



**C263 LATE EAST**  
**Non-listed Built Heritage Recording Report**  
**Plumstead Portal, Worksites West and East**

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## 1 Purpose

This Report presents the findings of the recording of the non-listed built heritage (NLBH) at the Plumstead Portal, Worksite West and Worksite East carried out by the Museum of London Archaeology (MOLA).

The fieldwork was conducted between 11/07/11 to 5/08/11 and included the photographic recording of various railway related, non-listed structures of low significance. These items were photographed to form a Level 1 record as described by the English Heritage specifications outlined in their publication *Understanding Historic Buildings, a guide to good recording practice* (EH 2006). In addition to these the survey included the investigation and recording of two sub-surface concrete structures, which are presumed to be air raid shelters dating to the Second World War. These latter two structures were to be recorded to a Level 2, as described by the English Heritage specifications. The on site work therefore included the following:

- Photography of railway and goods yard related NLBH features of low significance on the worksites west and east at Plumstead
- investigations into the two sub-surface concrete structures to determine their nature, extent, function and method of construction as far as it was safe to do so
- A series of measured sketches to record plan and section information of the structures
- Annotated sketches made during an on site analysis of the structures' make up, with attention paid to any areas of interest, alteration or repair
- A photographic record including general and detailed shots, as form of record and as an aid to off site analysis.
- In addition to the above NLBH recording a further period of site work was undertaken as a result of the preparatory ground works for the portal of the Plumstead tunnel. The ground works had exposed sub-surface structures which were identified at the brick foundations of a former chimney and furnace along with the lower portions of a concrete cooling tower. Though unlisted, both features were directly associated with the Grade II listed Council Depot building to the north (LB UID 487648) and therefore required a comprehensive record prior to their demolition.

The event code (sitecode) for the project is XSW 11

This document presents the combined results of the NLBH fieldwork, levels 1 and 2 completed at the Plumstead Worksites West and East (Crossrail, C156 Site-Specific Archaeological Written Scheme of Investigation, Doc. No. CR-SD-PRW-X-IS-00004, Rev 4, .13.07.11).

## 2 Scope

The Non-listed Built Heritage (NLBH) assessment and recording forms part of the archaeological mitigation for Crossrail and the definition of NLBH adopted follows Information Paper D22 Archaeology and Crossrail Generic WSI (Document Reference 14022008-44-P2Z1) and includes:

- Important non-listed buildings of historic interest proposed for demolition in conservation areas (as set out in Information Paper D18, Listed Buildings and Conservation Areas):
- Important non-listed street furniture and materials:

- Other important non-listed buildings and structures of historic interest outside conservation areas, locally listed station buildings and railway structures and industrial and defence archaeology of significance.

### 3 Methodology and objectives

The primary task for the NLBH recording at the Plumstead Portal Worksites was described in the Plumstead Portal Site Specific WSI, (Crossrail 2008). Various railway and goods yard related heritage assets of relatively low significance were identified and the survey was to be carried out to provide photographic record of the features, the equivalent to a Level 1 record in the EH specifications (*Understanding Historic Buildings, a guide to good recording practice*, EH 2006). Shortly before the commencement of fieldwork the first subterranean concrete structure was identified and included in the scope of MOLA's work. During the first site visit by MOLA the second subterranean concrete structure was identified within land at the time under the possession of Network Rail, adjacent and to the south of the Worksite West site boundary. The possibility that this area may be later included into the Worksite West boundary led to its inclusion in the scope of MOLA's work and further investigation was required.

The assets highlighted in the Plumstead Portal Site Specific WSI to be recorded to a level 1 were are as follows:

- Network Rail electricity sub-station on west side of White Hart Road
- Building adjacent to North Kent Line (NKL) to the west of White Hart Road, within the Old Goods Yard
- Late 20th century brick and concrete construction within the Old Goods yard
- Corrugated iron and steel frame structure, with brick base walls within Old Goods Yard.
- Rectangular corrugated iron sheeting and concrete framed building at west end of proposed worksite west of White Hart Road.
- Pavilion on sports ground adjacent to White Hart Depot (assessment of setting only as no physical impact anticipated)
- Black and white painted rectangular corrugated iron shed underneath NKL railway bridge.
- Kerbstones underneath NKL railway bridge on White Hart Road.
- Disused railway lines by the southern boundary of White Hart Depot Worksite.
- Small square brick structure within cartilage of listed building on southern edge of White Hart Depot
- Concrete blocks at far eastern end of White Hart Depot within former railway sidings
- Timber telegraph pole outside of Old Goods Yard, presumed redundant, west end of Old Goods yard
- Iron railings outside old goods yard on southern side of southern outfall sewer

- Timber telegraph pole, presumed redundant, within heavily vegetated portion of Old Goods Yard.
- Series of disused railway lines at west end of old Goods yard.

As mentioned above, further to the non-listed items noted in the Plumstead Portal Site Specific WSI, (Crossrail 2008), were two sub-surface concrete structures. These were to be assessed for their heritage significance and were recorded further, approximately to a level 2 in the English Heritage specifications (EH 2006). Initially a group of sub-surface structures were identified within Worksite East. It transpired that these were all part of one subterranean structure, whilst a second subterranean structure was identified in Worksite West. Both were subsequently investigated and recorded.

Further to this the surviving sub-surface foundations of the chimney and furnace of the Listed council depot building, along with the lower portions of a cooling tower were recorded prior to demolition and removal. These structures were not listed and had been demolished above the present ground level, presumably when the council depot became redundant. However the surviving foundations related to the former function of the council depot and were therefore recorded prior to demolition. They were analysed and drawn to scale on site and photographs made.

The fieldwork was carried out in accordance with:

- The Crossrail Generic WSI: Archaeology Generic Written Scheme of Investigation, doc no. 140022008-44ES-P2Z1
- A Crossrail Site-specific Written Scheme of Investigation C156 Site-Specific Archaeological Written Scheme of Investigation, Doc. No. CR-SD-PRW-X-IS-00004, Rev, .14.12.10
- C263 Archaeology Late East method Statement Archaeological Evaluation and Non-Listed Building Recording Assessment Plumstead Portal doc no. C263-MLA-X-RGN-CR140-50001

In addition the fieldwork, the off site analytical study and the reporting in this document comply with the relevant guidelines from the Institute for Archaeologists, (IFA 1996), English Heritage (EH 1991, GLAAS 1998, 2000, 2006 and 2008), the Royal Commission of Historical Monuments, England (RCHME 1996), the Museum of London Archaeology Health and Safety Policy (MOLA 2008), and the Museum of London Archaeology Service site manual (MoLAS1994).

### **3.1 Objectives of the NLBH Fieldwork**

The overall objective and aims of the NLBH recording was to secure preservation by record of the various features on both the West and East worksites. The field work undertaken and the office based off-site work have produced the requisite results in the form of this report. This report gives a written and illustrated description of the features, in particular the sub-surface concrete structures with site photographs and drawings reproduced in CAD.

This report and the site drawings and photographs will be archived under the relevant site code (XSW11), whilst a summary of the field work will appear in the appropriate publications.

## **4 Results of the fieldwork**

### **4.1 Summary history of the site**

The South Eastern Railway opened a branch line to Greenwich in 1845, but further eastward extension of the line was not possible due to opposition from the Greenwich Hospital, until the line eventually joined the North Kent Line at Charlton in 1878. This is origins of the present railway line adjacent to and to the south of the site.

Situated within the Plumstead Portal east worksite is the Grade II Listed White Hart Depot, which opened in 1903 as an electricity generating station, later used as a council depot. It was also known as the Woolwich Municipal Electrical Generating Station. In order to maximise energy capture and dispose of refuse at the same time the electricity generating station was designed to combine the destruction of rubbish with the generation of power, specifically for lighting. Its construction was a civic project, the local authority Plumstead Vestry organising the financial backing and commissioning plans and organising visits by engineers to other power generating stations in Liverpool and Brighton. The Depot was built by Frank Sumner the Engineer-Surveyor along with Arthur Wright, Surveyor-Electrical Engineer (Ramsey 2000) and the project was completed shortly before the Plumstead Vestry was amalgamated into the new Woolwich Borough Council ([greenwichindustrialhistory.blogspot.com](http://greenwichindustrialhistory.blogspot.com)).



## 4.2 The level 1 record

The following NLBH features were assessed for their heritage significance and photographed to form the Level 1 record. Some lay outside the Plumstead Portal worksite boundary and were assessed for the impact upon their setting. The location of the items recorded is shown on Fig 2 and Fig 3.

Table 1 NLBH items recorded to Level 1 within Worksites East and West


Worksite East	
NLBH item	Results/comments
<p><b>Item 1</b> Disused small gauge tracks by the southern boundary of White Hart Depot Worksite.</p>  <p>Photo 1. The small gauge tracks and the set of points looking west.</p>	<p>This feature is due to be removed during the enabling works was photographed from multiple angles and in detail on the 11th of July. The gauge was 2 feet in width and it is likely to have been for the transport of coal or similar materials through the Depot yard. From their easternmost extent the tracks progressed westwards and included a set of points towards the eastern end, sending a branch off to the north west, which had been truncated after a short distance. The tracks were set within concrete which rose from east to west to form a platform approximately 50m in length, up to a height of approximately 0.45m above existing ground level, truncated at its western end. The track is located within the cartilage of the Grade II Listed White Hart Depot and is of local interest and of low significance as a heritage asset.</p>



Photo 2. The concrete track bed looking south east.



Photo 3. The truncated western end of the concrete track bed.

Small square brick structure within cartilage of listed building on southern edge of White Hart Depot.



Photo 4. Image taken from Site Specific WSI. Doc no. CR-SD-PRW-X-IS-00004.

The small square structure of orange bricks in stretcher bond located on the southern edge of the White Hart Depot is likely to have been built within the last 35 years. It is of no architectural merit, and of negligible significance as a heritage asset, though it is within the cartilage of the Grade II Listed building. This structure was not visible during the visit by MOLA on July 11th and is likely to have already been demolished. The photograph taken by Crossrail prior to demolition shown opposite (taken from the Site Specific WSI, document number CR-SD-PRW-X-IS-00004), is sufficient to form a basic Level 1 record.

**Item 2** Concrete blocks at far eastern end of White Hart Depot within former railway sidings.



Photo 5. The group of concrete buffer blocks at the far eastern end of Worksite east, looking east.



At the far eastern end of worksite east were 5 large concrete blocks which originally formed buffers at the end of the Depot railway tracks. They were approximately 2.10m in height and formed from five concrete blocks 0.5m in width, secured together with steel ties. Beneath the blocks were visible the remnants of the former railway tracks. These features were considered to be of low heritage significance.



Photo 6. The side view of one of the blocks showing its composition from five separate blocks, looking south.



Photo 7. The former tracks visible running beneath the southernmost block, looking east.

Worksite West	
NLBH item	Results/comments
<p><b>Item 3</b> Network Rail electricity sub-station on west side of White Hart Road</p>  <p>Photo 8. The view of the building from the entrance to Worksite east, looking west.</p>	<p>This building is under the management of Network rail and therefore no access was possible up close to the structure or to the interior. The building was observed from the currently available areas within Worksite West and from White Hart Road. It is locally listed and a heritage asset of medium significance with the potential for this significance to increase with time. The impacts on the building are likely to be minimal and that the building will not be demolished or altered. There will therefore be no physical impact on the building itself. The impact of the proposed scheme on the building's setting is also likely to be minimal. If this is the case further detailed recording will not be required.</p>
<p><b>Item 4</b> Late 20th century brick and concrete construction within the Old Goods yard.</p>  <p>Photo 9. The view of Building Item 4 from the entrance to the Worksite east, looking north.</p>	<p>This building is currently in use as a motor vehicle breakers yard. It was visually assessed from White Hart Road and is of negligible heritage significance as a heritage asset. The impact of the proposed scheme upon its setting is also negligible.</p>

**Item 5** Corrugated iron and steel frame structure, with brick base walls within Old Goods Yard.



Photo 10. Building item 4, looking north east.



Photo 11. The interior of building item 4, looking south.

This building and its extension to the south was observed and photographed internally and externally. It is of very low significance as a heritage asset. It had been used until recently as a mechanic's workshop and there was a water-filled inspection pit along with an overhead hoist and chain, attached to an overhead RSJ. The annex to the south was a single storied structure constructed of cement blocks and was also briefly photographed internally.



Photo 12. The interior of the southern annexe of building item 4, looking north.

**Item 6** Rectangular corrugated iron sheeting and concrete framed building at west end of proposed worksite west of White Hart Road.



Photo 13. Building item 6, the train shed, looking north west.

This building which is likely to be cleared in advance of worksite establishment was observed and photographed internally and externally. The associated rail tracks to the west and north were also photographed (see below). The structure had been built as a train shed, though short in length, presumably for the maintenance and inspection of single engines or carriages.



Photo 14. The western end of the building looking east.



Photo 15. The interior of the structure looking east.

The building lay orientated west to east and was constructed with a brick base, with tall concrete posts, which divided the structure in to seven bays. The concrete uprights supported concrete roof trusses, whilst the structure above the brick base was clad in corrugated asbestos and PVC material, or similar.

Internally the southern side of the structure had a concrete slab surface whilst railway tracks were visible on the northern half, running through the building.

Timber telegraph pole outside of Old Goods Yard, presumed redundant, west end of Old Goods yard.

Not present at time of site visit, see below (Item 7).

**Item 7** Timber telegraph pole, presumed redundant, within heavily vegetated portion of Old Goods Yard.

The previous telegraph pole mentioned above (also specified in the WSI doc no. CR-SD-PRW-X-IS-00004) was no longer present in-situ at the time of the site visit. However





Photo 16. Item 7, The laddered telegraph pole, looking east.

from the photos in the WSI its form clearly conformed to the group of other identical laddered telegraph poles on the site which were photographed from multiple directions. The photographs taken constitute an appropriate, Level 1 record and no further mitigation is likely to be necessary.

**Item 8** Series of disused railway lines at west end of old Goods yard.





Photo 17. Item 8, disused railway tracks.

Item 8 were disused railway tracks at the western end of the old Goods yard. They were situated alongside and to the north of the rectangular corrugated and concrete framed building at the west end of worksite west.



Photo 18. The railway tracks looking towards the south-east showing their position in relation to the engine shed (Item 6).

Table 2 NLBH items assessed and recorded to Level 1 outside Worksites West and East

NLBH items outside the worksite	
NLBH item	Results/comments
<p><b>Item 9</b> Iron railings outside old goods yard on southern side of southern outfall sewer</p>  <p>Photo 19. The iron railings looking south-east</p>  <p>Photo 20. The iron post, looking south-west</p>	<p>The iron railings, considered to be of low heritage significance, were situated outside the site boundary to the north west, upon the Ridgeway Path, which runs south-west to north-east along the northern edge of Worksite west. A single iron post remained, with iron railings running down the slope to the south. The iron post was hexagonal in profile, with a decorated bauble at the top.</p>
<p><b>Item 10</b> Black and white painted rectangular corrugated iron shed</p>	<p>This is outside the worksite east area and of negligible significance as a heritage asset. The impact of the scheme does upon its setting would be negligible. No level 1 record was required.</p>

**Item 11** Kerbstones underneath NKL railway bridge on White Hart Road.



Photo 21. The kerbstones on White Hart Road, looking south



Photo 22. The kerbstones beneath the railway bridge on White Hart Road, looking east. Note the two separate builds visible in the fabric of the bridge

The stepped kerb was observed and photographed from multiple directions on the 11th of July. The asset is outside the worksite areas but may be subject to adverse impacts due to contact with site traffic.

**Item 12** Pavilion on sports ground adjacent to White Hart Depot (assessment of setting only as no physical impact anticipated)



Photo 23. The pavilion outside the Worksite East boundary

Outside and to the north-east of the worksite East boundary was a pavilion serving the recreation ground to the north. The building may in fact be the same structure visible on the 1916 OS map. The proposed scheme would have a negligible impact of the setting of the asset in this case. In particular as railway infrastructure has existed to the south of the pavilion in the past.

### 4.3 The air raid shelters

Two sub surface concrete structures were present at the Plumstead site, one in worksite east and the second in worksite west (see Fig 2 and Fig 3). After both had been inspected it seemed probable that both structures were built as air raid shelters during the Second World War, to offer protection to the workers at the Plumstead depot. Both were constructed in the same manner and in the same materials and enough of each survived intact to enable a record of a part of the interiors to be made. The structures had been built within an excavated trench and were formed from pre-cast concrete upright posts supporting pre-cast concrete trusses, which supported a double pitched roof with concrete slabs forming the roof and walls. The concrete posts and trusses were reinforced with metal bars internally. The slabs that formed the walls and roof sat within grooves in the upright posts or trusses, the various interlocking elements of the structure therefore being held in place (this can be seen in Photo 27 at the eastern opening to Shelter 2). Once the shelter was built the trench was backfilled and the structure buried.

The shelters would not have been able to withstand a direct hit but would have afforded protection for the workers of the depot against the effects of bomb-blast and shrapnel. As with similar shelters built at this time, both shelters had evidence for escape hatches, to enable the occupants to exit the shelter if the entrance became blocked. A comparable example was recorded in 2005, in the grounds of the former New Cross Hospital between 1939 and 1940, which had an escape hatch and an air vent to provide air for the occupants if they became trapped (NXH05). The condition and survival of Shelters 1 and 2 varied at Plumstead, as a significant portion of Shelter 1 had collapsed but its entrance, escape hatch and air vent were visible. It had been substantially filled with soil so the original floor and height were obscured. However, a section of Shelter 2 remained in a better condition, including the original floor level along with its escape hatch, but a vent for Shelter 2 could not be identified.

#### 4.3.1 Shelter 1

Shelter 1 was recorded within the Worksite East area in sufficient detail to constitute an appropriate level 2 record (its location is shown in Fig 3). Photographs were taken and the feature was drawn to scale in plan and section, whilst its relationship to other possible elements of the subterranean complex, the air vent and escape shaft were also photographed and located in plan (Fig 5). The escape shaft led via a metal step ladder down to a brick arched tunnel, running westwards (Photo 25). If this connected to the main body of the shelter, which seems likely, it would have to have been via a 90° angle, turning to the north. This is the arrangement that has been illustrated in the conjectural plan of Shelter 1 (Fig 5), which also includes the circular air vent at the western end. This was in a collapsed state and was formed from large curved concrete blocks (0.33mX0.22mX0.51m), with little or no bonding material, forming a circular shaft 0.95m in diameter.



Photo 24. The entrance of Shelter 1 from within, looking south



Photo 25. The escape shaft to the south of the shelter, with the brick tunnel running to the west



Photo 26. The remains of the air vent to the west of the shelter

#### 4.3.2 Shelter 2

Shelter 2 lay within the Worksite West area and was recorded to the west of the former electricity power station adjacent to the railway tracks (its location is shown in Fig 2). Externally the shelter appeared to be a linear mound lying west to east, approximately 30m in length, covered with foliage. This was cut back from around the entrance at the eastern end of the feature (Photo 27) and annotated and measured sketches were made of the structure both internally and externally. A second opening was also discovered approximately 20m to the west of the entrance (Photo 29) which is likely to have formed an emergency exit or escape hatch to the shelter. However a definitive link was not established between the escape hatch and the observed underground shelter area. It may be that the link between the two has been obscured by collapsed soil or that the underground network originally extended westwards, beyond the accessible and observed area.

The full height of the interior of shelter 2 was visible (Photo 28) allowing a cross section of the structure to be drawn (Fig 6). The floor was formed from a concrete slab with a lower level at the north and south edges, forming a gully either side of the centre of the concrete floor. However these gullies were not continuous along the length of the shelter but limited to each bay, being separated from each other at each concrete post.

Whilst Shelter 1 had significantly collapsed and its soil covering had mostly been levelled, the soil covering Shelter 2 remained highly visible above ground as a distinct linear mound approximately 30m in length. However the interior was only visible for a length of approximately 11.5m, the western end being partially blocked off by a mound of soil, perhaps from a collapse of the roof (Photo 31). However, the mound of soil appeared to be emanating from the north, perhaps suggesting the shelter turned 90° in this direction. Beyond the collapse of soil, the shelter appeared to terminate and an end wall was visible. No access to the escape hatch was visible internally. It may be that the external mound is in fact formed by two sub-surface structures or that indeed the shelter turns 90° before continuing west, though there is no clear reason as to why this should be the case.



Photo 27. A view of the entrance to shelter 2 at its eastern end looking west





Photo 28 An internal view of shelter 2 looking east towards the present entrance



Photo 29 The entrance to the escape hatch in the foreground, the electricity substation, Item 3 is in the background.



Photo 30. The concrete escape hatch looking east.



Photo 31. The internal view towards the western end of the shelter and the concrete wall behind the collapse of earth

Approximately 15m to the west and slightly south of the present entrance was the escape hatch (Photo 29 and Photo 30), which unlike that seen on Shelter 1 had a sloped concrete cover or embrasure. It led down to a tunnel the continued northwards, towards the main part of the shelter. Unlike Shelter 1, there was no 90° angle at the current entrance of Shelter 2. There was also no arched brick tunnel from the escape hatch and unusually, there was no metal step ladder for the escape hatch.

It is very likely that the original entrance to shelter 2 was in fact at the western end (Photo 31) and that this original entrance, like shelter 1, was at a 90° angle. An angled entrance limits the effect of blast damage into the shelter and would have been a common feature used to protect the occupants of such structures. The present eastern entrance (Photo 27) is therefore probably a recent break in the structure and this explains why there was no sign of a sloped or stepped decent with a 90° turn as there was in the eastern entrance of Shelter 1. This may also explain the lack of a visible air vent shaft, which was probably removed from the eastern end of the structure.

#### 4.4 The former power station chimney and cooling tower

Within worksite east and to the south of the Grade II Listed former Council Depot building (LB UID 487648), the ground works undertaken in preparation of the Plumstead Portal revealed a substantial brick structure, the former base of a chimney, with an equally substantial concrete structure to the west (see Photo 32). Both structures continued north beyond the limit of excavation. At their highest they lay 0.10m below the present ground surface. The excavation was located approximately 11.m to the south of the central corner of the Depot building where its southern wall returns northwards, (see Fig 7).



Photo 32. The excavations looking north east and the location of the recorded features in relation to the Listed Depot building

The brick structure lay to the east of the excavated area and was constructed using frogged Fletton bricks in English bond with a cementitious mortar. The structure had stepped foundations, each step being of one course in height. On the southern edge of the structure only

three of these were visible, but a deep sondage dug by machine on the western side of the structure showed that the extensive foundations continued deeper, as eleven brick foundation steps were recorded reaching a depth of 1.8m below the current surface level. These were noted continuing deeper and the base of the structure was not reached or observed (see Photo 33).



Photo 33. The stepped foundations of the brick chimney base which continued below the exposed levels, looking north east.

Above the stepped foundations the brick structure extended to a maximum height of approximately 0.65m and formed two solid brick bases approximately 2.35m in width west to east, either side of a central, rectangular brick area of blackened and unfrogged bricks (see Fig 9) which were abutted at the southern edge of the structure by a long stone sill, 0.96m in length. To the north of this central part of the structure the frogged and unfrogged bricks formed a circular area which was filled with blackened and burnt soil. This is likely to have been the furnace within the structure.



Photo 34. the central area of unfrogged bricks looking south, with the circular area or furnace of burnt soil and the stone sill on the southern edge

The central area is likely to be the remnants of an opening in the base of the chimney from which burnt debris was removed or possibly where fuel for burning was loaded. The stone sill and the unfrogged bricks formed an area with a smooth surface, from which material could be easily removed. The small gauge tracks recorded as Item 1 (Photo 1) are without doubt related to the chimney, specifically the removal or addition of material, as the branch that emanated from the set of points shown in Photo 1 headed directly towards the hatch in the chimney base. Also within this area was the lowest part of a copper lightning conductor protruding from the ground adjacent to the southern side of the structure, this along with the deep foundations of the structure suggest the chimney had been of considerable height prior to its demolition.



Photo 35. The copper lightning conductor and the stone sill on the southern side of the brick structure

The concrete structure was situated approximately 2m to the west of the brick chimney base (above the stepped foundation level). It was rectilinear in plan and formed from a single wall of concrete 0.77m thick, forming three sides of the rectangle, the fourth being beyond the limit of excavation to the north (*Photo 36*). The central area of the concrete structure was probably originally hollow or void, but had been backfilled with concrete rubble, presumably during the structure's demolition. Emerging from the south eastern area of the tank was a wide pipe approximately 0.35m in diameter, of which the majority was buried being only visible as a linear stretch of raised ground. However a small section of the steel pipe had been exposed and could be seen to have been set within or surrounded by a thin layer of concrete.



Photo 36. The concrete structure, or cooling tower, looking east with the brick chimney base in the background



Photo 37. The exposed section of the pipe emanating from the former cooling tower



Both features recorded are visible and labelled on the 1916 OS map (*Fig 8*) though the small gauge tracks and the pipe from the cooling tower are not represented. From the layout represented on the OS map it seems that the chimney was originally linked and connected to the Depot building top the north. This may have been how the energy created within the furnace was transferred to the turbines within the building, or it may be that fuel to be burnt was loaded into the furnace from the north, whilst the southern aperture revealed during the excavation, provided access to the furnace for clearing, cleaning and maintenance, ashes and debris being removed via carts on the small gauge tracks.

The pipe that emerges from the cooling tower may have continued to the east, possibly as far as the wash mill and large cooling tank visible on the 1916 OS map situated to the east of the Depot (*Fig 8*), although alternatively it may have joined the Marmadon Sewer which runs to the east of the area.

## 5 Reference Documents

Crossrail, C156 Site-Specific Archaeological Written Scheme of Investigation, Doc. No. CR-SD-PRW-X-IS-00004, Rev 8, .14.12.10

Crossrail Generic WSI: Archaeology Generic Written Scheme of Investigation, doc no. 140022008-44ES-P2Z1

C263 Archaeology Late East method Statement Archaeological Evaluation and Non-Listed Building Recording Assessment Plumstead Portal doc no. C263-MLA-X-RGN-CR140-50001

English heritage 2006, King, J., (ed). *Understanding Historic Buildings: A guide to good recording practice*. English heritage Publishing

### On line references

- Ramsey, D, 2000. *White Hart Road Depot*, Greenwich Industrial History: Volume 3, issue 5. <http://gihs.gold.ac.uk/gihs15.html>
- <http://greenwichindustrialhistory.blogspot.com/2011/02/brief-history-of-combined-dust.html> Accessed 15.09.11
- NXH05 2005, Building recording of an Air Raid Shelter, New Cross Hospital, Avonley Road, Lewisham SE14, <http://www.museumoflondon.org.uk/laarc/catalogue/siteinfo.asp?id=18356&code=NXH05&terms=NXH05&search=simple&go=GO> Accessed 15.09.11

## 6 Appendices

### Appendix 1 List of archaeological photographs taken on site

Table 3 Photographs taken 11th July, 2011.

Photo ID/Serial number	Oracle Number/Original File Name	Description	Direction of view (view towards)
11072011-01	DSCN5380	Worksite west	south west
11072011-02	DSCN5381	Item 6 Worksite west	south west
11072011-03	DSCN5382	Worksite west	south east
11072011-04	DSCN5383	Worksite west	south east
11072011-05	DSCN5384	Item, 9 Worksite west	south west
11072011-06	DSCN5385	Item, 9 Worksite west	south east
11072011-07	DSCN5386	Item, 9 Worksite west	west
11-08072011	DSCN5387	Item 7 Worksite west	east
11072-09011	DSCN5388	Item 7 Worksite west	north west
11072011-10	DSCN5389	Exterior of shelter 2, obscured by later reused sleepers	south
11072011-11	DSCN5390	Exterior of shelter 2,	south east
11072011-12	DSCN5391	Worksite west, general view, rail tracks in foreground	west
11072011-13	DSCN5392	Telegraph pole similar to Item 7	south west
11072011-14	DSCN5393	Worksite west, general view, rail tracks in foreground	west
11072011-15	DSCN5394	Worksite west, rail tracks detail	west
11072011-16	DSCN5395	Worksite west, rail tracks detail	west
11072011-17	DSCN5396	Worksite west,, general view towards Item 5	east
11072011-18	DSCN5397	Worksite west, general view towards Item 3	south east
11072011-19	DSCN5398	Worksite west, general view rails in foreground	east
11072011-20	DSCN5399	Cut RSJ in surface, Worksite west	east
11072011-21	DSCN5400	Worksite west general view RSJ cut, in foreground	east
11072011-22	DSCN5401	Worksite west, general towards Item 6	west

11072011-23	DSCN5402	Item 6	west
11072011-24	DSCN5403	Interior Item 6	east
11072011-25	DSCN5404	Interior Item 6	west
11072011-26	DSCN5405	Item 6	east
11072011-27	DSCN5406	Item 8	east
11072011-28	DSCN54070	Detail Item 8	east
11072011-29	DSCN5408	Items 7, 8 and 6	east
11072011-30	DSCN5409	Item 6	south east
11072011-31	DSCN5410	Detail north side of Item 6	south
11072011-32	DSCN5411	Detail north side of Item 6	south east
11072011-33	DSCN5412	Worksite west general view towards Item 5, with rails in foreground	east
11072011-34	DSCN5413	Interior, Item 5	north
11072011-35	DSCN5414	Interior, Item 5	east
11072011-36	DSCN5415	Interior, Item 5	east
11072011-37	DSCN54176	Interior, Item 5	south
11072011-38	DSCN5417	Interior, Item 5	south
11072011-39	DSCN5418	Interior, Item 5	north
11072011-40	DSCN5419	Interior, Item 5	south east
11072011-41	DSCN5420	Exterior Item 5	north east
11072011-42	DSCN5421	Interior, annex to Item 5	north
11072011-43	DSCN5422	Detail, drain cover	south
11072011-44	DSCN5423	Detail, drain cover	south
11072011-45	DSCN5424	Detail, concrete slab	west
11072011-46	DSCN5425	Detail, drain cover	south
11072011-47	DSCN5426	Worksite west general view towards Item 6	east
11072011-48	DSCN5427	Worksite west general view towards Item 6 and 7	east
11072011-49	DSCN5428	Worksite west general view towards Item 5	south
11072011-50	DSCN5429	Worksite East, Item 1	west
11072011-51	DSCN5430	Worksite East, Item 1, detail of points	west
11072011-52	DSCN5431	Worksite East, Item 1	west
11072011-53	DSCN5432	Worksite East, Item 1	west
11072011-54	DSCN5433	Worksite East, Item 1	east

11072011-55	DSCN5434	Worksite East, Item 1	east
11072011-56	DSCN5435	Worksite East, Item 1	south east
11072011-57	DSCN5436	Worksite East, Item 1, detail of points	south
11072011-58	DSCN5437	Worksite east concrete slab	east
11072011-59	DSCN5438	Detail, former WCs Worksite east concrete slab	south
11072011-60	DSCN5439	Worksite east concrete slab	south west
11072011-61	DSCN5440	Worksite east concrete slab	east
11072011-62	DSCN5441	Worksite east concrete slab	south east
11072011-63	DSCN5442	Former concrete base	north
11072011-64	DSCN5443	Detail Former concrete base	east
11072011-65	DSCN5444	Former concrete base	north
11072011-66	DSCN5445	Item 2	east
11072011-67	DSCN5446	Item 2	east
11072011-68	DSCN5447	Detail Item 2	east
11072011-69	DSCN5448	Detail Item 2	south east
11072011-70	DSCN5449	Detail Item 2	south east
11072011-71	DSCN5450	Detail Item 2	east
11072011-72	DSCN5451	Item 2	north west
11072011-73	DSCN5452	Item 2	north
11072011-74	DSCN5453	Item 2	west
11072011-75	DSCN5454	Item 2 detail	east
11072011-76	DSCN5455	Item 2 detail	south
11072011-77	DSCN5456	Item 12	north east
11072011-78	DSCN5457	Item 12, Item 2	north east
11072011-79	DSCN5458	Railway debris	south
11072011-80	DSCN5459	Concrete post & area of shelter 1	east
11072011-81	DSCN5460	Concrete post & area of shelter 1	east
11072011-82	DSCN5461	Concrete post & area of shelter 1	east
11072011-83	DSCN5462	View towards entrance of Shelter 1	N
11072011-84	DSCN5463	Concrete post & area of shelter 1	east
11072011-85	DSCN5464	Concrete post & area of shelter 1	east
11072011-86	DSCN5465	Concrete posts & area of shelter 1	east
11072011-87	DSCN5466	Concrete post & area of shelter 1	east
11072011-88	DSCN5467	Concrete post & area of shelter 1	east

11072011-89	DSCN5468	Cast iron boundary or gate post, southern edge of Worksite West in central area	south
11072011-90	DSCN5469	General view of worksite east	north west
11072011-91	DSCN5470	Item 11	south
11072011-92	DSCN5471	Item 11	east
11072011-93	DSCN5472	Item 11	east
11072011-94	DSCN5473	Item 11	north
11072011-95	DSCN5474	Item 11	north
11072011-96	DSCN5475	Item 11	south east
11072011-97	DSCN5476	Item 11	north east
11072011-98	DSCN5477	Item 11	south east
11072011-99	DSCN5478	Item 3	west
11072011-100	DSCN5479	Item 4	north
11072011-101	DSCN5480	Brick gate posts to Worksite east	north east
11072011-102	DSCN5481	Base plate for removed structure, worksite east, in area of Shelter 1	west
11072011-103	DSCN5482	area of Shelter 1	north west
11072011-104	DSCN5483	Entrance to shelter 1	north
11072011-105	DSCN5484	Entrance to shelter 1	north
11072011-106	DSCN5485	Interior Shelter 1	west
11072011-107	DSCN5486	Interior Shelter 1	west
11072011-108	DSCN5487	Interior Shelter 1 towards entrance	south
11072011-109	DSCN5488	Interior Shelter 1	west
11072011-110	DSCN5489	Interior Shelter 1	west
11072011-111	DSCN5490		
11072011-112	DSCN5491		
11072011-	DSCN5492	Interior Shelter 1	west

113			
11072011-114	DSCN5493	Detail interior, shelter 1	north west
11072011-115	DSCN53494	Detail interior, shelter 1	north west
11072011-116	DSCN5495	Detail, rebar in concrete, shelter 1	north east
11072011-117	DSCN5496	Interior Shelter 1	east
11072011-118	DSCN5497	Interior Shelter 1	south east
11072011-119	DSCN5498	Collapsed & overgrown area of Shelter 1 from outside,	east
11072011-120	DSCN5499	Air vent, from outside, Shelter 1	east
11072011-121	DSCN5500	Air vent, from outside, Shelter 1	east
11072011-122	DSCN5501	Blocks from Air vent, from outside, Shelter 1	east
11072011-123	DSCN5502	Air vent, from outside, Shelter 1	north east
11072011-124	DSCN5503	Escape hatch, shelter 1	west
11072011-125	DSCN5504	Escape hatch, shelter 1	down
11072011-126	DSCN5505	Escape hatch, shelter 1	down
11072011-127	DSCN5506	Escape hatch, shelter 1	down

Table 4 Photos taken Friday 5th August 2011.

Photo ID/Serial number	Oracle Number/Original File Name	Description	Direction of view (view towards)
05082011-01	DSCN5717	Entrance to shelter 2	west
05082011-02	DSCN5718	Detail – entrance to shelter 2 scale 0.5m	north west
05082011-03	DSCN5719	View into interior of Shelter 2 from entrance	west
05082011-04	DSCN5720	View into interior of Shelter 2 from	west

		entrance	
05082011-05	DSCN5721	interior of Shelter 2	west
05082011-06	DSCN5722	interior of Shelter 2	west
05082011-07	DSCN5723	interior of Shelter 2	west
05082011-08	DSCN5724	interior of Shelter 2	East
05082011-09	DSCN5725	interior of Shelter 2	East
05082011-10	DSCN5726	interior of Shelter 2	East
05082011-11	DSCN5727	Exterior of shelter, northern edge showing overgrown condition & reused railway sleepers	east
05082011-12	DSCN5728	Escape hatch	north east
05082011-13	DSCN5729	Escape hatch with item 3 in background	east
05082011-14	DSCN5730	Escape hatch	east
05082011-15	DSCN5731	View down into escape hatch	Down
05082011-16	DSCN5732	View down into escape hatch	Down
05082011-17	DSCN5733	View down into escape hatch	Down
<del>05082011-18</del>	<del>DSCN5734</del>		
05082011-19	DSCN5735	Southern profile of escape hatch	north
05082011-20	DSCN5736	Escape hatch	north east

Table 5 Photos taken Tuesday 4th October 2011

Photo ID/Serial number	Oracle Number/Original File Name	Description	Direction of view (view towards)
04102011-1	DSCN6233	The recently exposed chimney base and cooling tower	east
04102011-2	DSCN6234	The recently exposed chimney base and cooling tower	east
04102011-3	DSCN6235	The recently exposed chimney base and cooling tower	east
04102011-4	DSCN6236	The brick chimney base	north west
04102011-5	DSCN6237	The brick chimney base	north
04102011-6	DSCN6238	Burnt bricks – furnace area, chimney base	south
04102011-7	DSCN6239	West side of chimney base and	south



		furnace area	
04102011-8	DSCN6240	east side of chimney base and furnace area	south
04102011-9	DSCN6241	The brick chimney base	north
04102011-10	DSCN6242	Exposed pipe and concrete cooling tower	west
04102011-11	DSCN6243	Cooling tower and brick base with pipe	east
04102011-12	DSCN6244	Concrete cooling tower	north
04102011-13	DSCN6245	Cooling tower and brick base with pipe	north east
04102011-14	DSCN6246	Concrete cooling tower	east
04102011-15	DSCN6247	Cooling tower and brick base with pipe	east
04102011-16	DSCN6248	Cooling tower and brick base with pipe	east
04102011-17	DSCN6249	Small gauge tracks to south of features	east
04102011-18	DSCN6250	Small gauge tracks to south of features	east

Table 6 Photos taken Monday 10th October 2011

Photo ID/Serial number	Oracle Number/Original File Name	Description	Direction of view (view towards)
10102011-1	DSCN6319	Gap between concrete cooling tower and brick stepped foundations of the chimney, water removed	north west
10102011-2	DSCN6320	Stepped foundations of chimney	north east
10102011-3	DSCN6321	Stepped foundations of chimney	east
10102011-4	DSCN6322	Furnace area of chimney	north east
10102011-5	DSCN6323	Furnace area of chimney	west
10102011-6	DSCN6324	Brick chimney base, south side and	north

		lightning rod	
10102011-7	DSCN6325	Brick chimney base, south side and lightning rod	north west
10102011-8	DSCN6326	south east corner of chimney base	west
10102011-9	DSCN6327	south east corner of chimney base	north west
10102011-10	DSCN6328	Furnace area of chimney	south
10102011-11	DSCN6329	Furnace area of chimney and eastern area of base	south
10102011-12	DSCN6330	Furnace area of chimney and western area of base	south
10102011-13	DSCN6331	Brick base	north east
10102011-14	DSCN6332	Brick base	north
10102011-15	DSCN6333	Brick base	north
10102011-16	DSCN6334	Brick base and concrete cooling tower	North west
10102011-17	DSCN6335	Brick base and concrete cooling tower	North west
10102011-18	DSCN6336	Section through soil in north edge of excavation to east of brick chimney base, scale 0.5m	north
10102011-19	DSCN6337	Section through soil in north edge of excavation to east of brick chimney base, scale 0.5m	north

## **Appendix 2**

Figures Site plan, historic mapping and survey section and elevation drawings



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Fig 1 Site location

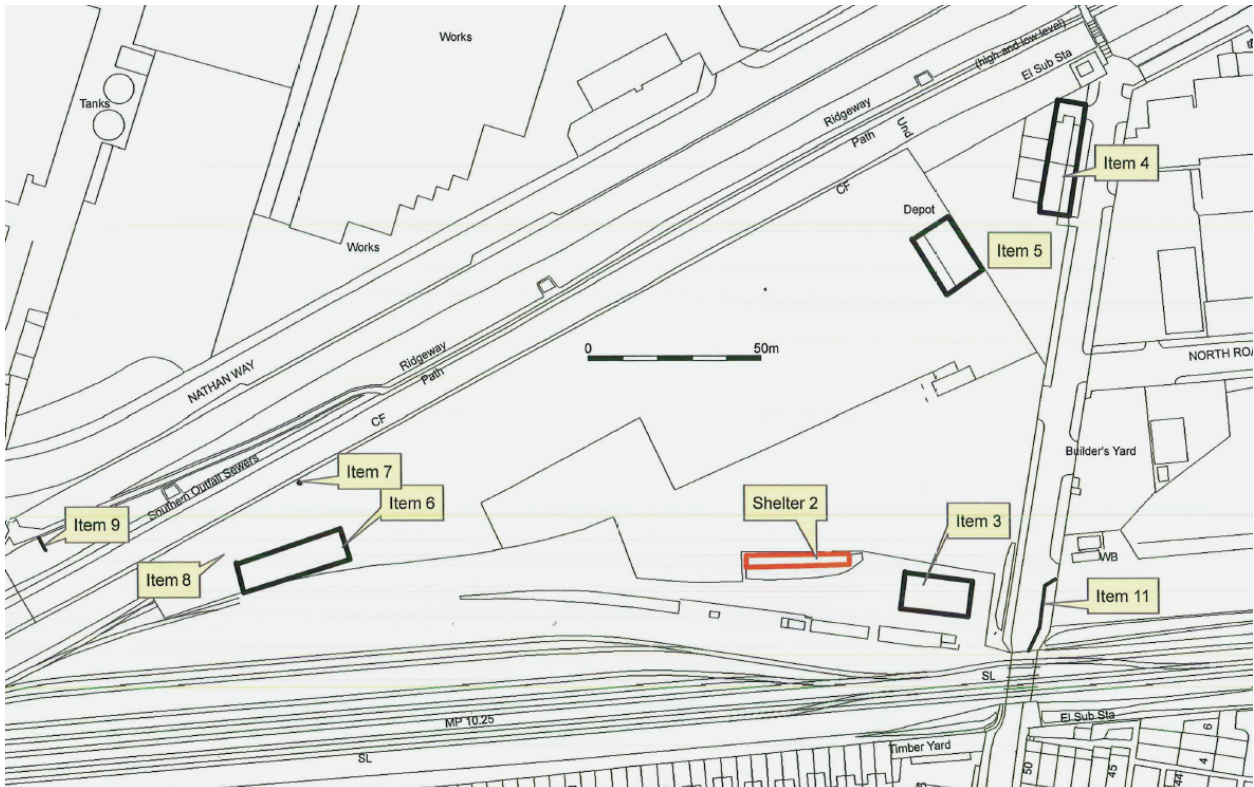


Fig 2 The location of NLBH features within and outside the site boundary of Worksite West.

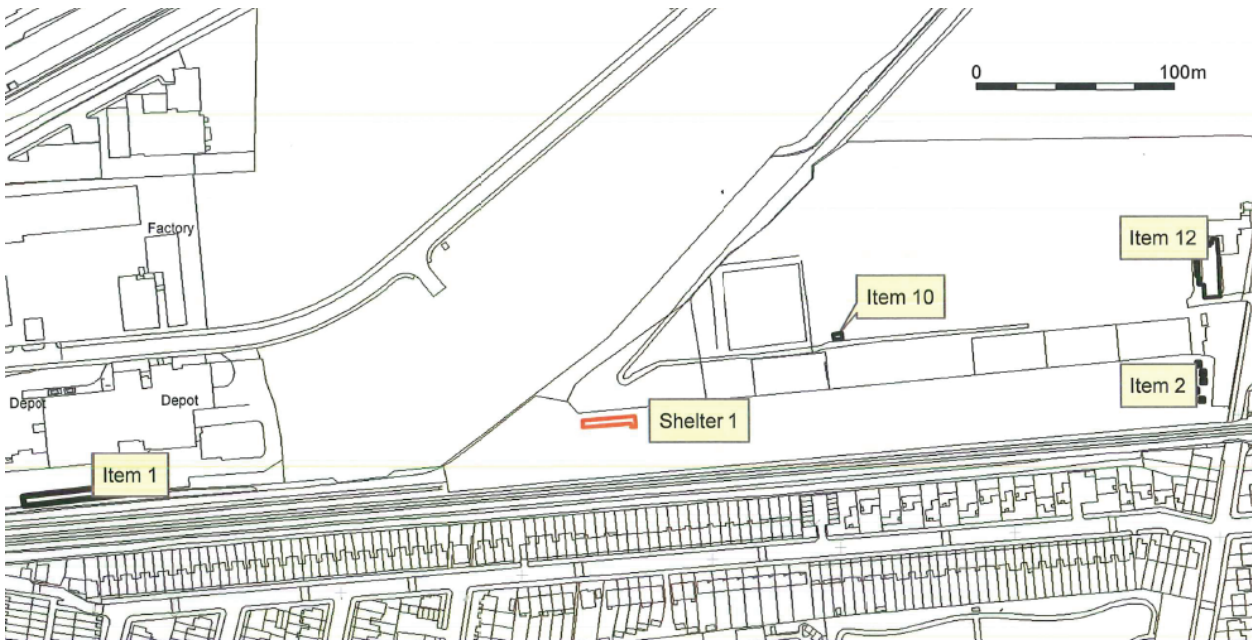


Fig 3 The location of NLBH features within and outside the Worksite East site boundary

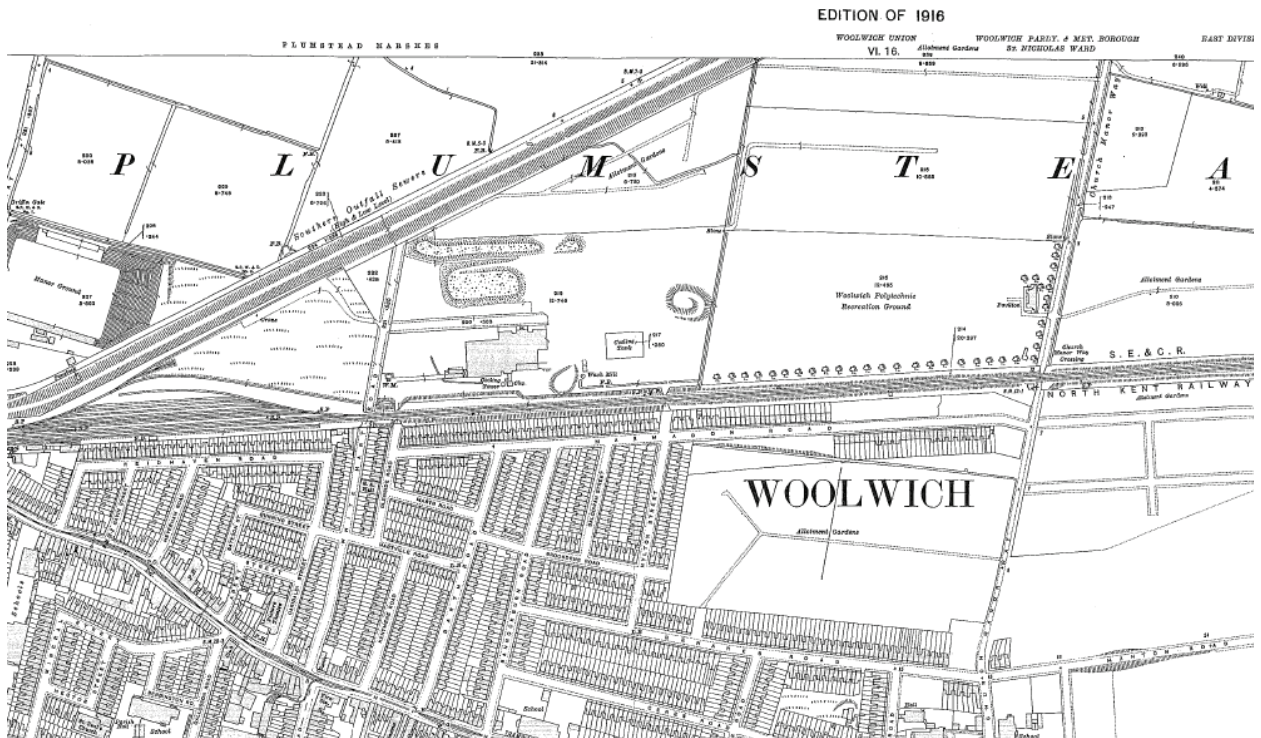


Fig 4 The OS map of 1916

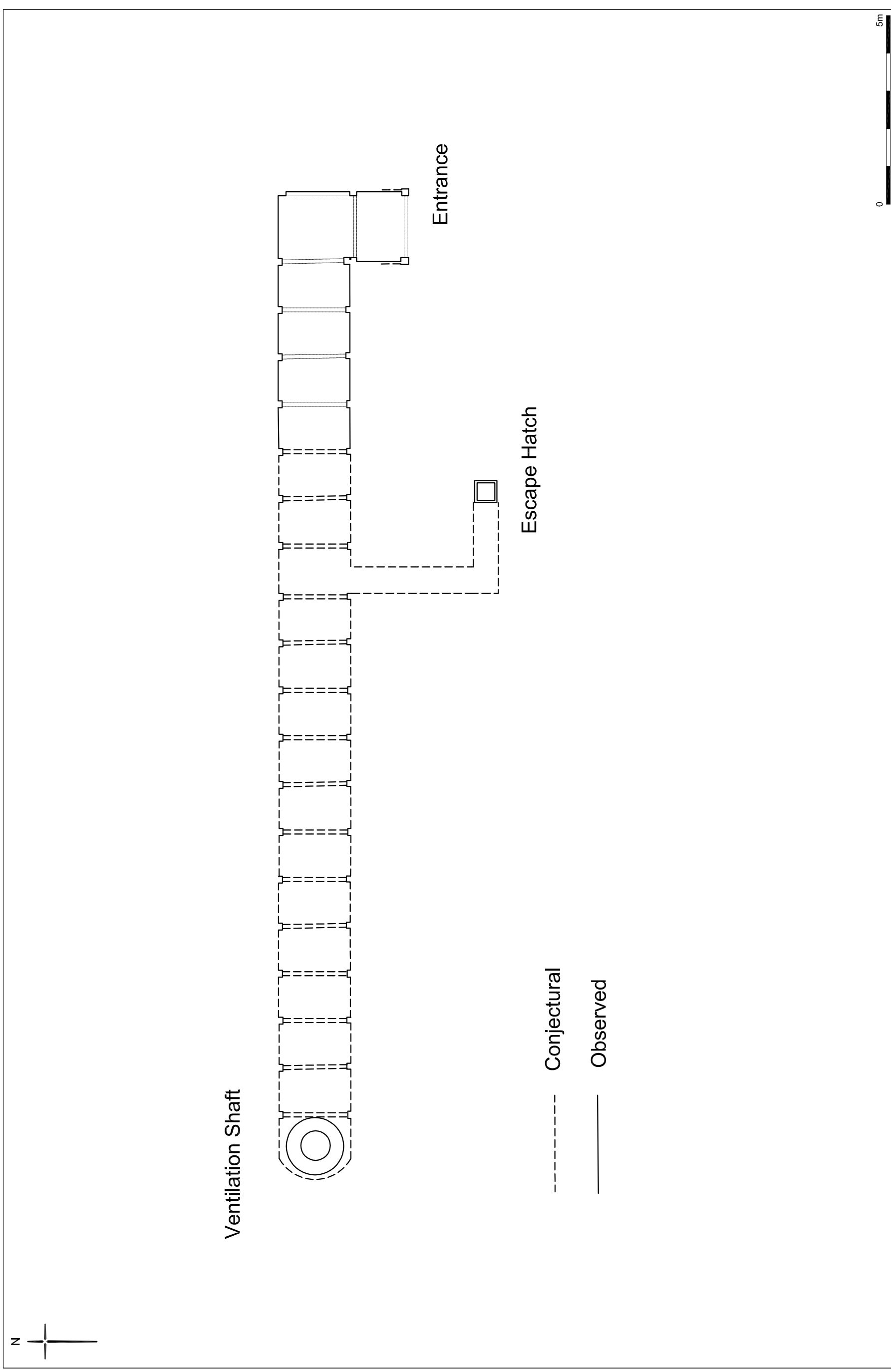


Fig 5 Conjectural plan of the probable arrangement of Shelter 1

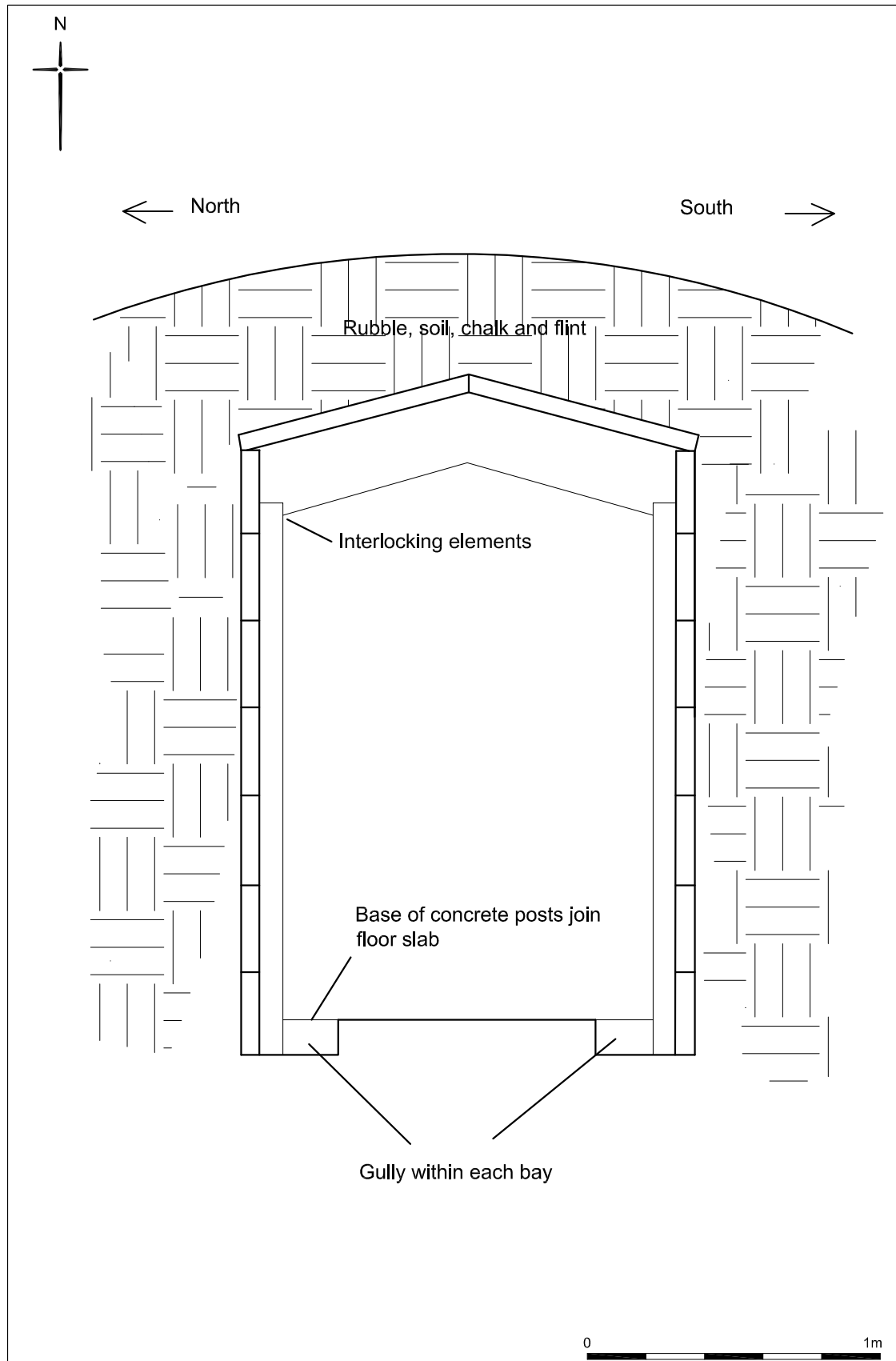


Fig 6 Section through shelter 2



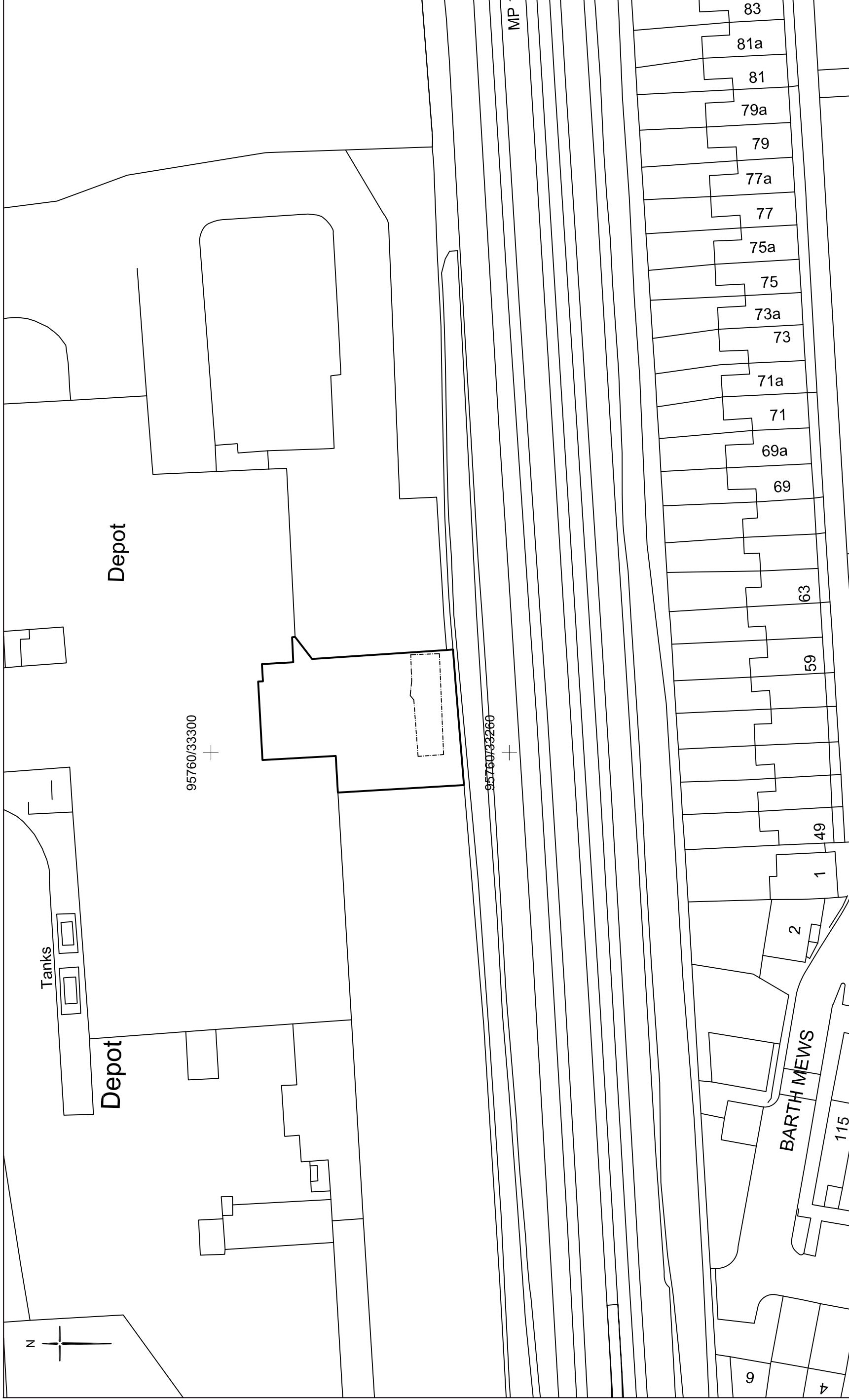


Fig 7 The location of the sub-surface recorded features within worksite east

Site outline  
 Trench edge

1:500 @ A3



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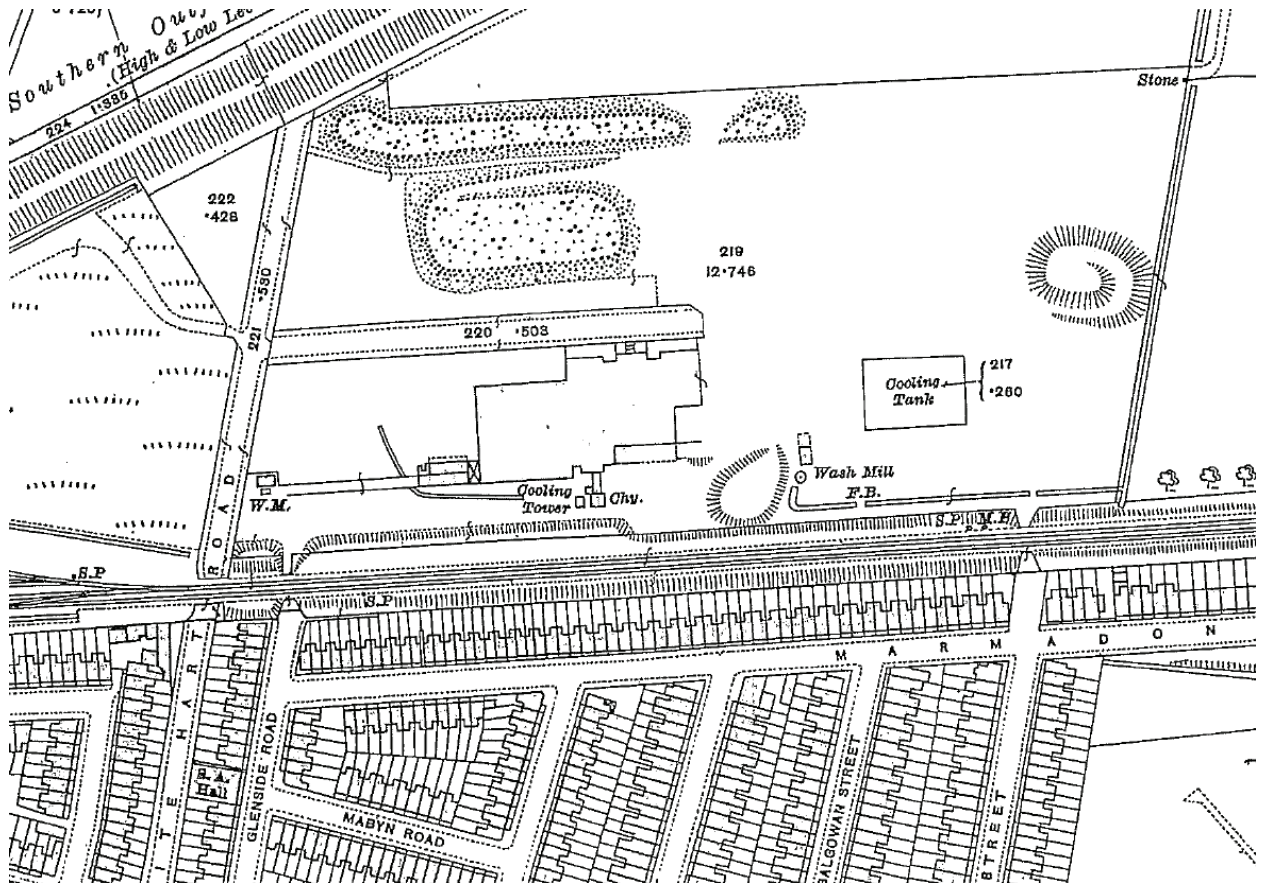
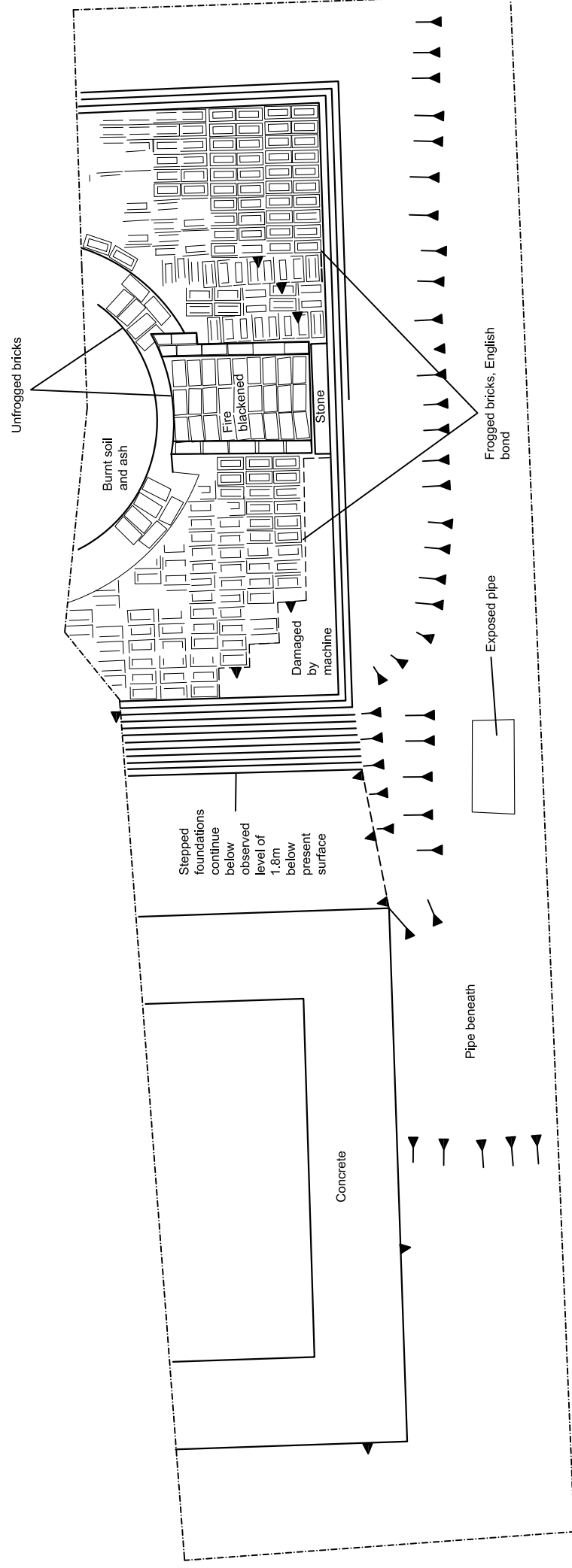


Fig 8 Detail of the 1916 OS map showing the cooling tower and chimney to the south of the depot building.



95766/33275



95766/33268






-  limit of excavation
-  break of slope
-  slope denotation

Fig 9 A plan of the chimney base and cooling tower

1:50 @ A3  
0 5m

## Appendix 3

### Oasis Report

**OASIS ID: molas1-113316**

#### Project details

Project name Plumstead Portal

Short description of the project Non-listed built heritage was recorded in advance of the Crossrail development of the site, which is adjacent to the Grade II Listed Council Depot building (LB UID 487648). Numerous railway related structures were recorded, along with a section of small gauge railway tracks related to the council depot building. These were recorded to a level 1. Further to this two air raid shelters in the form of long linear, sub-surface concrete structures, were recorded to a level 2. In addition the brick base of the former council depot chimney and the base of a cooling tower were also recorded to a level 2.

Project dates Start: 11-07-2011 End: 08-11-2011

Previous/future work No / No

Any associated project reference codes XSW 11 - Sitecode

Type of project Building Recording

Current Land use Industry and Commerce 1 - Industrial

Monument type COUNCIL DEPOT Modern

Methods & techniques 'Annotated Sketch','Measured Survey','Photographic Survey','Survey/Recording Of Fabric/Structure'

Prompt Direction from Local Planning Authority - PPS

### Project location

Country England

Site location GREATER LONDON GREENWICH WOOLWICH Plumstead Portal

Postcode SE18

Study area 15000.00 Square metres

Site coordinates TQ 45483 78931 51.4900766403 0.09576458096190 51 29 24 N 000 05 44 E  
Point

### Project creators

Name of Organisation MOLA

Project brief originator Crossrail

Project design originator MoL Archaeology

Project director/manager David Divers

Project supervisor David Sorapure

Type of sponsor/funding body  
Crossrail Ltd

Name of sponsor/funding body  
Crossrail Ltd

### Project archives

Physical Archive Exists?  
No

Digital Archive recipient  
LAARC

Digital Media available  
'Images raster / digital photography'

Paper Archive recipient  
LAARC

Paper Media available  
'Drawing','Miscellaneous Material','Notebook - Excavation',' Research',' General Notes','Photograph','Plan','Report','Section','Survey ','Unpublished Text'

### Project bibliography 1

Publication type  
Grey literature (unpublished document/manuscript)

Title  
C263 LATE EAST Non-listed Built Heritage Recording Report

Author(s)/Editor(s)  
Sorapure, D.

Other bibliographic details C263-MLA-X-RGN-CRG07-50025

Date 2011

Issuer or publisher Museum of London Archaeology

Place of issue or publication London

Description Unpublished Crossrail report

Entered by David Sorapure (dsorapure@museumoflondon.org.uk)

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