

BRUNEL'S OTHER BRIDGE NEWS

February 2024

Bristol Local Plan

The deadline for representations has just closed, and the Plan now goes off to the Secretary of State for further examination. The Development Strategy for Western Harbour (Policy DS4) starts on page 28. See: <https://www.bristol.gov.uk/residents/planning-and-building-regulations/planning-policy-and-guidance/local-plan/local-plan-review>

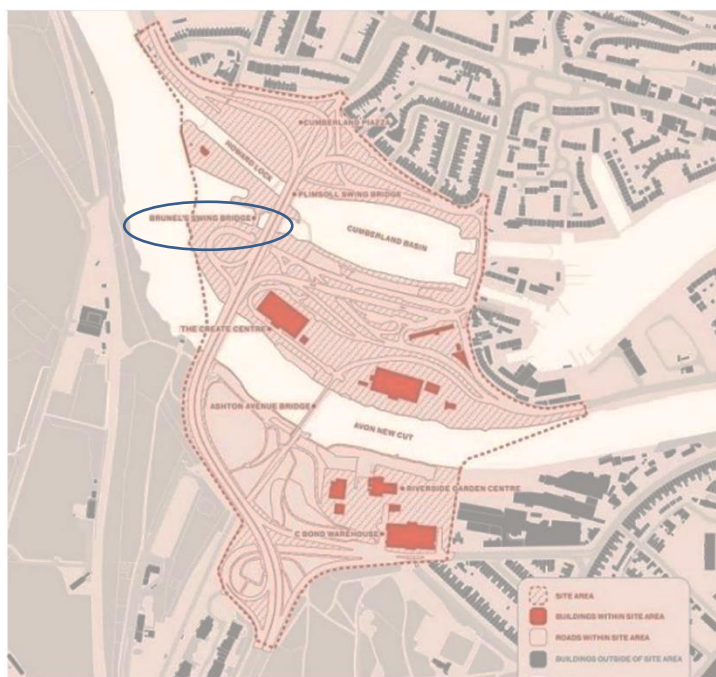
The development will include: **‘A reconfigured road system, replacing the present network of roads and bridges with a simplified system; New homes with a mix of types, sizes and tenures, including affordable housing in accordance with Policy AH1 ‘Affordable housing provision’; A mix of workspace; Retail and leisure development consistent, as required, with Policy SSE4 ‘Town centre first approach to development’; Infrastructure, services and community facilities required to support the new development; The retention and provision of high quality public open spaces incorporating green infrastructure and public realm enhancements. New open and enhanced space should be provided in accordance with local plan policy GI A ‘Open space for recreation’ and will be secured from new development; New walking and cycling routes to connect to the development to the city centre, surrounding neighbourhoods, public transport facilities and the wider cycle network.’**

Little mention is made of heritage assets but the principle is stated:

‘Proposals will have regard to the area’s important heritage assets and respond appropriately to key views and landmarks set out in the relevant Conservation Area Character Appraisals and other supporting policy and guidance.’

Our Group made representation that the heritage assets in the Western Harbour area should become the focus of the new development and The Bridge be fully restored to working order.

Western Harbour ‘Master Plan’



The City’s Regeneration Team are appointing planning consultants. Selection will be based on quality, price and social value. The budget is £1million, and it is anticipated the team will start work by March 2024 with completion one year later.

The Masterplan will describe a long-term picture for Western Harbour and help define where housing, community spaces, walking and cycling networks, the road and greenspace will go. The future of the road network, creating a sustainable place to live and helping to combat the housing crisis are all issues to be addressed. For the ‘story so far’, vision and process, [CLICK HERE](#)

Encouragingly, the study area (above) specifically mentions Brunel’s Swivel Bridge. (Ringed)

Western Harbour Advisory Group

The City's Regeneration Team is recruiting members for the new Western Harbour Advisory Group. Our Swivel Bridge Group has been invited to participate, so we look forward to making a positive contribution. The Team has issued a progress update. To view control-click on:

[cfile:///C:/Users/User/Desktop/Western%20Harbour%20Advisory%20Group/Western%20Harbour%20update%20Dec%202023.pdf](file:///C:/Users/User/Desktop/Western%20Harbour%20Advisory%20Group/Western%20Harbour%20update%20Dec%202023.pdf)

You will notice that on Page 5 under 'Gateway for Bristol' 'Celebrate Heritage' there is a commitment that heritage infrastructure will be '.....restored, adapted, reused, and explained'. These words have been taken from the earlier consultation exercise to which the Swivel Bridge Group contributed, along with many others.

It is therefore encouraging to see this written into the brief now. The challenge for the 'heritage fraternity', is to help Bristol City deliver sympathetic *restoration, adaptation, reuse* and effective *explanation* as they promise.

The photos below show what Brunel's Lock could again look like if the sluice-gate under the Replica Bridge is returned to working condition, and the silt sluiced away.



Photos from Historic England's Archive dated 1970 (Ref 0071_137 and 139) showing Brunel's Lock of 1846-9 before it was allowed to silt up about a decade ago.

Bristol Docks ('Harbourside') Place-Shaping strategy

This link is to the Harbourside Place-shaping strategy, the Council's vision for the central harbour area. <https://www.ask.bristol.gov.uk/hub-page/harbour-place-shaping-strategy>

We shall lose the Mayoral system in May 2024 and there will be a separate Harbour Board. The first sitting of this should be in June 2024.

Avon Flood Strategy

Bristol City's recent *Avon Flood Strategy, Outline Business Case* for alleviating flooding may be found [HERE](#) Page 83 proposes new a new Entrance Lock Gate, a new piled floodwall around the Knuckle (or Tongue), raising the existing dam across Brunel Lock, and flood-proof it, which would have to incorporate the Grade 2* Listed Replica Bridge.

This report arose from Arup's report *Bristol Avon Flood Strategy* of Dec. 2020 which can be found [HERE](#) In that the wording (page 53) was '..... replacement of Brunel Dam, ramps, road raising. Whatever is planned for Brunel Lock, it would be of great benefit to the Harbour if at least one sluice-gate could be made operational so as to clear out the silt from Brunel's Lock.

High Tech hits the spot

Mann Williams Consulting Engineers of Bath are carrying out an analysis of the Swivel Bridge, and designing repairs to ensure that it will be safe for pedestrians and dismounted cyclists. On 4th December in unpleasant heavy, continuous rain Jon Avent and Iasonas Bakas, Brian Jarvis of Eatec Dynamics, dynamic testing specialist, carried out site-work, assisted by volunteers Charlie Kay, Geoff Wallis, (BOB Project Manager), Bob Watkins and John Willis.

Charlie travelled back from Plymouth University specially for this unusual experience, catching the coach at 5.00am so as to be on site soon after 9.00am. The team worked hard despite continuous heavy rain, and secured some great results.



water and the tests repeated. (Blue bag in the photo above)



First they erected a 160 Kg 'agitator' on the free end of the deck, vibrating at 1.9 Hz (cycles per second), much lower than the structure's natural frequency of 10-12 Hz. A magnetic accelerometer was attached at node points all down both sides of the deck to measure displacement. Then a 750Kg ballast tank was filled with

Next the free end of the deck was propped on hydraulic jacks and the readings again taken without ballast. Finally the jacks were raised to 35mm and displacement measurements taken again at each node. The accelerometers were so sensitive that they were able to detect slight 'bouncing' in the two 50 T hydraulic jacks placed under the free end of the deck.

The test-measurements were used to validate a digital model of the structure which will then be modified to demonstrate the effect of the many plate-repairs planned.

Matthew Myerscough and David Pearce-Webb from Cass Hayward carried out further survey work on 25th January in rather better weather conditions, and positive feedback was received at a progress meeting hosted by Bristol City on 1st February. The project finishes in April this year.

What really causes the Swivel Bridge to rust?

After 170 years of occasional flooding, the iron foundations and turntable are in remarkably good order with surprisingly little rust, and we have often wondered why. Seawater rusts metals badly, so, is the water that floods BOB saline or fresh? On a chilly, bright Sunday morning in January BOB volunteer Chris was on the road from his home in Warminster by 6.00am, and met Charlie in Bristol at 7.00am in time to catch the rising tide. They tested water salinity every 500mm on the rising & falling tides over 4 ½ hours around high tide at Sea Mills, BOB, New Cut, Floating Harbour and Netham Lock.

Chris is a Chartered Environmentalist working for the Defence Infrastructure Organization, so knows his subject, and kindly supplied his Electrical Conductivity (EC) Meter to read salinity. (For the techies it is basically a Wheatstone Bridge calibrated against a fluid of known concentration.)

Initial findings suggest that the flow on the day from the Avon predominated at BOB site and the water was fairly fresh. Thank you for doing this chaps, we await your final report with interest.

VIDEOS

Our volunteer Julian Baldwin is a skilled member of the Bristol Film and Video Society, who has recorded our work over many years. If you have not seen his excellent 7 minute video of trial repair work in progress, please control/click on <https://vimeo.com/365737810>

Our friends from Balfour Beatty accurately scanned the Bridge last year and prepared an animation of it working. Contol/click on https://www.brunelsotherbridge.org.uk/bob_news.html scroll down to August 2023 and click on the amination pane.

UNDERFALL YARD FIRE

Bristol 24/7 reported at the end of November that a serial arsonist Robert Boyd-Stevenson has been jailed for life after admitting that he deliberately started the fire at Underfall Yard in May which caused damage expected to cost millions of pounds to repair.

Police said that “on another day, Stevenson could have seriously injured or killed someone”.

The 46-year-old of Headford Road in Knowle West had just got a job as a maintenance manager at Underfall Yard just three days before he started the fire on the evening of May 5, using his work keys to let himself into the historic site.

Stevenson pleaded guilty to one count of arson with recklessness as to whether life was endangered. He was handed a life sentence and must serve a minimum of six years in prison.

He was previously jailed for 14 years in 2004 after starting a fire in Bournemouth which killed a work colleague’s pet cats. He was also jailed for two-and-a-half years in 2016 for sending a bomb hoax to Bristol Airport.

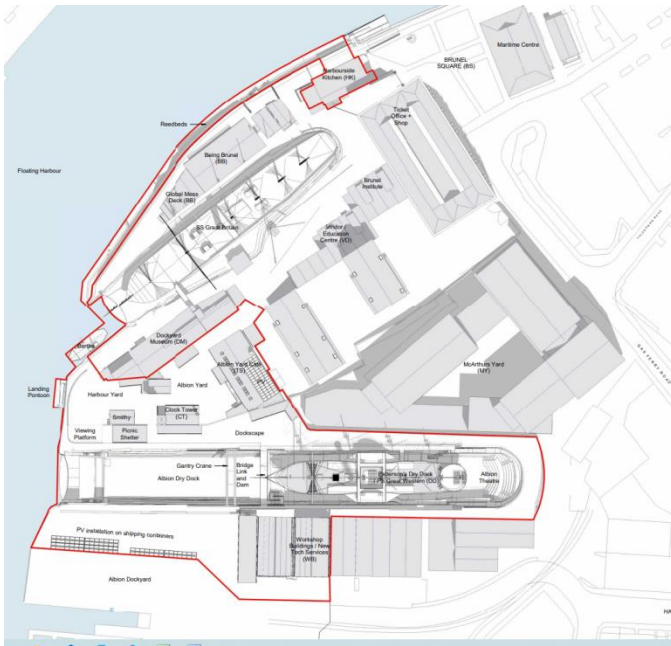
After 8 months in the hands of the police and insurers, architects and project managers have just been appointed to restore the buildings. We wish the Yard every success. If you would like to help at Unfderfall Yard as a volunteer please phone 0117-929-3250 and ask for ‘Flex’.

BRISTOL CITY E-PETITION

Our petition on Bristol City’s website ended mid-December with 368 signatures and was Bristol City’s best -supported petition for several months.

We petitioned against relocating the Bridge, and most importantly, we asked the Council to restore and display Brunel’s Lock and Bridge, and the other historic features in the Western Harbour area, to form the focus of the new development. The Swivel Bridge deserves a new lease of life as a working low-level crossing over the entrance channel. Currently the only crossing is via the tops of the lock-gates, which can be difficult and dangerous for some.

SSGB PLANNING APPLICATION



The SS Great Britain has now submitted its application to develop Albion Dockyard, close to where the Swivel Bridge was completed in 1849. Following advice from Historic England, and our petition, they have removed from their Planning Application a proposal to relocate the Bridge to Albion Dockyard.

For details see:

<https://pa.bristol.gov.uk/online-applications/applicationDetails.do?activeTab=documents&keyVal=S57F48DNJMG00>

VOLUNTEER WORKDAYS in 2024

Nominally we meet on the third Saturday each month, but this sometimes changes according to activities in the Docks, so please check our website www.brunelsotherbridge.org.uk.

February	24 th	March	16 th	April	20 th
May	19 th	June	15 th	July	13 th
August	17 th	September	21 st	October	26 th

As well as continuing to paint the Swivel Bridge and maintain the landscape, this year we have three new challenges: restoring the manual capstan next to Brunel Lock, renewing the mineral-felt on the roof, and recording the hydraulic equipment in the pits on the Tongue.

These hydraulic jiggers once used water at 750 psi from Underfall Yard to open and close the Entrance Lock gates, and raise the paddles. They became redundant when the oil-hydraulic system was installed but much still survives, and may be one of the most comprehensive collections of water hydraulic equipment still on its original site in Britain.

A BIG THANK YOU TO OUR VOLUNTEERS FOR YOUR ONGOING SUPPORT

WE LOOK FORWARD TO SEEING YOU AT OUR WORKDAYS

www.brunelsotherbridge.org.uk
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