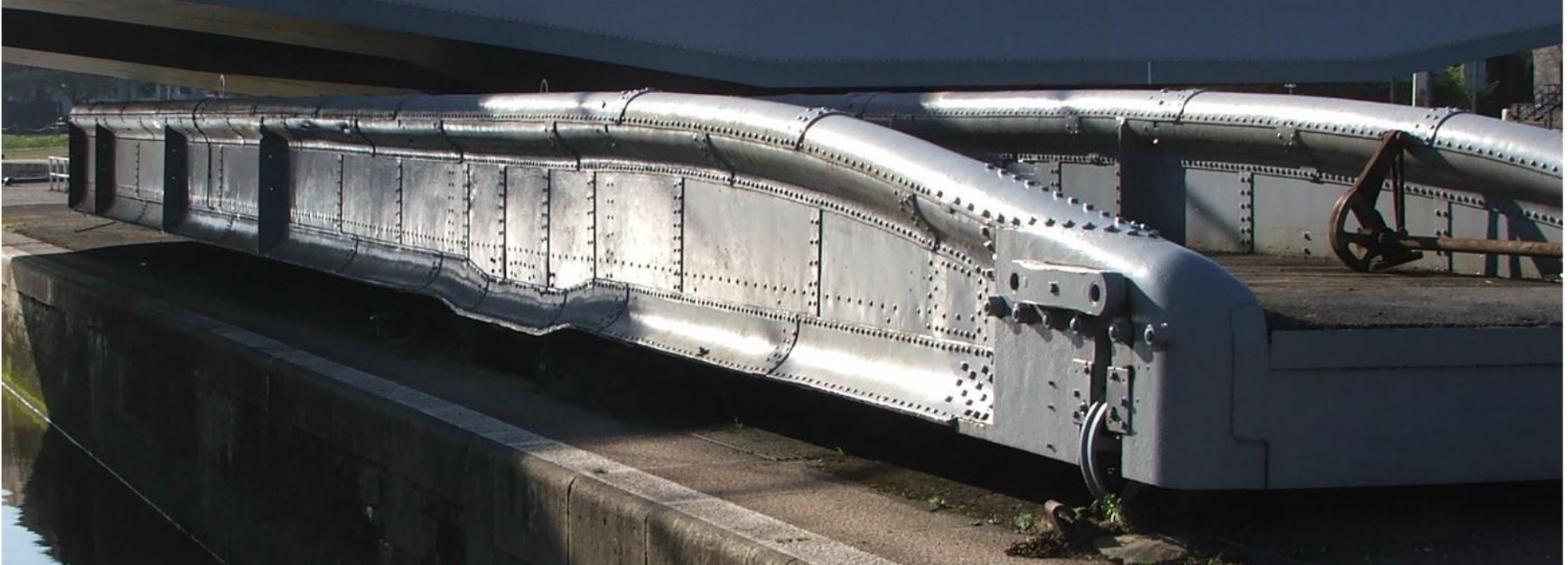


Brunel's Swivel Bridge

A Prospectus from the Brunel Swivel Bridge Group CIO

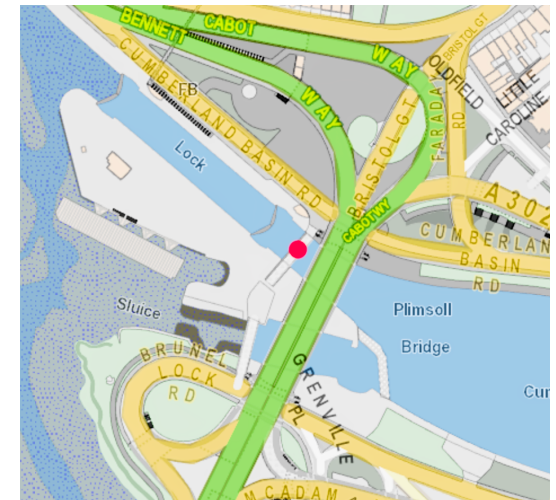


WHAT IS BRUNEL'S SWIVEL BRIDGE ?

Isambard Brunel's innovative rotating bridge was originally built to carry a road across his new Entrance Lock to Bristol City Docks. It was built in 1849 in the same dockyard as the SS Great Britain and by the same firm. It still survives today, next to the 1872 Entrance Lock where it provided an essential crossing until made redundant by the Plimsoll Swing Bridge, commissioned in 1968.

The deck is 33 m (110 ft.) long, weighs about 70 Tonnes, and, although derelict, can still rotate.

The bridge is a Grade 2* listed national heritage asset and on Historic England's *Buildings At Risk* Register, where its condition is described as 'very bad'.



WHY IS THE SWIVEL BRIDGE IMPORTANT?

It is remarkable evidence of Brunel's thinking. The innovative design clearly reveals Brunel's creativity at a time when he was developing new ideas for longer, stronger bridge spans. Some design features didn't work, but those that did were copied elsewhere both in the UK and abroad. This is a pioneering structure, designed at a time of competitive creativity in bridge-building, and a key part of Brunel's legacy.

It is unique. The Bridge is the oldest rotating bridge in the world, older than the Clifton Suspension Bridge, and the only early moving wrought iron bridge to survive intact.

It was built in Bristol. It was constructed in the same dockyard as the SS Great Britain and by the same firm, George Hennet & Co.

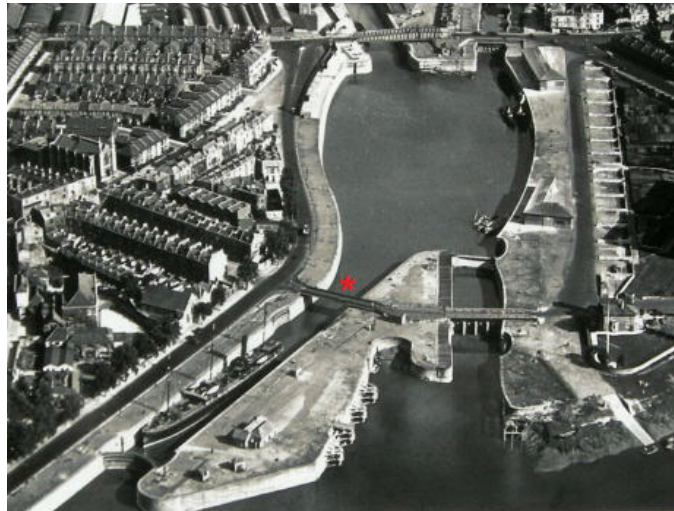
It is complete. Despite being severely rusted in places, the structure is substantially complete and can still rotate.

It is an exceptional example of the best of Victorian technology. The design is strong but economical and lightweight, constructed over a short period, but to an exceptionally high standard of workmanship.

It is constructed of wrought iron. This traditional hand made material is no longer made. It was jointed using white-hot rivets, hammered manually, a process no longer used in construction.

It was technologically innovative. The Newcastle firm Sir W G Armstrong Whitworth & Co Ltd. supplied a jigger mechanism to rotate the deck using hydraulic water power alone - originally the Bridge had been operated manually. This jigger equipment survives intact, demonstrating the technology that led directly to the oil hydraulic systems used widely in engineering solutions today.

It is historically significant. The Bridge is recognised by its national Grade 2* listing, putting it in the top 4% of the UK's most important heritage assets.



WILL THE BRIDGE HAVE A USE WHEN RESTORED ?

It will provide an essential crossing over the Entrance Lock, needed now, and even more so within the proposed Western Harbour scheme. It would form part of the walking and cycling routes, which the Western Harbour project team are championing, and become an essential link between cycle routes north and south of Cumberland Basin.

With this practical function, it will also support Bristol Council's Climate Emergency Action Plan, One City Plans and Transport strategies.

Currently the only passage is over the lock gates themselves. Many feel unsafe on these minimally guarded walkways and they are tricky for cyclists, scooter users and those with walking or other mobility difficulties. For wheelchair users, prams and pushchairs, the lock gate walkways are completely impractical, whereas the restored Bridge would offer a safe and usable route,

The Bridge will be operable by harbour staff with a one-button system, alongside the existing lock gate controls.

Crucially, the Bridge will also provide a focus for the many heritage assets in the Western Harbour area and act as a catalyst for their conservation and interpretation. This will form an essential part of preserving the heritage appeal of this end of the harbour as it is developed.

ABOUT THE BRUNEL SWIVEL BRIDGE GROUP (BSBG)

AIMS OF THE BSBG

To restore and save a valuable heritage asset of local and national significance.

To recommission and maintain the Bridge as part of a cycle route, and for foot traffic, and to develop its amenity value for Bristol.

To celebrate, conserve and care for heritage assets in the Western Harbour area.

To develop the site's educational value through exploration of its significance in the context of the Floating Harbour and Brunel's other works.

To inspire interest in history, engineering and technology in people of all ages.

OUR PRINCIPAL TASKS ARE TO:

Establish a relationship with Bristol City Council, and negotiate a license to permit the Group to carry out works to the Bridge.

Raise further funds to complete the works and an endowment fund to contribute towards ongoing maintenance.

Draw up a schedule of works and business plan in parallel for a 3-5 year period, then to carry out repairs and re-commission the Bridge to full working order.

WHY NOW?

Plans for the restoration of the Swivel Bridge need to be developed in parallel with the Western Harbour Master Plan. Conservation is made more urgent by the poor condition of the Bridge which will eventually collapse if not repaired.

While the bridge has benefited from volunteer support for over a decade, in June 2025, prospects were substantially advanced by a pledge of significant funding from a private donor. This means that less than half of the needed funds now have to be raised.

CONSERVATION PHILOSOPHY

The project leaders are conservation-minded and will retain of as much of the historic structure as possible, repairing rather than renewing. We will minimise risks to the historic fabric by a minimal intrusion approach and restore the Swivel Bridge as a heritage monument to safe working condition.

ENVIRONMENTAL SUSTAINABILITY

The restored Bridge will provide a new crossing with a very low embedded carbon footprint, and at a much lower overall cost than any newly-built crossing.

Routing cyclists across the Bridge will remove the need for a two-lane cycle-path along the flood defences, significantly lowering their capital cost.

The Bridge crossing will be level, more direct and convenient than alternative routes, and free of vehicular traffic. This will encourage the use of low-carbon forms of transport and reduce both air pollution and noise in the area.

SO FAR WE HAVE:

Raised the profile of the Bridge through our website, social media, and local radio & TV. Researched its history and published three journal papers.

Attracted significant financial support from Historic England and charitable foundations, allowing works to progress.

Hosted a major conference for the Institution of Structural Engineers; held numerous lectures and 170th anniversary celebrations in 2019.

Focussed attention on the area's heritage as part of the Western Harbour scheme and prepared an online database of heritage assets in the Western Harbour area.

Surveyed and prepared detailed CAD drawings of all component parts and their defects. Carried out investigations, conservation work, repair trials, and restored the turntable to working condition,.

Enlisted more than four hundred supporters with volunteers giving over 3,000 hours conserving the Bridge, removing graffiti and maintaining the environs.



TRUSTEES OF THE BRUNEL SWIVEL BRIDGE GROUP

Geoff Wallis C.Eng. MIMech.E

Geoff has 50 years' experience in the practical conservation of historic metalwork and machinery. He was a director of Dorothea Restoration Engineers for 30 years and has unparalleled experience with mechanical and industrial machinery. Geoff has had education and consultancy roles with several universities, English Heritage, Historic England and the Heritage Lottery Fund. He co-founded the National Heritage Ironwork Group, is Council member of the Association for Industrial Archaeology and a former President of the Bristol Industrial Archaeological Society. He founded the Brunel Swivel Bridge Group in 2013 and continues to campaign for its restoration.

Bob Watkins BSc, MSc, CEng, FICE, Aff.IHBC

Bob is a chartered civil engineer and a Fellow of the Institution of Civil Engineers and holds a MSc. in the Conservation of Historic Buildings. He has more than 50 years of experience in the management of large projects, including civil engineering projects, bridges, marine works and buildings. Bob specialises in the investigation and rehabilitation of structures and has written several papers in this field. He has been engaged as a consulting engineer in the UK, Hong Kong, Singapore. Bob has received extensive professional recognition from his peers, including the Historic Bridge & Infrastructure Award from the Institution of Civil Engineers in 2011.

Nick Booker B.Com, FCIM

Nick was born in Bristol and has worked as a strategic business consultant in tourism for over 20 years as the owner of Attract Marketing and was elected a Fellow of the Chartered Institute of Marketing in 2006. He was a trustee of The Postal Museum until 2016, Chairman of Mail Rail Trading Ltd., and a member of the Fundraising Board. Until 2021 he was a member of the project board at Coventry Cathedral guiding the development of a capital project for City of Culture and was Vice Chairman of the Coventry Heritage & Arts Trust. Nick is a specialist in industrial archaeology and the history of technology, writing for publications including The Guardian. Nick is chairman of the Welsh Highland Railway Heritage Group and a member of the Ffestiniog and Welsh Highland Railways Heritage Advisory Group.

Simon Hickman BSc, MSc

Simon was Historic England's Principal Inspector of Historic Buildings and Areas and Development Advice Team Leader in the South West for over ten years. He has worked extensively across the South West, with knowledge of every part of the region. Simon was a building inspector for English Heritage's London region, where he guided the restoration of some of the Nation's best loved buildings, including Kings Cross and St Pancras Stations, and the National Theatre. Simon started his career in heritage managing a steam railway in Eastern Scotland, and maintains interests in transport heritage, serving as vice chair of Bristol Industrial Archaeology Society.

Iain Boyd MBE, BSc, MSc

Iain is a conservation advocate living in the Hotwells area of Bristol who chairs the City's Conservation Advisory Panel. As well as a range of business experience, he holds an MSc in Conservation of the Historic Environment. He became a Trustee and then Chair of the Society for the Protection of Ancient Buildings (SPAB) from 2008 until 2022. He also served as a Trustee of the Institute for Conservation (ICON) for six years and was an appointed Council member of the National Trust until 2024. Iain is the co-author of New Designs for Old Buildings, published by the RIBA and was awarded an MBE for services to heritage in 2023

CONTACT US

To find out more about any aspect of the project, please contact Geoff Wallis at jandgwallis@gmail.com

**The Brunel Swivel Bridge Group is a Charitable
Incorporated Organisation. Charity no. 1214276**



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