

Balfour Beatty

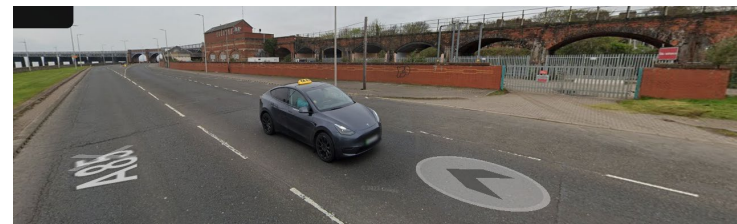
Forth and Tay Rail Bridges

Future works consultation



Contract

- We currently maintain the Forth and Tay rail bridges on behalf of Network Rail
- We have now been awarded the first year of the next contract, CP7, with a potential for 4 additional years. This contract runs from the 24th April to 31st March 2025
- The works will use the existing compounds only, no new areas.
 - ▶ Battery Road, North Queensferry (contained septic tank, mains connection)
 - ▶ Riverside Drive, Dundee compound (contained septic tank, own generator)
 - ▶ At Wormit side, there is a compound beneath the structure that will be reactivated and there is also a slipway owned by Network Rail that will also be used.
 - ▶ Currently in design and costings phase for future works, routine maintenance activities and surveys ongoing.

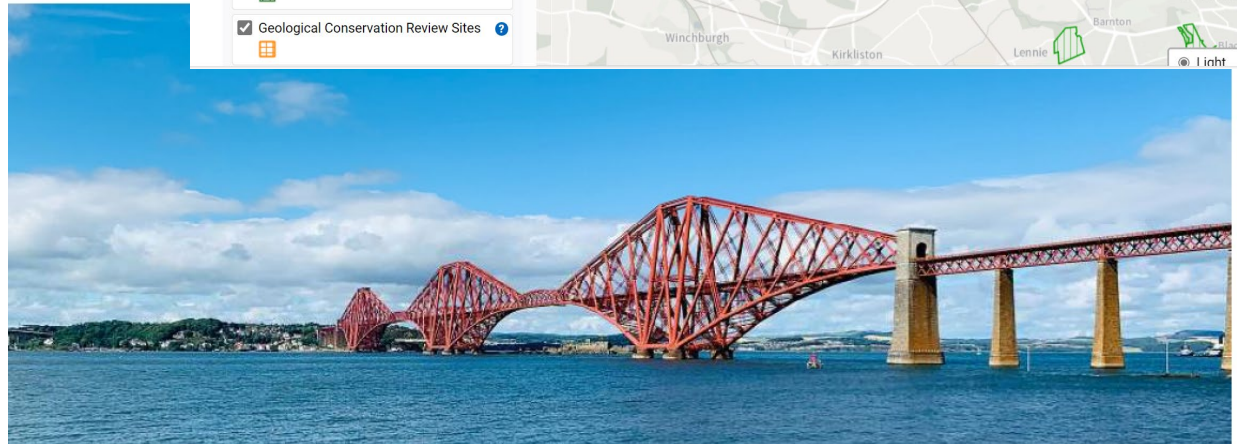


Forth Bridge Works

The screenshot shows the NatureScot SiteLink web application. The header includes the NatureScot logo (with the Gaelic name 'NàdarAlba') and navigation links for 'SiteLink', 'Map', and 'About'. A left-hand sidebar contains a list of site categories, each with a checked box and a help icon:

- Special Areas of Conservation
 - Candidate SAC - submitted to EC
 - SCI (adopted cSAC)
 - Current
- Special Protection Areas
- Ramsar Sites
- Demonstration and research MPA
- Nature Conservation MPA
 - JNCC
 - NatureScot
- National Nature Reserves
- Geological Conservation Review Sites

The main map area displays a geographical view of the Forth Bridge and surrounding regions, including Inverkeithing, Queensferry, and Dalmenny. The map is overlaid with various colored patterns representing the different site types defined in the sidebar. A legend in the bottom right corner of the map area shows a 'Light' icon.



Forth bridge – repairs to trough and deck plate fractures

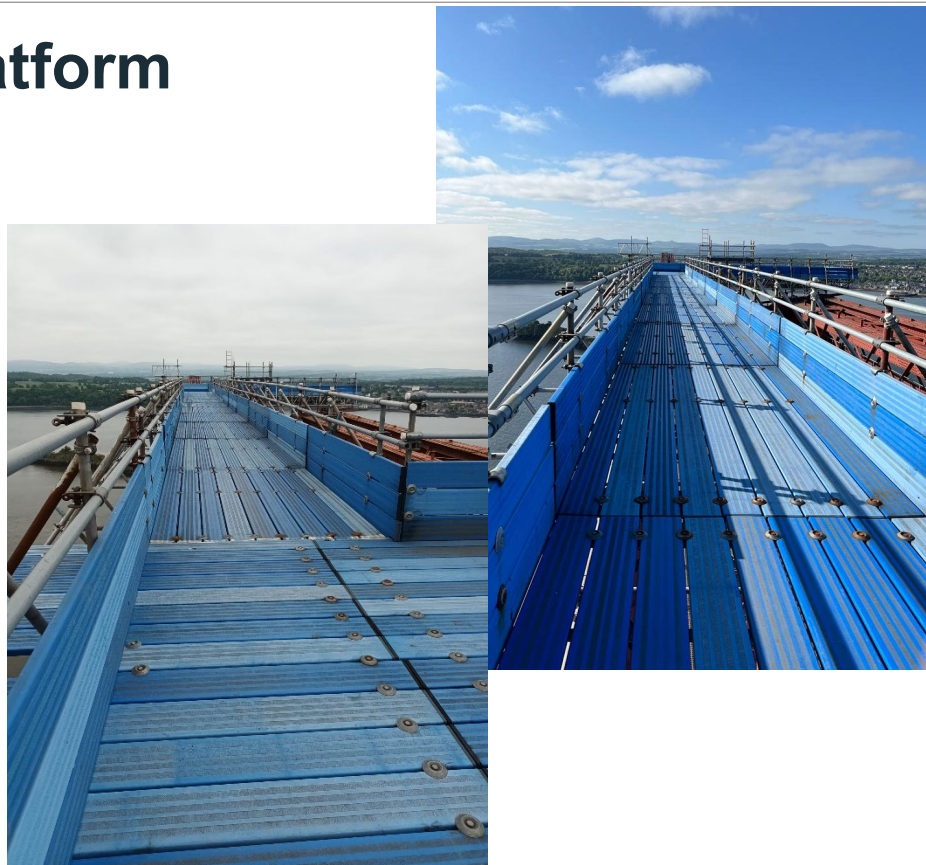
- Design and complete a schedule of repairs to the trough and deck plate steelwork fractures, including painting works.
- Spans 1-3 over land, and 4-10 beach and water
- Surveys will be completed by rope access teams and will inform the schedule of permanent works.
- The permanent works will be shrouded in debris netting and will have solid wooden platforms to prevent anything falling to ground/estuary below.
- No grit blasting. Mainly mechanical preparation and hand applied coatings.
- **Licensable with Marine Scotland only**
- **CH – There are 29 identified repairs in the system which will require 3tonne of fabricated steel sections for the repairs and 20ltrs of coatings. Access scaffolding will be an erect/dismantle a=with maximum 10 tonne of scaffold required.**

Forth bridge – repairs to North Approach Viaduct wind fence

- Design and carry out North Approach viaduct wind-fence repairs and painting works to the internal faces. This will include
 - Surface preparation and corrosion protection system to repairs and internal face of wind fence
 - All landside, no works other water.
 - Works will be done at night time as required to be done under Network Rail possession.
 - No grit blasting etc. Battery bristle blasters and hand applied coatings.
 - Working with existing paint which has lead but is not above the threshold for special waste.
 - Not licensable by Marine Scotland/SEPA/NatureScot

Forth Bridge – Viewing platform

- Maintain in working order.
- Provide design and costs for maintaining the platform for this year and into future years.
- **Cover under general maintenance licence from Marine Scotland.**



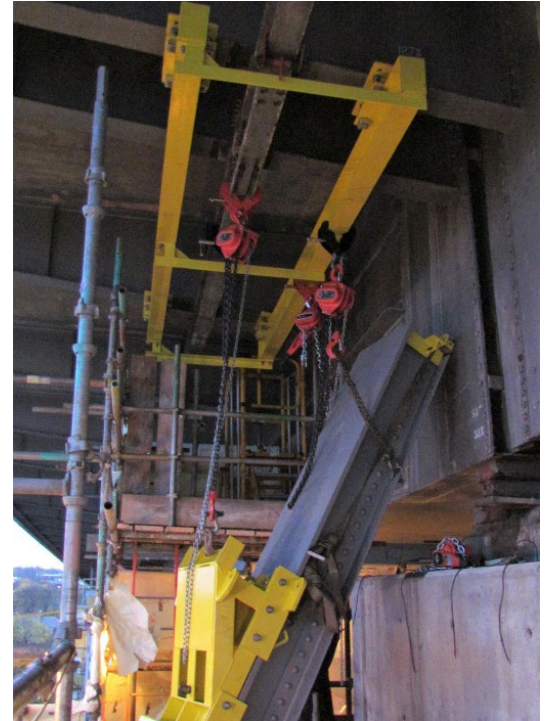
Forth Bridge – Bothy structure repair

- Listed Building status (as is the bridge).
 - Currently not used. The current works are not to bring them back into use but instead to make them weatherproof and prevent further damage.
 - Design being confirmed, likely to use sealant and waterproof layers applied to existing roof.
 - The expectations are that these repairs will only be required to last 1 year without maintenance, with more extensive design work to be undertaken in a future year within CP7 for extensive refurbishment in CP8.
-
- Licensable by Marine Scotland
 - CH- Combined roof area for all 3 locations is 162m² 20 rolls of bitumen tanking with primer required.



Forth bridge – bearing inspection report actions

- Take forward recommendations from the CP6 Forth Bearing Inspection Report which include:
 - Masonry repairs, mainly at north and south portal.
 - Installation of monitoring points to the bearings, including movement gauges.
 - Design and installation of caging or netting system to prevent pigeon access to bearings.
 - Rails currently greased by gravity action. Survey to review and see if grease canisters are operational or if there is blockages and look at improved design.
 - Mix of days and nights across the entire structure.



Licensable by Marine Scotland. Protected species survey before netting/caging installed.

CH- Masonry repairs are Small with less than 1 tonne of stone required, 1 tonne of sharp sand and 20 bags of Portland cement. Bird cage areas has access in place so no temporary access required. Brid cage fabrication requires 1 tonne of fabricated steel and mesh.

Forth Bridge – Track level

- On a minimum of a 6 monthly basis, clean the track level of the structure above publicly sensitive areas on the North Approach Viaduct spans 11-15 and South Approach Viaduct spans 1-4.
- This is to include removal of debris from the track throughout the structure on a routine basis and also routine inspection and maintenance of inspection walkways and access stairs to ensure they are free from loose material and that connections are secure.
- No power washing, will use an industrial dry vacuum.
- May need to unblock drainage weep pipes using a wet vac and disposed of offsite. Small volumes anticipated.
- **Not licensable by Marine Scotland/SEPA/NatureScot**



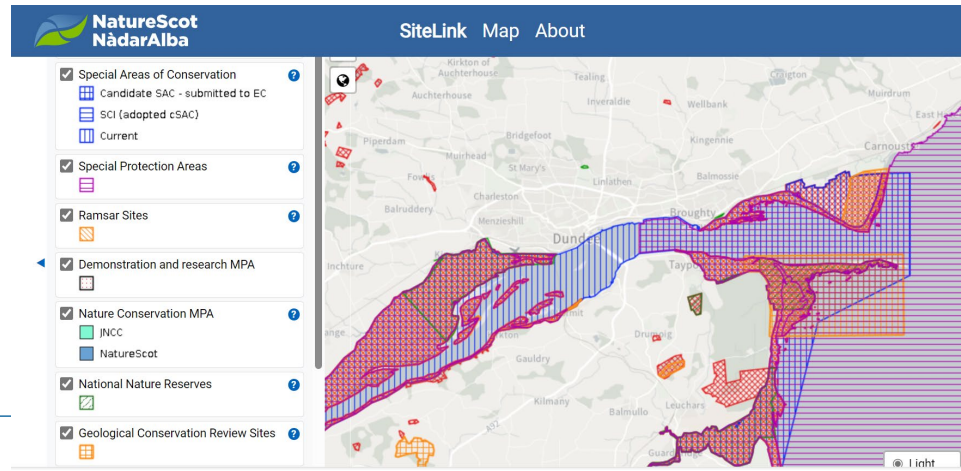
Forth Bridge – Navigation Lights

- Refurbish/renew the access steps/platform for the shipping navigation lights on the structure.
- Directs ships to deepest part of channel. 12 lights in total
- Access to lights needs to be reinstated to allow the lights to be maintained.
- Lights are currently operational and in good condition.
- Licensable by Marine Scotland
- CH – Survey of area only and update of appropriate design forms. No installation works currently in first year of CP7 Works.
- For information if works are instructed 2 tonne of access scaffold would be required on an erect/dismantle to each location and 1 tonne of fabricated steel for each location.



Forth bridge – picnic area

- Design and install a fence in the area at the North Compound delineating the “picnic” area to reduce the risk of fall from height by Members of the Public. This design should also address the trespass issues to the east of the compound to ensure no easy access over or round the wall from the picnic area.
 - Fence to be developed in consultation with local stakeholder groups and be sympathetic to meet the requirements of the listed building status of the Forth Bridge
 - Fence to tie in at each end to a suitable point to protect from fall from height risk from members of public climbing on it. Fit a fenceline on the wall to prevent this and make sure it ties into the palisade boundary fence.
 - Will go for planning permission and then works will start.
 - Drilling and bolts.
 - Picnic area closed.
 - **Not Licensable, planning Authority to be consulted.**



Tay Bridge Works



Tay Bridge – Structural Repairs

- Develop and effect repairs raised by inspection reports at Span 51, Span 53, Span 80 and Span 83. This includes:
 - Additional survey to form design details. 6 repairs in total.
 - 80 and 83 in compound and on land. Survey via rope access.
 - For works, build access scaffold, boarded out and contained within debris netting. Drilling and preparation works to fit new bolts in.
 - Span 51 and 53 is over water but as above.
 - Licensable by Marine Scotland
 - CH – Survey works only with Span 80 and 83 on land. Access to span 51 and 53 by rope access.

Tay bridges – Scour repair

- Design and then complete the works to repair any scour defects discovered during underwater exam to Piers 39-41. (High span section)
 - ▶ Removal of debris around Piers 39-41.
 - ▶ Barge with hiab. Divers will sling if can't be removed by hand. Barge will lift onto deck.
 - ▶ Slipway at Wormit side to take waste into skips and take offsite for appropriate disposal.
 - ▶ Divers will then survey to look at condition.
 - ▶ Don't know length of operation as don't know how much debris is there.
 - ▶ Diving availability is related to tides etc.
 - ▶ Licensable by Marine Scotland. NatureScot will review and come back on whether licensable. Likely to need consent to work in SAC for physical removal of the debris.
 - ▶ CH – We are not introducing new materials into this work but removing historic debris from around the piers and as yet do not know how much debris there is. Scour structural review will be carried out by approved commercial diving company and we are currently setting this up with Briggs Marine.



Tay bridges - walkway

- 20 timber replacements for existing walkway. 2nd April for 6 weeks.
- Everything all contained. Old timber roped out or if in poor condition into a debris bag.
- New timbers roped up so can't be lost from structure.
- Safety boat in river for works when working to a leading edge.
- No debris net required as no fine material/risk of items flaking off. Hand works and small tools only. Scaffold deck is sealed to prevent anything falling through.
- Survey remainder of structure to identify further locations where repairs are needed.

Licensable by Marine Scotland

CH – 20 walkway timbers 5.8m long to be removed and replaced with new timbers. Three access platforms erected at any one time with maximum 3 tonne of scaffold required.





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