GATEWAY TO PARADISE

CLIENT : City of Gold Coast
MAIN CONSTRUCTION COMPANY : Georgiou

The Isle of Capri Bridge project included the construction of a new 4-lane bridge with an increased clearance height and shared paths on both sides, as well as intersection upgrades on Via Roma and Remembrance Drive, new road connections and improvements to allow for an increased capacity of 25,000 cars per day and reduce congestion.

The City of Gold Coast has identified Isle of Capri as the preferred corridor to cater for the growth of east-west traffic into Surfers Paradise. The construction of the Isle of Capri Bridge located on the Nerang River on Queensland's Gold Coast is part of the Cities ongoing investment in its road network

The project involved construction of the new eastbound six-span bridge supported on piles up to 50m in depth, switching traffic to allow demolition of the existing bridge and then construction of the westbound bridge.

The City of Gold Coast sought industry feedback on the bridge design, particularly around piling methodology, through an Early Tender Involvement process. Georgiou was awarded the project in August 2020 with works commencing the following month.

An aggressive programme saw a team of 70 at peak time working across numerous fronts on the 140m bridge. The tight working area, close proximity to neighbours and demolition of the 60 year existing bridge presented challenges for the team.

Georgiou was required to carry out marine piling of 1,350mm diameter piles at the piers and construct 1,500mm diameter piles at the abutments up to a depth of 50m.

"We're had predominately three crawler cranes up to 250 tonnes in size onsite at one time, working across the bridge which is extremely tight," said Project Manager, Simon Millard. "As the project is located so close to neighbouring properties, the team undertook vibration modelling and monitoring on the piling and temporary bridge construction works. This modelling allowed the construction team to determine a method of construction that best suited the desired outcome of minimising impact to these properties."

Due to the extent of the compacted sand and large gravel layers beneath the riverbed, a design was required which accommodated a resilient solution in a marine environment with minimal noise and vibration impacts.

"To assist with this challenge, Georgiou engaged with our piling subcontractor, Caporn, in an exclusive arrangement to allow solution-based conversations with the client through the Early Tender Involvement phase of the project," explained Simon. "The final solution required pile installation with the assistance of BG28 piling rigs and 250-tonne cranes situated on land, temporary bridges and barges."

Working space and storage room were also major issues, with a requirement to maintain traffic and pedestrian connectivity. Barges and temporary platforms were occasionally the only option for storage.

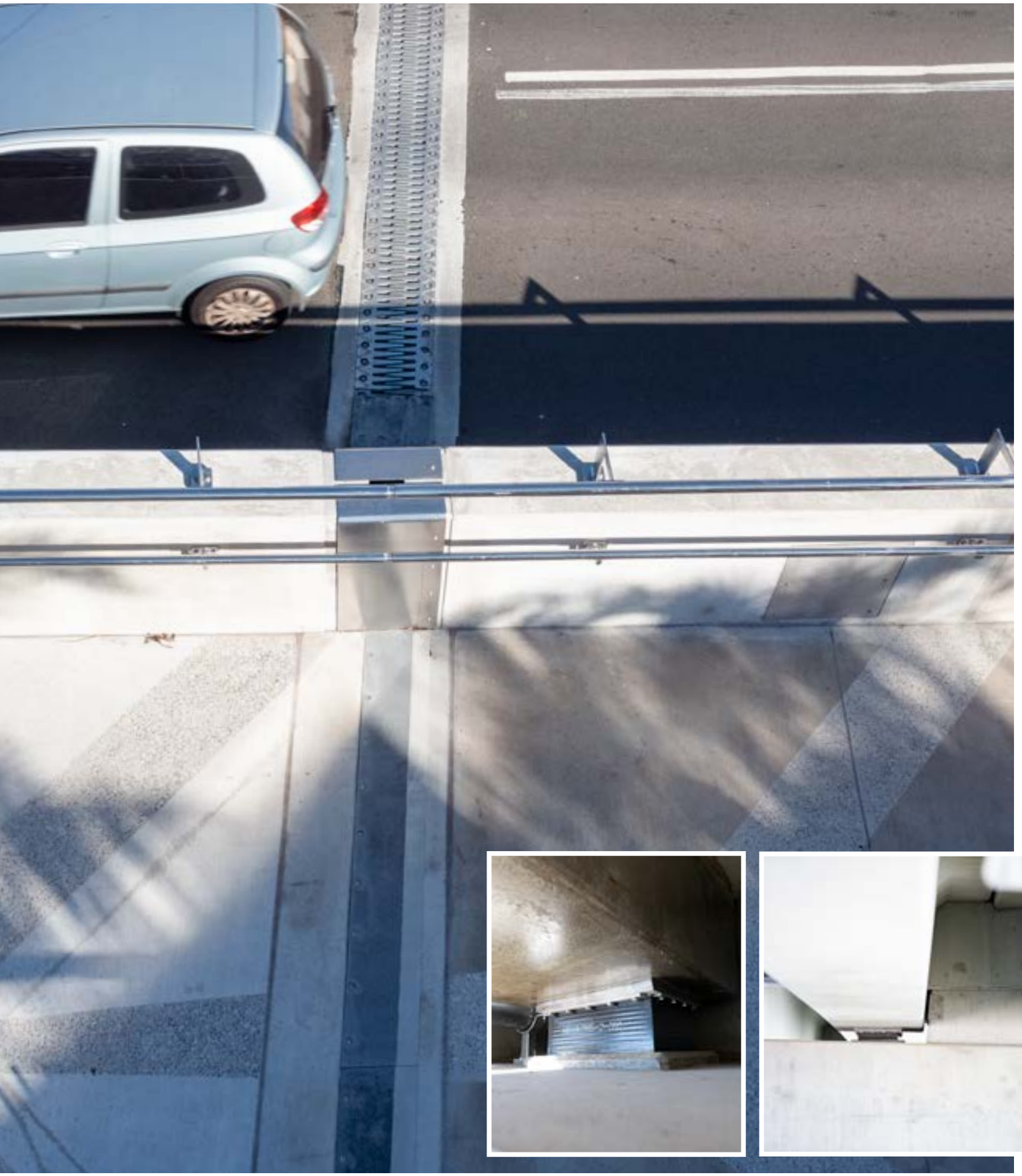
"Other challenges included the treatment of material and water associated with the excavation of the piles. A treatment plant was deployed which effectively cleaned the dirty piling water recovered in the drilling operations and allowed the clean treated water to be discharged back to the river after testing."

The bridge demolition was carried out over six weeks, consisting of more than 161 tonnes of asphalt, and more than 1,350 tonnes of concrete materials removed. Georgiou along with Ironbark Demolitions has extensive experience in bridge demolition and pursues a policy of diverting waste from landfill for reuse or repurposing.

Georgiou previously delivered the award-winning HOTA Green Bridge for the City of Gold Coast in 2020. With continued growth on the east coast, Georgiou has added a number of high profile projects to its repertoire including the Indooroopilly Riverwalk Project, the Bolivia Hill Upgrade on the New England Highway, Windsor Bridge replacement project and the New Tabulam Bridge project.

"Georgiou's strong focus on its people underpins its continued growth as we focus on our vision to be the best people to work with," Simon said.

For more information contact Georgiou, Level 3, 100 McLachlan Street, Fortitude Valley QLD 4006, phone 07 3319 4500, email qld@georgiou.com.au, website www.georgiou.com.au



Below mageba supplied a number of their specialist products for the project, bearings and expansion joint cover plates.

mageba (Australia) Pty Ltd is part of the global mageba Group, a leading supplier of structural bearings, expansion joints, seismic protection devices, vibration damping products and structural monitoring systems for infrastructure, buildings and industrial structures.

With subsidiaries in six countries and agents in a further 45 countries, mageba Group has become renowned for their exceptional products and engineering excellence. In Australia, mageba has been involved in supplying inputs to some of the country's major infrastructure developments, including bridges, stadiums, ports and mines.

The construction of the Isle of Capri Bridge on Queensland's Gold Coast is one of mageba's recent projects. The City of Gold Coast has commissioned the new bridge to replace the existing 60 year old structure which can no longer cope with current and forecast increased traffic volumes from the current 19,000 vehicles per day to 35,000 by 2031. The new 4-lane bridge will reduce congestion, improve traffic flow and is built with a clearance height to allow large vessels to pass underneath.

mageba supplied a number of their specialist products for the project, including 168 LASTO® BLOCK Laminated Elastomeric bearings and 96 LASTO® PAD Elastomeric bearings for lateral restraint. Also supplied were two mageba TENSA®FINGER type RSFD expansion joints of 9.6m in length, plus two cover plates fully compliant to AS1248.1 (Accessibility Standard) and HB197 (Slip resistance requirements for pedestrian materials).

The TENSA®FINGER RSFD cantilever finger joints are bridge expansion joints for movements of up to 500mm. Their robust steel edge profiles have strong anchor loops for concreting to the main structure, resulting in excellent fatigue resistance which makes these joints 'the only 100% compliant' joints in AU/NZ to AS5100.4. The joints are provided with a hose connection for drainage channel cleaning with ease, discharging into the bridge's drainage system which is a unique mageba design.

A particular challenge at the Isle of Capri Bridge was that the joint was at a skew. "mageba also had to allow for the steep bridge alignment and transverse slope in the manufacture of the finger joints," said Quality and Installation Manager, Rishikesh Deshpande.

"Due to the COVID-19 travel restrictions, mageba assisted the site team by providing every possible support to allow Georgiou to install the joint with ease."

The initial discussions with the City Council started in mid-2019, where mageba presented their capabilities and range of solutions including TENSA®FINGER joint. Sabia Kazi – Head of Sales and Projects, said the Council was impressed with the well-engineered and fully tested joint system and also with the design and engineering quality of the product.

Other features of the TENSA®FINGER joint include minimisation of noise emissions and maximisation of driver comfort due to the orientation of the fingers which are aligned in the direction of travel. The finger joint can be installed in both asphalt or concrete carriageway surface and are suitable for use in bridges with heavy traffic loading, able to readily meet the challenges of vehicles with exceptionally heavy loads.

mageba is an approved supplier for elastomeric and structural bearings and expansion joints for DTMR in Queensland, Transport for NSW and other road authorities, providing supply and installation plus maintenance services.

mageba Australia has supplied thousands of structural and elastomeric bearings to hundreds of project in Australia and New Zealand, including the West Gate Tunnel Project in Victoria where mageba is supplying more than 200 High Performance and Innovative Structural Bearings. The company is also supplying fully Australian Made RESTON®SPHERICAL bearings for major mining companies in Western Australia.

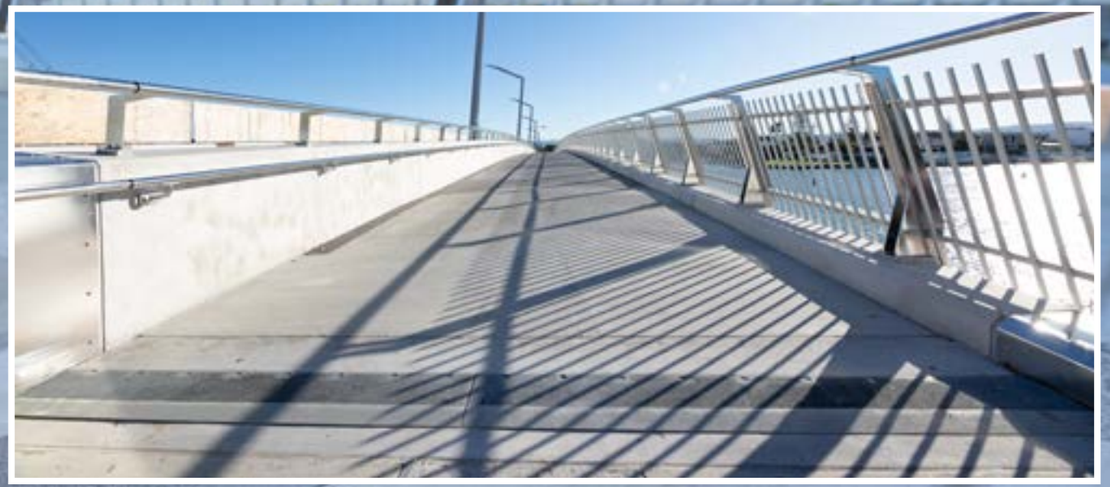
mageba expansion joints are in service on many critical public structures including the Gateway Bridge in Brisbane, the Giovanni Bridge at Sydney Airport and on the Hunter Expressway in New South Wales.

mageba is particularly proud to be able to supply locally designed and manufactured structural bearings and expansion joints for bridges, buildings and industrial structures. For more information please visit www.australianmade.com.au/licensees/mageba

For more information contact mageba Australia, 8/42 Peter Brock Drive, Eastern Creek NSW 2766, phone 1300 MAGEBA, email info.au@mageba-group.com, website www.mageba-group.com

Isle of Capri Bridge, Queensland

Below Global Manufacturing Group provide aluminium and stainless steel fabrications for Queensland road and bridge projects.



Global Manufacturing Group is a leading Australian operator in a wide range of steel fabrication and coating services, committed to precision and excellence. Working from locations equipped with world-class technology in Maryborough and Gladstone in Queensland, GMG provides complete manufacturing services across a range of industries including mining, engineering, transport, construction, marine maintenance and energy.

For Isle of Capri Bridge, GMG supplied a range of fabricated stainless steel products including expansion joint covers and bridge railings. GMG has TMR certification to provide aluminium and stainless steel fabrications for Queensland road and bridge projects, including laser cut items, fabricated steel assemblies and bracketry for bolting bridge components.

"Stainless steel is often specified on these projects as it provides longevity in all environmental conditions. GMG has the equipment and skilled staff to produce both standard and custom-made products with QA certification," said GMG General Manager, Greg McKinnon.

GMG has also been a major supplier of manufactured metal products to the consortium building the $950 million Bruce Highway upgrade on the Sunshine Coast where numerous ramps, flyovers and bridges have been constructed.

"We manage all projects inhouse, where we have 7,000m² of factory space with an experienced workforce," Greg said. "We can maintain strict quality control from raw material to the delivery of the finished product, on time and on budget. Our equipment includes the latest fibre laser cutters and profiling oxy plasma cutters, giving GMG the capacity to cut and weld carbon steel using MIG, TIG, robotic and automated welding systems to AS-1554. We also have well-appointed coating shops in controlled environments, facilitating industrial blasting, powder coating and spray painting."

Established in 1982, GMG offers a total turn-key operation to a diverse client base. The company's team operates on rotating 24-hour rosters, ensuring the highest standards of customer service and timely delivery of finished products.

For more information contact Global Manufacturing Group, 92 Kent Street, Maryborough QLD 4650, phone 07 4122 4244, email sales@gmqld.com.au, website www.gmqld.com.au