they succinctly delivered the larger bridge sections for the K2RQ Alliance on multi-axle platform trailers.

Warrick Andrews, Operations Manager of Rex J Andrews, said whilst working on the K2RQ Project, his professional team had been able to offer efficient and cost-effective solutions to transporting

the significantly sized loads. "The specialist trailers we used on the K2RQ Alliance Project have more than 80 wheels and are capable of transporting up to 300 tonne," Mr Andrews said.

"In addition, some of the bridges had deliveries of beams over 30 metres long and as a result, required the use of our rear trailers with remote steering.

"Furthermore, given our on-going commitment to safety and professionalism, each convoy had up to six police escorts, 18 operators and six trucks all assisting the transportation," he said.

Although Rex J Andrews faced challenges such as tight removal space access, limited delivery hours and coordination of the large amounts of equipment required, a combination of their industry experience and commitment to providing customer satisfaction, allowed them to overcome these.

"Careful planning and constant liaising with the client and the other project sub-contractors well before the delivery of each load, has ensured the smooth operation of the K2RQ Alliance Project," Mr Andrews said.

Given the on-going success of the K2RQ Alliance Project, it is without a doubt Rex J Andrews will continue to provide enhanced and specialist transport services to the fulfill the transit needs of their customers, regardless of the size of their demands.

REX J ANDREWS
t. 02 4721 7633
e. warrick@rja.com.au
www.rja.com.au

ENVIRONMENTAL EXPERTS



A.D. ENVIROTECH AUSTRALIA Pty Ltd
Unit 70, 42-46 Wattle Road
Brookvale NSW 2100
t. 02 9743 6655
f. 02 9401 0097
e. allen@ADenviro.com.au

Since 1997, A.D. Envirotech Australia, a team of high calibre of independent scientists and engineers, have been providing a range of environmental, occupational health and safety and laboratory services to a variety of businesses and industries across Australia.

Working with a broad range of high profile clients, A.D. Envirotech's experienced consultants deliver practical and cost-effective solutions for projects requiring technical planning and application processes.

Committed to providing proactive and technical recommendations to eliminate potential problems before they occur, as well as pursuing sustainable technologies and methods to achieve these outcomes, A.D. Envirotech were recently involved in Sydney's Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project.

Since their initial involvement in 2008, A.D. Envirotech have provided 24 hour-seven day-week services such as Asbestos Inspections, Analysis and Management, Hazardous Materials Removal Specification, Surveys and Planning, Demolition of redundant Signal Huts, as well as technical expertise in a range of site contamination and remediation issues.

Allen Dobrovosky, Director of A.D. Envirotech said that throughout their involvement on the Project, the team had faced with a number of challenges, in particular the limited space available to remove the onsite hazardous materials. "Unfortunately, the rail corridors we were working within were extremely limited space-wise, so in order to ensure all asbestos and hazardous materials were removed in a safe manner, in accordance to regulatory guidelines, A.D. Envirotech staff liaised closely with both K2RQ engineers and foremen," Dr Dobrovosky said.

"This professional interaction allowed for the necessary planning and implementation of critical controls to ensure the safe removal of the hazardous materials and nullified any asbestos associated risks.

"We are looking forward to continuing to providing our cost-effective and practical, site-specific environmental services to the K2RQ Alliance," he said.

With over 13 years experience in providing a comprehensive range of environmental and hazardous materials services, A.D. Envirotech will continue to exceed client expectations on all levels.



GIVING THE EDGE TO K2RQ



Newcastle Innovation, the commercial arm of the University of Newcastle, facilitate the transfer of knowledge, technology and scientific research from the University to industry and commercial partners.

Able to tailor their research and consulting services to suit specific projects, Newcastle Innovation enable small and large organisations to access their multi-disciplinary research talent to address specific Research and Development issues.

Given their extensive expertise and professional approach, Newcastle Innovations Structural and Materials testing unit recently provided the Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project with their structural testing expertise. The unit has a well equipped laboratory, which together with the skills and expertise of laboratory and academic staff, has been used to solve a range of industrial and research problems.

Working alongside the main client, Leighton Contractors, Newcastle Innovation provided the K2RQ Alliance Project, which, when complete will incorporate 12 kilometres of new track, 10 railway

bridges and additional construction works, with new capability and design solutions. This ensured the project retained a competitive and technologically innovative edge and was carried out within the limited timeframe and budget requirements.

With their extensive portfolio and commitment to providing expert opinion and specialist services, Newcastle Innovation will continue to provide technological and business solutions to a range of Australian based industries, regardless of the size of the project.

NEWCASTLE INNOVATION

t. 02 4921 8777

f. 02 4921 8778

e. innovation@newcastle.edu.au

www.newcastleinnovation.com.au

GORAN SIMUNDIC BE, ME, MIE Aust, CPEng

Structural Testing Manager

t. 02 4921 6140

f. 02 4921 6991

e. goran.simundic@newcastle.edu.au

SEVENTY YEARS STRONG

Olex, Australia's largest and most technically advanced manufacturer of electrical cable has been designing and manufacturing cables in Australia for over 70 years.

Operating as a fully owned subsidiary of Nexans, the worldwide leader in the cable industry, Olex has established an international reputation for providing high quality, advanced and reliable technology.

With over 700 employees in Australia, Olex have been involved in a number of high profile projects nation-wide. Some of these include working with the Australian Rail Track Corporation (ARTC) to deliver the South Sydney Freight Line Alliance Project, as well as a number of Power Supply Upgrade Projects directly with Railcorp. Given their specialist expertise and locally manufactured products, Olex has also been appointed to provide their specialist technical services and cable design expertise to the Kingsgrove to Revesby Quadruplication (K2RQ) Alliance Project.

Danny Bravo, National Sales Manager, Rail & Infrastructure for Olex, said that throughout their involvement on this Project, Olex were responsible for the supply and delivery of a range of specifically designed cables. "Whilst working on the K2RQ Alliance Project, we supplied a technically advanced 33KV Rail Power Cable, with a fibre

optic cable which is embedded within the cable sheath specifically designed by Olex for the application required," Mr Bravo said.

"We also supplied and delivered to the site a 1500VDC traction cable and a 33KV and 6.6KV Power Distribution Cable for Stages One and Two of the K2RQ Alliance Project," he said. Although Olex were faced with the challenge of achieving site delivery deadlines, as well as the difficulty of delivering very large drums of cable to the rail site, through Project coordination with the clients and other subcontractors, these obstacles were effectively removed.

Offering local expertise, Australian manufactured products, extensive rail experience and a high level of service to the building and construction industry, Olex will continue to remain at the forefront of the electrical cable industry.

OLEX AUSTRALIA

207 Sunshine Road

Tottenham VIC 3012

t. 1300 CABLES (1300 222 537)

f. 1300 556 551

www.olex.com.au



K2RQ, NSW