



# DESIGN AND DELIVERY

From designing a new freeway to widening an arterial roadway, building a bridge or planning for toll collections, GHD's multidisciplinary team collaborates with clients to develop innovative and sustainable design and engineering solutions.

We also provide a full spectrum of Intelligent Transport Systems (ITS) services, including policy, strategy and planning, specification and procurement, independent verification and validation, and construction, project management services, testing and commissioning.

## OUR CAPABILITIES

GHD's design and delivery capabilities consist of:

- ▶ Geometric design
- ▶ Structural
- ▶ Bridges
- ▶ Tunnels
- ▶ Tollways
- ▶ Signals
- ▶ Intelligent Transport Systems (ITS)
- ▶ Pavements

## OUR EXPERIENCE

### SH9 NEW ENGLAND HIGHWAY UPGRADE, AUSTRALIA

GHD was responsible for preparation of concept and detailed design and tender documentation for the reconstruction of the New England Highway at Devils Pinch, approximately 30 km north of Armidale. The project aims to upgrade the existing highway to a safe 100 kph standard and provide consistent travel speeds along the New England Highway. The project involved route selection,

project development works, an EIS and SIS, concept design and detailed design and preparation of tender documentation of 3.3 km of highway on a new alignment through an environmentally sensitive area. Environmental assessments included flora and fauna, archaeology, noise, air quality and hydrology. Extensive community and stakeholder consultation was undertaken including presentations, exhibitions, newsletters and workshops.

### ELEANOR SCHONELL BRIDGE, AUSTRALIA

GHD designed the Eleanor Schonell over the Brisbane River as part of a AUD55.5 million design and construct contract.

The 500-metre long cable-stayed bridge with steel deck is the third largest of its kind to be built in Australia and is the first bus, cycle and pedestrian-only bridge.

This landmark project features a number of environmentally sustainable design features, including bio-retention ponds to control the quality of water run-off, minimal use of fill from off-site sources, and the use of solar energy to power the lighting and the intelligent traffic system.

### EAST TAMAKI CONNECTION, NEW ZEALAND

The AUD62 million Waiouru Interchange project represents a significant link in Auckland's transport network. Manukau City Council and Transit New Zealand commissioned GHD as design consultant and construction contract administrator.

The key features include two-grade separated interchanges, the widening of over two kilometres of motorway, the construction of local arterial roading, as well as a large roundabout and a 200-metre long bridge.

### INFRASTRUCTURE DESIGN, QATAR

The Public Works Authority (PWA) – ASHGHAL in Qatar commissioned GHD to deliver the infrastructure design for the towns of Umm Slal and Al Khor.

The scope of works comprised the horizontal and vertical design, and the associated grading for both towns, which covered 350 kilometres of roads for Umm Slal and 200 kilometres for Al Khor.

This project incorporated minimum earthworks design and optimisation of balance of cut and fill volumes throughout, vertical alignment to facilitate overland storm water flow to designated emergency flooding areas and existing threshold levels, landscaped corridors and intersections, commercial areas with maximum parking and speed regulating measures, full street lighting design, one corniche route and signalised junctions, as well as complete tender documentations and specifications.

### PERTH-BUNBURY HIGHWAY, AUSTRALIA

The AUD511 million Perth-Bunbury Highway contract was awarded in December 2006 to the Southern Gateway Alliance, which comprises GHD, Leighton Contractors and WA Limestone in partnership with Main Roads Western Australia.

The alliance will deliver the highway under an alliance contract and specifically, GHD will provide transport planning, traffic engineering, civil and structural design, geotechnical engineering, materials technology, environmental and sustainability services.

The new Perth-Bunbury Highway is a massive undertaking that will bring significant benefits to all of Western Australia, as the project will increase the efficiency of the north-south road network and improve regional transport routes.

