Shaping the Great Western Highway
The landscape architect’s role in the upgrade of the Great Western Highway

Now in its bicentenary year, the route of the Blue Mountains or Great Western Highway has been incrementally upgraded to dual carriageway since the 1990s. The final stage of the upgrade at Bullaburra, was completed in July this year. All of these upgrade projects have involved landscape architects as instrumental design partners in the shaping of the project from options stages to implementation. Their role and place in the program is due to the quality of the work they have produced as well as the support of project managers and leaders in the NSW road authority.

If you were to look for a project that demonstrates landscape architecture’s influence on major infrastructure - of any kind - you would need to look no further that the Great Western Highway upgrade in the Blue Mountains.

The traditional lands of the Darug and Gundungurra Nations, the Blue Mountains is a landscape of outstanding natural value and beauty that attracts tourists from around the world. It now has a population of around 80,000 people represented by the Blue Mountains City Council. The Great Western Highway is a 210km long state road linking Bathurst and Sydney. Approximately 60km due west of Sydney it begins the crossing of the Blue Mountains.

View from the Hazelbrook pedestrian bridge lookout

Commissioned by Lachlan Macquarie and built by William Cox, the first route was completed 200 years ago in 1815. It followed the realisation by the explorers Blaxland, Lawson and Wentworth (all now immortalised in the name of a Blue Mountain’s town) that if you hiked up the ridges of the Blue Mountains rather than the valleys you would get to the top. You can stand at the heads of these valleys, on the nearly 1km high plateau, and experience the treacherous cliffs and waterfalls falling into dense eucalypt forest - clearly a dead end for the first surveyors.

The highway has a strong visual connection to the 1868 rail line
The early Great Western Highway was joined by the rail line in 1868 linking the towns and contributing to the thriving Victorian era tourism industry. Katoomba is the largest of these towns. Straddling the highway it is the location of the City Council and home of the Three Sisters - that great view and tourist attractor. However nearby Leura, perched on the edge of the Jamison Valley, is one of the prettier towns. A stone and timber constructed settlement with a surveyor straight high street, cherry trees suited to the cooler air and quaint cafes and bookshops. Other towns such as Falconbridge, Lawson, Wentworth Falls and Bullaburra are smaller, focused on the stations and local hotels but equally interesting and worth exploring. The towns, the rail line and the highway have been fondly referred to as a ‘string of pearls’ by the design teams over the years.

Leura

Around the 1970s the traffic on the GWH started to become problematic - for the residents the stress, noise and air quality was disturbing and for the state, the single carriageway route over the mountains too dangerous and time consuming. The NSW Government started to duplicate the road. Early projects included town centre upgrades like Glenbrook, Springwood and the Katoomba bypass, the latter involving Environmental Partnership. But the program didn’t really hit its stride until the 1990s, following the publication of a design guide prepared by EDAW and Sinclair Knight in 1992.

The place speaks for itself and the community and government understood the importance of the historic road, the world heritage landscape (it received World Heritage listing in 2000) and the unique towns. The response was to follow the example of Peter Spooner’s engagement on the Sydney Newcastle motorway and work with landscape architects. Bruce Mackenzie was one of the earlier engagements, on the Woodford Bends project (1995). Bruce and his team developed their understanding of the area and worked with the engineering teams and the then RTA landscape group to produce terraced walls to avoid impacts on the bush, and cuttings of rock flanked with endemic species. The design pattern for the upgrade started to take shape.

Woodford Bends
The success of that project lead to a strong ongoing collaboration between landscape architect and engineer. Hassell worked on the Faulconbridge upgrade (2001) responding to the pattern of natives in the bush and cultural plantings (pin oaks) in the town. The railway station was left in view with the sandstone cuts left uncovered. A signature bridge was designed to connect the railway to the town with potential for an extension (carried out later). The road environment was shaped by landscape architect and civil engineer to create a self explaining character, reinforcing the change from the 80kmh speed limit out of town to 60kmh in town: a strategy designed to make drivers feel naturally uncomfortable travelling above the speed limit rather than being dictated to by signs.

In 2002 Spackman Mossop Michaels won the AILA NSW award for excellence for their master plan for the Leura to Katoomba project. The award was both for the excellence of the design solution and for demonstrating ‘the positive contribution that landscape architects can make to the planning and conceptualisation of major road infrastructure’.

The highway was kept in cutting topped by landbridge along the Leura Mall axis. The environment below – a sleek and contemporary response to the road. The character above – responsive to the town and ruins of the 1910 Chateau Napier house above. SMM continued their involvement in the ongoing implementation of the project which opened in 2009.

The success and lessons of these early projects had to be captured, and in 2006 the RMS Centre for Urban Design worked with JPW and Jackson Teece Chesterman Willis to produce the Great Western Highway Urban Design Framework – Blue Mountains, Lapstone to Katoomba.

The document set down the ‘string of pearls’ concept and the need to distinguish town and bush and the different driving environments. It promoted the use of sandstone walling, rain gardens and the need to capture the views of the mountains and towns and provide for opens space walking and tourism. It set down the use of two rail safety barriers to allow views and supported the community in avoiding the need for noise walls. It barred roadside advertising and made the intertwined connection to the railway a design objective and an opportunity. Due to the
sensitivity of the project and the strong collaboration with the landscape architects in the Blue Mountains City Council, it also adopted the model of RMS directly appointing landscape architects rather than being sub contracted to the engineering teams.

From 2006 to 2015 the upgrade continued with multiple projects running concurrently and landscape architects working in design teams in the options, concept and detailed design stages - in accordance with the framework’s vision, objectives and design principles.

Spackmann Mossop Michaels worked on Shell Corner which received an AILA NSW award for excellence in 2008. Replacing a notoriously dangerous section of highway, the project was commended for ‘an integrated design approach’ and ‘robust and stylish design interventions.’

The Woodford to Hazelbrook project was a challenge, spanning several years due to contractors affected by the financial crisis of 2008. HBO+EMTB and Noel Corkery (via URS and Corkery Consulting) collaborated in the design of the project which included a truss bridge designed to create a lookout and reflect the weathered steel catenary structures of the adjacent railway and Memory Park - a local memorial park with stone terracing down the mountain side.
HBO + EMTB worked on the Wentworth Falls project (2012) and were instrumental in designing the flowing, terraced walls of sandstone undulating between the railway and road.

The Lawson project continued this terraced approach but importantly recognised that a transformation was needed in the town to avoid severance effect of the highway. Tract and HBO+EMTB worked with RMS and Council landscape architects, collaborating in the design of the upgrade, the realignment of the railway and the design of a new street and revitalised Lawson town square (2010).

JPW worked on the Bullaburra West project and after around 20 years of intense work the Great Western Highway upgrade program was completed with the opening of Bullaburra East in July 2015. Without landscape architects this upgrade would have been a very different outcome. But with landscape architects, all working together on the client, stakeholder and the contractor side, we have an upgrade that is an uplifting experience in movement; a place specific to the Blue Mountains character and people; and a legacy for the future. The projects have begun from an understanding and respect for the qualities of the built form, the history, the topography, geology and soils, the vegetation, and the beauty and ecological importance of the Blue Mountains. These qualities have been captured in the design and woven throughout the whole upgrade over 20 or so years of design and building. This represents an astonishing degree of prolonged focus and dedication. The success of the projects has been rewarded by the response of the community and the road user.

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