Laing O’Rourke is a global construction and development company. It is also one of the leading privately owned construction companies in the world. The acquisition of Barclay Mowlem in 2006 has provided a fresh influx of local Australian knowledge, expertise and insight to a company that takes great care to ensure ideas and information flow freely between its international divisions.

With 27,000 employees located across the globe in Europe, the Middle East, India, Asia and Australia; Laing O’Rourke is well positioned to deliver some of the worlds most innovative, forward thinking and dynamic projects. The global leverage the company possesses adds essential know-how to all of their projects wherever they may be undertaken. The Chatswood Transport Interchange (CTI) Project benefited significantly from this aspect of Laing O’Rourke’s operations. Considerable effort, communication and cooperation have been devoted to understanding the specific requirements of the locale and the project. This includes regular consultation with stakeholders, local businesses and residents to ensure that all are well informed about the project and its progress. The dissemination of information regarding the project has been both extensive and accessible in the form of electronic and printed media and via the 1800 project phone line. With an infrastructure undertaking of this size it is sometimes easy to overlook the need for the general public and stakeholders to share ownership through a clear understanding. It is not a coincidence that the project has progressed smoothly without undue or inaccurate publicity.

The scope of the CTI and its expected benefits for the transport hub of Chatswood and the North Shore is anticipated to be significant. Designed to interface with the existing North Shore Rail Line and the new Lipping to Chatswood Rail Line, the CTI project consists of the construction of redesigned pedestrian and rail concourses including lift and escalator access to rail platforms and bus interchange, rail bridges over Help Street and Albert Avenue. Also the widening of both Help Street and Albert Avenue from four to six lanes and two to four lanes respectively, including road-lowering of Help Street to increase bridge elevation, and the relocation of the existing bus interchange to incorporate the addition of taxi ranks and kiss-and-ride spaces. As a result, train generated noise and vibration is considerably reduced. This type of design is a first for Australia.

Other initiatives on the project included the creation of rainwater retention tanks to provide non-potable water for the project, AAA rated taps and waterless urinals and the recycling of excavated concrete waste, paper and cardboard.

Laing O’Rourke has an international reputation for innovative development and dynamic construction. With 27,000 employees world wide and global-operations creating a turnover in excess of A$8.7 billion, their expertise and experience is unmatched by any other privately owned company. The delivery of the CTI Project will not only create an enhanced transport and business hub for North Sydney but it is sure to add to a prestigious stable of highly regarded projects and further enhance Laing O’Rourke’s already strong reputation.
JA Bradshaw Civil Contracting is a name that has become synonymous within the civil contracting and excavation industry. The company has accumulated a wealth of experience and an in-depth understanding of the intricacies of project management and successful completion. Both the owner/directors, Kevin Couter and Gary Dowling, bring real hands-on knowledge to the delivery of their services, both having been involved in the different facets of the industry for many decades.

JA Bradshaw Civil Contracting was engaged by Lang O’Rourke to undertake earthworks and sharing for the Chatswood Interchange project. Close liaison, a trademark of JA Bradshaw’s Civil Contracting operations, provided effective delivery of their services, both having being involved in the different facets of the industry for many decades.

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As Director Kevin Couter puts it, “Our commitment as a company is to ensure great service and to deliver quality projects on time, every time. Clients value our problem solving abilities and our willingness to listen to them and liaise closely throughout the project.”

JA Bradshaw Civil Contracting has worked successfully with many of Australia’s ‘blue chip’ developers and building companies on projects such as the Westfield shopping centre extension Tuggerah NSW, Stages 1 – 5 Wooloomare Shores Retirement Village -Taren Points NSW and the Silkwood Development - Surry Hills NSW

Undertaking a broad range of services within the industry from bulk earthworks and civil construction to site remediation and foundation works, JA Bradshaw Civil Contracting specialise in bulk excavation, demolition and bonded asbestos' removal, construction of shoring and retention systems, storm water drainage and culvert construction, retaining walls, road works, pavement construction and hard and soft landscaping.

The diversity of JA Bradshaw Civil Contracting, and their industry experience and professionalism are clearly evident in the successful completion of their operations on the Chatswood Transport Interchange.

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SHOWING GOOD FORM

The Chatswood Transport Interchange (CTI) Project and its expected impact on the transport hub of Chatswood and the North Shore will be significant. The interchange is designed to combine with the existing North Shore Rail Line and the new Epping to Chatswood Rail. The works included the redesign of pedestrian and rail access and concourses - lift and escalator access to rail platforms and bus interchange and new rail bridges over Help Street and Albert Avenue.

The existing bus interchange has been relocated to incorporate the addition of taxi ranks and kiss-and-ride spaces.

The design of the new CTI will allow for 760 bus movements per day and an anticipated 140,000 commuters daily. Future plans include the development of three landmark residential towers to accommodate 599 units with secure underground parking.

Established in March 2000, The Rix Group was engaged by the developers on the $160 million CTI project to provide 120 metres of concrete track slab, and to assist in the form-working and creation of four new bridges. Two were cast in situ construction and two were constructed using girders which required extensive suspended formwork. The company also provided shotcrete application services in a number of ‘between pile’ areas as required.

The CTI Project was an ideal opportunity for The Rix Group to demonstrate their ability to undertake large-scale projects with the same skill, commitment and safety values that they incorporate into their other operations. Specialising in form-working, civil works, and shotcrete application, The Rix Group has expanded rapidly since the company’s inception and they now provide their services to a wide range of companies and governmental utilities.

Recently The Rix Group has been assisting Sydney Water in the construction of water storage tanks.

The Rix Group is also proud to have had the opportunity to work with Laing O’Rourke and the other parties involved.
**BRINGING IT ALL TOGETHER**

The Chatswood Transport Interchange (CTI) Project in Sydney is a sizeable undertaking. The project headed by Laing O’Rourke, required considerable cooperation and coordination between contractors and on site staff.

The scope of the CTI is extensive. Designed to interface with the existing North Shore Rail Line and the new Epping to Chatswood Rail, the project consists of the construction of redesigned pedestrian and rail concourses including lift and escalator access to rail platforms and bus interchange, rail bridges over Help Street and Albert Avenue, the widening of both Help Street and Albert Avenue from four to six lanes and two to four lanes respectively including road-lowering of Help Street to increase bridge elevation, and lanes respectively including road-lowering of Avenue from four to six lanes and two to four lanes respectively including road-lowering of Help Street to increase bridge elevation, and the relocation of the existing bus interchange to incorporate the addition of taxi ranks and kiss-and-ride spaces.

Hecdal was engaged by the developers after providing a comprehensive and thorough tender. The company has a significant and successful history on major development infrastructure projects and it was this reputation that provided Laing O’Rourke with the certainty that Hecdal’s scope of works would be undertaken with the utmost professionalism, care and safety.

Hecdal is a progressive company and it is clear from previous projects they have completed that their dedication to their staff is only matched by their ability to ensure stringent OH&S protocols are adhered to. The company provides extensive OH&S and careers training to its entire staff. A core belief is that skilled and safe employees produce exceptional work and thorough delivery of its services.

Hecdal are very proud to have been involved with Laing O’Rourke and the CTI Project and the successful expedition of their works is sure to enhance an already sound reputation.

**AN ALARMING SUCCESS**

With 115 years of experience in providing fire services and safety systems to a wide range of businesses, Wormald also has the added leverage of belonging to the Tyco group of companies. Tyco adds a further level of expertise and understanding with access to a global knowledge base from over 80 countries. These indisputable credentials provide Wormald with the ability to undertake a wide and varied brief of fire protection projects from conception through to completion.

The $160 million Chatswood Transport Interchange (CTI) when completed will have the capacity to accommodate up to 100,000 commuters daily. A complex multi-use infrastructure facility such as the CTI incorporates a number of different areas over which fire services protection and facilities were required. These areas include the bus interchange, rail platforms, retail areas and car parks.

Wormald provided its services over three broad areas - that of monitoring and detection including thermal and smoke detection alarms, fire suppression and control with a range of sprinkler systems, hydrants and extinguishers, and emergency warning and communication combining public address with emergency warning and intercommunication. Within these areas Wormald also supplied project specific detail such as nine inert gas fire suppression systems for sensitive areas, fire alarm control systems, and hearing impaired alert systems.

Mark Gowans, the General Manager of Wormald Australia was keen to highlight one of the challenges the CTI project presented, “One of the most interesting aspects we found with this development has been working with two power grids as opposed to just one.” He explains, “Both RailCorp and Energy Australia provide power to the site. What this means for the installation is that we’re conscious of always meeting the right regulations for whichever grid we are working on – an example of this is that any conduit pipes on the RailCorp side have to have chemical anchors to insulate them. So as well as being a large scale installation there is also a range of operational details to factor in.”

Additionally, while Wormald provided the installation, it was required to operate around temporary structures as opposed to isolating the required areas which would be the option on most projects.

Wormald has the capacity to assign a dedicated client team to every project – this not only ensures continuity and clear communication but also the delivery of the client’s specific requirements integrating drafting, design, solution, construction and installation into one holistic result tailored to the clients budgetary and asset controls.

Wormald’s core principles of client satisfaction, safe work practices, and a cost effective solution have been well demonstrated on the CTI Project. Naturally the company is proud of what has been achieved through the careful and thorough delivery of its services.
The scope of the $160 Million Chatswood Transport Interchange (CTI) Project is complex and diverse. The anticipated benefits of this project will flow through to the transport hub of Chatswood and the North Shore are also expected to be very significant.

The CTI project consists of the construction of redesigned pedestrian and rail concourses, improved pedestrian access to rail and bus, rail bridges over – and the widening of both Help Street and Albert Avenue and the relocation of the existing bus interchange. The CTI has been designed to accommodate an anticipated 100,000 commuters daily – integrating with the existing North Shore Rail Line and the new Epping to Chatswood Rail Link.

Reinforcing Values

The $360 Million Chatswood Transport Interchange (CTI) Complex heralds a new era in design and architecture. The redevelopment of one of the busiest transport hubs in Sydney required extensive planning and coordination to ensure smooth passage from the plans to the site. One aspect of this delivery process was the requirement to assess the effects of the wind on the planned structure and the surrounding environment. Heggies was appointed by the developers to assist with this process and to model the possible results of wind action upon the completed development with the inclusion of additional towers planned for the future.

Heggies is a name that has become synonymous with quality specialist advice on a diverse range of areas within the building and construction industry. Operating for 30 years and with offices in many Australian states and in Asia, Heggies employs engineers and scientists from a wide variety of fields who have the experience and capability to provide the very best advice on complex issues. In brief the CTI project delivered the construction of new pedestrian and rail concourses, lift and escalator access to rail platforms, bus interchange, rail bridges over Help Street and Albert Avenue, widening Help Street and Albert Avenue, lowering of Help Street to increase bridge elevation, and the relocation of existing bus interchange. The project has been designed to accommodate an anticipated 760 bus movements per day and through traffic of 100,000 commuters.

As the wind engineering consultant for all aspects of the project, Heggies undertook environmental wind tunnel testing of the CTI and surrounds using a scale model of the development. In addition, Heggies used Computational Fluid Dynamics (CFD) to determine interior wind flows within the concourse, tunnels and other internal retail spaces including the large Food Court area. This combined approach delivered data on possible areas of high wind activity that could be addressed and then re-tested. Finally, the CFD approach was extended by Heggies to provide state-of-art predictions for wind-driven rain ingress for internal retail areas of the development. Heggies’ wind studies led to numerous design modifications aimed at ameliorating potentially adverse wind or wind-driven rain conditions.