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Chance Brothers Glassworks,
Smethwick, West Midlands
Historic Building Record
Tunnels Between Buildings A & B
Interim Report

2007

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**Former Chance Brothers Glassworks,
Spon Lane, Smethwick, West Midlands**

Historic Building Recording

TUNNELS BETWEEN BUILDINGS A & B: INTERIM REPORT

by

Ric Tyler AIFA
(Birmingham Archaeology)

For further information please contact:

Alex Jones (Director)
Birmingham Archaeology
The University of Birmingham
Edgbaston
Birmingham B15 2TT
Tel: 0121 414 5513
Fax: 0121 414 5516
E-Mail: bham-arch@bham.ac.uk
Web Address: <http://www.arch-ant.bham.ac.uk/bufau/>

**FORMER CHANCE BROTHERS GLASSWORKS, SPON LANE,
SMETHWICK, WESTMIDLANDS**

Historic Building Recording

Interim Report, Tunnels North of Buildings A and B: September 2007

CONTENTS

1	INTRODUCTION	1
2	SITE LOCATION	1
3	AIMS AND OBJECTIVES	2
4	METHODOLOGY	2
4.1	The Written Record	2
4.2	The Drawn Record.....	2
4.3	The Photographic Record	2
4.4	Documentary Research.....	2
5	HISTORICAL BACKGROUND.....	2
6	DESCRIPTION.....	3
7	INTERPRETATION AND SIGNIFICANCE.....	4
8	CONCLUSIONS AND RECOMMENDATIONS.....	5
9	ACKNOWLEDGEMENTS	5
10	REFERENCES	5
	APPENDIX A : List Entry for Buildings A and B	7

List of Figures

Figure 01: Site location plan.

Figure 02: Site layout and tunnel location plan.

Figure 03: 1857 aerial view.

Figure 04: Board of Health plan of 1858

Figure 05: Ordnance Survey 1st Edition 1:2500 County Series map of 1854-1901, published 1890.

Figure 06: Ordnance Survey 1st Revision 1:2500 County Series map of 1904.

Figure 07: Tunnels; Plan and cross sections.

Figure 08: Tunnels; longitudinal cross section.

List of Plates

Plate 01: Buildings A and B seen from south side of NML canal.

Plate 02: Entranceways to tunnels between Buildings A and B.

Plate 03: Entrance within Building B.

- Plate 04: Tunnel, western section, looking east.*
Plate 05: Arched recess with weights.
Plate 06: Entrance to central section (W).
Plate 07: Tunnel, central section looking east.
Plate 08: Tunnel, central section, detail of stair.
Plate 09: Tunnel, central section, blocked tunnel leading north.
Plate 10: Entrance to central section (E).
Plate 11: Blocking of east section.
Plate 12: Tunnel, eastern section looking east.
Plate 13: Arched recess with winch gear.
Plate 14: Inserted brickwork, east end.
Plate 15: Blocked archway, east end.
Plate 16: Blocked doorway from Building A.

SUMMARY

Birmingham Archaeology undertook a programme of historic building recording in July – September 2007 at the former Chance Brothers Glassworks, Spon Lane, Smethwick West Midlands, in advance of limited demolition and refurbishment works associated with the redevelopment of the site.

Recording work extended to seven listed structures on the site, all of which relate to the expansion of the glassworks in the 1830-50s when Chances attained a position of prominence in the glass manufacturing industry. Additional recording work was commissioned to cover a series of tunnels located beneath the present access road and the probable basal remains of a late 19th-century regenerative furnace, beneath the current hard-standing of the site. The current report presents an interim statement of the results of the study of the series of tunnels which extend beneath the present access road leading off Spon Lane, located to the north of Buildings A and B.

The original purpose of the tunnels remains unclear, though the survival of metal rails within the eastern and western sections suggest they may originally have functioned for the transportation or distribution of materials between different areas of the glassworks complex and their proximity to the main entrance to the site may of significance in this respect. That the tunnel system was formerly more extensive is indicated by a backfilled, transverse tunnel branching off to the north of the recorded section, beneath the Lister's light industrial estate development.

The present project has allowed for a record to be made of the tunnels in their present state. It is possible that a future programme of documentary research may throw some light as to their original function and how they related to other buildings of the manufactory complex.

FORMER CHANCE BROTHERS GLASSWORKS, SPON LANE, SMETHWICK, WESTMIDLANDS

Historic Building Recording

Interim Report: Tunnels north of Buildings A and B, September 2007.

1 INTRODUCTION

- 1.1 Birmingham Archaeology was commissioned by Templegate Land and Commercial Property Consultants of Edgbaston, Birmingham to undertake a programme of historic building recording at the former Chance Brothers Glassworks, Spon Lane, Smethwick, West Midlands. The recording was undertaken in advance of limited demolition and refurbishment works associated with the redevelopment of the site.
- 1.2 A total of seven buildings and associated features have been recorded as part of the project. This report presents an interim statement of the results for the series of tunnels which extend beneath the current access road to the site, located to the north of Buildings A and B.

2 SITE LOCATION

- 2.1 The site of the former Chance Brothers North Glassworks is located approximately 2 km north-west of Smethwick town centre and 7 km north-west of the city-centre of Birmingham (centred on NGR: SP 0040 8975; Figure 1).
- 2.2 The site is bounded to the west and north by the Brindley's Old Main Line (OML) canal (Wolverhampton Level) of 1768-69 and to the south by Thomas Telford's New Main Line (NML) canal (Birmingham Level) of 1829-30. To the south, the canal frontage of the site extends eastwards as far as Spon Lane (A4031) while north of Palace Drive, the site is bounded by a series of modern light industrial buildings and car parking fronting onto Spon Lane. These latter structures encroach onto the eastern side of the Chance Brothers site, which formerly extended as far as Spon Lane. The site is entered off Spon Lane to the east via Palace Drive and an access road which descends parallel to the NML canal.
- 2.3 The site includes seven Grade II Listed Buildings (Buildings A - E, K and L: Figure 2) all of which are also included on the Black Country Sites and Monuments Record (SMR). In addition, they lie within the Smethwick Summit / Galton Valley Conservation Area (DSD184) and form a part of a Scheduled Ancient Monument (DSD195, MBL3153). A large proportion of the 19th-century industrial buildings were removed in the 1940's, and, since closure of the site in 1981, the majority of the above ground structures on the site have been cleared, the remainder comprising concrete slab and areas of hard standing.
- 2.4 Buildings A and B are located to the eastern end of the southern site boundary, on the southern side of the entrance road leading off Spon Lane, terraced into the northern embankment of the NML canal (Figure 2, Plate 1) and are centred on NGR SP 0060 8971 and SP 0056 8972 respectively. The series of tunnels, here under consideration, are located immediately north of, and are accessed from, the north sides of Buildings A and B and the open area between (Figure 2).

3 AIMS AND OBJECTIVES

- 3.1 Recording of the tunnels has been undertaken as a supplementary exercise to the original brief. The principal objective of the project, as stated in the original Written Scheme of Investigation (WSI), was to make ‘a detailed record of the structure’ taking into consideration ‘it’s historical development, typology, spatial layout technology and function’.
- 3.2 The Historic Building Record was made in accordance with by English Heritage’s ‘*Understanding Historic Buildings; A Guide to Good Recording Practice*’ (EH, 2006) and with guidelines laid out in the Institute of Field Archaeologists ‘*Standards and Procedures for Historic Building Recording*’ (IFA, 2004).

4 METHODOLOGY

4.1 The Written Record

- 4.1.1 A written record of the buildings was made using *pro-forma* building and room recording sheets.

4.2 The Drawn Record

- 4.2.1 The drawn survey comprised the verification and annotation of pre-existing measured survey drawings. Significant archaeological detail was measured by hand and added to overlays of the existing survey drawings at an appropriate scale (1:100). In addition, a series of transverse sections and single longitudinal cross-section were generated.

4.3 The Photographic Record

- 4.3.1 The photographic survey comprised monochrome print accompanied by high-resolution digital photography. Where possible, photographs included a graduated photographic scale. Details of photographs were recorded on *pro forma* index sheets, and included location, subject and orientation.

4.4 Documentary Research

- 4.4.1 No programme of documentary research was commissioned as part of the current study, however a rapid regression analysis of readily available historic Ordnance Survey 1:2500 maps has served to put the tunnels within the general context of the development of the glassworks as a whole (see §.6 below). It is understood that the Chance Brothers archive, now amalgamated into the Pilkingtons archive, may contain a considerable amount of significant information relating to the history and development of the Spon Lane site (Upson, 2004, §.2.1.8-2.1.10).

5 HISTORICAL BACKGROUND

- 5.1 The Spon Lane glassworks traces its origins to the formation of the British Crown Glass Company by Thomas Shutt and the works he established on the site on the south side of the OML canal in 1814. This works was sold in 1822 by Joseph Stock and Thomas and Philip Palmer, two of the original partners, to Robert Lucas Chance. Chance ran the company

under its original name with his brother William and with John Hartley. On the death of Hartley and following the departure from the firm of his two sons, the works began trading as Chance Brothers and Company in 1836.

- 5.2 Immediately upon acquiring the company, Chance began to expand the operation, specialising in fields such as coloured glass, and developed alternative techniques, including the innovative cylinder methods of sheet glass production, imported from the continent. From around 1850, Chances began to develop lighthouse glass and a subsidiary company, Chance's Lighthouse Works was established in the south works (south of the NML canal) producing not only lenses but also related lighthouse apparatus including lanterns and revolving carriages.
- 5.3 The company went on to attain a position of prominence within the British glass manufacturing industry, becoming the largest crown and sheet glass manufactory in England by 1851 when it famously supplied the glass for Paxton's Crystal Palace at the Great Exhibition.
- 5.4 Pilkingtons Brothers of St. Helen's acquired a sizeable interest in Chance's in 1936, eventually taking over control of the company in 1955. Glass production at the Spon Lane works ceased in 1976 and the remainder of the site was closed in 1981.
- 5.5 As stated above (§.4.4.1), it is beyond the scope of the current project to undertake research into the origins and development of the Chance Brothers company and their activities at the Spon Lane site. A brief overview of the company's development is given in Upson (2004), while a number of unpublished articles and theses (eg. Chance 1979) have described the firm of Chance Brothers and their operations at Spon Lane in some detail. However, no detailed study has yet been undertaken of the development of the Spon Lane site and its operations and it is understood that the Chance Brothers archive, now amalgamated with the Pilkington archive, may contain a considerable amount of significant information in this respect (Upson, 2004, §.2.1.8-2.1.10).

6 DESCRIPTION

- 6.1 The tunnels as recorded can be divided into three separate sections. To the west is a 19.5m long section, 2.6m wide; it is brick-built, laid to English bond, with a longitudinal, segmental vault standing 2.47m tall to the apex, springing at a height of 1.92m (Plate 4). The western wall of this section is primary, though the eastern wall, again in brick, is secondary inserted blocking. The flooring is of brick setts, aligned east-west, and includes two 0.06m iron rails to the northern side, set 1.20m apart which run the full length of the tunnel. The floor between the rails is at a level of 0.05m below the main tunnel floor. The southern wall of the tunnel represents the northern wall of Building B with which it is demonstrably contemporary. It includes two arched recesses, 1.82m wide by 0.35m deep, with segmental brick arches and with vents above, which traverse the width of the wall through to the interior of Building B. Deep, webbed I-section iron girders are set into the brickwork of the rear of the recesses, possibly originally carrying winch gear, as recorded to the east (see §.6.3; Figure 7d). At the base of the recess, a void accommodates two heavy iron counter-weights (see Figure 7b, Plate 5), the purpose of which is presently unclear. The western section of tunnel is accessed via a single entranceway to the far west end, 1.25m wide though originally wider at 2.4m (Plate 3).

- 6.2 The central section of the tunnel, east of the brick blocking described above, is again brick-built but the ceiling here constitutes a series of transverse jack-arches which rise incrementally from west to east (0.13m per bay), reflecting the slope of the access road above (see Figure 7). The arches are supported on transverse RSJs with additional concrete supports. The floor of this section is in concrete and is set at a slightly higher level than that to the west, obscuring original arrangements; specifically it is unclear how far east the iron rails recorded to the west extend. The western end of the tunnel is closed off by a low brick wall enclosing an oil tank. To the east, a brick-built stair rises 0.75m to an angled, transverse cross-tunnel, formerly extending to the north beneath the present Lister's light industrial estate development (Figure 7). To the south, the opening of this tunnel has been partially blocked by a low brick wall (Plate 10), while to the north, the passage has been fully blocked in red-brick (Plate 9). The central section of tunnel is accessed via a segmental arched opening (partially blocked) within the south wall from the area between buildings A and B to the south (Plate 6).
- 6.3 The third section of tunnel, to the eastern end, measures *c.*20m long by 2.85m wide; it is again brick-built, laid to English bond, with a longitudinal, semi-circular barrel vault standing 3m tall to the apex and springing at a height of 1.85m (Plate 12). The floor is of brick setts, aligned east-west and retains two iron rails at 1.2m centres towards the northern side aligning with those of the western section, previously described (§.6.1, Figure 7d). Within the south wall of the tunnel, representing the north wall of Building A with which it is demonstrably contemporary, two arched recesses were recorded. The arches have two centred heads extending into the main vault, otherwise details were similar to those within the western section (§.6.1), though the iron girders embedded in the brickwork here support mechanical winches (Plate 13).
- 6.4 The tunnel is currently only accessed from the central section to the west, though original entrances (both now blocked) were located at the western and eastern ends of Building A, north wall (Figure 7a, see §.6.4 below). This tunnel originally formed an open space, as at the eastern end, but has been subsequently divided off by a series of roughly built brick walls, both at the eastern and western ends (Figure 7a). Immediately east of the transverse tunnel, a short length of brick wall has been inserted to the south, appearing to form a passage to the south side of the paired iron rails. This arrangement has, however, been lost and the area north of the inserted wall blocked off to both east (Plate 11) and west.
- 6.5 At the eastern end, the tunnel projects beyond the eastern limit of Building A, where a large arched opening was recorded in the south wall (see Figure 8, Plate 15); reference to early maps reveals that Building A was originally constructed with a small extension to the east (see Figure 5), though this structure appears to have been short-lived and is absent from the Ordnance Survey 1st revision map of 1904 (Figure 6). To the west of the arched opening, a further two blocked doorways were recorded, shielded from the body of the tunnel by an L-shaped, inserted brick wall (Plate 14); the western of these formerly opened into the interior of Building A (Plate 16).

7 INTERPRETATION AND SIGNIFICANCE

- 7.1 The tunnels are clearly associated with Buildings A and B which are located directly to the south, from which they are accessed and with which they are contemporary. Analysis of historic maps indicates these buildings represents some of the latest surviving structures on the site, being constructed between the time of the Board of Health Plan (1858; Figure 00) and the 1st Edition County Series 25 inch map of 1885 (Figure 00). Informal discussions

with Mr Ray Drury, former Chief Engineer at Chance Brothers, revealed that Building A and the associated tunnels had been out of use for a protracted period of time before closure of the site, and thus the original function of Buildings A and B, and of the related tunnels remains unclear. The presence of the iron rails within the eastern and western sections of the tunnel suggests an original use for transportation or distribution of materials between different areas of the complex and their proximity to the main entrance to the site may of significance in this respect. It is possible that the two sets of rails formerly part of a single, east-west track, the central section having been lost with the alteration of floor levels and the reordering of the central section. That the tunnel system was formerly more extensive is indicated by the backfilled, transverse tunnel branching off to the north of the recorded section. Any former buildings related to this latter feature were, however, demolished ahead of the Lister's light industrial development fronting onto Spon Lane. It is possible that a programme of documentary research may throw some light as to the original functions of these buildings, of Buildings A and B, and by association the function of the tunnels themselves

8 CONCLUSIONS AND RECOMMENDATIONS

- 8.1 The buildings of the Chance Brothers factory are all Grade II Listed and are accepted to be of national importance and significance. Further, the structure lies within the Smethwick Summit /Galton Valley Conservation Area and has recently been designated as part of a Scheduled Ancient Monument. These designations highlight the importance of the surviving glassworks structures to the industrial heritage of the local area and wider region and to the heritage of the industrial revolution on a national scale. The series of tunnels under consideration here, while of reduced significance in terms of their intrinsic architectural merit, are none the less of interest in the contribution they make to understanding the layout and function of the 19th-century glassworks complex.
- 8.3 The current project has allowed for a record to be made of the features in their present state and it is unlikely that further study would significantly enhance our understanding of their form or function. Such enhancement would best be served by documentary research, with reference being made in particular to the Chance company archives.

9 ACKNOWLEDGEMENTS

- 9.1 The fieldwork was undertaken by Ric Tyler of Birmingham Archaeology and was managed by Dr. Malcolm Hislop. The current report was written by Ric Tyler and edited by Malcolm Hislop. The illustrations were prepared by Ric Tyler and Nigel Dodds of Birmingham Archaeology.

10 REFERENCES

- | | |
|--------------------------------|---|
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Archaeology | 'Written Scheme of Investigation for Historic Building Recording at the Former Chance Bros Glassworks, Smethwick, Sandwell, West Midlands'. |
| Chance H 1979 | 'History of the Firm of Chance Brothers from 1919' |

- English Heritage 2006 *Understanding Historic Buildings: A Guide to Good Recording Practice.*
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APPENDIX A : List Entry for Buildings A and B

SP 08 NW

SANDWELL MB

SPON LANE SOUTH
Smethwick

9/133

Two Warehouses, immediately east of Chance's Glassworks

21.7.78

GV

II.

Warehouses. Circa 1853. Brick with hipped slate roofs. Both adjoin the Birmingham Level of the Birmingham Canal and rise above the brick retaining wall of the canal cutting. Both are of similar dimensions and are linked by a low brick wall. The western warehouse has four tall blocked openings facing the canal, with segmental heads. The wall of the eastern warehouse is blank. Interior: bolted queen-post trusses.



Figure 1: Site location plan

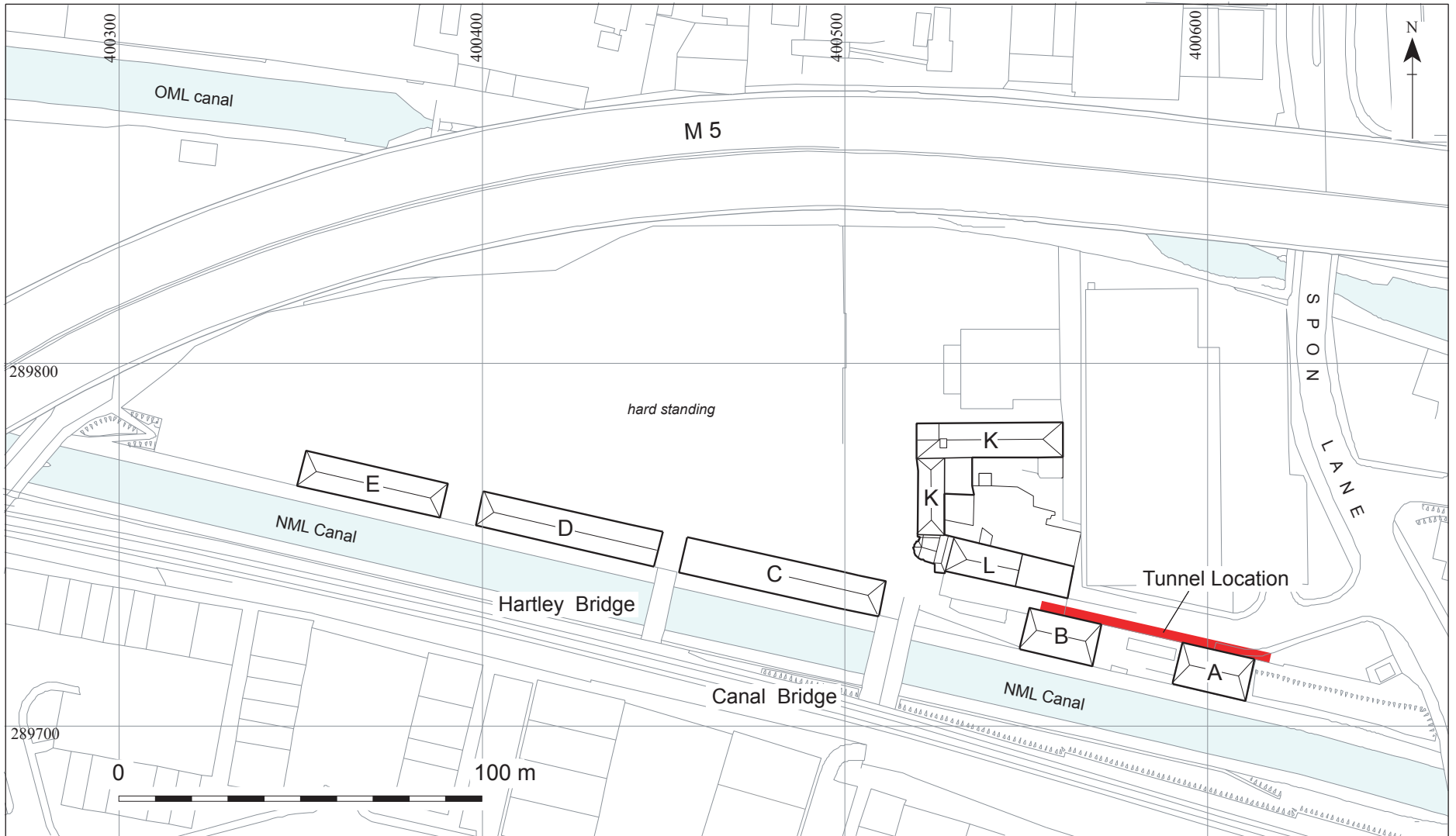


Figure 02: Site layout and tunnel location



Figure 03: View of Chance's Glass Manufacturing from the south-east c. 1857

1858

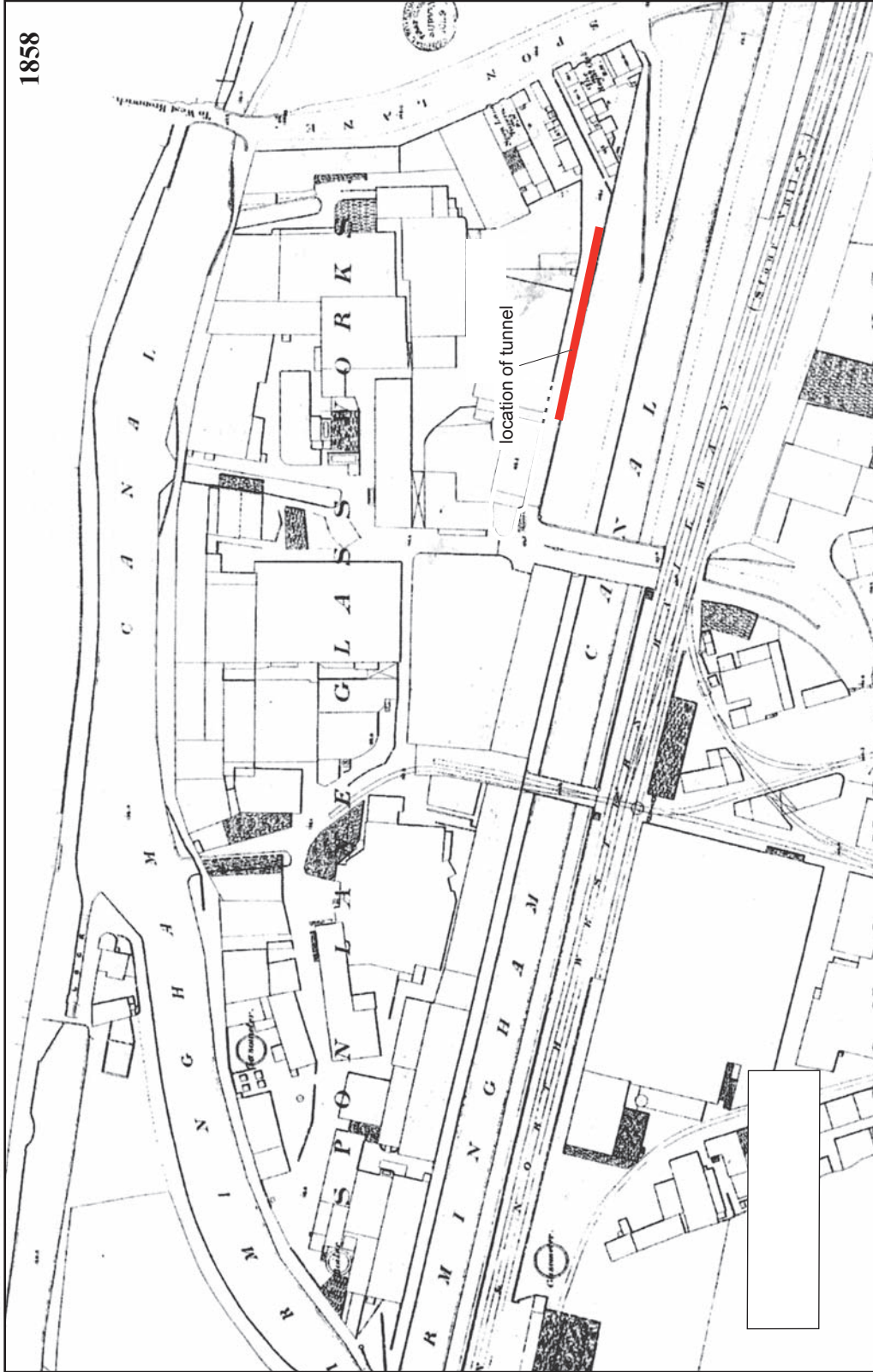


Figure 04: Board of Health Plan, 1858

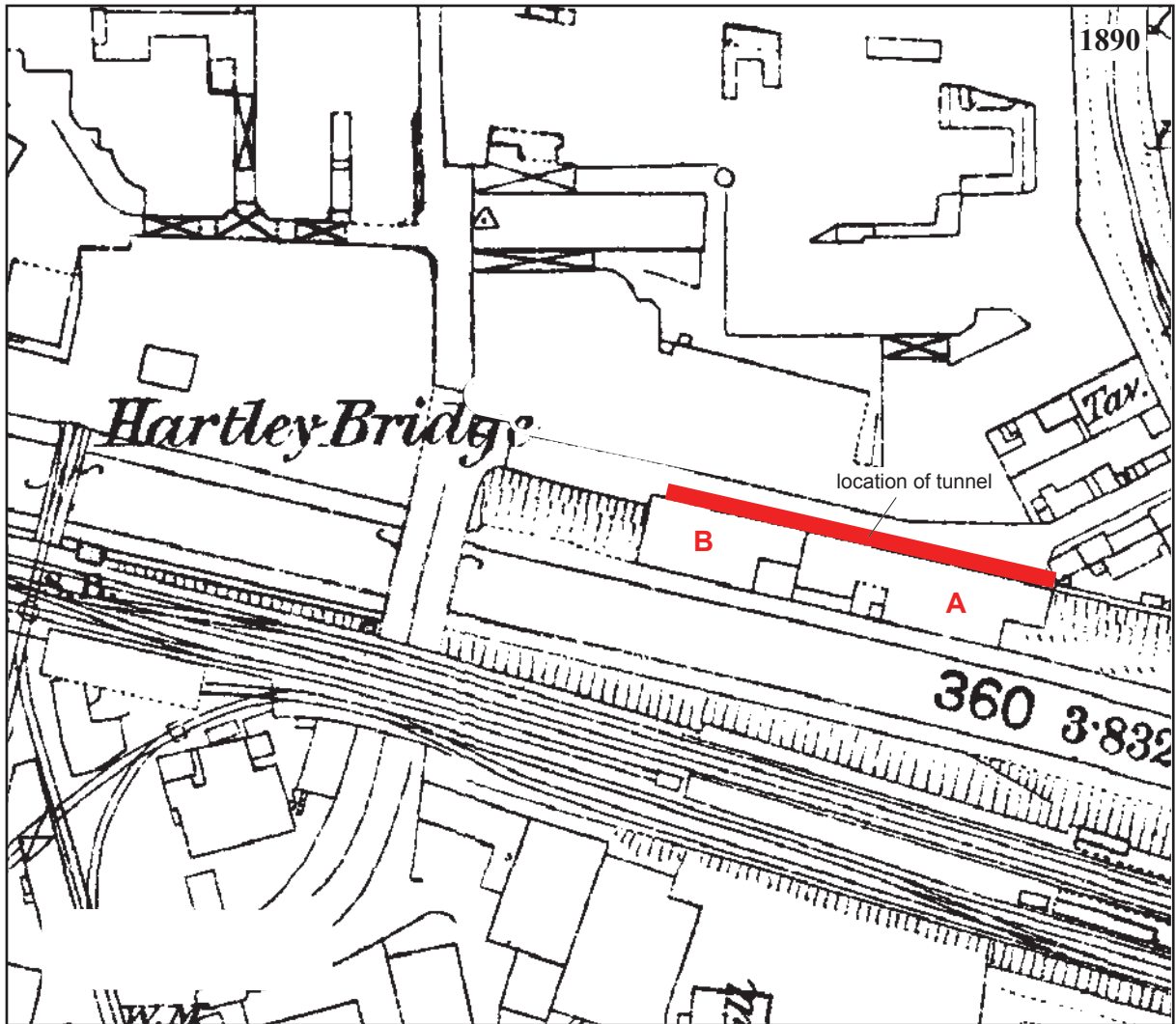


Figure 05: 1st Edition OS map, 1890

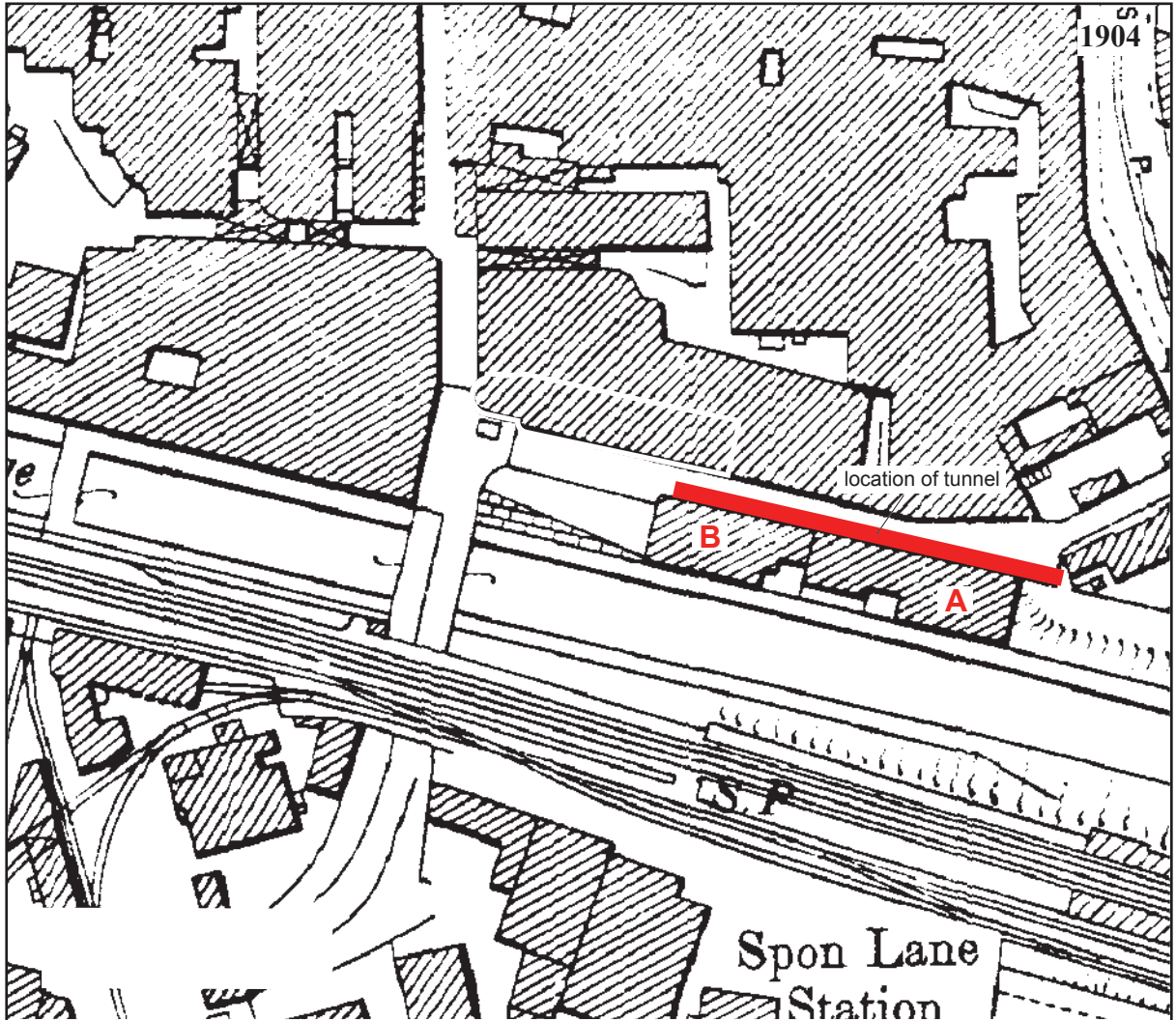
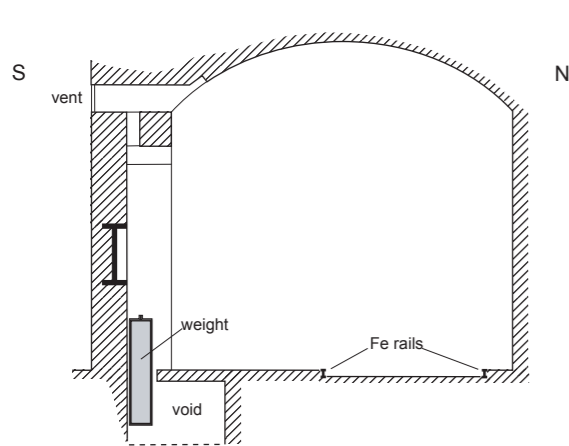
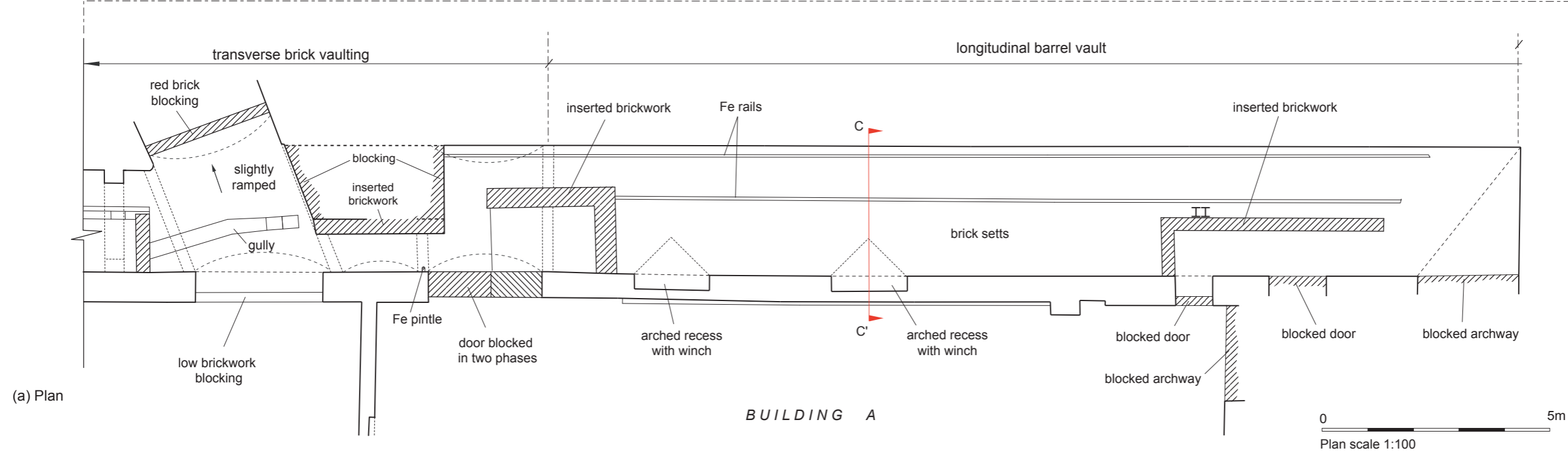
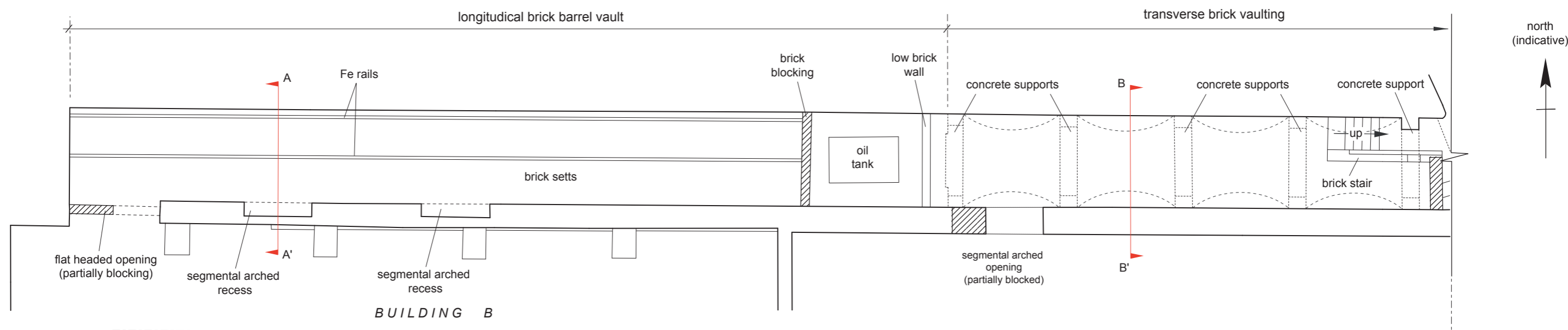
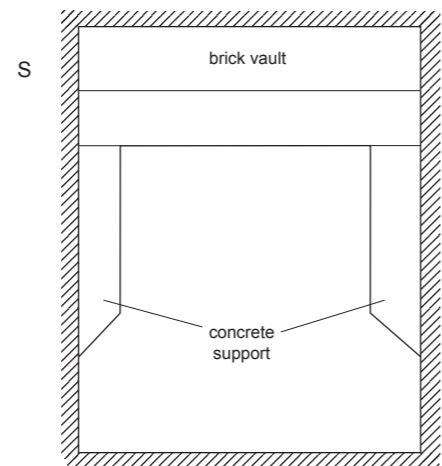


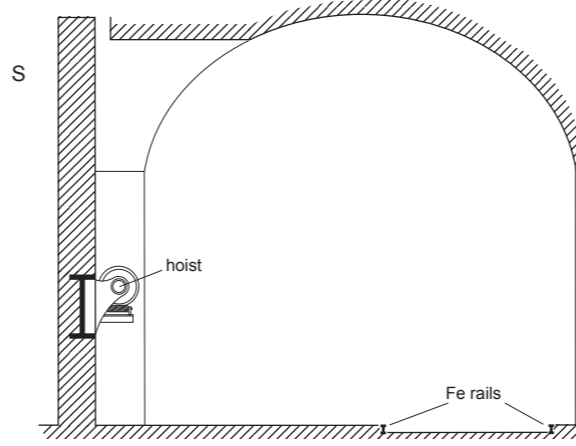
Figure 06: Ordnance Survey, 1st Revision, 1904.



(b) Section at A-A'



(c) Section at B-B'



(d) Section at C-C'

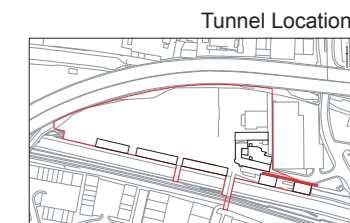
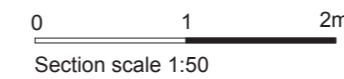


Figure 07: Plan and cross sections

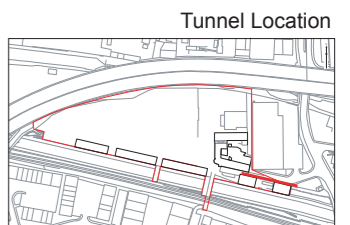
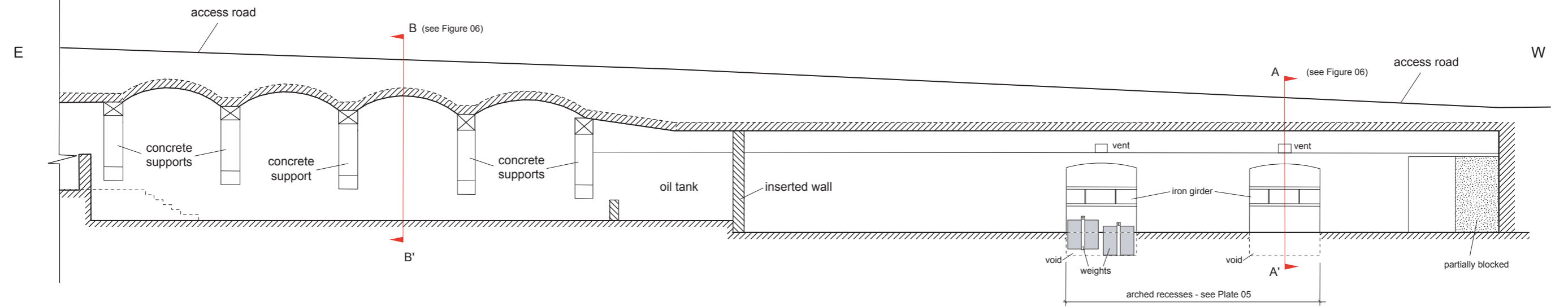
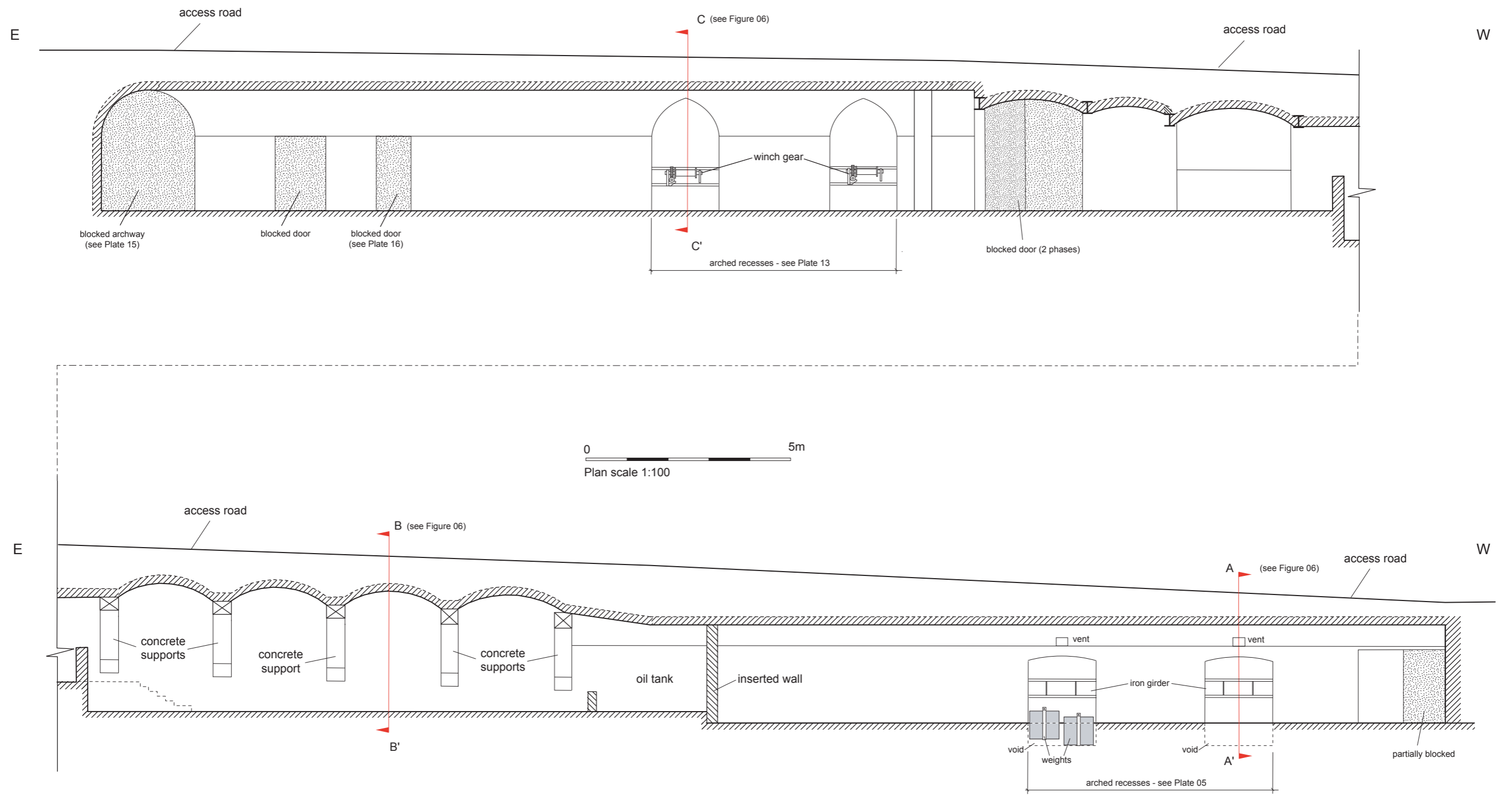


Figure 08: Tunnel at A/B; longitudinal section



Plate 01: Buildings A and B seen from south side of NML canal.



Plate 02: Entranceways to tunnels between Buildings A and B.



Plate 03: Entrance within Building B.



Plate 04: Tunnel, west section looking east.



Plate 05: Arched recess with weights.

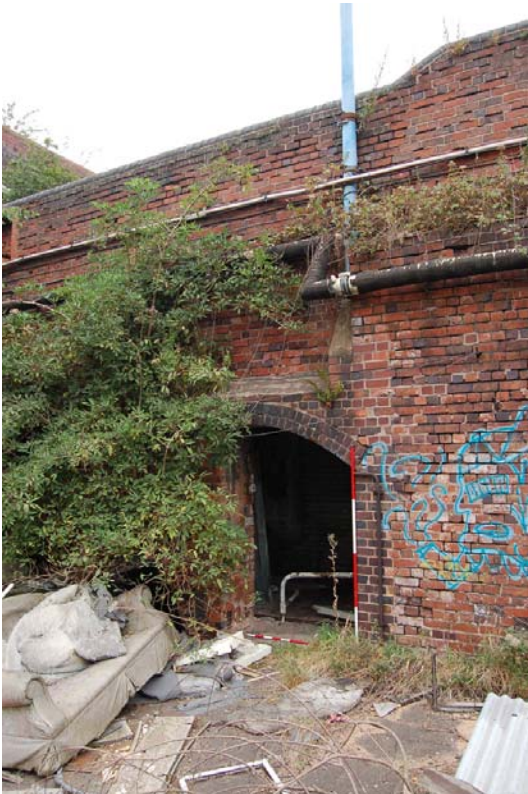


Plate 06: Entrance to central section (W).



Plate 07: Central section looking east.



Plate 08: Central section, detail of stair.



Plate 09: Central section, blocked tunnel leading north.



Plate 10: Entrance to central section (E).



Plate 11: Blocking of east section.



Plate 12: Eastern section looking east.



Plate 13: Arched recess with winch gear.



Plate 14: Inserted brickwork, east end.



Plate 15: Blocked archway, east end.



Plate 16: Blocked doorway from Building A.

