

INDUSTRY LEADING BRIDGE ENGINEERING SOLUTIONS

CONSTRUCTING,
MAINTAINING AND
EXTENDING THE LIFESPAN
OF BRIDGES ACROSS
THE UK & EUROPE

Think Extraordinary. Think Spencer
spencerbridgeengineering.co.uk





HISTORIC BRIDGES

Spencer Bridge Engineering have over 25 years' experience of refurbishing historic bridges over water, land and railways. Our team of experienced Chartered Engineers and on-site delivery teams are highly experienced in the refurbishment of Grade I and Grade II listed structures across the UK.

We have developed significant expertise in the refurbishment of bridge decks, suspension systems, masonry repairs, grit blasting, inspections, steel-work execution, weld repairs and subsequent repainting activities.

Our in-house design team offer complex temporary and permanent works design solutions, providing safe access for our workforce whilst limiting disruption to local residents and businesses.

By combining pioneering engineering solutions with meticulous planning and excellent stakeholder relationships, we can ensure that any project is delivered to meet the client's requirements and expectations.

Our bridges teams are highly experienced with working on ageing structures to deliver carefully executed construction methodologies required to preserve and maintain their iconic significance and structural integrity. Our site teams diligently work to our in-house procedures to ensure a first class quality offering is produced, extending the lifespan of these historic structures.



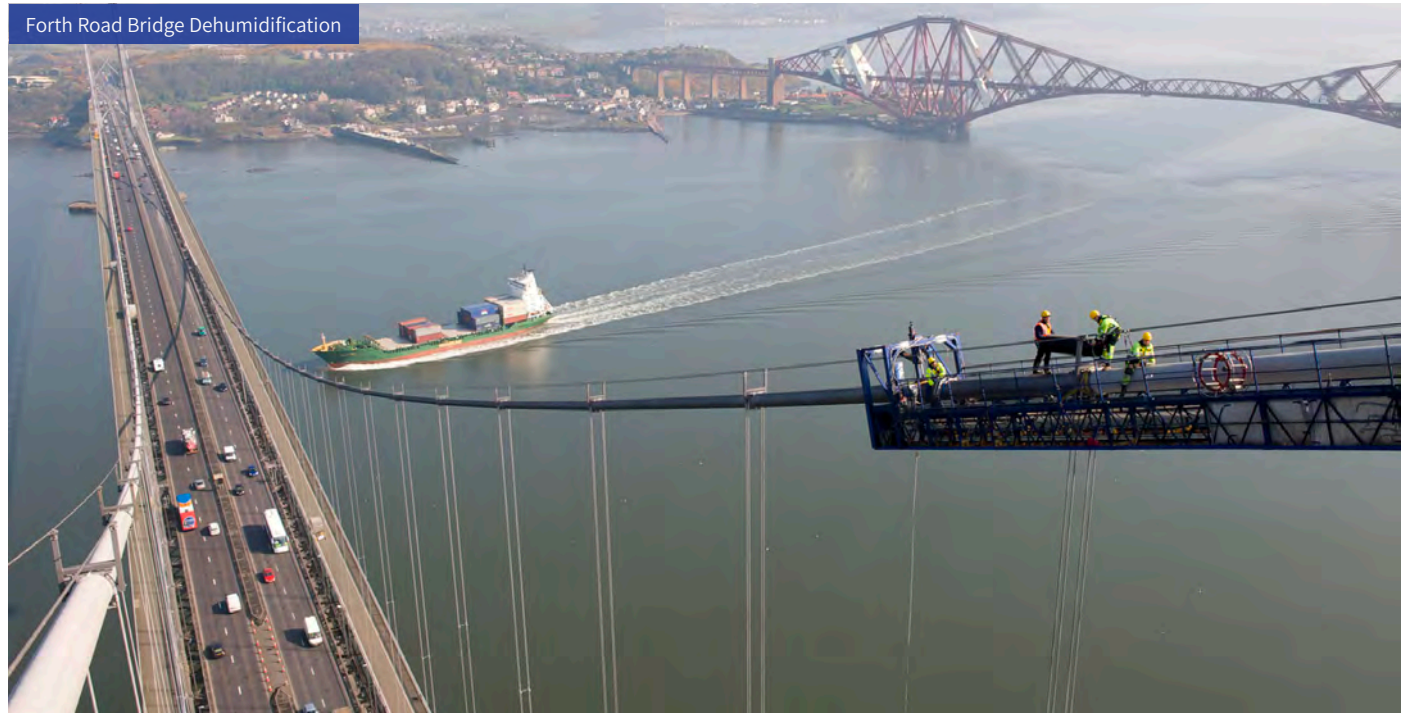


REPAIR, REFURBISHMENT & MAINTENANCE

Spencer Bridge Engineering has an outstanding track record of work on some of the largest bridges in the UK and Europe. We have developed significant expertise on undertaking highly technical maintenance and repair works to assist our clients in extending the lifespan of bridges, using a combination of disciplines across the civil engineering sector and beyond to develop game-changing solutions to unique problems.

Our extensive experience in the maintenance of bridges allows us to perform works of all disciplines to maintain the structural integrity or the bridge aesthetics. Prioritising innovative solutions that save the client time and money are imperative in our bridge maintenance. From unique cable dehumidification methods on large suspension bridges to bearing replacements on large multi span bridges, we're sure to have the experience to complete the job successfully again. We're often commended by our clients on the speed in which we operate on the bridges, this is because of our years of extensive experience which have allowed us to design and fabricate temporary access gantries and platforms to ensure works are as safe and efficient as possible.

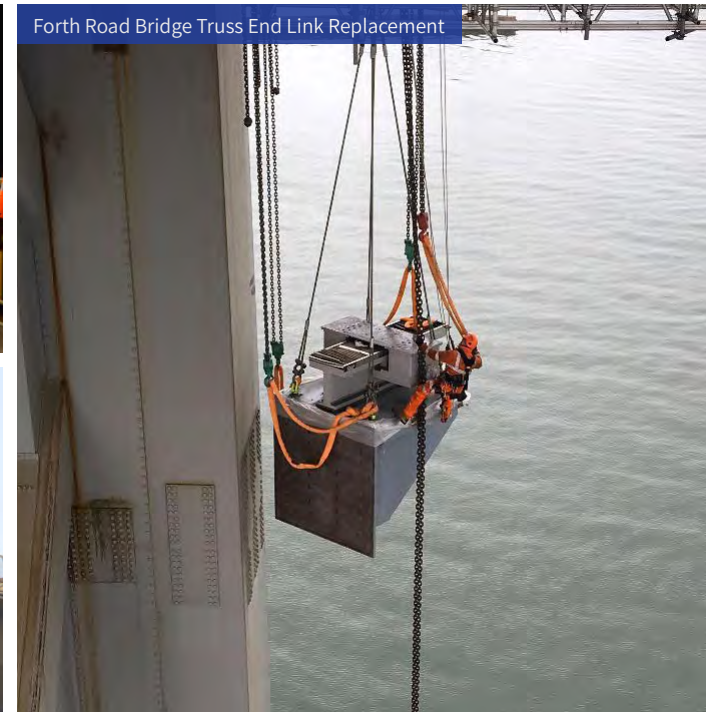
This innovative approach extends beyond the engineering solutions into the planning side, with a focus on ensuring our clients experience as little disruption as possible during the project by minimising the need for closures and carriageway possessions. By combining ingenious engineering solutions with meticulous planning and excellent stakeholder relationships, we can ensure that any project is delivered to meet the client's requirements and expectations.



Humber Bridge Hanger Replacement



Forth Road Bridge Truss End Link Replacement



Erskine Bridge Major Maintenance





INNOVATIVE TEMPORARY ACCESS SOLUTIONS

Spencer Bridge Engineering has unrivalled experience in providing access solutions for our clients. Our in-house multi-disciplinary approach gives us the ability to utilise engineering experience from across our business to deliver efficient and effective access on complex structures within challenging environments. Each access system is designed and selected specifically for a bridge structure, taking into consideration the constraints of each project and any limitations on loading.

Originally used during suspension bridge main cable inspections, our patented cable crawler design has also been used to retrofit dehumidification systems to some of the largest suspension bridges in the world. Since then, we have designed and built a range of temporary gantries and platforms that allow our engineers and clients to carry out any bridge inspection or refurbishment activity. Such activities are suspension bridge hanger replacements, under-deck blasting, painting and steel-work strengthening, inspections and monitoring of bridges and major bridge refurbishment works.

Our gantries allow work to be carried out safely at height within an enclosed environment, whilst also keeping bridges operational and minimising disruption to bridge users. Each access solution is selected for the project based on the unique requirements for each activity. Our access solutions can incorporate fully encapsulated platforms to contain particulates from blasting and painting activities, to ensure environmental concerns are mitigated.

Union Chain Bridge Suspended Access System



Humber Bridge Hanger Gantry

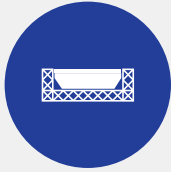


Forth Road Bridge Underdeck Platform



Humber Bridge Cable Crawler





PERMANENT UNDERDECK GANTRIES

Spencer Bridge Engineering has unrivalled experience in the design, supply, installation and commissioning of permanent moving underdeck gantries on major crossings. Our team deliver innovative and efficient access solutions on complex structures within challenging environments, right from concept design to handover and ongoing maintenance.

We work collaboratively with our clients to understand the requirements of the access on each bridge asset, and engineer a bespoke gantry to suit the particular constraints and geometries. Moving gantries are a complex safety critical integration of structural, mechanical and control system disciplines, often requiring long operational design lives and robust maintenance strategies. Spencer Bridge Engineering are industry leading in this field and have provided some of the most complex systems in use today.

Our in-house design team of structural, mechanical and control system engineers, along with our technical project delivery team, provide a 'one stop shop' for all permanent gantry requirements. Our off-site and on-site teams have a proven ability to overcome the many challenges that arise when working on bridge structures in demanding environments, including working at height over waterways and within live operational and sensitive environments.

Kessock Bridge Underdeck Gantry



Forth Road Bridge Underdeck Gantry



Erskine Bridge Underdeck Gantry





STEELWORK STRENGTHENING

Spencer Bridge Engineering has unrivalled technical capability in the execution of steel-work strengthening works on bridges, self-delivered utilising our own in-house welding qualifications and NDT procedures in accordance with our NHSS 20, BS EN ISO 3834-2 and BS EN 1090-2 accreditations. We follow our own company NDT procedures and have a fully qualified inspection workforce in both CSWIP and PCN certifications, qualified to carry out visual and NDT inspections on major bridges and structures.

The quality of steel-work strengthening on major bridges is paramount to ensure the design life of the structure is maintained. Their location is often in highly corrosive marine environments and subject to fatigue loading, therefore the quality of the inspections and welding repair works must be of a high standard. Integrated with our delivery teams, our structural engineers, metallurgists and welding engineers provide technical support and guidance on achieving quality levels to our clients.

Coupled with the utilisation of our bespoke access solutions, painting capability and temporary works execution, we are able to provide a comprehensive self-delivery offering to our clients for all steel-work strengthening and welding requirements.

Our team engages with key stakeholders throughout the project cycle to consider access, plant, site constraints and environmental impacts associated with steel-work strengthening activities, for every project we undertake.

Forth Road Bridge Truss End Link Repair



Erskine Bridge Steelwork Repairs



Erskine Bridge Steelwork Repairs





BLASTING AND PAINTING

Spencer Bridge Engineering's capabilities include self-delivery of onsite blasting and painting works, working on bespoke structures in challenging environments including working at height, over waterways and within live railway environments.

As a Sector Scheme 19A contractor, our team are experienced in self-delivery of blasting, painting and associated inspection works on highway structures utilising our in-house procedures to control the quality of the painting works in strict accordance with the Specification of Highway Works Series 5000.

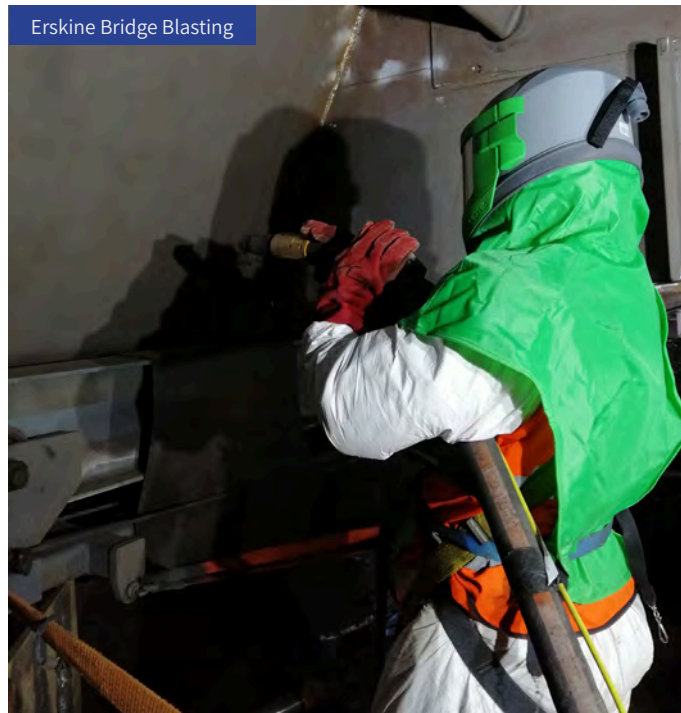
The quality of the preparation and painting on bridge works is paramount to ensure the lifespan of the paint system is realised. Their location is often in highly corrosive marine environments, therefore the quality of the painting must be of a high standard and applied strictly in accordance with the paint manufacturers data sheets to provide guarantees on the life of the coating.

Coupled with the utilisation of our bespoke access solutions, steel-work and welding capabilities, we are able to provide a comprehensive self-delivery offering to our clients for all blasting and painting applications on bridges and structures.

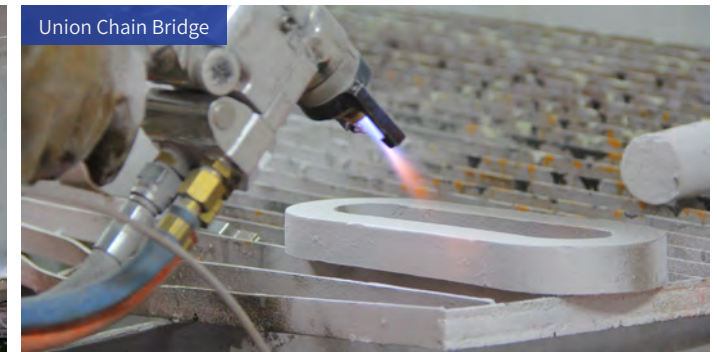
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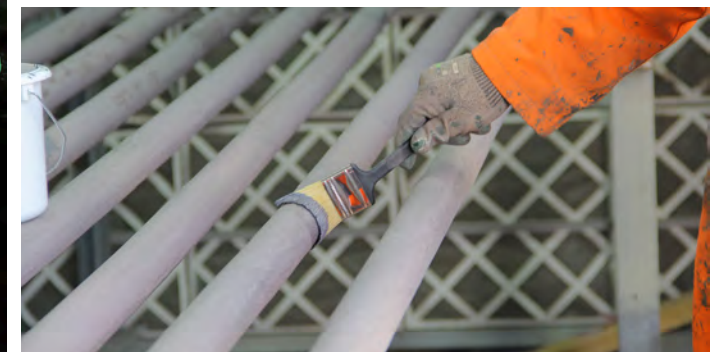
Boothferry Bridge Encapsulation



Erskine Bridge Blasting



Union Chain Bridge





DESIGN AND ASSESSMENTS

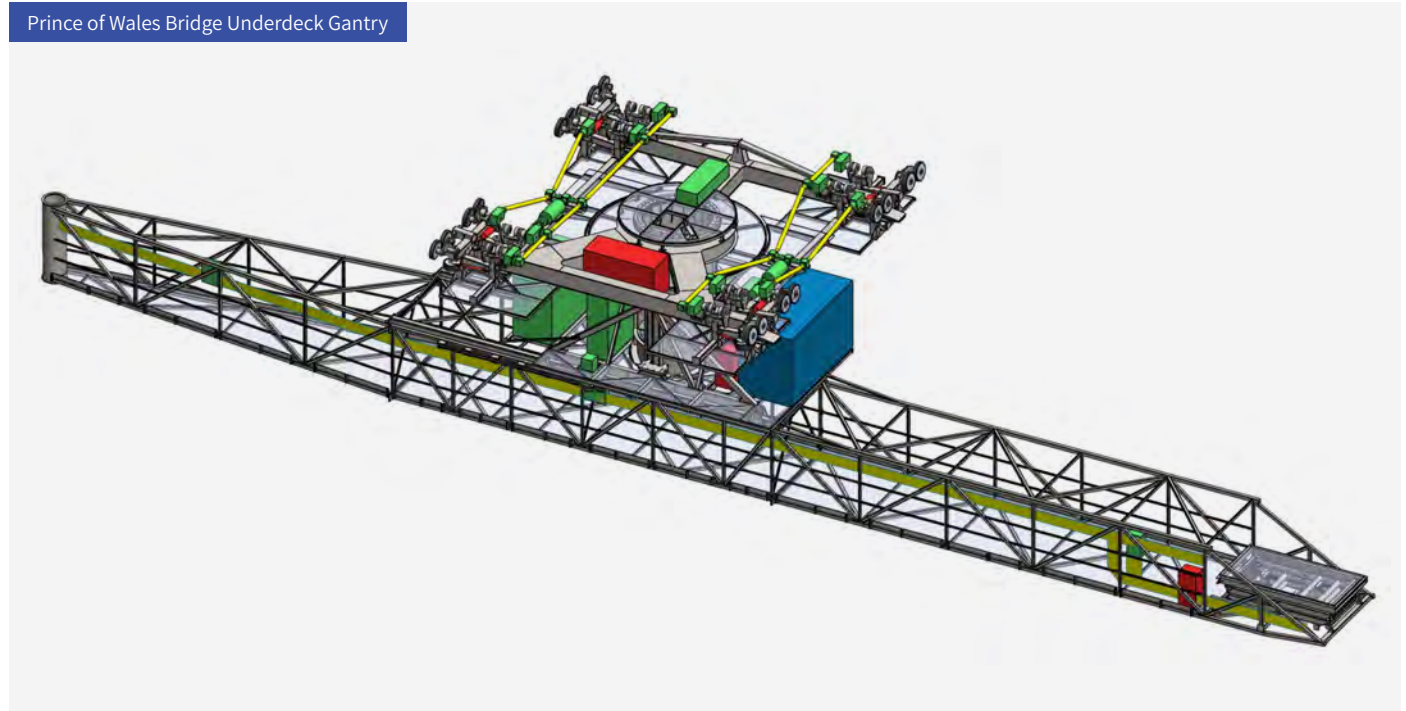
Spencer Bridge Engineering have a significant in-house multi-disciplinary design team, capable of undertaking design work as part of a design and build offering, or on its own as a consultancy service. Our teams comprise civil, structural, mechanical and electrical design disciplines, who work together with our project managers and on-site delivery teams to enable first-in-class temporary and permanent works design and assessment services.

The team are conversant with both Network Rail and the Design Manual for Roads and Bridges design and assessment criteria, employing a number of industry leading Chartered Engineers to undertake complex analysis using traditional calculation methods and finite element techniques.

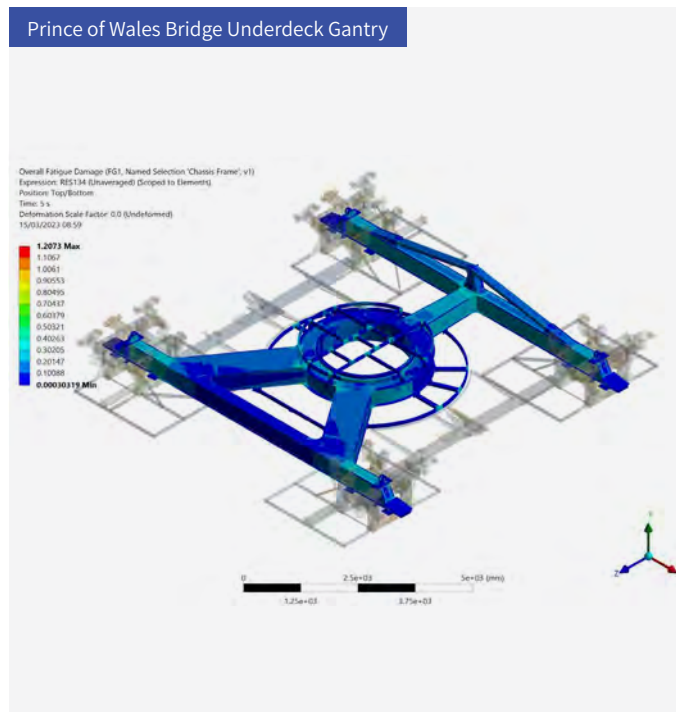
Permanent works design is implemented in a BIM compliant common data environment, making the sharing of information and hand back as smooth as possible. Our team have experience working on both steel and concrete bridges and the expertise of our in-house mechanical engineers means we are equally adept at working on both moving and static structures.

Our moving structures portfolio includes hydraulic lifting bascule bridges, telescopic bridges, self-levelling under-deck gantries, bespoke MEWP's and many more. Our design teams are able to undertake assessment work to determine the remaining lifespan of existing structures, using complex finite element methods to calculate likely fatigue damage and offering the client strengthening solutions to extend the lifespan of the asset where required.

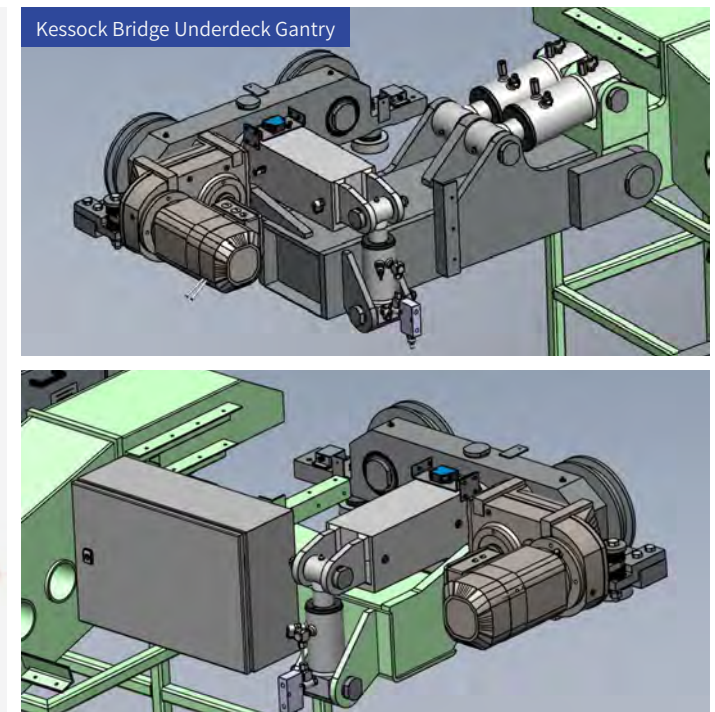
Prince of Wales Bridge Underdeck Gantry



Prince of Wales Bridge Underdeck Gantry



Kessock Bridge Underdeck Gantry





NDT AND PAINT INSPECTIONS

Spencer Bridge Engineering have a significant in-house multi-disciplinary NDT and Paint Inspection team, offering an inspection service as part of our quality requirements for steel-work execution, blasting and painting, or on its own as an independent service to the client for third party compliance.

Our inspection teams are qualified to CSWIP, PCN and ICorr and have a proven track record with high profile inspection work scopes on major bridges and have in depth knowledge and understanding of the relevant standards and acceptance criteria, ensuring full compliance throughout.

We offer a comprehensive range of inspection services including visual inspection, MPI, DPI, UT, Eddy current, 3rd Party Witness, QA/QC audits and paint inspection. Should any compliance or defects be found during the inspections, our team can assist in determining the root cause of failure and provide cost-effective solutions for remedial actions.

At Spencer Bridge Engineering we understand that inspection plays a crucial role in ensuring the project quality requirements are achieved. We have built a solid reputation within the industry as a high quality steel-work and painting contractor, exceeding our clients expectations in challenging environmental conditions.

Erskine Bridge Paint Inspection



Erskine Bridge UT Inspection



Union Chain Bridge Paint Inspection





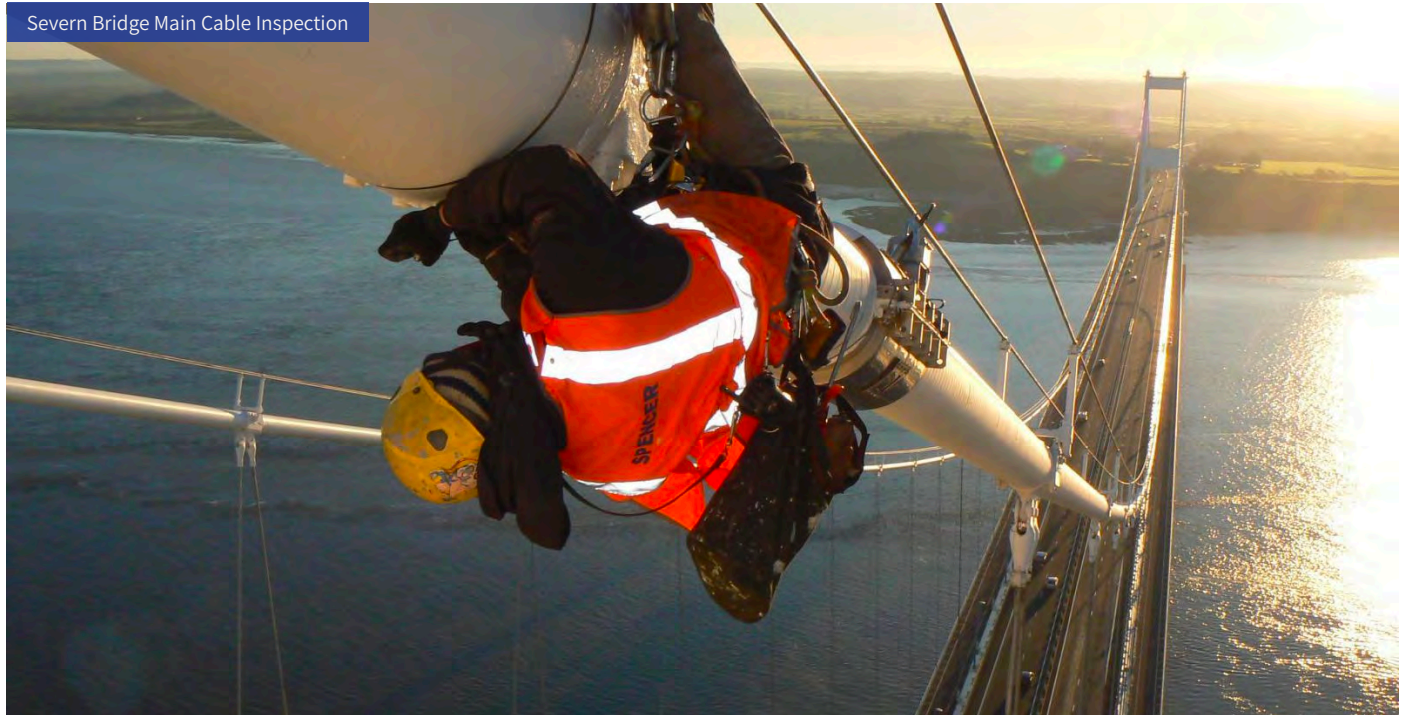
ASSET INSPECTIONS

Spencer Bridge Engineering have a strong track record in delivering asset inspections for bridges and structures across the UK to ensure mandatory requirements are met, such as those described within the DMRB CS450 - Inspections of Highway Structures. Our Chartered Civil, Structural and Mechanical Engineers deliver the inspections, supported by our teams of roped access inspectors, ensuring a compliant inspection is undertaken safely. If specialist access is required over and above traditional roped access means, our access systems can be deployed to enable more detailed examinations to be undertaken, including any subsequent repair works.

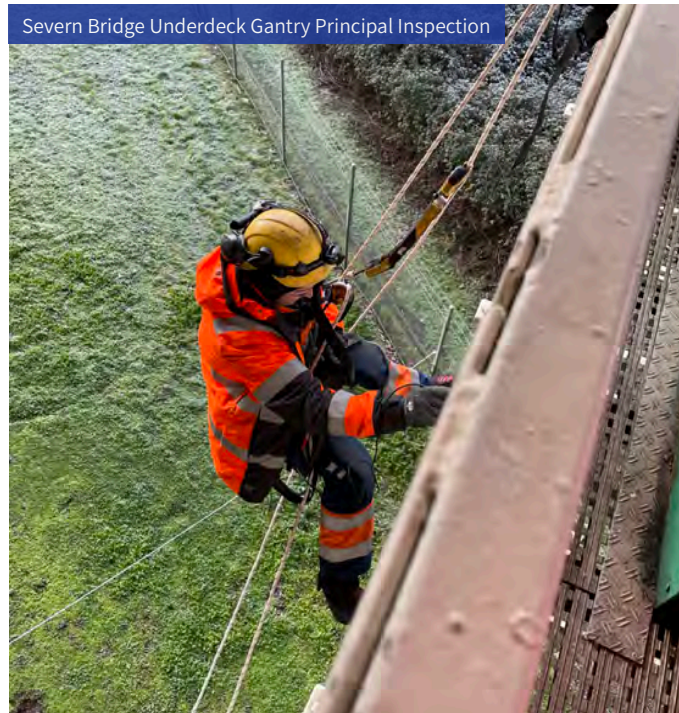
We have delivered CS450 inspections on a number of major long span crossings and moving structures, providing detailed reports and evidencing any issues or defects found during the inspections, including making recommendations for any subsequent assessment work and any resulting repairs. Our inspection capability is not limited to those described within the various inspection standards - our engineering team can assist with any bespoke inspection requirements for unique assets, or when the client requires any form of condition reporting or structural health monitoring.

All inspections are planned and managed safely, utilising the capability of the wider construction business in accordance with statutory regulations, to the highest levels of quality and safety. Full support is provided from the project management, site delivery, planning and off-site health, safety, environmental and quality functions. Any plant and materials deliveries are coordinated upfront, including any road space bookings and possessions to suit the constraints of the project.

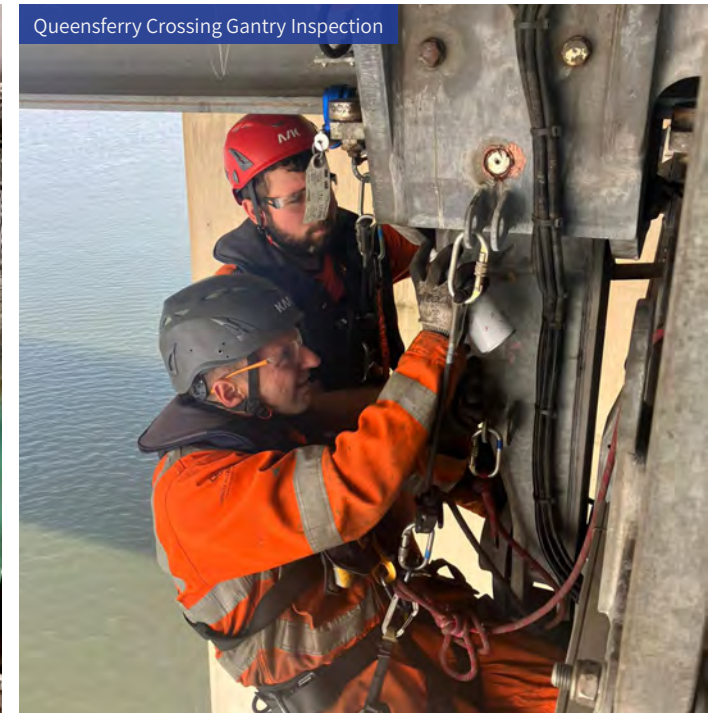
Severn Bridge Main Cable Inspection



Severn Bridge Underdeck Gantry Principal Inspection



Queensferry Crossing Gantry Inspection





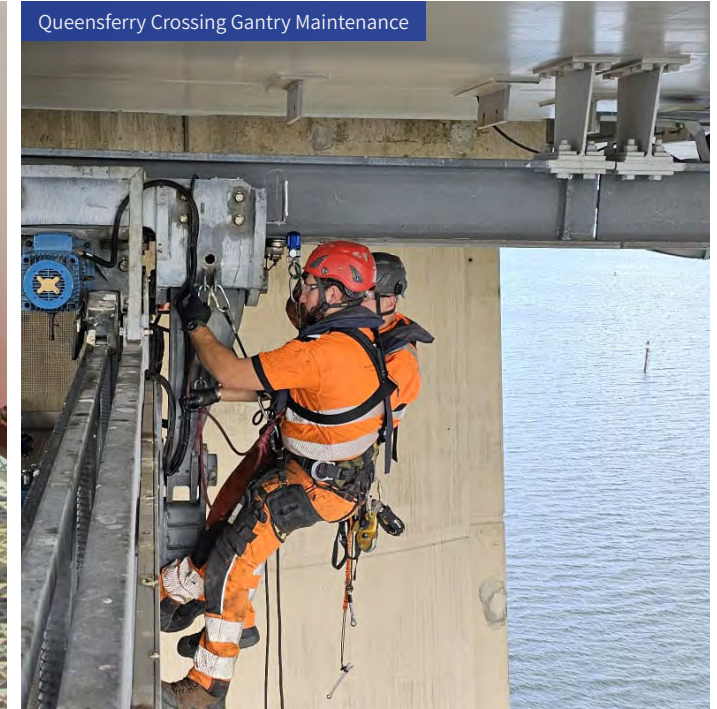
GANTRY MAINTENANCE

As part of our turnkey solution for under-deck gantries, Spencer Bridge Engineering offer an ongoing gantry maintenance package to ensure compliance with statutory regulations and to maximise the availability of the access. Each maintenance package is tailored to the clients needs, taking into account their own maintenance capability and any training they require to ensure compliance.

Our in-house expertise and engineering pedigree means we are able to take on the maintenance of existing gantries at any stage in their lifespan, however complex. We have relationships with OEM's that enable us to source parts and equipment to ensure ongoing operation of the asset.

Our maintenance team coordinate the full scope of services and provide a detailed report of tasks carried out, including review of usage logs which are essential to any future assessment work for gantry approaching life expiry. Our site teams are fully supported by our Chartered Design Engineers who are able to assist with any engineering matters arising, requiring such support.

In addition to gantry maintenance, we are able to undertake 3rd party LOLER examinations of both gantries and their associated runway rails, offering engineering consultancy support as required for any assessment work such as fatigue analysis or life extension strengthening work.





GET IN TOUCH

One Humber Quays
Wellington Street West
Hull
East Riding of Yorkshire
HU1 2BN

01482 766340
think@spencerbridgeengineering.co.uk

spencerbridgeengineering.co.uk

