

Welcome To

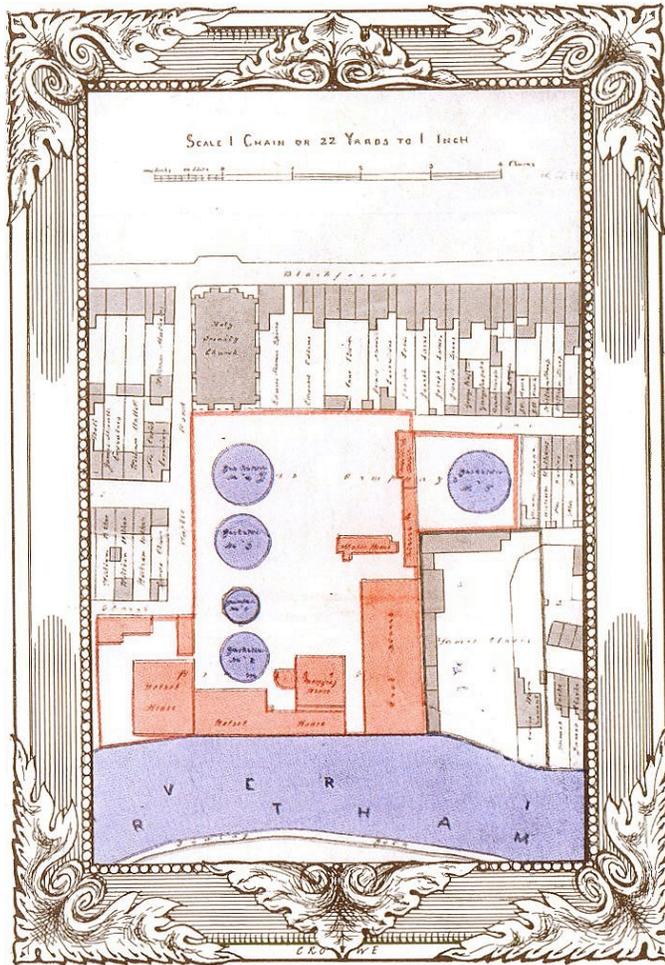
The Gasworks Pipe Bridge  
Information day

## History of the bridge

### The Gas Works

The gasworks pipe bridge was erected in 1927 by Head Wrightson & Co Ltd, engineers of Thornaby-on-Tees. It was built near the northern end of Marlborough Road to carry pipes across the river between the north and south sites of the works. Later it was adapted to become a footbridge to allow workers to cross, and it is now a public footbridge linking Grandpont with St Ebbe's and the city centre. In March 2021 the bridge was unexpectedly closed, the City Council having received a report warning that it was unsafe.

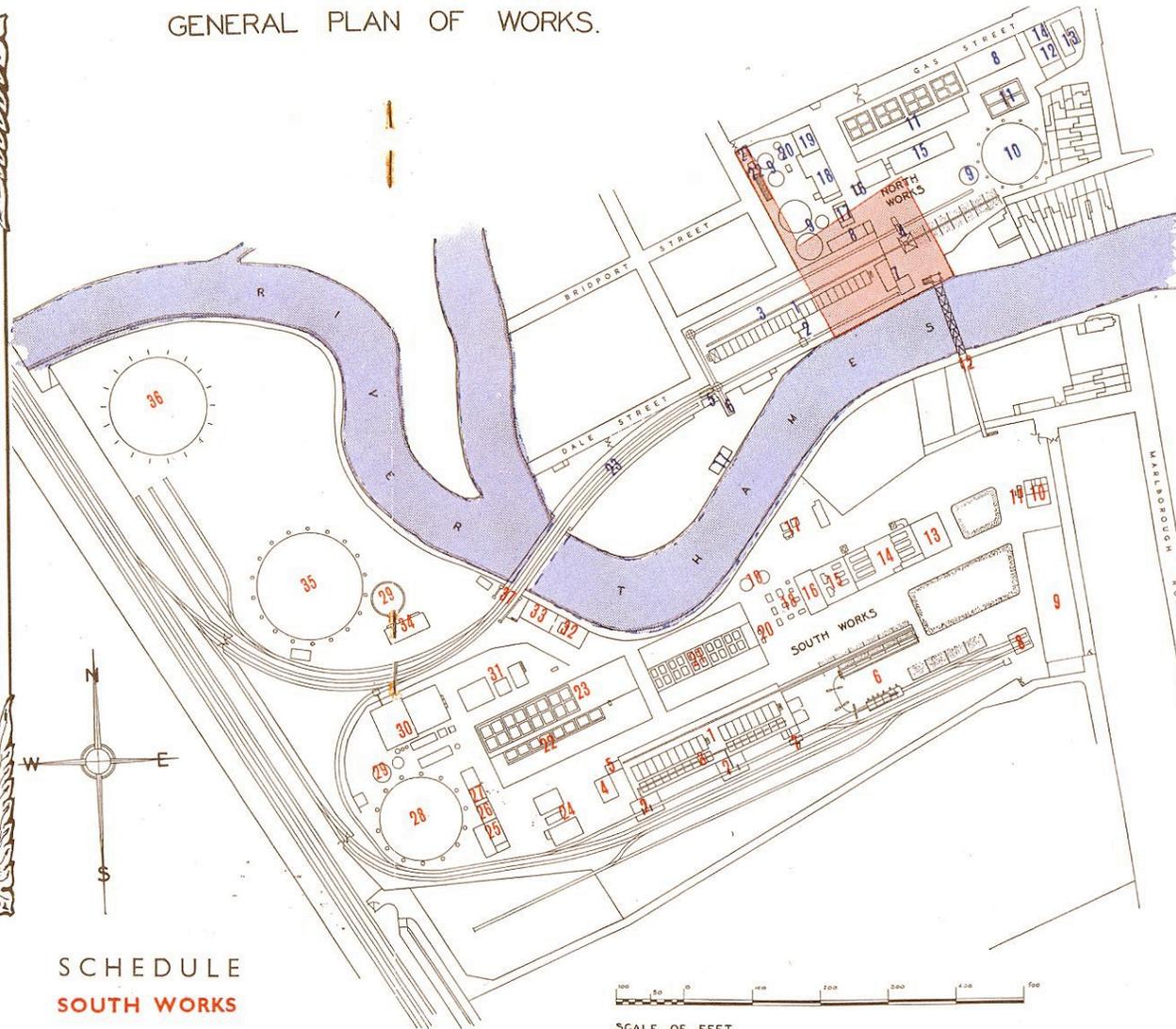
The pipe bridge and the two railway bridges (the southern of which is also now a footbridge) are the last physical vestiges of the St Ebbe's gasworks, which closed in 1960. Thereafter Oxford consumers got their gas from Southampton and Reading until North Sea gas became available in 1971. Two gas holders remained in use at St Ebbe's until 1968 but these and all the other structures relating to the gasworks, apart from the three bridges, were eventually demolished. (The same thing was happening to 19th-century gasworks across the country.) Preachers Lane housing estate now occupies part of the northern site, and Gas Street, which was the original entrance to the works, no longer exists. The suburb of St Ebbe's itself, which grew up around the gasworks on the northern bank of the river in the 1820s, was also cleared, and many of its residents went to live in newly-built Blackbird Leys. The Westgate shopping centre now occupies much of the area, which was once criss-crossed with streets lined with two-up two-down terraced houses.



1818 — 1869 — 1948

ABOVE is reproduced a plan of the Works in 1869. On the right are the Works in 1948 with the site of the original Works shaded red.

GENERAL PLAN OF WORKS.



SCHEDULE

**NORTH WORKS**

- No.
- 1 Horizontal Retorts—22 settings.
  - 2 Coal handling plant.
  - 3 Coke haulage system.
  - 4 Coke handling and screening plant.
  - 5 Weighbridge — rail.
  - 6 Locomotive building.
  - 7 Workshops.
  - 8 Stores.
  - 9 Tar and liquor tanks.
  - 10 No. 1 Gasholder.
  - 11 Purifiers.
  - 12 Meter house.
  - 13 Sports and social clubhouse.
  - 14 Calorimeter room.
  - 15 General offices.
  - 16 Weighbridge — road.
  - 17 Garages.
  - 18 Boiler house.
  - 19 Exhauster house.
  - 20 Washers and scrubbers.
  - 21 Detarrer.
  - 22 Condensers.
  - 23 Viaduct — Garages under.

**SCHEDULE SOUTH WORKS**

- |  |   |  |   |
|--|---|--|---|
| <p>No.</p> <ol style="list-style-type: none"> <li>1 Horizontal retorts—18 settings.</li> <li>2 Wagon tipplers and coal elevators.</li> <li>3 Push plate conveyer and overhead hoppers.</li> <li>4 Garage.</li> <li>5 Coke haulage gear.</li> <li>6 Coke handling and screening plant.</li> <li>7 Weighbridge—rail.</li> <li>8 Locomotive building.</li> <li>9 Workshops and stores.</li> </ol> | <p>No.</p> <ol style="list-style-type: none"> <li>10 Rectifier building.</li> <li>11 Weighbridge—road.</li> <li>12 Footbridge.</li> <li>13 No. 2 compressor house.</li> <li>14 Boiler house.</li> <li>15 Power and exhauster house.</li> <li>16 Pumphouse.</li> <li>17 Pumps and filters.</li> <li>18 Detarrer, washers and scrubbers.</li> <li>19 Tar and liquor tanks.</li> </ol> | <p>No.</p> <ol style="list-style-type: none"> <li>20 Condensers.</li> <li>21 Purifiers—No. 1 coal gas.</li> <li>22 Purifiers—No. 2 coal gas.</li> <li>23 Purifiers—C.W.G.</li> <li>24 Ammonia liquor concentration plant.</li> <li>25 Concrete blockmaking plant.</li> <li>26 Carpenters shop.</li> <li>27 Laboratory.</li> <li>28 No. 2 Gasholder—C.W.G. relief.</li> </ol> | <p>No.</p> <ol style="list-style-type: none"> <li>29 Oil storage tank.</li> <li>30 C.W.G. plant and ancillaries.</li> <li>31 Benzole plant.</li> <li>32 Meter house.</li> <li>33 Governor house.</li> <li>34 No. 1 compressor house.</li> <li>35 No. 3 Gasholder.</li> <li>36 No. 4 Gasholder.</li> <li>37 Railway bridge.</li> </ol> |
|--|---|--|---|

SCALE OF FEET.

This photograph was taken in 1945, looking west along the towpath from a spot just to the east of the northern end of Marlborough Road. The gasworks pipe bridge (now a footbridge) is near the centre; the large shed-like building behind it and to the right is the retort house. Two gas holders (whose tops look like crowns) can be seen in the distance. Image © Oxfordshire County Council, Oxfordshire History Centre, ref: D252205a.



Historic Photograph  
showing footpath  
across the bridge  
and the Tow path  
under construction



Historic Photograph showing  
the bridge deck



The rest of the gasworks site is now a nature reserve with a pleasant riverside walk running through it. But when the gasworks were functioning, between 1818 and 1960, this area was very different. The poet WH Auden (1907-1973), an undergraduate at Christ Church in the mid 1920s, would bring visitors here to show them what he considered to be the embodiment of 'The Waste Land' described in TS Eliot's poem of the same name, of which he was a great admirer. (Credit [southoxfordhistory.org.uk](http://southoxfordhistory.org.uk))

### Oxfordshire County Council and Oxford City Council

The public right of way that runs across the bridge is the responsibility of the Highways Authority (Oxfordshire County Council) to maintain.

Both Oxford City Council and Oxfordshire County Council have been working hard to ensure the bridge can be reopened as soon as possible.



## **Current condition and Safety Concerns**

Oxford City Council and Oxfordshire County Council have a mutual interest in the Gasworks Pipe Bridge it was therefor decided at the end of 2017 to jointly fund a principal inspection on the bridge. This is an in-depth survey that will examine the condition of the bridge.

- This was done through County's termed contract with Skanska, as they already had the required expert advice
- Oxfordshire County Council took the lead as Technical Approval Authority, as their bridge team had the skills set to interpret the results of the Inspections and assessments.

## **Principal Inspections**

A Principal Inspection was then carried out and the report was received on 23/10/2018.

- From the report it was evident that the high priority item for the Gasworks Pipe Bridge, was to commission a structural assessment.
- Oxford City Council agreed the funding for the assessment, which was delivered to the City Council in Feb 2021 by the County Council.

## **Structural Assessment and Areas of works required**

The structural assessment identified the Bison planks that form the footpath over the bridge were showing significant signs of deterioration. Additionally, the assessment on the truss, including its connections, had inadequate capacity to carry crowd loading and was deemed to be at risk of collapse.

The City Council accepted the advice and recommendations from the County Council and Skanska as technical experts and agreed with the report and its content.

## **Options on repairing or replacing the bridge.**

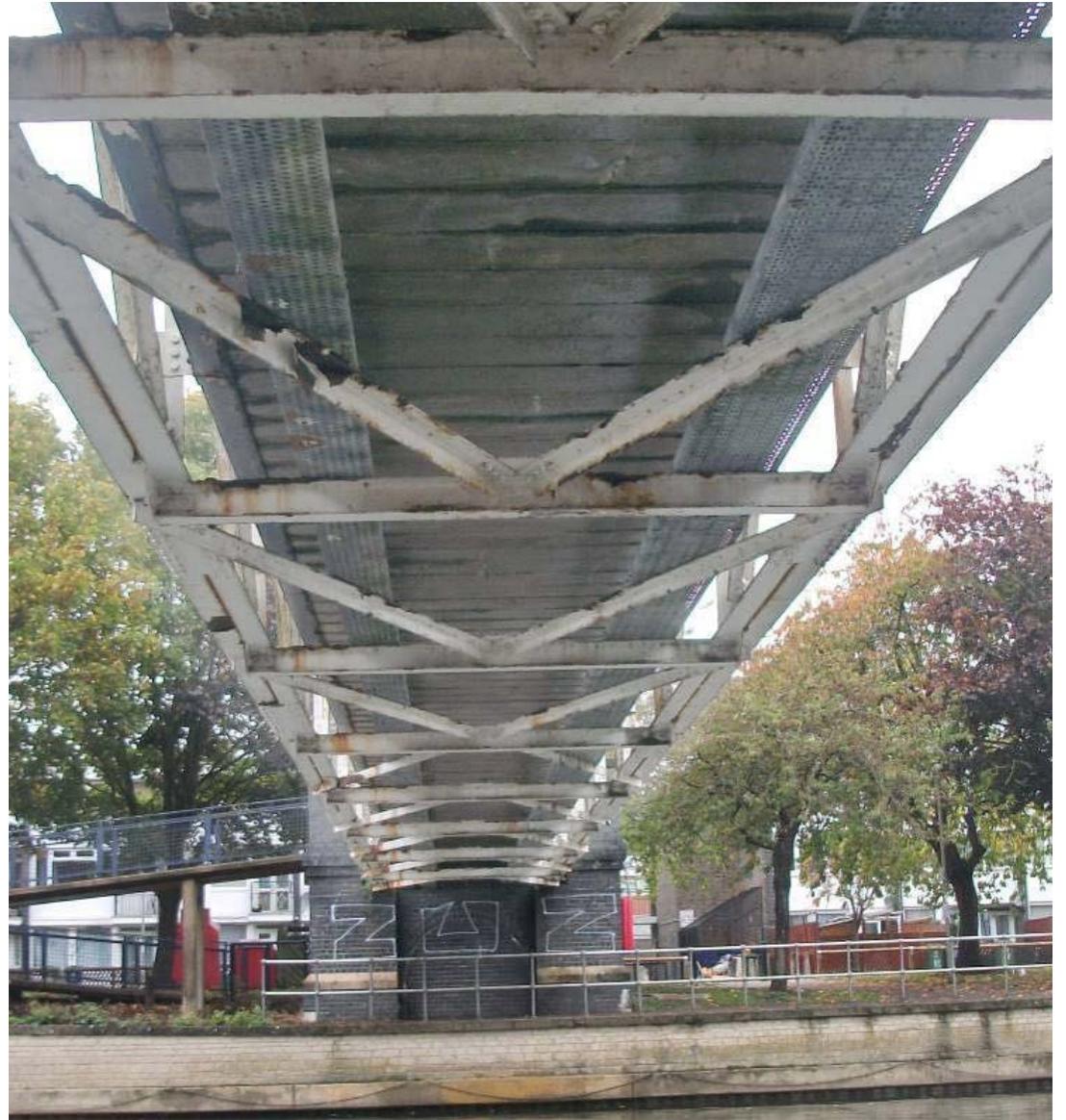
The City Council appointed Stantec a specialist engineering consultant to undertake an options appraisal for the bridge. The options considered were to demolish and rebuild on the existing footprint or strengthen and refurbish the bridge or leave the bridge in situ and build a new bridge to either the east or west of the existing bridge.

In October 2021 Stantec delivered the options report, it was determined that the most appropriate course of action, which would allow for the fastest route to reopening and the most economical solution was to strengthen and refurbish the bridge. This also meant preserving the historical character of the bridge which was welcomed.

## Key Actions to date:

- February 2021 A structural inspection is carried out by Skanska and determines the bridge is unsafe for members of the public to walk on.
- February 2021 The Bridge is closed by Highways Department following report.
- April 2021 Stantec appointed to review options for the bridge (Replace / Refurbish).
- October 2021 Stantec completes options appraisal of the bridge.
- November 2021 Stantec submits first draft refurbishment designs to County.
- December 2021 - August 2022 Various designs & redesigns by Stantec issued to County
- September 2022 Final draft design submitted by Stantec, following County “approval in principle”.
- October 2022 Oxford City Council (OCC) draft Cabinet report and approval process begins.
- November 2022 OCC Cabinet approve project and funding is awarded for project.
- November 2022 OCC Procurement process begins for tender of the project.
- December 2022 Detailed designs submitted by Stantec to County for approval.
- January 2023 Tender process concluded.
- March 2023 Contract awarded to B&M McHugh, Contract Signed by both parties.
- March 2023 B&M McHugh temporary works design, underway with Stantec due to the to current complexities of temporary strengthening to the bridge, design still pending approval.
- June 2023 Pembroke College approval on diversions.
- June 2023 B&M McHugh submit flood risk activity permit (FRAP).

Photograph of Underside of Bridge and  
Bison Planks showing signs of corrosion  
due to age



Enlarged view of Bison Planks showing corrosion due to age.



Gasworks Pipe Bridge being inspected shown from the East.



Ramps approaching northern abutment showing security gates and fencing – installed by Oxford Direct Services for the Bridge closure.



Stairwell on northern abutment showing security gates and fencing – installed by Oxford Direct Services for the Bridge closure.





Ramps  
approaching  
northern  
abutment.

## **Works Required**

The list of works to be undertaken by the Contractor as part of the repair and strengthening works to the Isis Gasworks Footbridge:-

- Carry out testing to confirm the strength of the steel and then test for the presence of lead in the protective paint system.
- Validate the assumptions made in the assessment.
- Remove and dispose of existing concrete deck planks and supporting steel angles (a safe system of work is required, this may require the use of a pontoon system, which could be used by the Contractor to prevent debris falling into the river).
- Put up a temporary scaffold for access, then wrap the scaffold structure.
- Remove old paint and rust with a blasting system.
- Carry out an inspection with the Permanent Works designer, of the steel structure to understand how much rust and corrosion there is and identify all items to be repaired and replaced
- Repair and/or replace steelwork.
- Repair or replace the existing bridge parapet (side walls).
- Replace the existing bridge bearings.
- Repaint the bridge.
- Install new FRP (fibre reinforced polymer) deck panels.
- Repair brick abutments (removal of vegetation, repair cracks in the brickwork, repointing).
- Install new lockable access doors at the ends of the structures for access to the room behind the abutments.

## **Design, Diversion routes and Programme**

There are several drawings displayed around the room that show the works at different stages, if you have any questions there are technical experts that will be able to help answer any questions you may have on the Design, Diversion routes and Programme.

## **Contractors**

The City Council and the County Council, have been working with partners Stantec, who are specialist structural engineers on the refurbishment and strengthening of bridges.

B&M McHugh have been appointed to carry out the work.

B&M McHugh are specialist civil engineering contractors, the company was founded in 1967 with a track record of working with public sector and private sector customers.





In 2023 Oxford City Council procured Stantec Ltd as Structural Engineers and Contract Administrator for the works to the Gas Pipe Bridge.

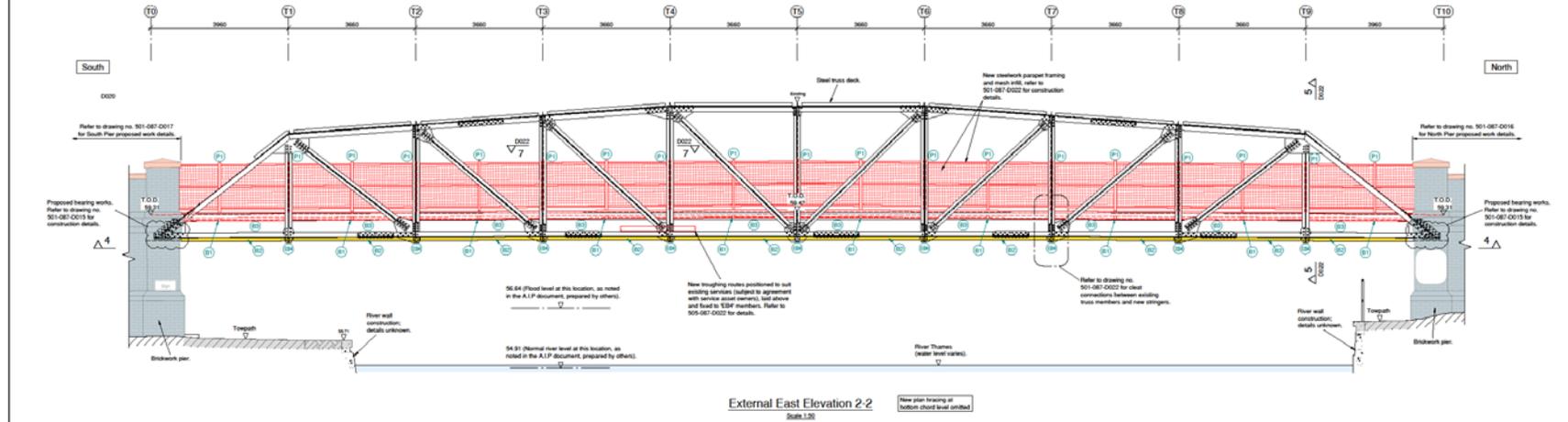
Stantec have been working with our clients and communities in the UK for over 150 years. With around 3,000 people working in integrated regional teams across the UK & Ireland. They plan, design, deliver and manage the development and infrastructure needed to support the creation of sustainable, healthy and prosperous communities.

Their teams provide effective and relevant solutions, translating our client's vision into valued consents, deliverable plans for projects and programmes, and efficient designs for delivery, based on technical excellence and deep market insight.

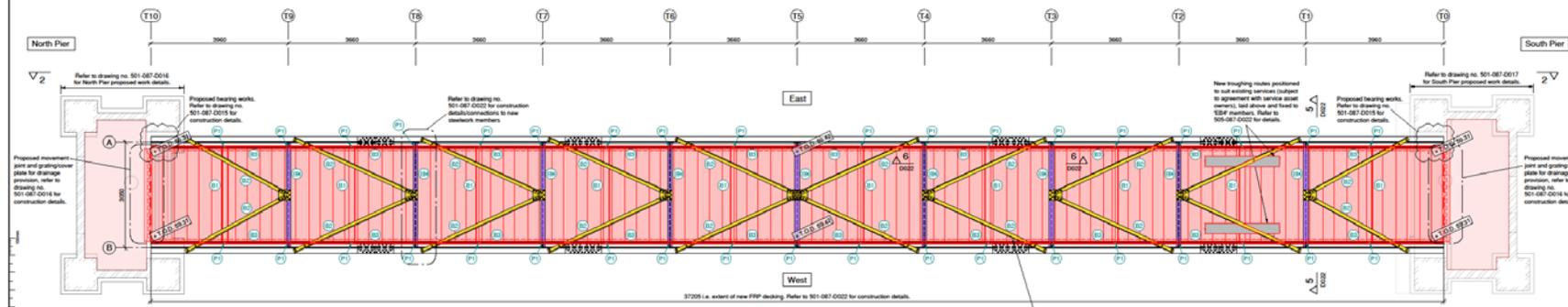


# B. & M. McHugh Ltd.

- Based in the south of England, over the past fifty years, we have grown from a company that predominantly delivered tunnelling and structures works into a company who now delivers a broad range of works across construction sectors including Rail, Highways and Utilities.
- We have been delivering projects on the railway infrastructure since 1975, initially for British Rail and more recently for Network Rail. Our management team and staff continue to be focused in providing the commitment and quality of work our clients have come to expect.
- From our head office in New Eltham, London, with other office locations around the south of England, we continue building our reputation as a business that delivers by being:
  - **Collaborative** – when working with our clients
  - **Innovative** – providing solutions that add value
  - **Quality driven** – by predominantly delivering the work with our own workforce
  - **Environmentally sensitive** – to the impact of our construction activities, backed by our ISO 14001 accreditation
  - **Locally focused** – investing in the local community by providing local employment opportunities and using local suppliers. We are active members of the 5% club.
- Across the business, we provide a guarantee of complete dedication to our client's requirements, based on an appreciation and understanding of the specification, thereby delivering customer satisfaction and on time completion.
- Our pride and professionalism is founded on a proven ability to have systems in place that are capable, competent, organised and resourced to deliver quality, safety and environmental management in all projects carried out.



External East Elevation 2-2  
Scale 1:50



Reflected Soffit Bottom Plan 4-4  
Scale 1:50

**Notes**

- This drawing is to be read in conjunction with the following:
  - Drawing nos. 501-087-0001 to 0009
  - 501-087-0010 to 0017 & 0022
  - Designers Risk Information 501-087-006
  - Specification notes 501-087-000
- This drawing has been produced following a topographic survey carried out by Surva Services Ltd in March 2022, and inspections carried out by Haydn Evans on 23/03/22, 16/03/22 and 11/03/22.
- All dimensions are in millimetres and all levels are in metres unless noted otherwise. Do not scale from this drawing.
- A fabrication survey must be carried out by contractor/steelwork fabricator prior to the fabrication, and/or installation of new steelwork and GFRP elements.

**Legend**

- Top of steelwork elements.
- Steelwork piers / landing.
- Approach ramps.
- Top of deck levels.
- Proposed FRP decking panels - 'Dura Slab 100 Easy Lift' by Dura Composites, refer to drawing no. 501-087-0020 details.

**Steelwork Schedule**

21	180 x 75 PFC traverse member
22	New bracing designed and detailed by others, as advised by BSM McHugh.
23	250 x 75 x 25 PFC deck stringer members with 75 x 75 x 8 FGA cheep welded to inner face. Splice locations to be proposed by the steelwork contractor to suit their construction sequence.
24	Existing 6" x 2" bottom beams 'I' beam. To be inspected once access is available and either (A) Replaced (B) Be replaced Details T.B.C. once access is available. Design by others.
25	New 60 x 60 x 8 SHS parapet posts

**IMPORTANT NOTE**  
REPAIRS TO EXISTING REMAINING STEELWORK NOT SHOWN/NOT PERMITTED. REPAIRS ARE REQUIRED.

AD 06.07.23 Issued for Contractor's comments. AD 21 LMP

**For Contractor Comment**

**HAYDN EVANS**  
01473 26800  
www.haydn-evans.co.uk  
haydn@haydn-evans.co.uk

**OXFORD CITY COUNCIL**  
OXFORD CITY COUNCIL  
OXFORD

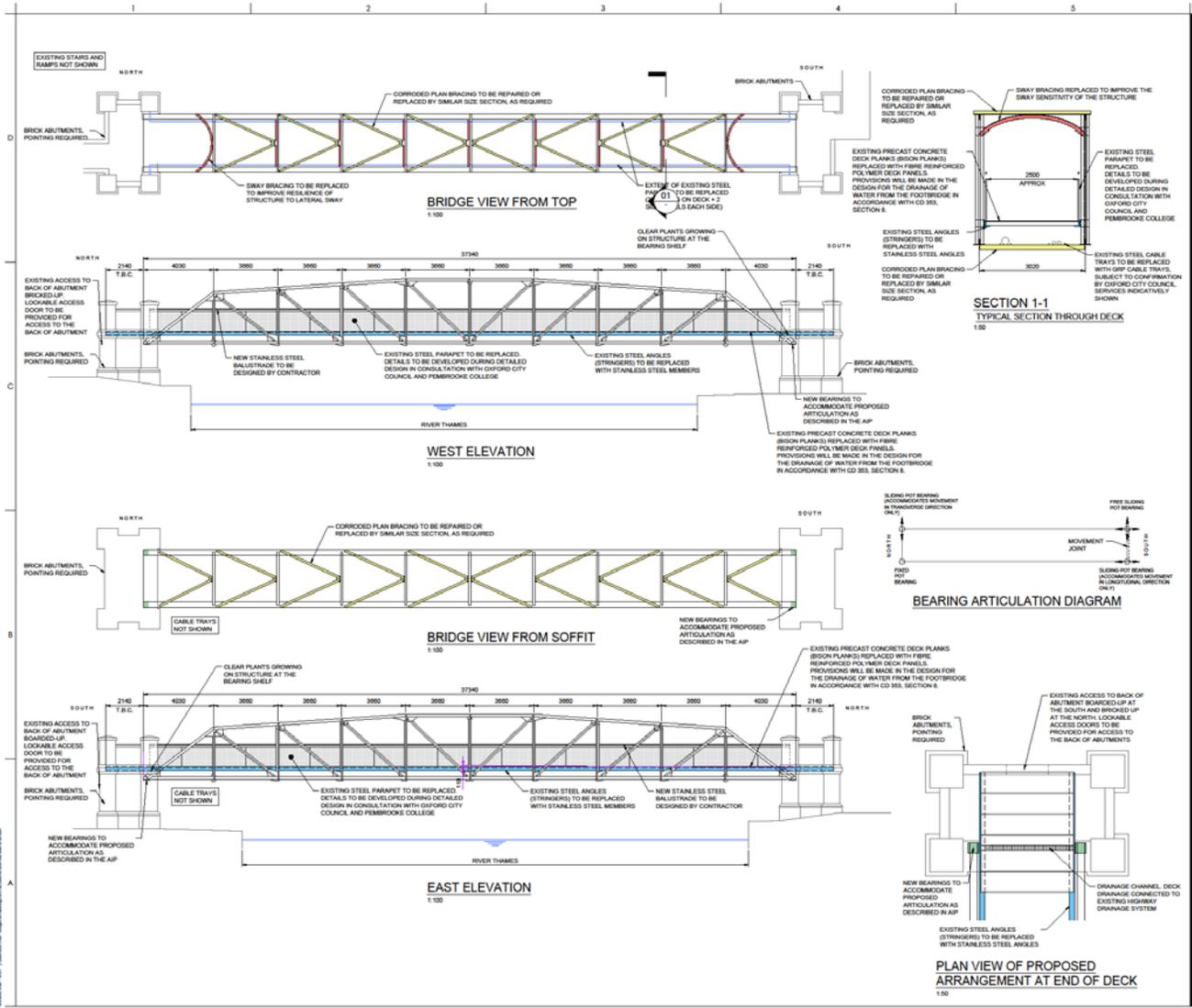
**Isla Gasworks Footbridge Refurbishment, Oxford**

**Steelwork General Arrangement Showing Proposed Works**

AD 06.07.23 AD 21 LMP 06.07.23

501-087-0020 A01





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The Client shall be responsible for all information provided to the drawing. The Client shall be responsible for all information provided to the drawing. The Client shall be responsible for all information provided to the drawing.

**NOTES**  
UNLESS NOTED, THE POSITION OF ANY EXISTING PUBLIC OR PRIVATE WORKS, UTILITIES, PARTS OF AN EXISTING STRUCTURE OR ANY OTHER WORKS TO BE REMOVED OR MODIFIED, SHALL BE DEVELOPED DURING THE DETAILED DESIGN IN CONSULTATION WITH OXFORD CITY COUNCIL AND PEMBROKE COLLEGE.

- 11001 ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- 11002 ALL LEVELS ARE IN METRES AND RELATIVE TO OS DATUM (SEA LEVEL).
- 11003 ALL CO-ORDINATES ARE IN METRES AND RELATIVE TO OS DATUM (SEA LEVEL). TOPOGRAPHICAL DATA, SURVEY GRID RELATES TO OS NATIONAL GRID. PLEASE NOTE THE SURVEY WAS ORIGINALLY PRODUCED IN METRIC SCALE FACTOR 1 AND HAS BEEN RETROSPECTIVELY CONVERTED TO OS NATIONAL GRID.
- 11004 THIS DRAWING IS BASED UPON THE FOLLOWING SUPPLIED DIGITAL INFORMATION:
  - TOPOGRAPHICAL SURVEY PROVIDED CARRIED OUT BY MOURMETS (DATE: 12/08/2016)
  - GEOMETRY AND MEMBER SIZES PROVIDED BY OXFORD CITY COUNCIL (DOCUMENT REFERENCE: GASWORKS FOOTBRIDGE DIMENSION SHEETS RECEIVED: 06/07/2016)
- 11005 REFER TO APPROVAL IN PRINCIPLE DOCUMENT REFERENCE: 2016/06/16/158-588-8466-06 FOR MATERIALS AND FINISHES.

- SERIES 1000 - STRUCTURAL STEELWORK**
- 10001 REFER TO PRINCIPAL INSPECTION REPORT (DOCUMENT REFERENCE: 2016/06/16/158-588-8466-06) FOR DETAILS OF THE STRUCTURE GEOMETRIC ALL MEMBER SIZES AND CONNECTION DETAILS.
- 10002 DILAPIDATED PAINT SYSTEM AND CORROSION TO BE REMOVED THROUGHOUT BRIDGING.
- 10003 ADDITIONAL ELEMENTS TO BE REPAIRED AND/OR REPLACED TO BE IDENTIFIED FOLLOWING REMOVAL OF DILAPIDATED PAINT SYSTEM AND CORROSION.
- SERIES 1000 - PROTECTION OF STEELWORK AGAINST CORROSION**
- 10001 STRUCTURE TO BE REPAIRED WITH TYPE 1 FOR A LACK OF DEFECT ACCESS IN ACCORDANCE WITH SERIES 1000 OF THE SPECIFICATION FOR HIGHWAY BRIDGES.

**KEY**

TRUSS BRACING TO BE REPLACED	REPAIR TO BE REPLACED
STRONGER TO BE REPLACED	PLAN BRACING TO BE REPLACED
NEW BEARINGS	

REV.	DATE	BY	CHKD BY	APP'D BY
1	11/11/2020			
2	11/11/2020			
3	11/11/2020			

**FOR CONSTRUCTION**

This document is suitable only for the purpose noted above. Use of this document for any other purpose is not permitted.



Client/Project: OXFORD CITY COUNCIL  
GASWORKS PIPE BRIDGE  
REPAIR AND STRENGTHENING  
Title: GENERAL ARRANGEMENT

Project No: 330610536  
Revision: 031  
Scale: AS SHOWN  
Drawing No: 330610536-STR-588-8466-06-CE-001

NOTES:

**SERIES 000 - INTRODUCTION**

000.1 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWINGS 3306/0526-57N-SBR-B4M-DR-CB-001 TO 003 FOR GASWORKS PIPE BRIDGE, REPAIR AND STRENGTHENING AND ALL OTHER DRAWINGS AND SPECIFICATIONS.

000.2 THE SPECIFICATION SHALL BE THE 'SPECIFICATION FOR HIGHWAY WORKS', PUBLISHED BY THE STATIONARY OFFICE (FORMERLY H.M.S.O.) AS VOLUME 1 OF THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, AS AMENDED AND EXTENDED BY THE FOLLOWING:

- I. ARTICLES BY CONTRACT SPECIFIC ADDITIONAL, SUBSTITUTE AND CANCELLED CLAUSES AND FIGURES.
- II. APPENDIX 02: CONTRACT SPECIFIC MINOR ALTERATIONS TO EXISTING CLAUSES, TABLES AND FIGURES.
- III. THE NUMBERED APPENDICES LISTED IN APPENDIX 03

**SERIES 010 - PLS/ANNEXES**

010.1 ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

010.2 ALL LEVELS ARE IN METERS AND RELATIVE TO ORDNANCE DATUM (NORTH).

010.3 ALL CO-ORDINATES ARE IN METERS AND RELATIVE TO ORDNANCE SURVEY GRID. TOPOGRAPHICAL DATA SURVEY GRID RELATES TO OS NATIONAL GRID. PLEASE NOTE THE SURVEY WAS ORIGINALLY PRODUCED ON METRIC SCALE FACTOR 1 AND HAS BEEN RETROSPECTIVELY CONVERTED TO OS NATIONAL GRID.

010.4 ALL DRAWINGS ARE BASED UPON THE FOLLOWING SUPPLIED DIGITAL INFORMATION:  
# TOPOGRAPHICAL SURVEY PROVIDED CARRIED OUT BY M&S SURVEYS DATED NOVEMBER 2018.  
# GEOMETRY AND MEMBER SIZES PROVIDED BY OXFORD CITY COUNCIL (DOCUMENT REFERENCE: IS15 GASWORKS FOOTBRIDGE DIMENSION SHEETS, REVISION 15/07/17)

010.5 EXISTING SERVICES SHOWN ON THESE DRAWINGS ARE BASED UPON SURVEYS UNDERTAKEN BY OTHERS AND MUST BE CONSIDERED AS INACTIVE ONLY. THE EXACT POSITIONS AND/OR DETAILS OF ALL EXISTING SERVICES SHOULD BE CONFIRMED BY THE CONTRACTOR PRIOR TO COMMENCING ANY OF THE WORKS.

010.6 ALL PROPRIETARY PRODUCTS SHALL BE APPROVED BY THE OVERSEEING ORGANIZATION AND SHALL BE PLACED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS. WHERE OUTLINES OF PROPRIETARY PRODUCTS ARE SHOWN ON THE DRAWINGS, SUCH AS DETAILS ARE INDICATIVE ONLY.

010.7 REFER TO SPECIFICATION APPENDIX 16 FOR TESTING TO BE CARRIED OUT BY THE CONTRACTOR.

010.8 REFER TO SPECIFICATION APPENDIX 17B FOR PERMANENT WORKS DESIGN BY THE CONTRACTOR.

010.9 REFER TO SPECIFICATION APPENDIX 111 FOR TEMPORARY WORKS DESIGN REQUIREMENTS.

**SERIES 020 - SITE CLEARANCE**

020.1 REFER TO SPECIFICATION APPENDIX 21 FOR LIST OF ITEMS TO BE REMOVED AS PART OF THE WORKS.

020.2 ANY MATERIALS THAT ARE NOT TO BE RETAINED OR RE-USED WITHIN THE WORKS SHALL BE CARRIED OFF BY THE CONTRACTOR.

**SERIES 030 - FENCING**

030.1 THE EXISTING SECURITY SCREENS INSTALLED AT THE NORTH AND SOUTH ABUTMENTS ARE TO BE REPLACED WITH STAINLESS STEEL SECURITY SCREENS. REFER TO REQUIREMENTS IN SPECIFICATION APPENDIX 31.

030.2 LOCKABLE ACCESS GATES (HIGH SECURITY STEEL DOORSETS) ARE TO BE INSTALLED AT THE NORTH AND SOUTH ENDS OF THE STRUCTURE FOR ACCESS TO THE ABUTMENT GALLERIES. REFER TO REQUIREMENTS IN SPECIFICATION APPENDIX 31.

**SERIES 040 - ROAD RESTRAINT SYSTEM (VEHICLE AND PEDESTRIAN)**

040.1 THE REPLACEMENT OF THE BRIDGE PARAPETS SHALL BE DESIGNED BY THE CONTRACTOR CONSIDERING ALL TYPICAL DETAILS ON DRAWING 3306/0526-57N-SBR-B4M-DR-CB-003.

**SERIES 050 - DRAINAGE AND SERVICE DUCTS**

050.1 NEW DRAINAGE INFRASTRUCTURE IS SHOWN ON DRAWING 3306/1026-57N-SBR-B4M-DR-CB-003.

050.2 DUCTING DETAILS AND CABLE TRAY REQUIREMENTS ARE SHOWN ON DRAWING 3306/1026-57N-SBR-B4M-DR-CB-003.

**SERIES 1100 - KERBS, FOOTWAYS, CYCLEWAYS AND PAVED AREAS**

1100.1 THE EXISTING CONCRETE (DECK PLANKS) ARE TO BE REPLACED WITH A FIBRE REINFORCED POLYMER (FRP) DECK SYSTEM. REFER TO SPECIFICATION APPENDIX 111 FOR REQUIREMENTS OF FRP DECK SYSTEM.

**SERIES 100 - STRUCTURAL STEELWORK**

**STEELWORK (NON-ALLOY STEEL)**

100.1 NON-ALLOY STEEL SHALL BE TO THE FOLLOWING GRADES:  
- ALL I-BEAM SECTIONS TO BE EN 10255 DESIGN OR EQUIVALENT  
- ALL PLATES AND OTHER ROLLED SECTIONS UP TO 16mm THICK TO BE EN 10025 S255D OR EQUIVALENT  
- ALL PLATES THICKER THAN 16mm THICK TO BE EN S255D2 OR EQUIVALENT.

**STEELWORK (STAINLESS STEEL)**

100.2 ALL STAINLESS STEEL SECTIONS SHALL BE AUSTENITIC GRADE 1.4461 (S316) TO BS EN 10088-2 UNLESS NOTED OTHERWISE.

100.3 ALL STAINLESS STEEL SECTIONS ARE TO HAVE THE FOLLOWING SURFACE FINISHES TO BS EN 10088-2 STRAIGHTENED BRUSH POLISH FINISH WITH DIRECTIONAL GRAIN (1K OR 2K) FAWAFT HANDBOOK: SATIN POLISH FINISH (1K OR 2K)

**WELDING**

100.4 ALL WELDS TO BE CONTINUOUS FILLET WELDS ALL AROUND. WELD SIZES INCLUDE AN ALLOWANCE FOR LOSS OF SECTION ARE TO BE UNLESS NOTED OTHERWISE:  
- THICKNESS OF THICKER PLATE JOINED UP TO AND INCLUDING 40mm + 8mm MINIMUM FILLET WELD LEG LENGTH  
- THICKNESS OF THINNER PLATE JOINED UP TO AND INCLUDING 40mm + 8mm MINIMUM FILLET WELD LEG LENGTH

100.5 ALL WELD JOINT PREPARATION TO BS EN 10088-1.

100.6 ALL SURFACE WELDS MUST BE FINISHED SMOOTH.

100.7 ALL HOLLOW SECTION OPEN ENDS MUST BE CLOSED (PLUG) WITH CLOSURE PLATES FULLY WELDED ALL AROUND.

**BOLTED CONNECTIONS**

100.8 ALL NON-REMOVABLE BOLTED CONNECTIONS UNLESS NOTED OTHERWISE TO BE GALVANIZED CLASS B BOLTS TO BS EN 1947.

100.9 UNLESS NOTED OTHERWISE ALL FRINGE (S) BOLTS, SCREWS (s)) THROUGHOUT THE STRUCTURE ARE TO BE SECURITY TYPE FRINGES.

100.10 STAINLESS STEEL BOLTED CONNECTIONS TO BE GRADE A4 AND PROPERTY CLASS 70 TO BS EN 1947-1.

**STRUCTURAL METALWORK REPAIRS**

100.11 ON COMPLETION OF THE REMOVAL OF THE EXISTING PROTECTIVE COATINGS THE CONTRACTOR SHALL CARRY OUT A STRUCTURAL SURVEY OF THE EXISTING (STEEL) STRUCTURE TO CONFIRM THAT THE PROPOSED REPAIR WORKS SHOWN ON THE CONTRACT DRAWINGS ARE SUITABLE AND ADEQUATE. REFER TO SPECIFICATION APPENDIX 04 FOR STRUCTURAL SURVEY REQUIREMENTS.

100.12 MATERIALS AND WORKMANSHIP (EXECUTION FOR STRUCTURAL METALWORK REPAIRS) SHALL BE IN ACCORDANCE WITH SERIES 1800 OF THE SPECIFICATION FOR HIGHWAY WORKS UNLESS MODIFIED BY SPECIFICATION APPENDIX 181.

**SERIES 190 - PROTECTION OF STEELWORK AGAINST CORROSION**

190.1 REFER TO SERIES 5000 FOR DETAILS.

**SERIES 210 - BEARING BEARINGS**

210.1 REFER TO BEARING SCHEDULE PROVIDED IN SPECIFICATION APPENDIX 211.

**SERIES 2300 - BRIDGE EXPANSION JOINTS AND SEALING OF GAPS**

2300.1 REFER TO EXPANSION JOINT REQUIREMENTS IN SPECIFICATION APPENDIX 231.

2300.2 ALL JOINTS BETWEEN THE STEELWORK AND THE FRP DECK SYSTEM SHALL BE APPLIED USING A TWO-PART GUN GRADE POLY-SULPHIDE SEALANT COMPLYING WITH BS 4204 AND USED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

2300.3 ALL JOINTS BETWEEN THE STEELWORK AND CONCRETE (AT THE ENDS OF THE STRUCTURE) SHALL BE SEALED USING A TWO-PART GUN GRADE POLY-SULPHIDE SEALANT WITH BS 4204 AND APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

**SERIES 2400 - BRICKWORK, BLOCKWORK AND STONEMASONRY**

**BRICKWORK REPAIRS**

2400.1 THE DESIGN OF BRICKWORK REPAIRS SHALL BE CARRIED OUT BY THE CONTRACTOR IN ACCORDANCE WITH BS EN 1996 AND CONSIDERING THE RESULTS OF THE PRINCIPAL INSPECTION INCLUDED IN THE IS15 GASWORKS FOOTBRIDGE, PRINCIPAL INSPECTION REPORT (DOCUMENT REFERENCE: B01812-0466-PR-001), DATED 29/09/2018.

2400.2 THE CONTRACTOR SHALL SUBMIT PROPOSALS FOR A REPAIR THAT WILL (ARREST) THE DAMAGE OR DETERIORATION (ENTERED BOTH SPYFONTS AND CAUSES) AND TO ACHIEVE THE DURABILITY AND LIFE EXPECTANCY REQUIREMENTS SPECIFIED IN SPECIFICATION APPENDIX 241.

2400.3 MATERIALS AND WORKMANSHIP FOR REPAIRS TO BRICKWORK SHALL BE IN ACCORDANCE WITH SERIES 200 OF THE SPECIFICATION FOR HIGHWAY WORKS UNLESS MODIFIED BY SPECIFICATION APPENDIX 201.

**SERIES 3000 - MAINTENANCE PAINTING OF STEELWORK**

3000.1 THE CONTRACTOR SHALL SUBMIT THEIR PROPOSAL FOR THE REMOVAL OF THE EXISTING PAINT SYSTEM FOR APPROVAL BY THE OVERSEEING ORGANIZATION.

3000.2 ALL NON-ALLOY STEELWORK TO BE CORROSION PROTECTED / PAINTED IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS, TYPE 2 (DIFFICULT ACCESS) (NOT FINE GRASS) RA 1016 (TRAFFIC WHITE).



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**Notes**

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ISSUE FOR CONSTRUCTION	EN	RS	2020.07.27
Issued/Revision	By	App'd	11/11/2020
	SI	JAS	JAS
	Des.	Sign.	Check
			2020.10.18
			11/11/2020

Issue Status

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Client/Project Logo



Client/Project

OXFORD CITY COUNCIL

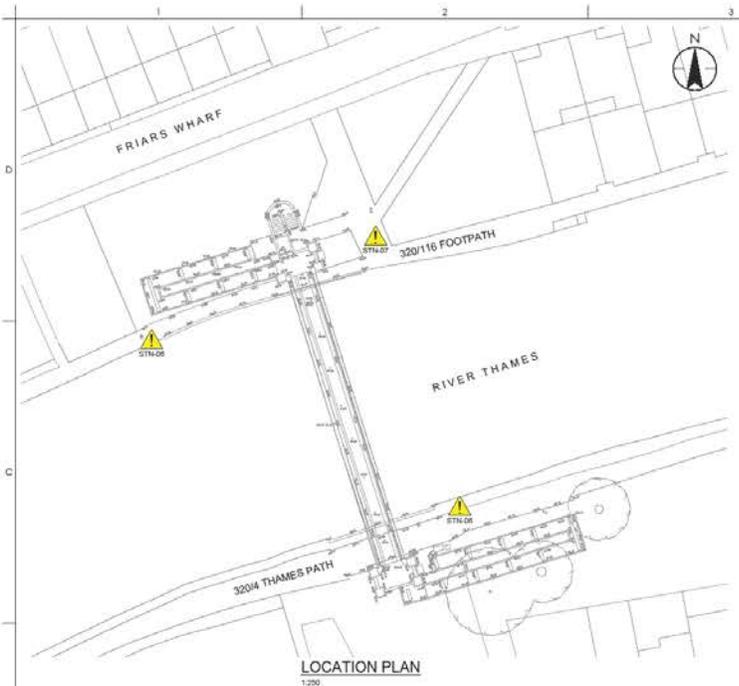
IS15 GASWORKS FOOTBRIDGE

REPAIR AND STRENGTHENING

Title

GENERAL NOTES DRAWING

Project No.	Scale
3306/1026	A5 SHOWN
Revision	Drawing No.
C01	3306/1026-57N-SBR-B4M-DR-CB-0010

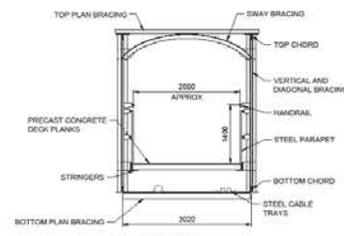


**CDM, HEALTH, SAFETY AND ENVIRONMENTAL NOTES (DRG. 0011)**

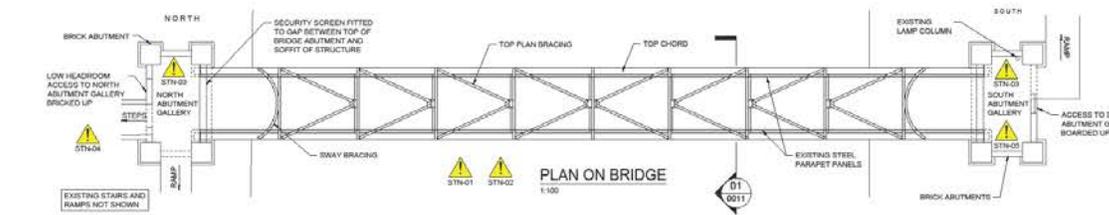
	DENOTES THE LOCATION OF RISK. FOR MORE INFORMATION REFER TO RISK REFERENCE AND DESCRIPTION		
IN ADDITION TO THE HAZARDS AND THE RISKS NORMALLY ASSOCIATED WITH THE FORM OF CONSTRUCTION DESCRIBED ON THE DRAWINGS, THE FOLLOWING INDIVIDUAL RISKS SHOULD BE CONSIDERED			
P - DETAILED DESIGN, C - CONSTRUCTION, S - IN SERVICE / MAINTENANCE, D - DECOMMISSIONING / DEMOLITION			
RISK PREFIX	RISK REF.	RISK DESCRIPTION	RISK PHASE
STN	01	DETERIORATION OF EXISTING STRUCTURE. REFER TO DETAILS PROVIDED IN THE PRINCIPAL INSPECTION REPORT (DOCUMENT REFERENCE: 09112-449-FR-01).	C
STN	02	PRESENCE OF LEAD, POLYCHLORINATED BIPHENYLS (PCBs) AND OTHER HAZARDOUS SUBSTANCES SHOULD BE ASSUMED.	C
STN	03	PRESENCE OF SERVICES WITHIN CABLE TRAYS ON UNDERSIDE OF STRUCTURE AND IN THE GALLERIES BEHIND THE NORTH AND SOUTH ABUTMENTS.	C
STN	04	LOW HEADROOM ACCESS TO NORTH ABUTMENT GALLERY.	C
STN	05	CONSTRUCTION WASTE.	C
STN	06	WORKING ON OR NEAR MAIN RIVER AND IN A FLOODPLAIN.	C



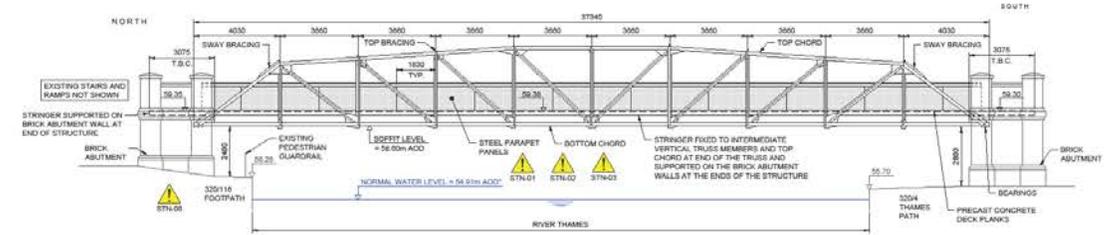
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 Notes  
 UTILITIES NOTE: The location of any existing public or private services, utility services, pipes or apparatus shown on the drawings is believed to be correct, but no warranty is made as to their accuracy or depth. Other such pipes or apparatus may also be present but not shown. The Contractor is instructed to undertake their own investigation where the presence of any existing services, services, pipes or apparatus may affect their operations.  
 SERIES 0100 - PRELIMINARY  
 0100.1 DRAWING TO BE PRINTED IN COLOUR.  
 0100.2 REFER TO DRAWING 330610526-01TH-SBR-8489-DR-CB-0010 FOR ALL NOTES.



**SECTION 01**  
TYPICAL SECTION THROUGH DECK  
1:50



**PLAN ON BRIDGE**  
1:100



**ELEVATION**  
1:100

\*NORMAL WATER LEVEL BASED ON INITIAL CONDITIONS WITHIN EA HYDRAULIC MODEL. FLOOD LEVELS NOT AVAILABLE. FLOOD MAP IS AVAILABLE TO VIEW AT <http://www.rivermap.org.uk>

CEL. FOR CONSTRUCTION	441	JAC	2023.07.27
Issue/Revision	01	Appr.	11711362.00
	001	JAC	2023.10.18
	002	JAC	11711362.00

Issue Status

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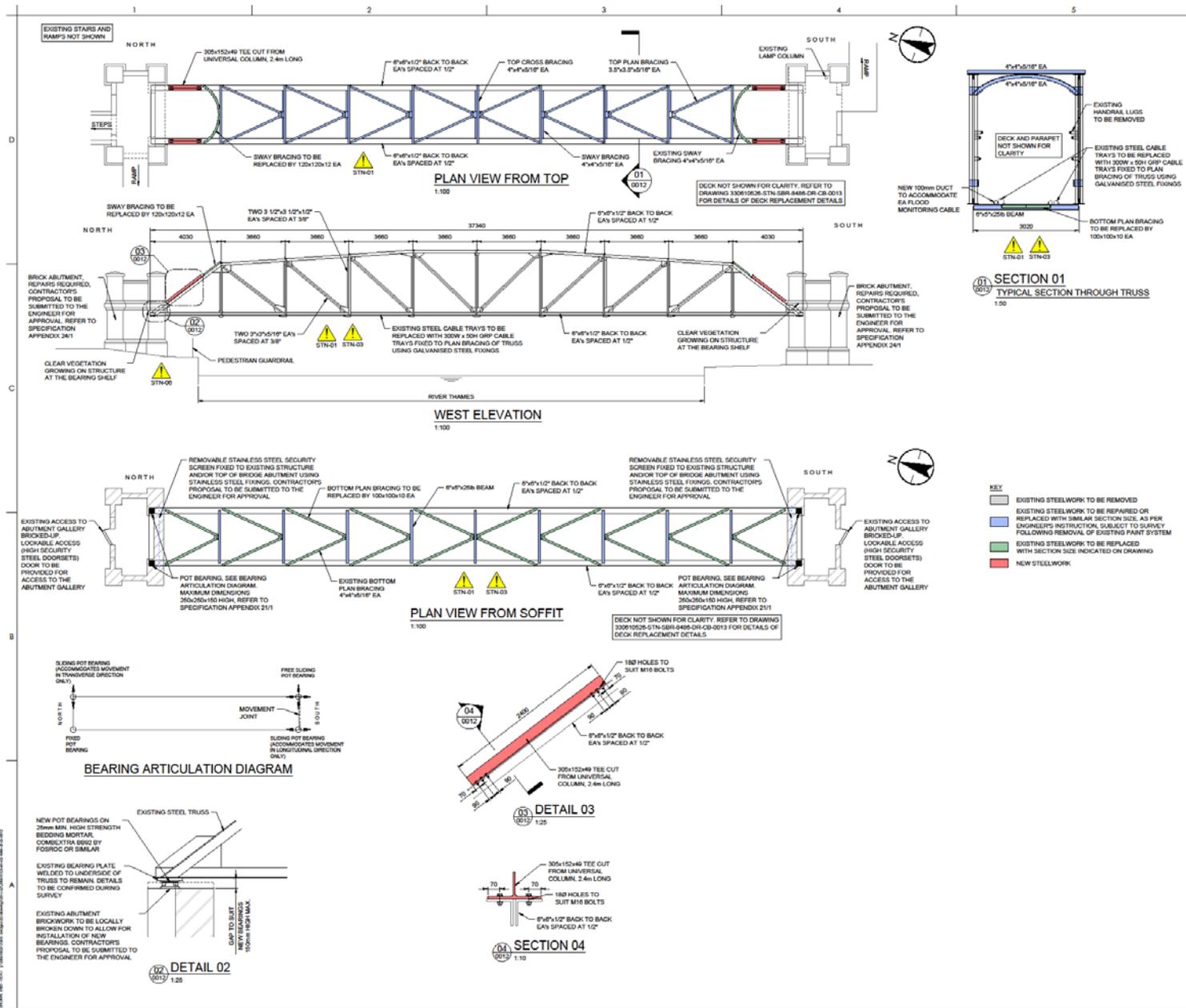
ISIS GASWORKS FOOTBRIDGE

REPAIR AND STRENGTHENING

Title  
EXISTING BRIDGE

GENERAL ARRANGEMENT

Project No.	Scale
330610526	AS SHOWN
Revision	Drawing No.
001	330610526-01TH-SBR-8489-DR-CB-0011



DATE	DESCRIPTION	BY	CHK	APP'D
11/11/2020	Issue/Revision	By	Appt	11/11/2020
		Den	Chk	11/11/2020

Issue Status

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ISIS GASWORKS FOOTBRIDGE

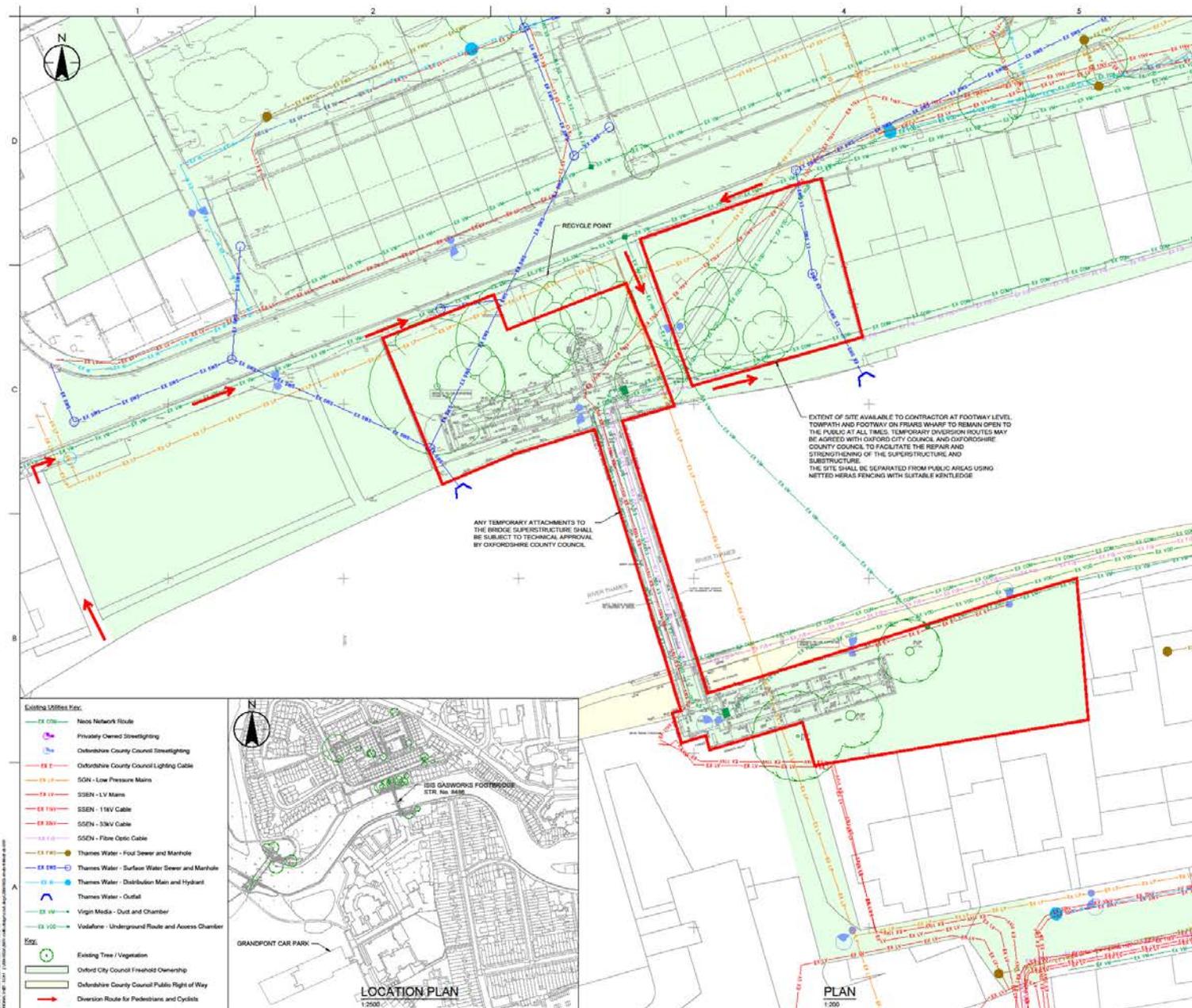
REPAIR AND STRENGTHENING

BRICKWORK AND STEELWORK REPAIR AND STRENGTHENING

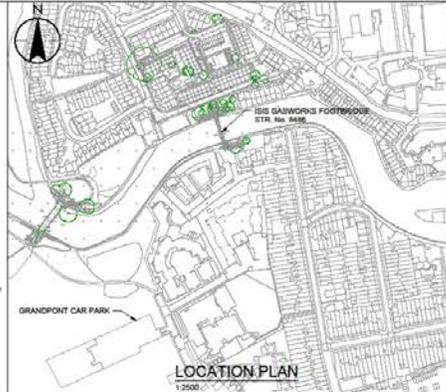
SHEET 1 OF 2

Project No. 330610526	Scale AS SHOWN
Revision C01	Drawing No. 330610526-STN-58R-8486-DR-CB-0012





- Existing Utilities Etc:**
- EX 000 - Neos Network Route
  - EX 001 - Privately Owned Streetlighting
  - EX 002 - Oxfordshire County Council Streetlighting
  - EX 003 - Oxfordshire County Council Lighting Cable
  - EX 004 - SGN - Low Pressure Mains
  - EX 005 - SSEN - LV Mains
  - EX 100 - SSEN - 11kV Cable
  - EX 200 - SSEN - 33kV Cable
  - EX 300 - SSEN - Fibre Optic Cable
  - EX 400 - Thames Water - Foul Sewer and Manhole
  - EX 500 - Thames Water - Surface Water Sewer and Manhole
  - EX 600 - Thames Water - Distribution Main and Hydrant
  - EX 700 - Thames Water - Outfall
  - EX 800 - Virgin Media - Duct and Chamber
  - EX 900 - Vodafone - Underground Route and Access Chamber
- Site:**
- Existing Tree / Vegetation
  - Oxford City Council Freehold Ownership
  - Oxfordshire County Council Public Right of Way
  - Diversion Route for Pedestrians and Cyclists



**PLAN**  
1:200

RECYCLE POINT

EXTENT OF SITE AVAILABLE TO CONTRACTOR AT FOOTWAY LEVEL. TOWPATH AND FOOTWAY ON FRINGS WARE TO REMAIN OPEN TO THE PUBLIC AT ALL TIMES. TEMPORARY DIVERSION ROUTES MAY BE AGREED WITH OXFORD CITY COUNCIL AND OXFORDSHIRE COUNTY COUNCIL TO FACILITATE THE REPAIR AND STRENGTHENING OF THE SUPERSTRUCTURE AND SUBSTRUCTURE. THE SITE SHALL BE SEPARATED FROM PUBLIC AREAS USING NETTED HERAS FENCING WITH SUITABLE KENTLEDGE.

ANY TEMPORARY ATTACHMENTS TO THE BRIDGE SUPERSTRUCTURE SHALL BE SUBJECT TO TECHNICAL APPROVAL BY OXFORDSHIRE COUNTY COUNCIL.



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- If received electronically, it is the recipient's responsibility to print to the correct scale. Otherwise, do not scale from this drawing. Written dimensions should be used.
  - This drawing has been produced in colour and should be reproduced in colour.
  - This drawing is to be read in conjunction with all other related project drawings and documents. Any discrepancies between this drawing and any other relevant engineering drawing should be reported to the design engineer immediately.
  - All dimensions in metres unless stated otherwise.
  - All levels are in metres AOD unless stated otherwise.
  - Information on this drawing is given with no warranty. No liability of any kind whatsoever is accepted by Stantec, or its agents, for any errors or omissions.
  - Latest information based on asset records received July 2021.
  - Topographical survey information based on MFL Surveys drawing number 25359 dated November 2018 and Interlink Surveys drawing number 210471 2D dated July 2021.
  - Land Ownership information shown individually based on Land Registry records received from Oxford City Council August 2021.

ISSUED FOR CONSTRUCTION	DATE	BY	APP'D
Issued/Revision	03/08/22	YJ	YJ
		YJ	YJ
		YJ	YJ
		YJ	YJ

Issue Status

**FOR CONSTRUCTION**

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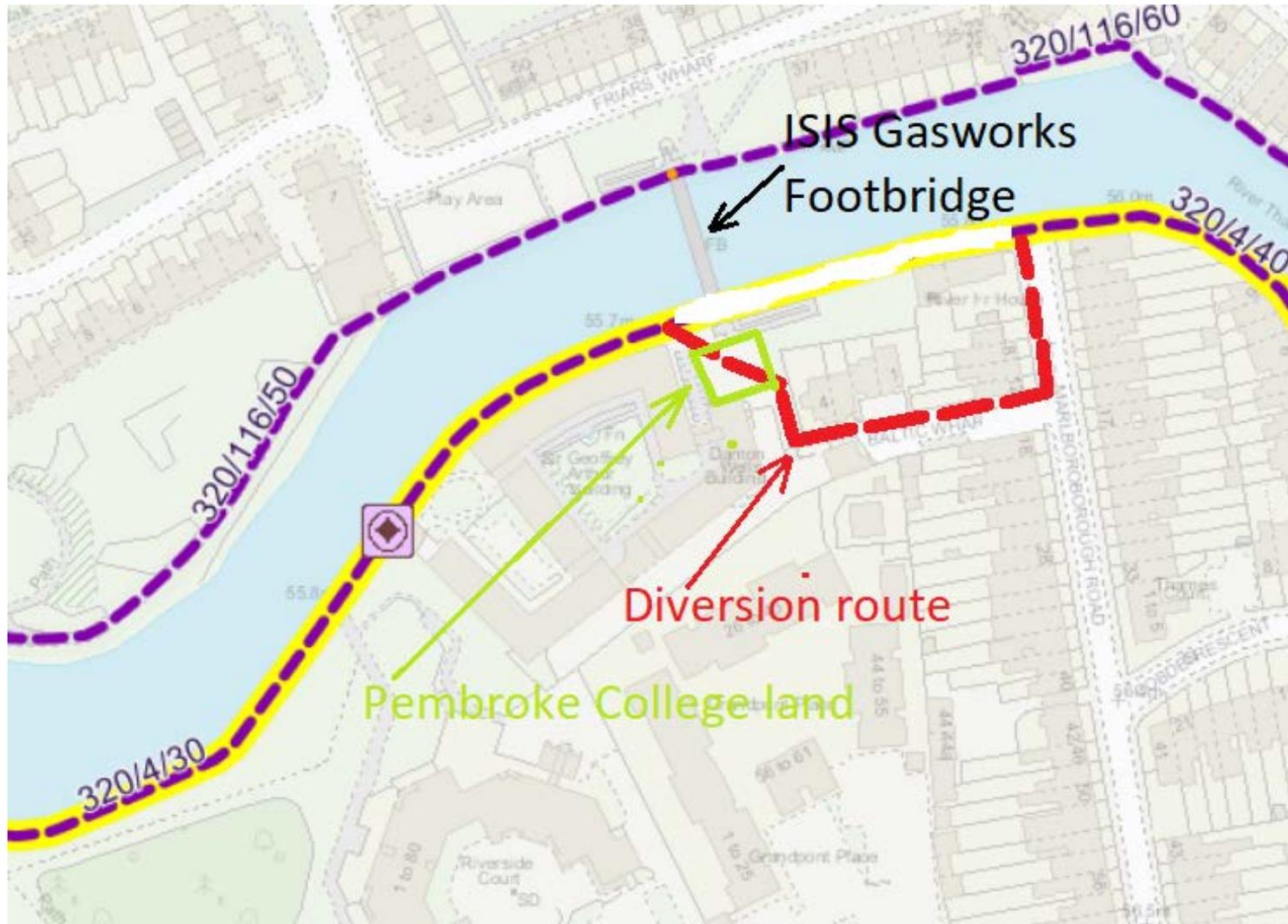


Client/Project  
**OXFORD CITY COUNCIL**  
 ISIS GASWORKS FOOTBRIDGE  
 REPAIR AND STRENGTHENING

Title  
**SITE EXTENTS**

Project No.	Scale
330410026	AS SHOWN
Revision	Drawing No.
C01	330410026-SIN-SBR-8404-DR-0101





- Gasworks Pipe Bridge shown from the West





Gasworks Pipe Bridge shown from the West

Southern abutment



- Tow path adjacent to the Geoffrey Arthur Building

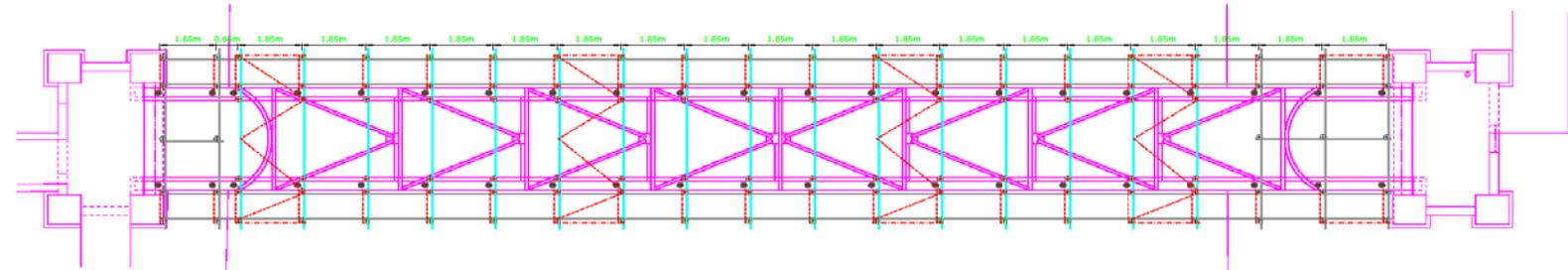


Contractor compound and temporary diversion routes



- Legend**
- Tube
  - 300mm ladder beam
  - 430mm Apollo beams
  - 750mm Apollo beams
  - Sheeting/Shrinkwrap sheeting
  - Debris netting
  - Double boards and Visqueen
  - Cordex and Visqueen
  - Ledger bracing
  - Facade bracing
  - Plan bracing
  - Knee bracing/spurs
  - X section bracing
  - Standard
  - Puncheon
  - Hanger
  - Gilder coupler tie (pins)
  - Band and plate shear tie
  - 12mm Apollo tie
  - Box tie
  - Suspension point
  - Check fitting

Plan at A-A △ Boarding, lacing tubes and intermediate transoms omitted for clarity



Elevation B-B



## SCAFFOLD TYPE A - BOATING SEASON



**!** Use load bearing couplers at all connections except board bearers

**!** Bearing points (Ground, Roof, suspension points etc) must be adequate to carry the imposed loads

**!** Between standards- Max 1 working lift at 1.5kN/m<sup>2</sup> (150kg/m<sup>2</sup>)  
**!** On inside boards or hop ups- Max 1 working lift at 0.75kN/m<sup>2</sup> (75kg/m<sup>2</sup>)

- Attention is drawn to the following notes
- 1) Ground, bearing points, tie points and sole boards must be adequate to support the imposed loads - MC to confirm
  - 2) A safe working platform must be used during erection and dismantling. Temporary platforms may be required to erect/dismantle this scaffold and should be highlighted in the scaffold contractors Risk Assessment and Method statement
  - 3) Edge protection must be fitted to all openings
  - 4) All dimensions must be checked on site prior to works commencing
  - 5) Protection for pedestrian and vehicular traffic must be provided
  - 6) Protection to the scaffold from impacts must be considered
  - 7) Scaffold contractor to work to TG 20:21 and SG4:15

**!** Please print out all drawings in colour A3 size  
**Drawing not to scale**  
 dimensions as per drawing

**!** **Drawing for approval only**

Drawing no:	1373/ 1	Rev:	B	Date:	25/05/2023
Site:	Oxford Pipe Bridge				
Description:	Suspended access scaffolding with encapsulation				
Altitude:	68m	In Country:	CC	Winds:	2.5 Vmax: 21m/s
Shoreline:	>=10m	Date:	25/05/2023		
Drawn by:	TL	Checked by:	JL		
Signature:	[Signature]				
Draft issue:	27/07/2024 - Detail draft	Developed			
Amended on:	12/04/2023 - Working drawings issued	Issued for P002&3			
Revision A:	Adding dimensions for EA				24 04 2023
Revision B:	Changing details and loadings				25 05 2023
Revision C:	None				n/a

- Notes**
1. Max lift heights: 2.5m, Max bay length: 1.85m, Max bay width: 4 boards (1m).
  2. Max transom spacing: 1.2m
  3. Max lift heights: 3m, Max bay length: 1.85m, Max bay width: 4 boards (1m).
  4. Max transom spacing: 0.9m (not on lacing tubes at 2m centres)
- General notes**
5. All connections except board bearers to be made using load bearing fittings
  6. 400mm beams- Plan brace top chord of beams and lace top and bottom chords at 1m centres. Use proprietary connectors and pins for connecting beams together.
  7. Max tie grid: 7.4m<sup>2</sup>



- Legend**
- Tube
  - 300mm ladder beam
  - 450mm Apollo beams
  - 750mm Apollo beams
  - Sheeting/Shrinkwrap sheeting
  - Debris netting
  - Double boards and Visqueen
  - Cordex and Visqueen
  - Ledger bracing
  - Facade bracing
  - Plan bracing
  - Knee bracing/spurs
  - X section bracing
  - Standard
  - Punchon
  - Hanger
  - Girder coupler tie (and)
  - Band and plate shear tie
  - 12mm Apollo tie
  - Box tie
  - Suspension point
  - Check fitting



**!** Use load bearing couplers at all connections except board bearers

**!** Bearing points (Ground, Roof, suspension points etc) must be adequate to carry the imposed loads

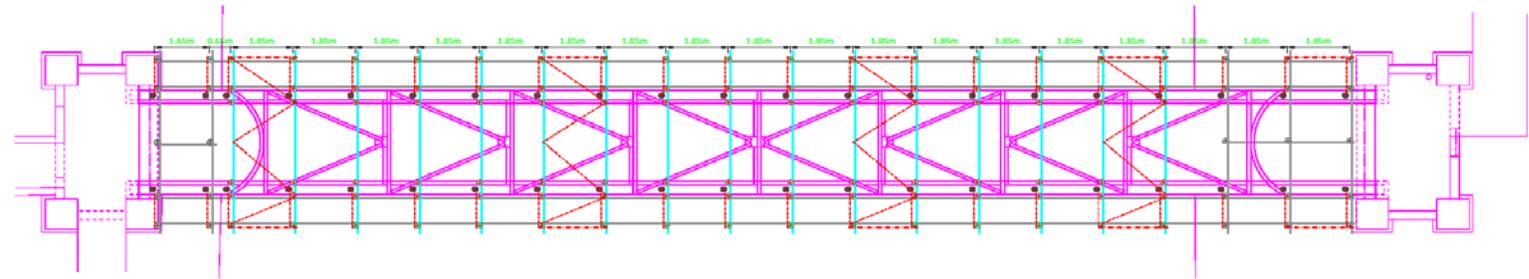
**!** Between standards- Max 1 working lift at 1.5kN/m<sup>2</sup> (150kg/m<sup>2</sup>)  
**!** On inside boards or hop ups- Max 1 working lift at 0.75kN/m<sup>2</sup> (75kg/m<sup>2</sup>)

- Attention is drawn to the following notes:
- 1) Ground, bearing points, tie points and sole boards must be adequate to support the imposed loads - MC to confirm
  - 2) A safe working platform must be used during erection and dismantling - Temporary platforms may be required to erect/dismantle this scaffold and should be highlighted in the scaffold contractors Risk Assessment and Method statement
  - 3) Edge protection must be fitted to all openings
  - 4) All dimensions must be checked on site prior to works commencing
  - 5) Protection for pedestrian and vehicular traffic must be provided
  - 6) Protection to the scaffold from impacts must be considered
  - 7) Scaffold contractor to work to TG 20:21 and SG4:15

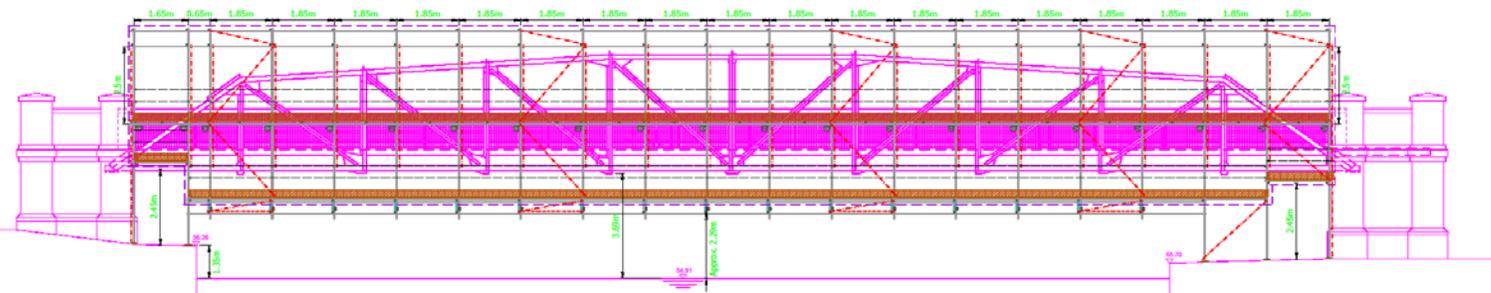
**!** Please print out all drawings in colour A3 min  
**Drawing not to scale**  
 dimensions as per drawing

**!** **Drawing for approval only**

Plan at A-A **!** Boarding, lacing tubes and intermediate transoms omitted for clarity



Elevation B-B



Drawing no:	1373/ 1	Rev/A	Date:	24/04/2023	
Site:	Oxford Pipe Bridge				
Description:	Suspended access scaffolding with encapsulation				
Altitude:	68m	In Country:	CC tasks:	2.5   Vmag:	21m/s
Shoreline:	>=3.0km	Date:	24/04/2023		
Drawn by:	TL	Checked by:	JL		
Signature:		Signature:			
Drawn on:	17/02/2023	Initial draft	Developed		
Amended on:	24/04/2023				
Issue tracking:	- warning drawings issued - issued for PO283				
Revision A:	Adding dimensions for EA				
Revision B:	None				
Revision C:	None				

- Notes
1. Max lift heights- 2.5m, Max bay length- 1.85m, Max bay width- 4 boards (1m)
  2. Max transom spacing- 1.2m
  3. Max lift heights 1m, Max bay length 1.85m, Max bay width 4 boards (1m)
  4. Max transom spacing- 0.9m (ast on lacing tubes at 2m centres)
  5. All connections except board bearers to be made using load bearing fittings
  6. 450mm beams- Plan brace top chord of beams and face top and bottom chords at 1m centres. Use proprietary connectors and pins for connecting beams together.
  7. Max tie grid 7.4m<sup>2</sup>

**SCAFFOLD TYPE B - NON BOATING SEASON**



## **Future**

### **Reopening**

The project team is working hard to reopen the bridge to the public as quickly as possible

### **Fit for the future**

The replacement of the deck and strengthening of the steelwork will reduce the weight of the structure, this will help improve its overall strength and reduce the total amount of strengthening work required.

### **Design**

The existing structure was constructed in 1927 and modified in the 1970s to accommodate a public footpath, by strengthening and repair works the bridge will further extend its life by approximately 120 years.

### **Heritage**

The existing bridge is listed on the Oxford Heritage Asset register and forms an important link to previous industrial activities in the area, by carrying out the strengthening and repair works the local heritage will be preserved.

### **Environmental, social and economic impact**

The planned works aim to minimise the environmental impact of the bridge structure and allow the original bridge to be retained.

