Spanning the world

Bridge engineering projects bringing people and places closer together

Bridges keep Bangkok moving

Two cable-stayed bridges, with main spans of 398m and 326m, were built to ease traffic congestion and improve connections between industrial areas and the port. We saved significant costs by using computational fluid dynamics simulations to optimise the deck section profile.

**Project**
Bhumibol Bridges

**Location**
Bangkok, Thailand

**Client**
Public Works Department
Iconic bridge makes its bow

The 200m Troja Bridge forms a key part of Prague’s new ring road, carrying road, tram, cycle and pedestrian traffic. Besides being a fitting new landmark for one of the world’s great capital cities, it represents a major step forward in structural efficiency. By reconfiguring the hangers of the classic bowstring arch from a conventional vertical arrangement to a diagonal one, we have dramatically improved the bridge’s performance.

Project
Troja Bridge
Location
Prague, Czech Republic
Client
City of Prague

Bridges improve lives

A bridge represents far more than a quicker way for people to get from A to B. Improved transport links facilitate the flow of ideas and capital required for trade and commerce, supporting the economic regeneration of cities, regions and entire nations.

At an individual level better connections bring employment and education opportunities within easy reach and improve access to healthcare and recreation, alleviating poverty, reducing inequality and contributing to healthier lifestyles.

The return on investment in the building of a bridge should, therefore, not just be measured in financial terms. We add value by helping clients to maximise the potential of projects to deliver economic, social and environmental benefits to communities.

Bascule bridge gives area lift

Improved access was essential to the redevelopment of London’s docklands. Designed by us, the Canary Wharf Eastern Access Bridge carries two lanes of traffic and a footpath across the Blackwall Cut, a waterway between West India Dock and Poplar Dock. We also supervised construction of the twin single-leaf bascule sections and composite steel/concrete viaduct.

Project
Canary Wharf Eastern Access Bridge
Location
London, UK
Client
London Docklands Development Corporation

Vital link’s new lease of life

The Silver Jubilee Bridge is the seventh largest bridge of its type in the world and a strategically important road link, carrying 85,000 vehicles each day across the River Mersey and Manchester Ship Canal. We devised a maintenance strategy, including an award-winning cathodic protection solution for the concrete deck, that will extend the bridge’s life by over 25 years.

Project
Silver Jubilee Bridge
Location
Halton, UK
Client
Halton Borough Council

Connecting continents

The Yavuz Sultan Selim Bridge is the third bridge across the Bosphorus linking the European and Asian sides of Istanbul. It is a stiffened suspension bridge with a main span of 1408m (steel box girder) and two side spans, 378m long, of a prestressed concrete box girder construction. We were the lenders’ technical advisor.

Project
Yavuz Sultan Selim Bridge
Location
Istanbul, Turkey
Client
İçtaş and Astaldi JV

Gap bridged after 600 years

A new footbridge was needed to improve visitor access to this world heritage site without disturbance to archaeologically sensitive areas. We developed the outline design to realise the client’s vision for a ‘floating’ design with piers that sit within a small footprint. An added benefit is that the 45m structure, which allows visitors to enter the site through the original drawbridge entrance for the first time in more than 600 years, sits low in the landscape, minimising interference with the views of the Snowdonia mountains.

Project
Harlech Castle Footbridge
Location
Harlech, UK
Client
Cadw

Bridge restored to former glory

The restoration of this Grade I listed bridge has extended the working life of a vital rail link and preserved an iconic city landmark. Major strengthening and refurbishment works were successfully carried out following our inspection and structural assessment. The project won several conservation awards including the Grand Prize for Conservation from pan-European cultural and heritage organisation Europa Nostra.

Project
Newcastle High Level Bridge
Location
Newcastle, UK
Client
Network Rail

Taiwan on the fast track

The high speed rail link between the cities of Taipei and Kaohsiung in Taiwan, which is over 345km long with 300km of viaducts and tunnels, cut journey times to 90 minutes. As leader of the International Railway Engineering Group consortium, our responsibilities included auditing and checking design and construction management activity.

Project
Taiwan High Speed Rail
Location
Taiwan
Client
Taiwan High Speed Rail Corporation

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Project
Taiwan High Speed Rail
Location
Taiwan
Client
Taiwan High Speed Rail Corporation

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Opening opportunities with connected thinking.

Safe even in an earthquake
The Oakland Bay Bridge in San Francisco is the world’s largest self-anchored suspension bridge with a clear span of 385m. Its design is so seismic resilient it could be returned to operation within 72 hours of a severe earthquake. In our role as technical advisor and programme manager to BATA, we provided multidisciplinary engineering services for this unique structure.

Project
Oakland Bay Bridge

Location
California, USA

Client
Bay Area Toll Authority (BATA)

We maintain what we build
We provided detailed design and construction supervision for the Severn Bridge, which has provided safe and easy passage between England and Wales since it opened in 1966. As maintenance consultant, we have carried out annual cable assessments of the 1600m suspension bridge, and the neighbouring cable-stayed Wye Bridge, increasing the resilience of both strategic crossings to cope with rising volumes of traffic.

Project
Severn Bridge

Location
UK

Client
Severn River Crossing

Link brings island closer
The Busan-Geoje Fixed Link, connecting the city of Busan and the island of Geoje, has cut travel times from more than 2.5 hours to 40 minutes. It includes two cable-stayed bridges, one with a main span of 475m, the other an unusual three-pylon structure with two back-to-back 230m spans. We supervised the construction of both bridges, advising on all technical aspects and foundation work.

Project
Busan-Geoje Fixed Link

Location
South Korea

Client
GK Fixed Link Corporation

Bridge strikes a chord
This network arch bridge across the River Irwell is a key part of the Ordsall Chord Viaduct that connects all of Manchester’s city centre railway stations for the first time, increasing rail capacity and reducing journey times. The bridge’s successful installation demonstrates how we can deliver complex projects using our market-leading BIM capability and expertise in multidisciplinary engineering services.

Project
Ordsall Chord Viaduct

Location
Manchester, UK

Client
Network Rail

Need help with a bridge engineering project?
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