MAINTAINING VITAL TRANSPORT ROUTES

(FROM IRONBRIDGE TO TOKYO)

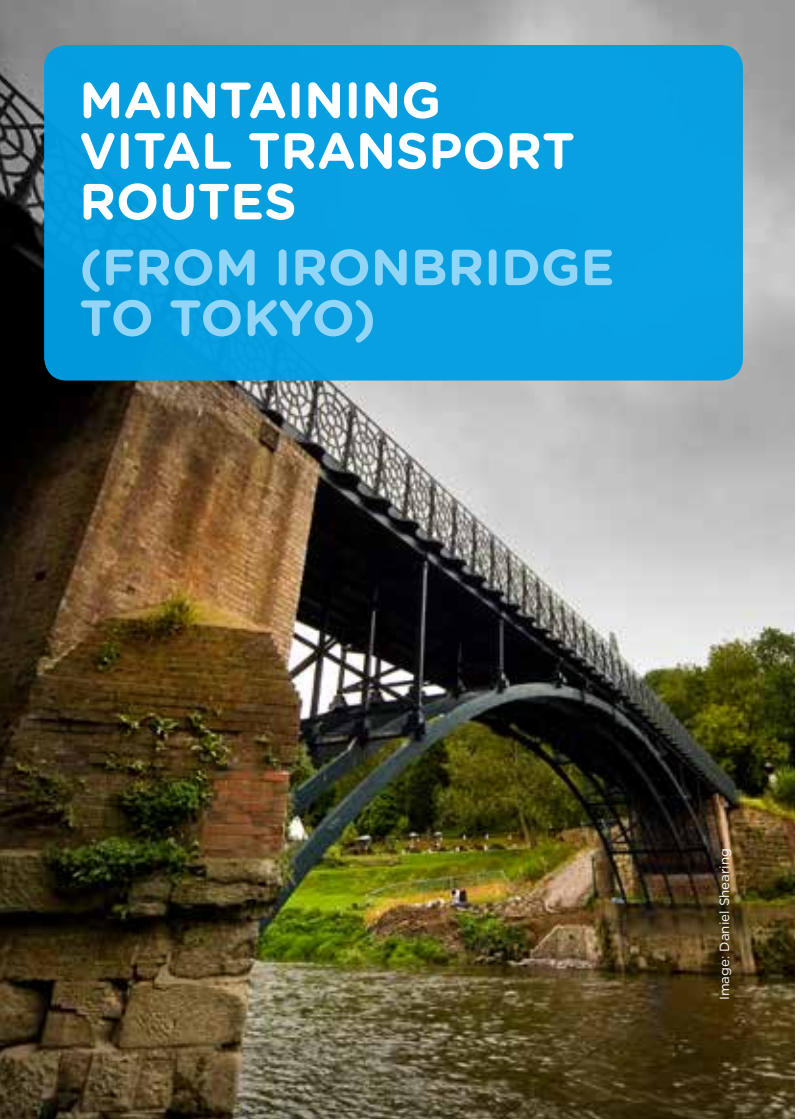

Image: Daniel Shearing

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ABOUT RAMBOLL

Ramboll is a leading engineering, design and consultancy company founded in Denmark in 1945. The company employs 13,000 experts and works across the markets: Buildings, Transport, Planning & Urban Design, Water, Environment & Health, Energy, Oil & Gas and Management Consulting.

The Ramboll Foundation is the main owner of the Ramboll Group A/S. The Foundation is the majority shareholder in the Ramboll Group.

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HOW TO EXTEND THE LIFE OF AGING INFRASTRUCTURE

without stopping traffic

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Image: Daniel Shearing

95 SPECIAL INVESTIGATIONS
of post-tensioned concrete bridges (1971 - 2016)

35 TECHNICAL PAPERS
on analysis/assessment/ strengthening of historic structures since 1991

£6m WORTH OF STRENGTHENING SAVED
by reassessment on the DLR 3 Car Enhancement project (2010)

21 WROUGHT IRON RAILWAY BRIDGES
strengthened for the Thameslink K02 scheme (2016)

1993-1998 M8 Kington Bridge strengthening

2001 Assessment and strengthening of Coalport Bridge (pictured)

2008-2009 Assessment of the influence of The Shard construction on London Bridge station

2015 Hammersmith Flyover -Many innovations including post-tensioning with UHPFRC anchors

350
ARCHTEC PROJECTS
since 1998, and Queen's Award for Enterprise: Innovation in 2002

GRADE 1
LISTED IRON BRIDGE
risk and strength assessment of the world's 1st cast iron bridge (2013)

40 HISTORIC
METAL BRIDGES ASSESSED
with non-linear analysis including Iron Bridge, Coalport and Britannia

5000
THAMESLINK MASONRY ARCHES
assessed in 6 months

68 ARCH
SPANS MODIFIED
for the Bermondsey Dive Under (2012-2016)

OPTIMISING SAFETY, RELIABILITY AND LIFETIME COSTS

Ramboll is an internationally recognised expert in assessing, strengthening and managing aging infrastructure. We are renowned for our non-standard assessment approaches which have avoided costly strengthening or replacement of structures, saving our clients millions of pounds.

We provide world class expertise in areas such as post-tensioning, the realistic assessment of structures, failure modes effect and criticality analysis, finite/discrete-element method, Engineering Simulation and 3D computational design.

These skills, coupled with our experience of specialist design and construction techniques enable us to safely maximise the capacity of existing structures and, where unavoidable, define complex strengthening schemes within significant operational constraints.

Recently, as part of our work on the TfL Structures and Tunnels Investment Portfolio (STIP), our innovative strengthening solutions have extended the life of the Hammersmith Flyover by installing the first ever full new pre-stressing system where it was not possible to remove the original without significantly disrupting the traffic on this critical route.

Our reputation has led to work for The Nippon Expressway Company Research institute. Ramboll is helping to develop standards for the management of their 11,000 post-tensioned concrete bridges in Japan.