

HIGHWAY TO SUCCESS

The \$75M Bullaburra East Upgrade consists of widening the existing two lanes into a four lane divided highway creating environmental and safety benefits, and includes revised turning facilities, carriageway, and an improved train station.

MAIN CONSTRUCTION COMPANY : Seymour Whyte
CONSTRUCTION VALUE : \$46 Million ex GST
TOTAL VALUE: \$75 Million
COMPLETION DATE : Late 2015

Seymour Whyte – Bullaburra East Upgrade is setting sustainability benchmarks

Seymour Whyte Group, a company with a number of successfully completed and ongoing essential services infrastructure projects, is constructing the \$46 million contract to upgrade the Great Western Highway Bullaburra East in NSW, for Roads and Maritime Services.

Work on the Bullaburra East project began in January 2013 and is expected to be completed in late 2015.

The project, which includes upgrading and widening approximately 1.6 km of the existing two lane Great Western Highway to a four lane divided highway, is successfully being delivered by the project team despite key challenges of the site.

The project required the full undergrounding of all overhead power along the highway within the Blue Mountains World Heritage area. Seymour Whyte initiated a fast track staging plan for undergrounding, which had all overhead electricity wires de-energised four months ahead of the original schedule, providing the new network early, and removing safety hazards associated with plant contacting live overhead wires.

Seymour Whyte has demonstrated stand out innovation around environmental management methods and techniques to increase overall efficiency and sustainability of the project. Before full earthworks and pavement construction could commence, construction of a main site sedimentation basin was required to capture all site runoff. As the outlet was in close proximity to the designated Blue Mountains hanging swamp, construction posed a significant risk of disturbance to natural vegetation.

Modifications to the dissipater structure were undertaken reducing construction impacts and risks of disturbance within this highly sensitive area. The proposal was strictly reviewed by the client and local environment authorities were engaged throughout the process.

Bullaburra is in an area of highly erodible weathered sandstone soils, creating a number of challenges managing and controlling soil erosion and sediment mobilisation. The team introduced the use of an emulsion product which can be sprayed over compacted surfaces, providing ground cover and

minimising erosion. The emulsion, acts as a binder to glue soil particles together minimising mobilisation in a rain event or high wind. This method proves advantageous not only for erosion control, however also has safety, cost and visual amenity benefits.

Seymour Whyte also proposed design amendments which enabled the reuse of as much spoil on site as possible. The team redesigned an access track, leading to an additional 4500m³ to be utilised on site, rather than being removed and possibly disposal in landfill. This activity also removed approximately 260 trucks from local roads.

Trials were undertaken by SWC on the re-use of existing Great Western Highway pavement material as a recycled product for use in new road construction. Trials on blends of milled asphalt, road base and insitu weathered sandstone at various ratios matched the strict pavement material properties required to meet client specifications. SWC are now planning to re-use all remaining former road pavement within the specified select material zone of the new westbound carriageway. This initiative will save the disposal and haulage of approximately 3500m³ of otherwise waste classified material.

Short and long term sustainability on our projects is something that Seymour Whyte is passionate about. The Bullaburra East waste management strategy sets industry benchmarks with a 94.13% project recycle rate. Of the 165 tonnes of waste removed to date, only 17.2 tonnes has gone to landfill.

Roads and Maritime Services have also engaged Seymour Whyte to undertake the upgrade of the Central Coast Highway at West Gosford. The \$43.3 million contract is for the construction of roadworks, bridgeworks and associated activities.

Seymour Whyte Group is on a path to growth expanding their service offering across the transport, utilities and resources sectors. Following the acquisition of Rob Carr Pty Ltd, specialists in micro-tunnelling and utilities services, the company now collectively employs more than 350 professional staff, with offices in NSW, Queensland, and Western Australia.

For more information contact Seymour Whyte Group, Brisbane Technology Park, 12 Electronics Street, Eight Mile Plains QLD 4113, phone 07 3340 4800, fax 07 3340 4811, website www.seymourwhyte.com.au



HEALTH AND SAFETY EXPERTISE

Hibbs & Associates Pty Ltd provides a comprehensive, high quality and cost effective risk management consulting service to both the private and public sectors throughout Australia, in the areas of occupational health and safety and environmental management.

Hibbs & Associates Pty Ltd was involved from the planning stages of the Bullaburra East Upgrade project to review documents, provide ways of communicating with local residents to alleviate their concerns about the removal of asbestos containing materials from their footpaths, to design removal procedures & provide advice and hands-on consultation to ensure the safe removal of all asbestos materials.

Hibbs & Associates Pty Ltd has been in operation since 1994 and combines expertise from a broad range of disciplines encompassing building and construction, engineering, science, risk management and occupational hygiene. The company's services include; hazardous materials surveys, NATA Approved laboratory analysis, risk assessments, hazard control strategies, the implementation of hazardous materials risk management programmes, air monitoring programmes, project management of hazardous materials and asbestos abatement projects, mould remediation and environmental audits.

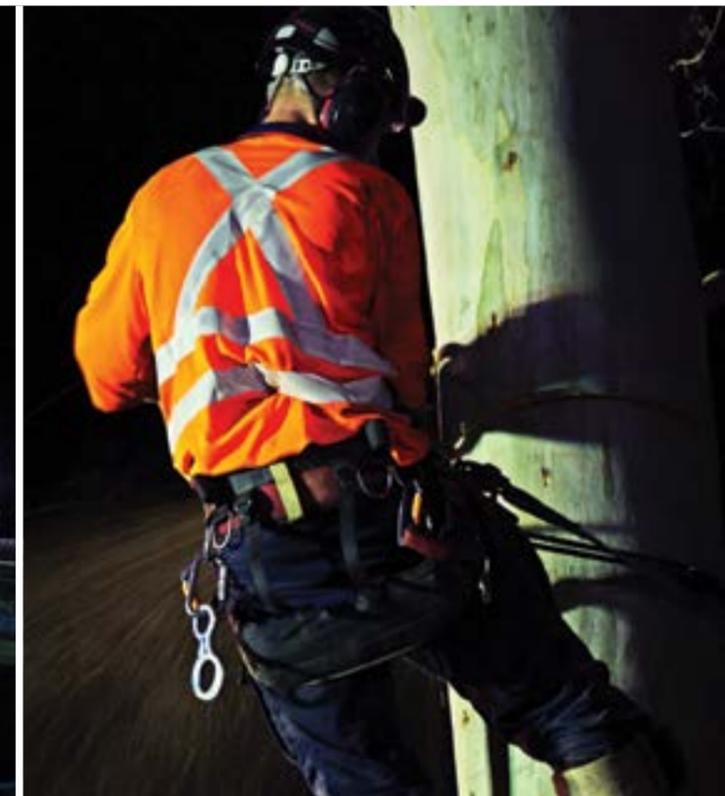
Hibbs & Associates Pty Ltd developed an asbestos awareness pamphlet to inform residents, within the vicinity of the of Bullaburra East Upgrade project, of upcoming asbestos removal works. The

purpose of the pamphlet was to notify the community of the scope of the removal works being undertaken and provide information on the origin of asbestos containing materials, relevant legislation, health concerns arising and the controls being implemented to minimise the release of asbestos into the surrounding environment.

Hibbs & Associates Pty Ltd recommended procedures for the safe removal of the asbestos containing materials and conducted asbestos fibre air monitoring to assess the effectiveness of the measures. The company also provided asbestos clearance inspections and reports during each stage of the works.

The Opera House, the Sydney Town Hall, the Art Gallery of NSW and Sydney University are some of Hibbs & Associates Pty Ltd' current projects in Sydney, NSW. "Our policy is to be the premium provider of professional risk management consulting services in occupational health and safety and environmental management," said Operations Manager, Robert Gale.

For more information contact Hibbs & Associates Pty Ltd, Unit 48, 378 Parramatta Road, Homebush NSW 2140, Toll Free 1300 4 HIBBS, office phone 02 9746 3244, fax 02 9746 3266, email info@hibbs.com.au, website www.hibbs.com.au



LAND CLEARING SPECIALISTS

Plateau Tree Service Pty Ltd specialises in all aspects of vegetation management, from land clearing to landscape maintenance. Seymour Whyte Constructions Pty Ltd engaged the company to undertake the clearing and grubbing for the Bullaburra East Upgrade project. Plateau Tree Service was also engaged to provide tree crews to undertake works as required on site.

Plateau Tree Service has been operating since 1991. The company employs trained arborists and horticulturalists who offer a highly professional service. Plateau Tree Service operates both in the Sydney region and across NSW on residential, commercial and government projects. It boasts an extensive range of vehicles, machinery and safety equipment that its employees are trained and experienced in using.

Bob Kennedy (Civil and Corporate Manager) led the skilled team on the Bullaburra East Upgrade project, with Andrew Davis (Senior Supervisor) controlling the practical works on site.

"There have been major obstacles in terms of the restrictions of the site, works with traffic control and the additional hazards involved with working within the rail corridor," said a company spokesperson. "Completing the works to a challenging program on a difficult and

compact site was a major achievement which has helped us to cement our relationship with Seymour Whyte for the future."

Plateau Tree Service is currently undertaking major clearing works for Lend Lease Corporation Ltd both at Cattai Creek for the North West Growth Centre and on the M5 for the M5 West Widening Project.

Plateau Tree Service takes pride in its professionalism and safety record. "We've been awarded Best Practice certification for our quality, safety and environmental systems, and for our commitment to safety, customer care and customer satisfaction," said a company spokesperson.

For more information contact Plateau Tree Service Pty Ltd, Unit 2A, Winbourne Estate, 9-13 Winbourne Road, Brookvale NSW 2100, phone 02 9939 5350, email info@plateautrees.com.au, website www.plateautrees.com.au

RETAINING SOLUTIONS

Retaining Solutions installed the retaining walls for the Bullaburra East Upgrade project. Retaining Solutions Design Construct Pty Ltd, trading as Retaining Solutions is a design and construct specialty contractor with experience and expertise in value engineering of site specific earth retaining structures. Other services include earthmoving plant hire (Plant Hire Solutions). Retaining Solutions has been in business for 10 years. Its personnel have over 50 years of combined experience in retaining wall construction and paving applications.

The Reinforced Earth TerraClass® retaining wall system was used for a number of the retaining walls on the Bullaburra East Upgrade project. In total, Retaining Solutions installed 1260 square metres of retaining wall. The cruciform shaped panel with horizontal rib and exposed basalt aggregate finish has been used extensively along the highway through the Blue Mountains and was thus an obvious choice. Retaining Solutions scope of works also included the installation of chimney drains, spreading and compacting select backfill material.



The experienced team at Retaining Solutions dealt with a number of major challenges. Heavy rain and flooding continually threatened the building programme. Traffic flow along the highway needed to be maintained throughout the construction period. The road was bound by the railway track on the north side and housing on the south side leaving a very narrow construction zone posing a number of challenges for backfilling operations and materials delivery. Retaining Solutions overcame these challenges to complete the work within the building programme and within the budget.

Retaining Solutions has been involved in many major retaining wall projects in NSW and Australia wide. One of the company's current projects is the Majura Parkway, Canberra, a new road development that will connect the Federal Highway to the Monaro Highway. "Retaining Solutions is dedicated to providing the very best products and services to its clients," said a company spokesperson. "At Retaining Solutions quality construction is our number one priority."

For more information contact Retaining Solutions Design Construct Pty Ltd, 57/5 Gladstone Road, Castle Hill NSW 2154, phone 02 9899 2111, fax 02 9899 2112, email info@retainingsolutions.com.au, website www.retainingsolutions.com.au



QUALITY AND ECONOMY

"Oberon Quarries for quality and economy" is Oberon Quarries Pty Ltd's motto. Oberon Quarries supplies natural basalt products for all types of construction work. The company won the tender to supply the Bullaburra East project. The quarry, which is located 5 km east of the Oberon, NSW, has been in operation for almost 20 years and has reserves in excess of 81 million tonnes of the "highest quality" basalt.

Oberon Quarries takes great pride in being an independent family owned quarry. The company has 22 employees. Both its production staff and fleet drivers worked on the Bullaburra East project. The natural basalt materials supplied to the Bullaburra East project were for stormwater drainage, subsurface drainage (10mm and 20mm aggregate) and gabion rock. Oberon Quarries produces basalt products to specification.

Typical aggregate sizes used are 7mm, 10mm, 14mm and 20mm. Oberon Quarries' aggregates conform to AS2758.1 – 1998 Aggregates and Rock for Engineering Purposes. The high quality of Oberon Basalt is confirmed by recent tests that show no silica rock, a Los Angeles Value of 15%, a Sodium Sulphate Soundness of 4.8%, a Wet /Dry strength Variation of 17, a Mean Uniaxial Compressive Strength of 71 mpa, and an Apparent Particle Density (AS1141.6.1) of 2.97(t/m³) among the results.

Oberon Quarries delivers throughout Sydney and the Central tablelands supplying concrete plants and construction projects. Local Government customers include Oberon, Bathurst, Lithgow and the Blue Mountains. Fulton Hogan, Roads and Maritime Services, SRS Roads, State Asphalts and Bagatella Bitumen purchase Oberon precoated aggregates. Special Jet Patch aggregates are purchased by Oberon, Bathurst, Lithgow, Blue Mountains and Wollondilly Councils. Road base is a product purchased by many customers, notably Roads and Maritime Services, together with Oberon and Bathurst Councils.

For more information contact Oberon Quarries Pty Ltd, Hargraves Quarry Road, Oberon NSW 2787, phone 02 6336 0259, fax 02 6336 0258, email neil@oberonquarry.com.au, website www.oberonquarries.com.au

