WIDER, FASTER, SAFER

Widening a section of road seems like a simple proposition, but when that section extends more than a kilometre and carries 28,000 vehicles a day past more than eighty occupied residences and two shopping centres, the project becomes interesting.

This was the assignment given to Seymour Whyte Constructions for the upgrade of Avoca Drive between Sun Valley Road and Bayside Drive, on the NSW Central Coast. Avoca Drive itself is one of the main traffic arteries of the region, linking the south-eastern beaches and suburbs to the more commercial areas of Erina and Gosford. It is also one way of getting to and from the F3 Freeway. Population growth has seen use of the road increase by a steady 4% in each of the past ten years.

Fortunately Seymour Whyte has 23 years of experience in complex infrastructure development in high traffic urban environments, recently demonstrated in its successful upgrade of the nearby Wamberal section of the Central Coast Highway, winner of the National CCF Earth award.

An essential aim of the project was to improve traffic flow and access for all users, including motorists, pedestrians, cyclists, road freight operators and buses, reducing congestion, travel time, and the number of accidents.

Additional work would be required to add six new indented bus bays, create a shared use pedestrian cycleway on the eastern side of the road and a pedestrian path along the western side, bulk earthworks, full pavement reconstruction and overlay works, signage, road furniture, landscaping, delineation for pedestrians and vehicles throughout the site, retaining structures, and property adjustments.

These were the aims. Achieving them called for all the company's accumulated expertise. There are a lot of pipes and wires along 1.3km of road, which had to be relocated outside of the widened road corridor while maintaining supply to the adjacent residents and shopping centres. Every step of the way, literally, they had to install temporary electricity, water, telecommunications, and gas mains prior to building the new road embankments, retaining wall structures, and new utilities. An existing 450mm trunk water main had to be temporarily diverted, then reconstructed along the route. The main supplied five reservoirs serving 25,000 residents. The three major connections had to be completed within a tight time limit of 18 hours before the reservoir storage supply ran out.

Deep retaining wall footings were constructed adjacent to the new traffic lanes and along property boundaries. A redesign during construction, due to poor ground along an 80m section, required driven timber piles to be installed within 15m of residences. Vibration monitoring and management was paramount in these areas. Dirty water management was another challenge given the narrow road corridor provided little space for retention and treatment basins and the close proximity of the site to Brisbane Water, a tidal lake and a popular fishing and recreation area. Restrictions on night works allowed no more than two consecutive nights of activity and no more than six nights in any month. The management of construction and resident access as well as traffic through the site during daytime peaks was critical to maximising workable space during the day.

At the peak of construction in late 2010 up to 62 items of plant, including 22 excavators were deployed on site in any one day. For a site only 1.3km long this required detailed co-ordination and constant communication between construction teams. Maintaining access to occupied properties was a constant challenge. Adjustments included new fencing, retaining walls, and driveways that allowed residents to turn within their own premises without reversing into the road. In some cases there was a difference of 3m between the existing and new levels.

Construction took eighteen months. On the subject of safety for crews – always a concern with close proximity of traffic, utilities and plant – Seymour Whyte workers came through it all with no Lost Time Injuries in over 200,000 man hours with an average of up to 100 workers constantly on site. No wonder that Seymour Whyte features in the BRW list 50 Great Places to Work.

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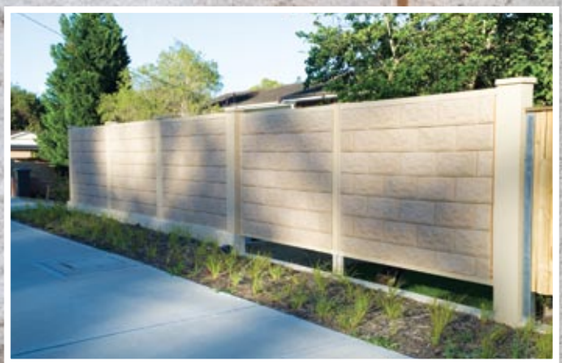
AVOCA DRIVE UPGRADE

MAIN CONSTRUCTION COMPANY : Seymour Whyte Constructions
CLIENT : Roads and Traffic Authority NSW
COMPLETION : February 2011
DESIGNER ENGINEER : Kellogg Brown & Root
PROJECT END VALUE : $40 Million



ELEGANCE AND STRENGTH

Every project has a problem spot. On Avoca Drive, as landscaping progressed with the roadworks, there was one easement where it would have been difficult if not impossible to build structural foots. All Districts Modular Wall Systems provided an elegant solution with a 16m sandstone cladded wall.

The modular wall system they use is a model of simplicity. Composite fibre cement sandwich panels are so light that they can be put into place easily without cranes or heavy digging equipment. The average weight of a panel is 15.49kg, thickness 75mm. Though light in weight, the posts and panels when joined have the strength of a brick or rendered wall with high impact resistance. The completed wall can tolerate expansion and ground movement and is acoustically rated for noise reduction.

Each panel is internally recessed to accept wiring for lighting, sound, security and intercom systems.

Panels are 900mm or 3m in height and are available in three styles: Contemporary, Traditional, and Estate. Timber or steel infills can be added to any style of wall. They can be painted with acrylic or sand based paint, or rendered. A stone wall look can be created with any stick-on stone products, or they can be tiled in mosaic.

The modular system can be used for any purpose that suits your needs, lifestyle, and the ambience you want to create. You can use it to highlight a water feature or BBQ area, enclose a swimming pool, or for front and boundary walls. Gates of all types can be fitted.

Walls for any domestic purpose can be raised to 1800mm for extra privacy and noise reduction by stacking two standard panels and joining them internally. The 3m panels are more suitable for commercial premises. Commercial walls can be built to exceed 4.2m.

All Districts Modular Wall Systems is a family owned business which has been operating on the Central Coast for 25 years.

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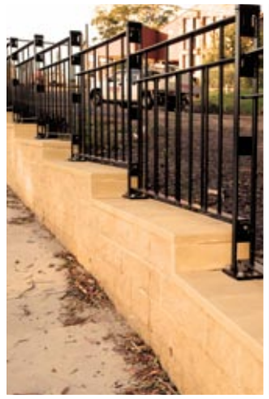

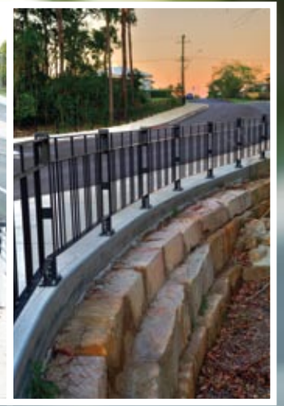

J.P.B. Welding was selected to install the essential pedestrian safety fencing along 1km of the widened Avoca Drive. Variations in pavement level as a result of the construction and new landscaping along the road made it even more necessary than usual to provide a barrier for pedestrians in places where they might slip and fall.

The style of fence chosen for this project was the increasingly popular RTA Safety Fence Type 5, which is almost indestructible when assembled. Each 2m panel weighs 60kg, with 12 solid 20mm vertical round bars 800mm high, topped by mild steel flat bars 75mmx10mm, creating a 1.5m barrier welded to an upright post every 2m. All metal is hot dip galvanised and powder-coated.

Previous experience with this type of fencing gave the company a strong advantage in the selection process and will no doubt serve it well in the future. They can install it quickly, according to the pace of the project and concreting etc., and "cheaper than anyone else" to quote a confident Peter Beaver.

The landscaping along Avoca Drive created additional problems for some residents who found their driveways unexpectedly much steeper than before. (This is a common difficulty for many on the hilly Central Coast.) J.P.B. was able to make access to their properties less jarring by installing galvanised reinforced steel plates.

J.P.B. has been trading in the region for 6 years. They have worked extensively with fencing, staircases and balustrades, aluminium powder-coated awnings, structural steel and stainless steel. They are currently also working in schools installing handrails, screens, and gates for the B.E.R. programme.

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Avoca Drive Upgrade, NSW

STACKING BLOCK.

THE COST EFFECTIVE, TIME SAVING ALTERNATIVE.

Stacking Block is a unique environmentally friendly way to retain sea walls, house blocks, roadways, embankments to waterways or any other large slopes.

Stacking Block is a cost effective approach to retaining structures and is fast becoming an accepted alternative to reinforced concrete, block wall and treated timber.

Stacking Block has proven successful on many municipal and civil projects, as well as small and large domestic or commercial projects. Large areas can be constructed in short periods of time, using excavators. This substantially reduces labour and construction costs, allowing further stages of your project to commence on a shorter time schedule.

Unlike some traditional methods, Stacking Block can be installed in most weather conditions allowing improved confidence in the timing of this component of your project.

The variety of colours in the sandstone results in each project have a uniquely different aesthetically pleasing appearance.

There is no additional finishing process or maintenance required, once the blocks are positioned during their life in situ.

Features.

- Gosford Quarries Sandstone is only sourced from Australian quarries.
- Natural product.
- A variety of colours are evident in the blocks.
- Sizes available are - 2000mm x 500mm x 500mm. - 2000mm x 1000mm x 900mm & 2000mm x 1000mm x 500mm
- Each application is beautiful & unique.
- Distribution channels are in place to deliver your blocks anywhere in Australia.

Benefits.

- Functional natural product.
- Environmentally friendly natural product.
- Cost effective-Reducing labour & construction costs.
- Large areas can be constructed in short periods of time.
- Reduction in time of construction schedule.
- Can be installed in most weather conditions.
- Improved confidence in the timing of this component of construction.
- Aesthetically pleasing addition to the environment.
- No additional finishing or processing required.
- No maintenance required.
- Available to satisfy your need across Australia.

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