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FOUNTAINBRIDGE STUDENT RESIDENCES, EDINBURGH

Archaeological Trial Trenching and Excavation

for Cityheart Ltd

11/00123/FUL

February 2012

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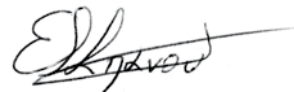
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CONTENTS

1.	INTRODUCTION	1
1.1	Site location	1
1.2	Historical background	1
1.3	Objectives	2
	<i>Stage 1 – Trial trenching</i>	2
	<i>Stage 2 – Targeted excavation</i>	2
2.	METHODOLOGY	2
2.1	Stage 1 – Trial trenching	2
2.2	Stage 2 – Targeted excavation	2
3.	RESULTS	5
3.1	Stage 1 – Trial trenching	5
	<i>Bainfield Place Tenements (Trenches 1 & 2)</i>	5
	<i>Industrial Works (trenches 3–10)</i>	5
	<i>Viewforth Works (trenches 11–24)</i>	11
3.2	Stage 2 – Targeted excavation	11
	<i>Area 1 – Bainfield Place Tenements</i>	13
	<i>Industrial Works</i>	19
	<i>Area 2 – Viewforth Works – brick-floored building and clay-lined tank</i>	19
	<i>Area 3 – Viewforth Works – brick ducts/drains and other structures</i>	22
	<i>Area 4 – Viewforth Works – chimney base and associated structures</i>	28
4.	DISCUSSION	34
4.1	Bainfield Place Tenements	34
4.2	Industrial Works south of Bainfield Place	34
4.3	Viewforth Works	36
5.	CONCLUSIONS	37
6.	REFERENCES	37
6.1	Bibliography	37
6.2	Cartographic sources	37
6.3	Internet sources	37
	APPENDICES	38
	Appendix 1 – Site register	38
	<i>Trench register</i>	38
	<i>Context register</i>	39
	<i>Photographic register</i>	45
	<i>Drawing register</i>	48
	<i>Sample register</i>	48
	Appendix 2 – Discovery and Excavation in Scotland entry	49

LIST OF ILLUSTRATIONS

<i>Illus 1</i>		x
	<i>Site location</i>	
<i>Illus 2</i>		3
	<i>Results of evaluation overlaid on 3rd Edition OS Town Plan (1893)</i>	
<i>Illus 3</i>		6
	<i>General view of Trench 1 facing E, showing walls [027] & [028]</i>	
<i>Illus 4</i>		6
	<i>General view of Trench 2 facing SE, showing wall [031]</i>	
<i>Illus 5</i>		6
	<i>Brick/concrete manhole base [002] in Trench 3, facing NW</i>	
<i>Illus 6</i>		7
	<i>Concrete floor and brick walls [001] in Trench 10, facing NW</i>	
<i>Illus 7</i>		7
	<i>Brick flue [005]/[019] and manhole [020] in Trench 24, facing S</i>	
<i>Illus 8</i>		7
	<i>Brick drain [006] in Trench 13, facing SW</i>	
<i>Illus 9</i>		8
	<i>Sandstone surface [018], brick chimney [016] and brick floor [015] in Trench 14, facing NE</i>	
<i>Illus 10</i>		8
	<i>Clay-lined tank [009] in Trench 17, facing N</i>	
<i>Illus 11</i>		8
	<i>Brick floor [024] and drain cut in Trench 19, facing NW</i>	
<i>Illus 12</i>		9
	<i>Results of excavation, overlaid on 3rd Edition Town Plan (1893)</i>	
<i>Illus 13</i>		12
	<i>Results of excavation in Area 1, overlaid on 1893 OS 3rd Edition Town Plan</i>	
<i>Illus 14</i>		13
	<i>General view of N range of tenements facing SW, showing walls [118] & [119]</i>	
<i>Illus 15</i>		14
	<i>Brick manhole [120], facing SW</i>	
<i>Illus 16</i>		14
	<i>General view of W range facing SE, showing walls [118] & [107] on the left, wall [117] directly ahead, and modern truncation just visible in the foreground</i>	
<i>Illus 17</i>		14
	<i>General view of W range facing NW, showing wall [113] (by scale bar), possible staircase support [109]–[111] just behind, and wall [106] to the right</i>	
<i>Illus 18</i>		15
	<i>Drainage structure [125] built into wall [124], facing SW. The cut for the transverse drain can be seen running into the background</i>	
<i>Illus 19</i>		15
	<i>General view of the garden area facing NW, showing wall [104], deposit (108) and the S extent of large cut [131]</i>	
<i>Illus 20</i>		15
	<i>Upstanding wall [101] facing N, with brick repairs [102] just visible</i>	
<i>Illus 21</i>		16
	<i>View of test slot dug through large cut [131], facing N</i>	
<i>Illus 22</i>		16
	<i>Bomb Shelter [121] facing SW, partly excavated</i>	
<i>Illus 23</i>		16
	<i>Bomb shelter [130] facing N, with SW wall removed and excavated to the concrete floor, which lies just below the level of the water</i>	
<i>Illus 24</i>		18
	<i>Results of excavation in Area 2, overlaid on OS 3rd Edition Town Plan (1893)</i>	
<i>Illus 25</i>		19
	<i>General view of Area 2 facing SW, showing brick floors [204] & [205] with bounding walls, and clay-lined tank [223] in the background</i>	

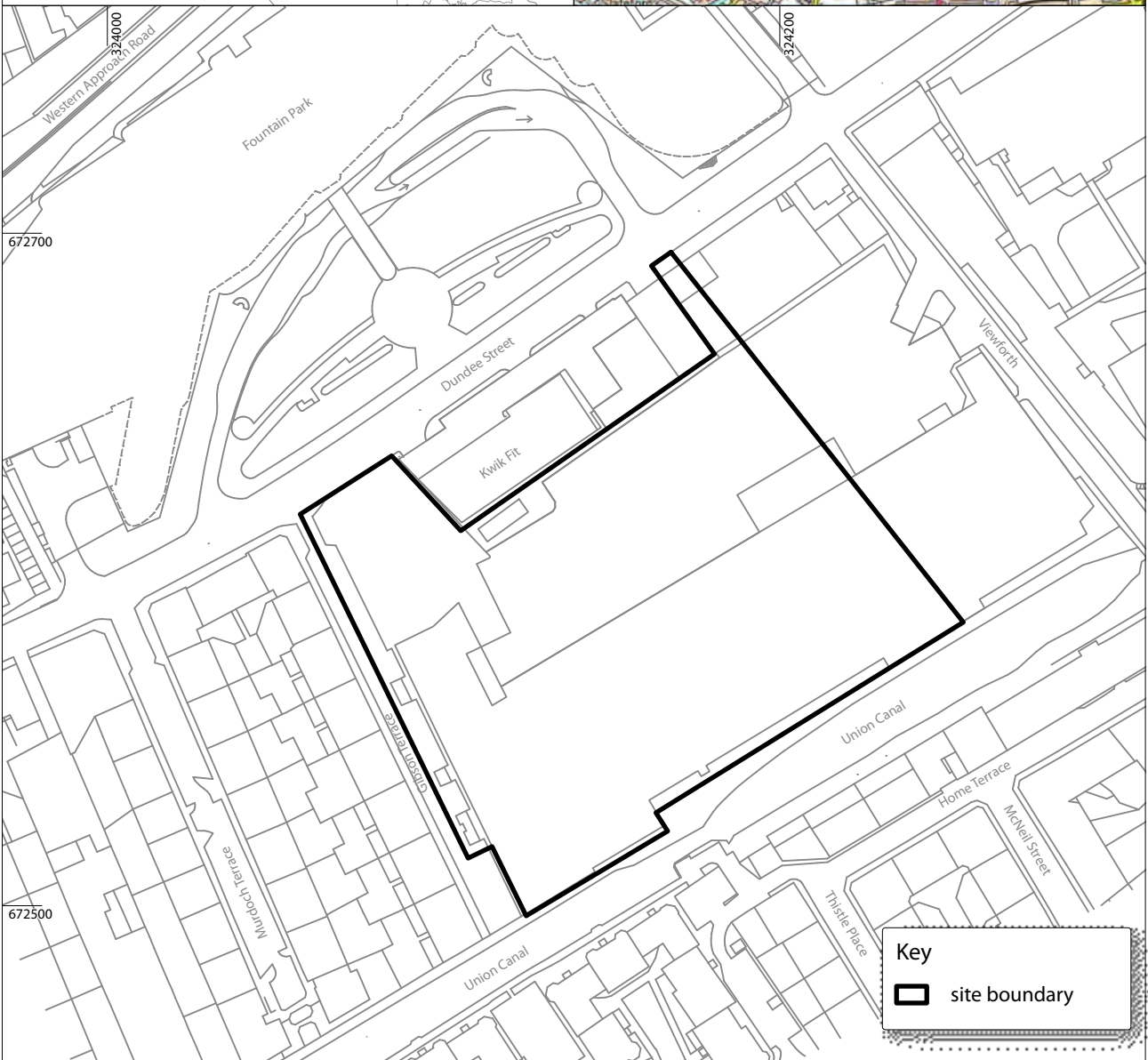


<i>Illus 26</i>	20
<i>Drainage structures underneath [215] facing SW, showing possible sump and radiating pipes</i>	
<i>Illus 27</i>	20
<i>Section through clay-lined tank [223], facing NE</i>	
<i>Illus 28</i>	20
<i>Detail of clay lining of tank [223], facing NE</i>	
<i>Illus 29</i>	21
<i>Results of excavation in Area 3, overlaid on OS 3rd Edition Town Plan (1893)</i>	
<i>Illus 30</i>	23
<i>Brick flue [316] facing S, with small segment of wood lining and arched roof visible</i>	
<i>Illus 31</i>	23
<i>View through manhole [318] showing blocking wall [321], facing S</i>	
<i>Illus 32</i>	23
<i>View of flue [316] facing N, after removal of S wall, showing blocking wall [318] and iron pipe support</i>	
<i>Illus 33</i>	24
<i>Brick flue/drain [310], facing N</i>	
<i>Illus 34</i>	24
<i>Detail of rubber lining (315) in flue [310], facing S</i>	
<i>Illus 35</i>	24
<i>General view of stone building [313]/[330] facing E, showing brick support [332] and drains/flues [310] and [323]</i>	
<i>Illus 36</i>	25
<i>View of base of cut [334], showing possible machine base [336]</i>	
<i>Illus 37</i>	25
<i>General view of flue/drain [323] facing S, showing drain from area 2 in foreground and structure [313]/[330] in the background</i>	
<i>Illus 38</i>	25
<i>Brick tank [327] facing W, showing concrete/brick structure [325]/[326] and brick flue/drain [323] in the foreground</i>	
<i>Illus 39</i>	26
<i>Concrete floor of tank [327] exposed, facing S</i>	
<i>Illus 40</i>	26
<i>Remains of brick flue/drain [302–4], facing E</i>	
<i>Illus 41</i>	26
<i>Manhole [301], facing W</i>	
<i>Illus 42</i>	27
<i>General view of Area 3 facing E, with all features removed</i>	
<i>Illus 43</i>	28
<i>Results of excavation in Area 4, overlaid on OS 3rd Edition Town Plan (1893)</i>	
<i>Illus 44</i>	29
<i>General view of Area 4 facing NE</i>	
<i>Illus 45</i>	30
<i>Detail of brick chimney [407] facing SE, showing ash/soot deposit [409] and firebricks [408], with buttress [415] behind</i>	
<i>Illus 46</i>	30
<i>Section of brick chimney [408] facing SW, showing rubble infill [410] behind</i>	
<i>Illus 47</i>	30
<i>General view of floors [414], [418] and [420] facing NW, with cement base [413] visible beneath</i>	
<i>Illus 48</i>	31
<i>Detail of brick structure [421] and ashy clay/silt [422], facing NE</i>	
<i>Illus 49</i>	31
<i>General view of brick drain/flue [402] and well [494] facing NW. The top stone step is just visible in the foreground</i>	
<i>Illus 50</i>	31
<i>Brick drain/flue [402] after excavation facing SE, showing cement lined base and stone steps</i>	
<i>Illus 51</i>	32
<i>Detail of brick well [404], facing SE</i>	
<i>Illus 52</i>	32
<i>Brick well [404] with W side removed, showing brick base, facing E</i>	

Illus 53	32
<i>Area 4 with all features (except the sandstone chimney base) removed, facing SW</i>	
Illus 54a	33
<i>Bainfield Place Tenements - main features overlaid on OS 1st Edition (1851)</i>	
Illus 54b	33
<i>Bainfield Place Tenements - main features overlaid on OS 2nd Edition (1877)</i>	
Illus 54c	33
<i>Bainfield Place Tenements - main features overlaid on OS 3rd Edition (1893)</i>	
Illus 54d	33
<i>Bainfield Place Tenements - main features overlaid on 1982 OS</i>	
Illus 55	34
<i>1946 OS air photo, showing location of WW2 bomb shelters</i>	
Illus 56a	35
<i>Viewforth Works - main features overlaid on OS 2nd Edition map (1877)</i>	
Illus 56b	35
<i>Viewforth Works - main features overlaid on OS 3rd Edition map (1893)</i>	
Illus 56c	35
<i>Viewforth Works - main features overlaid on OS 1942</i>	
Illus 56d	35
<i>Viewforth Works - main features overlaid on OS 1982 map</i>	
Illus 57	36
<i>Aerial view from E</i>	



Fountainbridge Student Residences Edinburgh



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0 100m

Illus 1
Site location

FOUNTAINBRIDGE STUDENT RESIDENCES, EDINBURGH

Archaeological Trial Trenching and Excavation

Headland Archaeology (UK) Ltd undertook a programme of archaeological works on part of the former Scottish & Newcastle brewery site in West Fountainbridge, Edinburgh. The work was required to meet a planning condition placed on a proposed student accommodation development. Historical map evidence showed that the development area overlay the site of several mid-19th century tenements and industrial works, including part of the Viewforth Works of the Scottish Vulcanite Company. A programme of trial trenching revealed that the site had been substantially disturbed during two phases of demolition, but some areas of archaeological remains had survived. These remains were explored further with four areas of open excavation; one targeted at the tenements at Bainfield Place, the other three at remains of the Viewforth Works.

The first area exposed the foundations of four tenements, associated drainage works and garden walls, and two WWII air-raid shelters. The demolition of the tenements in the late 20th century had removed all above surface remains, with no occupation levels remaining in situ. The remaining areas revealed a number of structures relating to several phases of the Viewforth Works, including a large brick-floored building, a clay-lined tank, the base of the main chimney with associated brick surfaces, and several brick drains and ducts. Most had been heavily truncated during the redevelopment of the Works in the 1950s, and by the recent demolition of these later buildings.

1. INTRODUCTION

This report presents the results of a programme of archaeological work comprising trial trenching (Stage 1) and targeted excavation (Stage 2) at West Fountainbridge, Edinburgh. The work was undertaken to meet a planning condition (Planning Reference: 11/00123/FUL) on an application for a student accommodation development by Cityheart Ltd. The condition was placed by the City of Edinburgh Council Archaeology Service (CECAS) who advises the City of Edinburgh Council on planning matters. The work was carried out in accordance with a Written Scheme of Investigation (WSI) prepared by Headland Archaeology (UK) Ltd and agreed by CECAS. Fieldwork took place between the 24th October and 24th November 2011.

1.1 Site location

The development is located in West Fountainbridge, Edinburgh (NGR 324177E, 672613N, Illus 1). The site is approximately 2 hectares comprising part of the former Scottish & Newcastle brewery (referred to as Site A on the EIA) and an existing area of park land to the north-west. It is bounded by the Union Canal to the south, Gibson Terrace to the west and Dundee Street and a Kwik-Fit to the north. The east side of the development area lies 50m west of Viewforth.

1.2 Historical background

The Fountainbridge area has been a hub of industrial activity since the late 18th century. Early development focused around Tollcross, but quickly spread westwards during the 19th century, catalysed by the completion of the Union Canal in 1822 and the Caledonian Railway in 1849.

Historical map evidence shows the site to be mostly open land in the mid 1850s, with the western end forming part of the Bainfield Estate. In 1861, the Scottish Vulcanite Company established the Viewforth Works on the open land - a substantial factory producing combs and jewellery made of vulcanised rubber. Around the same time, a number of smaller industrial concerns (two iron foundries and an engine works), and a number of tenements were constructed on the estate land.

The site developed substantially through the late 19th and early 20th centuries, with several expansions to the Viewforth Works and a further block of tenements. The Scottish Vulcanite Company was absorbed into the North British Rubber Company which owned the adjacent Castle Mills rubber factory in 1910. In 1957, much of the original Viewforth Works, the foundries and the engine works were demolished to make way for a large rubber hose plant. This building was taken over by Scottish & Newcastle as a high-speed canning line after the final



closure of Castle Mills in 1973. The Scottish & Newcastle brewery itself closed down in 2004.

Demolition of the industrial buildings and external service yards was undertaken early in 2011. The demolition material was crushed, with some being re-used at the site for re-grading and some being removed. At that time, obstructions in the form of basements, foundations walls *etc.* were removed by the contractor, without archaeological supervision, to a depth of around 2m below present ground surface.

1.3 Objectives

Stage 1 – Trial trenching

The overall objective of the programme of trial trenching was to evaluate the archaeological potential of the development site and determine the location, character, extent and quality of any archaeological remains identified within it. More specifically, it was intended to target the location of industrial buildings and tenements, as depicted on the historic maps and establish their preservation and extent as well as assess the impact of both the recent demolition works and the planned development.

Stage 2 – Targeted excavation

2 The trial trenching revealed some concentrations of *in situ* archaeological remains. These were divided into four discrete areas; the Bainfield Place tenements (Area 1) and three smaller areas around the central section of the Viewforth Works (Areas 2–4) (Illus 12). These areas were taken to full archaeological excavation, in accordance with a WSI prepared by Headland Archaeology and agreed by CECAS.

The objectives of the excavation were to preserve by record the remains threatened by the proposed development works and to undertake an appropriate level of analysis and reporting to meet the requirements of the Planning Authority.

2. METHODOLOGY

2.1 Stage 1 – Trial trenching

The trial trenching was designed to cover a sample area of up to 10% sufficient to meet the objectives of the evaluation. A total of c.421 linear m was excavated arranged in 25 trenches. The trenches were positioned to provide good coverage across the development site but were primarily concentrated in areas identified as having a higher archaeological potential and those areas more likely to be affected by the proposed ground works.

All trenches were dug with a 360° mechanical excavator fitted with a 2m wide flat bladed bucket under direct

archaeological control. Trenches were excavated to the depth of the first significant archaeological remains, or until geological subsoil was encountered. The sides of deeper trenches were stepped or battered to allow safe access where necessary, in accordance with the WSI. All identified archaeological features were recorded, and a representative sample investigated by hand. The stratigraphy of each trench was recorded in full.

All recording followed Headland Archaeology standard procedures. All contexts, small finds and environmental samples were given unique numbers and all recording undertaken on *pro forma* record cards that conform to accepted archaeological norms. Colour transparencies, print and digital photographs were taken to record archaeological contexts and to illustrate the progress of the excavations. A graduated metric scale was clearly visible in record photographs. All photographs were recorded by individual print number and included information on the context and direction taken. An overall trench and feature plan was recorded by differential GPS, relative to the National Grid and Ordnance Datum.

No artefacts were retrieved during the excavations.

Archaeological deposits were sampled systematically in accordance with Headland Archaeology standard environmental sampling practice. Bulk samples, a minimum of 10 litres but up to 30 litres where possible, were taken for wet sieving and flotation. Bulk samples were to be taken from any waterlogged deposits present for assessment of organic remains.

2.2 Stage 2 – Targeted excavation

Four areas of preserved archaeological remains were targeted for full excavation:

Area 1 (c.12,300m²) located in the north-western corner of the development site targeting the 19th century tenements and grounds associated with Bainfield Place.

Area 2 (c.540m²) located in the eastern part of the site targeting remains of the former Viewforth Works, with the view to fully expose the tank and floor structures uncovered during Stage 1.

Area 3 (c.300m²) located to the south and west of Area 2 targeting the brick structures associated with the former Viewforth Works and uncovered during Stage 1.

Area 4 (c.220m²) located to the south of the development site targeting the chimney and floor structures associated with the former Viewforth Works and uncovered during Stage 1.



Overburden was removed by two 360° mechanical excavators using flat bladed buckets, under constant archaeological control. The sides of the excavation areas were stepped or battered to provide safe access. All structures or deposits of archaeological significance were cleaned and recorded by hand. Planning was undertaken using a combination of differential GPS and total station, and related to National Grid and Ordnance Datum. Once fully exposed and recorded, most features were then removed by mechanical excavator under archaeological supervision, in order to expose any further underlying remains. Only those structures that could not be practically removed (e.g. the stone chimney base) were left *in situ*.

3. RESULTS

3.1 Stage 1 – Trial trenching

For clarity, the development area is described below in three areas following information from the historic maps (Illus 2): the Bainfield Place tenements in the north-west corner of the site, the industrial works in the south-west and the Viewforth Works.

The descriptions below concentrate on those trenches in which archaeological remains were encountered (for full description of all trenches, refer to Appendix 1).

Bainfield Place Tenements (Trenches 1 & 2)

Trenches 1 and 2 were positioned to expose any remains of the Bainfield Place tenements to the north-west of the main industrial site. This area had been previously landscaped following the demolition of the tenements and was in use as a public park at the time of fieldwork. In both trenches, structural remains were encountered below a thin layer of turf and topsoil and c.0.1–0.2m of crushed stone. In Trench 1 (Illus 3), two stone walls [027 and 028], measuring 0.3 and 0.6m wide respectively, were exposed most likely representing internal walls. They only survived as foundations since they were located at the same level as several adjacent ceramic drains. A further stone wall [029], 0.5m wide, was located towards the eastern end of the trench forming part of a diagonal garden wall visible on the 3rd Edition OS (1893) map. The wall had been truncated by a modern concrete fence foundation [030].

In Trench 2 (Illus 4), two stone walls were exposed [031 and 032], measuring 0.6m and 0.9m wide respectively. Wall [031] was an internal wall foundation. Wall [032] was perhaps broad enough to support an external wall, although it was located within one of the tenement buildings on the 3rd Edition OS (1893) map. A ceramic drain ran adjacent to Wall [031] on the west side.

The highly compact rubble infilling the space between the structural remains made further excavation of these features impractical within the confines of evaluation trenches.

Industrial Works (trenches 3–10)

A total of nine trenches were targeted at the remains of the industrial works in the south-west corner of the development area. This area was found to be generally highly disturbed, with only three trenches exposing any *in situ* remains.

The overburden consisted mostly of crushed concrete, stone and brick to a depth below present (post demolition) ground level (henceforth below pgl) of between 0.2m and 2m. The main exception to this was in the south of the area where sloping bands of loose brick and ash were encountered. This is more typical of earlier demolition practice, and did not appear to have been recently disturbed. In Trench 5, the geological subsoil was gravelly orange-brown sand with patches of shale and getting more clayey to the south. Deeper sondages were excavated in Trenches 3 and 5, the subsoil becoming coarser and more gravelly with depth. In Trenches 4, 7a, 8 and 9, areas of deeper truncation were encountered (up to 2.5m below pgl), most likely the result of grubbing out deeper foundations.

Trench 3 was positioned to target the northern part of the Etna Iron Foundry and the boundary wall between it and the Viewforth Works visible on the 3rd Edition OS (1893) map. Two structural fragments were discovered: a small section of concrete slab [003] directly above the geological gravel at the south-west end, and the base of a concrete and brick manhole [002] (Illus 5) located c.8m to the north-east. Both looked fairly recent and appeared more likely to relate to the one of the outbuildings of the 1957 rubber hose plant.

Trench 4 was also targeted at the Etna foundry, running across the line of two substantial outbuildings. Two *in situ* iron pipes were encountered near the south-western end, running north-south across the trench, with a brick/concrete fragment [026] lying adjacent to the south-west. The bricks were marked 'Dougal Winchburgh'. The trench was extended to the north-west to reveal that the pipes were truncated some 2m beyond the original trench edge.

Trench 10 was positioned across the western end of the Bainfield Iron Works. At the western end, a large concrete slab [001] (Illus 6) was found, cut slightly into the subsoil. The trench was widened at this point to reveal the remainder of this surface, which extended to 8.6x5m. Steel reinforcement within the concrete and the footings for brick walls around the perimeter and extending north-north-west to south-south-east were identified. These appeared to be the remains of a floor surface, possibly at



Illus 3 ▶

General view of Trench 1 facing E, showing walls [027] & [028]



Illus 4 ▶

6 *General view of Trench 2 facing SE, showing wall [031]*



Illus 5 ▶

Brick/concrete manhole base [002] in Trench 3, facing NW





◀ **Illus 6**
Concrete floor and brick walls [001] in Trench 10, facing NW



◀ **Illus 7**
Brick flue [005]/[019] and manhole [020] in Trench 24, facing S

7



◀ **Illus 8**
Brick drain [006] in Trench 13, facing SW



Illus 9 ▶

Sandstone surface [018], brick chimney [016] and brick floor [015] in Trench 14, facing NE



Illus 10 ▶

Clay-lined tank [009] in Trench 17, facing N



8

Illus 11 ▶

Brick floor [024] and drain cut in Trench 19, facing NW





basement level, related to the 1950s building. This area appears as open space in the earlier maps.

Viewforth Works (trenches 11–24)

A total of 17 trenches (including 3 also covering the industrial works to the south-west) were excavated across the site of the former Viewforth Works. Although much of this area had been substantially truncated by successive demolition works, archaeological remains were encountered in 6 trenches.

The overburden consisted mainly of mixed demolition rubble to depths of 0.5–3m below pgl. At the south-east end of Trench 14 and in Trench 16 the rubble appeared to be undisturbed by the most recent demolition works, consisting of banded ash, plaster and crushed brick. The geological subsoil was orange-brown gravelly clay, becoming somewhat sandier to the north of the area.

Trench 13 was positioned over two adjacent outbuildings to the north of the main Viewforth Works building. Towards the eastern end of the trench the subsoil was overlain by a c.0.8m thick band of dark grey silty clay [007]. Cut into this deposit, and into the geological subsoil was the southern face of an intact brick structure [005] (Illus 7) measuring c.1.2m wide and 0.5m high. The remains of a brick flue or drain [006] were exposed at c.2m below pgl surviving to a height of 0.7m, with two parallel brick walls built on a brick base 0.7m wide. A concentration of broken stone filling the structure may suggest that it was originally stone-capped.

In order to determine the extents of these remains, two further, roughly parallel trenches were excavated. Trench 22 revealed the continuation of silty clay [007] and the heavily truncated remains of brick drain [006]. A brick manhole [026] was found at c.1m below pgl. Similarly, in Trench 24 the band of silty clay [007] was encountered, into which a deep, brick-built chamber [019] was cut, which appeared to be the continuation of structure [005]. Against the southern section of the trench, a stone-capped brick manhole [020] was built over this chamber. Two pipes ran into this structure from the west. Chamber [019] was truncated to the north by a rubble-filled cut. Immediately to the north-east this cut truncated the continuation of the brick drain/flue [006, 023] although a small patch of bricks remained.

Trench 14 targeted the main Viewforth Works building, and ancillary structures to the south-east. The former appeared to have been entirely removed, as was the case in other nearby trenches. The southern end however did not appear to have been substantially disturbed by the most recent demolitions. The rubble deposits were formed of layers of ash, plaster and brick, with the remains of a collapsed brick wall [010]. Beneath these deposits, at a depth of c.1.3m below pgl, a large area of brick floor [015], including the base of

a chimney [016] was preserved (Illus 9). The chimney was supported on a series of substantial sandstone flags [018], which were placed onto the subsoil. The chimney survived to 5 courses (c.0.4m) high, was octagonal on the outside and curved on the inside. The remains of a sooty deposit [017] were found in the interior. Trench 21 was placed to find the extent of these remains – it was excavated through 2.4m of very mixed rubble (including modern scaffold fittings). No structural remains were encountered.

Trench 17 was placed over a structure marked ‘reservoir’ on the 3rd Edition OS (1893) map. The remains of a large clay-lined tank [009] (Illus 10) were encountered at this location. It had been cut into the subsoil and lined with compact grey clay, which was packed with large angular stones. The fill of the tank was a black, hydrocarbon-rich sand [028]. No upstanding superstructure was found, and a small extension of the trench to the north-west showed no signs of the adjacent building to the west. It is likely that these remains represent the truncated remains of the very base of the mapped structure.

A concrete fragment lying horizontally at the base of the 3m deep Trench 18b [004] was recorded as being potentially *in situ*, but its size (2x1.5m) and depth suggest that it is more likely to form part of the rubble deposit.

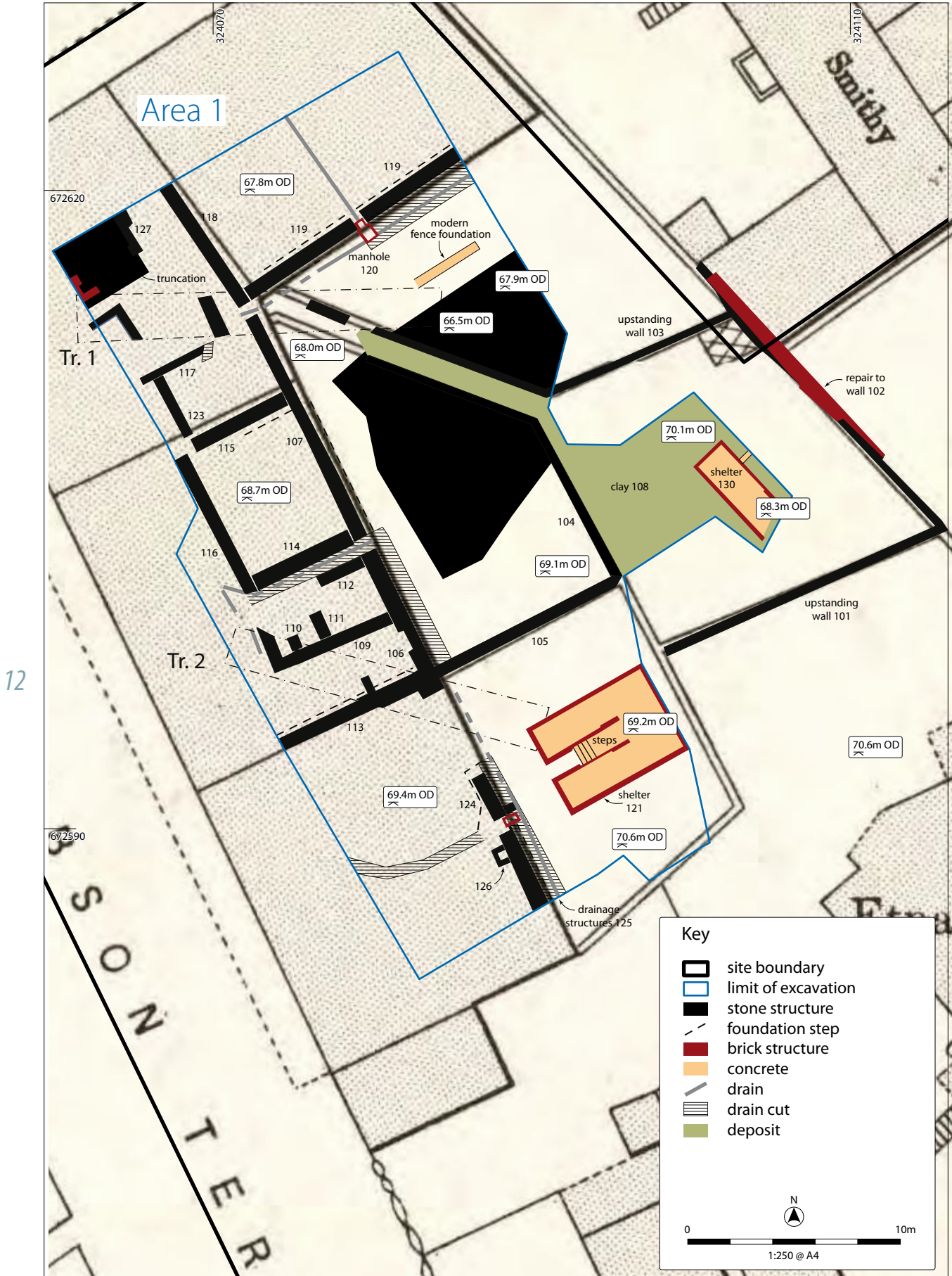
Trench 19 was targeted at a large outbuilding running out of the eastern boundary of the development area. A large brick surface [024] (Illus 11) was encountered on the line of this building. It was built on a dark sandy gravel, levelling deposit, which in turn overlay the geological gravelly sandy subsoil. The surface had been truncated by a 1m wide linear cut – most likely a later service trench.

11

3.2 Stage 2 – Targeted excavation

Following the archaeological evaluation, four areas were targeted for open area excavations, totalling some 1950m² (Illus 12). The excavations in Area 1 were intended to cover the full extents of the Bainfield Place tenements within the development area, but were reduced somewhat at the north, east and western perimeter due to a line of established trees around the periphery of the park. It was decided that the trees would be removed in places should the nature of the remains suggest significant archaeological value in doing so. In the event, this was not deemed necessary by CECAS. As a result, the excavations uncovered only the back half of the tenements and their gardens. The excavations in Area 3 covering the Viewforth Works were extended in order to find the northern limits of three brick ducts.

No small finds were retrieved from any of the four areas during the excavation.



Illus 13

Results of excavation in Area 1, overlaid on 1893 OS 3rd Edition Town Plan

Area 1 – Bainfield Place Tenements

The structural remains encountered in this area represent the sub-floor foundations, drainage works and garden boundaries of the 19th-century tenements, with some later additions. On the whole, these were constructed directly on, or cut into the geological subsoil. The subsoil varied across the site from a compact orange gravelly sand to the south, to a looser red-brown silty sand to the northern end. A 2m deep test pit was dug at the far north-eastern corner of the site to test that the latter was indeed a natural deposit. The subsoil became gradually sandier and more gravelly with depth, suggesting that the upper, siltier material was the result of weathering and slope wash from the south. Geological subsoil was encountered between 0.3 and 1.0m below the original ground level.

The Tenements

The tenements (Illus 13) consisted of four buildings laid out in an L shape – one facing onto Dundee street to the north (Illus 14), two facing onto Gibson Terrace to the west and a corner tenement joining them. Generally, the walls uncovered by the excavation survived only two or three courses high, and represented a mixture of external, partition and internal walls. No floor surfaces remained, and all the tenement walls were built onto the natural subsoil, except towards the south (upslope) end, where they were cut into it by up to 0.15m.

The external walls uncovered by the excavation [106] and [124], running north-north-west to south-south-east and Wall [119] running perpendicular survived

to c.0.3–0.6m. They were built of uncoursed, roughly worked sandstone to a width of 0.65m, albeit with a wider (c.0.9m) foundation course in some places (marked with dashed lines on Illus 13). The stone was undressed and bonded with a coarse lime mortar. The walls were broken at points to allow for ceramic drains and related brick structures (Illus 15) to run through them. These breaks appeared to be part of the original construction rather than later insertions, and are described more fully below.

The partition walls between adjacent tenements [113], [115] and [118] were of a very similar form to the external walls in terms of width, construction, and survival. No drainage structures were incorporated into these walls, suggesting that drainage between buildings was connected only on the outside. Both partition and external walls were generally not keyed together at joins and corners, although this may be more a product of the limited surviving remains, rather than an indicator of construction method or phasing.

The internal walls were of a slighter construction. They were built of uncoursed, roughly worked sandstone, between 0.3 and 0.6m in width. In the corner tenement, a small length of wall [127] survived on the eastern edge of what appeared to be a modern demolition cut. It was rendered on the western side suggesting this was not just a foundation wall, and had a small return at the south-south-east end. Although the west-south-west continuation of this return was truncated by the modern



Illus 14

General view of N range of tenements facing SW, showing walls [118] & [119]



◀ **Illus 15**

Brick manhole [120], facing SW



◀ **Illus 16**

General view of W range facing SE, showing walls [118] & [107] on the left, wall [117] directly ahead, and modern truncation just visible in the foreground



◀ **Illus 17**

General view of W range facing NW, showing wall [113] (by scale bar), possible staircase support [109]–[111] just behind, and wall [106] to the right

Illus 18 ▶

Drainage structure [125] built into wall [124], facing SW. The cut for the transverse drain can be seen running into the background



Illus 19 ▶

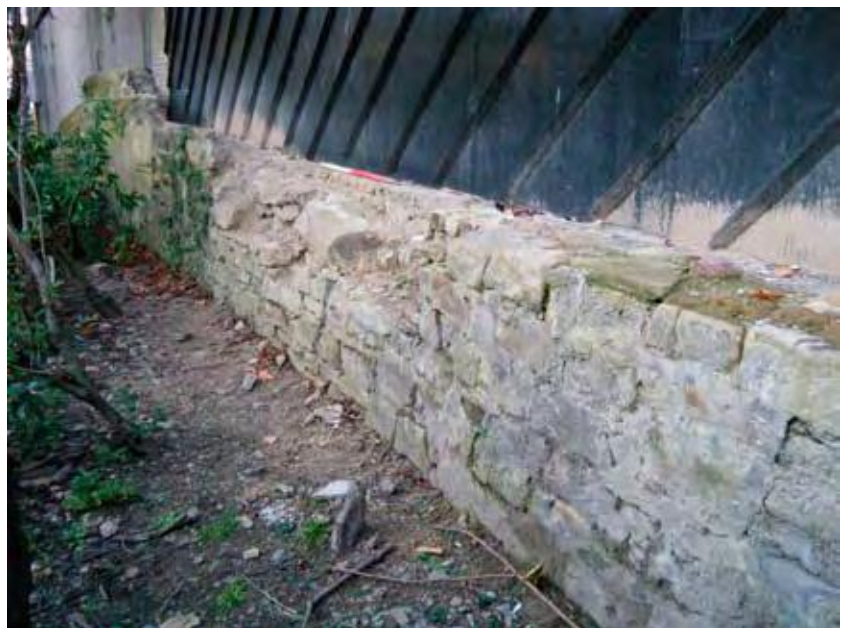
General view of the garden area facing NW, showing wall [104], deposit (108) and the S extent of large cut [131]



15

Illus 20 ▶

Upstanding wall [101] facing N, with brick repairs [102] just visible





◀ **Illus 21**

View of test slot dug through large cut [131], facing N



◀ **Illus 22**

Bomb Shelter [121] facing SW, partly excavated

16



◀ **Illus 23**

Bomb shelter [130] facing N, with SW wall removed and excavated to the concrete floor, which lies just below the level of the water

cut, it is unlikely to have continued far in this direction, due to the presence of a truncated brick manhole some 2.5m away. Two of the stone walls [027] and [028] located during the evaluation also appeared in this building, just to the south-south-east. These are likely to relate to the entrance/main corridor as seen on the 1876 OS map. Walls [117] and [123] enclosed a 4.5x3.3m area in the south-east corner of this building.

In the next building to the south-south-east, two substantial walls [114] and [116], 0.65 and 0.5m wide respectively enclosed the north-eastern quarter of the building. The south-east corner had a denser arrangement of less substantial walls [109–112], and [031], which may have formed a support for an internal stairwell (Illus 17). No internal walls survived in the southernmost building, or in the building facing onto Dundee Street.

Associated with the stonework of the tenements was an extensive drainage system. Each building had a substantial ceramic pipe running laterally through the middle of it. In some cases, these were in shallow cuts to achieve the necessary gradient, which in turn were connected to a main ceramic pipe running outside the back walls of the buildings. Breaks in the external walls had been intentionally left to accommodate the drains. In two cases, structures [120] and [125] these breaks were augmented with small brick/stone structures, presumably to act as sumps or to allow for inspection. Structure [120] measured 1.2x0.65m, stood 0.45m high and was constructed of a single thickness of red, machine-cut brick. Structure [125] was smaller, at 0.8x0.45m, surviving to 0.6m high, and built of similar brick to [120], albeit with a dressed stone capping. A downpipe or surface drain ran directly into the top of the external pipe at this point and there was a capstone with a suitably sized hole lying adjacent. On the other side of Wall [124] lay a small, U-shaped stone structure [126], which may have been related to the drainage system.

The gardens

The earliest feature in the garden area (Illus 19) was a substantial cut, [131] measuring 11x9.5m, up to 1.6m deep (Illus 21). The northern end was cut vertically through the subsoil, with the base rising steadily to the S. It was backfilled with crushed stone at the north-eastern end and a compact clayey silt to the south. This cut was contemporary with, or pre-dated the construction of the tenements. The purpose of this and the provenance of the crushed stone are unclear, though possibly related to site clearance prior to tenement construction.

Overlying this cut was a layer of compact dark grey, silty clay [133] that covered nearly all of Area 1. It appeared to have been deposited after the construction of the tenements as there were no visible wall cuts through it. Deposit [133] was at its thickest c.0.4m to the north end of the site, thinning out as the ground rises, before disappearing entirely about half-way up the garden area.

It is likely to represent a levelling deposit creating a relatively flat surface in the lower half of the site.

The garden area was enclosed and divided into separate areas for the individual buildings by a series of stone walls [101–5] built upon Deposit [133]. These were slighter than the walls of the tenements, typically 0.35m thick and built of two thin faces of uncoursed, roughly shaped sandstone tied together by larger blocks at intervals. The bonding material was a coarse lime mortar.

The south-east boundary wall [101] (Illus 20) survived to original height in places, up to 3.2m at the northern end, and had dressed capstones with regular marks from an extant iron fence. Towards the northern end, the wall had been repaired with red brick [202], possibly related to the construction of a substantial retaining wall running outside the excavation area to the east.

Walls [103] and [104] marked off the garden area for the corner tenement. These walls turned to form a diagonal passageway leading to the rear of that tenement. This passageway was built up with a somewhat bituminous silty clay deposit (108), which continued across the garden area. Wall (105) divided the garden areas of the two Gibson Terrace tenements.

The latest of the structures in Area 1 were two brick-and-concrete WW2 air-raid shelters. Both structures appear to be of identical form; Structure [130] (Illus 23) was only partially exposed. Structure [121] (Illus 22) measured 6.2x4.6m and consisted of two parallel rooms, sunk 1.6m into the geological subsoil. The walls were formed of steel-reinforced red brick, cement-rendered inside and with signs of additional internal support. Between these rooms lay a set of concrete steps descending from ground level to the floor level of the rooms, supported directly on the internal brick wall. At the base of the stairs, the walls swelled, most likely for additional support. The floor was of poured concrete. No internal features were seen. Large sections of the original reinforced concrete roof had collapsed into the structure.

A compact demolition rubble, up to 0.5m thick, lay over and in between the majority of the structural remains in Area 1. It consisted primarily of large sandstone blocks, crushed stone and mortar, broken ceramic pipes and occasional fragments of brick structures. The make-up of this rubble was consistent with the fabric of the buildings that stood here – *ie* it did not appear to have been mixed with any demolition rubble from the industrial works to the south-east. It also did not appear to have been disturbed substantially since the buildings were destroyed, except for the insertion of concrete fence foundations associated with the landscaping of the park area. There was a thin layer of topsoil, c.0.1–0.2m, lying over the rubble, with areas of turf and wood chippings on top.



Illus 24

Results of excavation in Area 2, overlaid on OS 3rd Edition Town Plan (1893)



Illus 25

General view of Area 2 facing SW, showing brick floors [204] & [205] with bounding walls, and clay-lined tank [223] in the background

19

Industrial Works

No substantial remains of the Etna Foundry, Bainfield Iron Works or Caledonian Engine Works were encountered during trial trenching. As a result, no excavations were undertaken in this area.

Area 2 – Viewforth Works – brick-floored building and clay-lined tank

Area 2 (Illus 24, 25) was targeted at a substantial brick floor [024] and a clay-lined tank [009] found to the north-east end of the site during the trial trenching phase. The building to which the floor belonged extended beyond the development area, and so only the south-west half was exposed. The whole area was buried under up to 2.1m of demolition rubble, mostly of crushed concrete and stone, but with larger fragments of brick, concrete, stone and metalwork throughout. It is most likely that this represented a mixture of rubble from the Viewforth Works and the 1950s buildings, but that had all been re-processed by the latest demolition works. The natural subsoil was a compact, gravelly orange sand.

The brick-floored building

The remains of a large, rectangular building were found to the north-east of the area. It was orientated north-east to south-west, measured 9m across and was exposed for

14m. Although heavily truncated, two brick surfaces, the bases of several stone walls, and a small extension survived. The main external walls [201], [211], [212]) were 0.65m wide, with a wider foundation course (c.0.8–0.9m), built from massive stone slabs. The sandstone was roughly coursed and bonded with a coarse lime mortar. There were some patches of cement render, although this may not have been original. Shallow (0.1m) construction cuts were visible for [201] and [211]. One further transverse stone wall [210] divided this end of the building into two rooms. It was of similar dimensions and construction to the external walls, although there may have been provision for a doorway between the two rooms at the south-eastern end as the stonework above the level of the floor appeared to have been squared off here.

There were several indications that the upper parts of these walls may have been of brick. The best surviving wall [211] had two rows of bricks bonded to the top, using what appeared to be the same mortar as the rest of the wall. Both bricks and mortar were different from those used in the adjacent extension to this wall (217, see below). Additionally, two square brick bases built into the internal wall [210] may have supported columns or pillars, again suggesting that the upper structure of the wall was not of stone.

A ceramic pipe ran through [201] across the western room to a brick structure [215] outside the north-western external wall [212]. The pipe was cut into the subsoil and



◀ **Illus 26**

Drainage structures underneath [215] facing SW, showing possible sump and radiating pipes



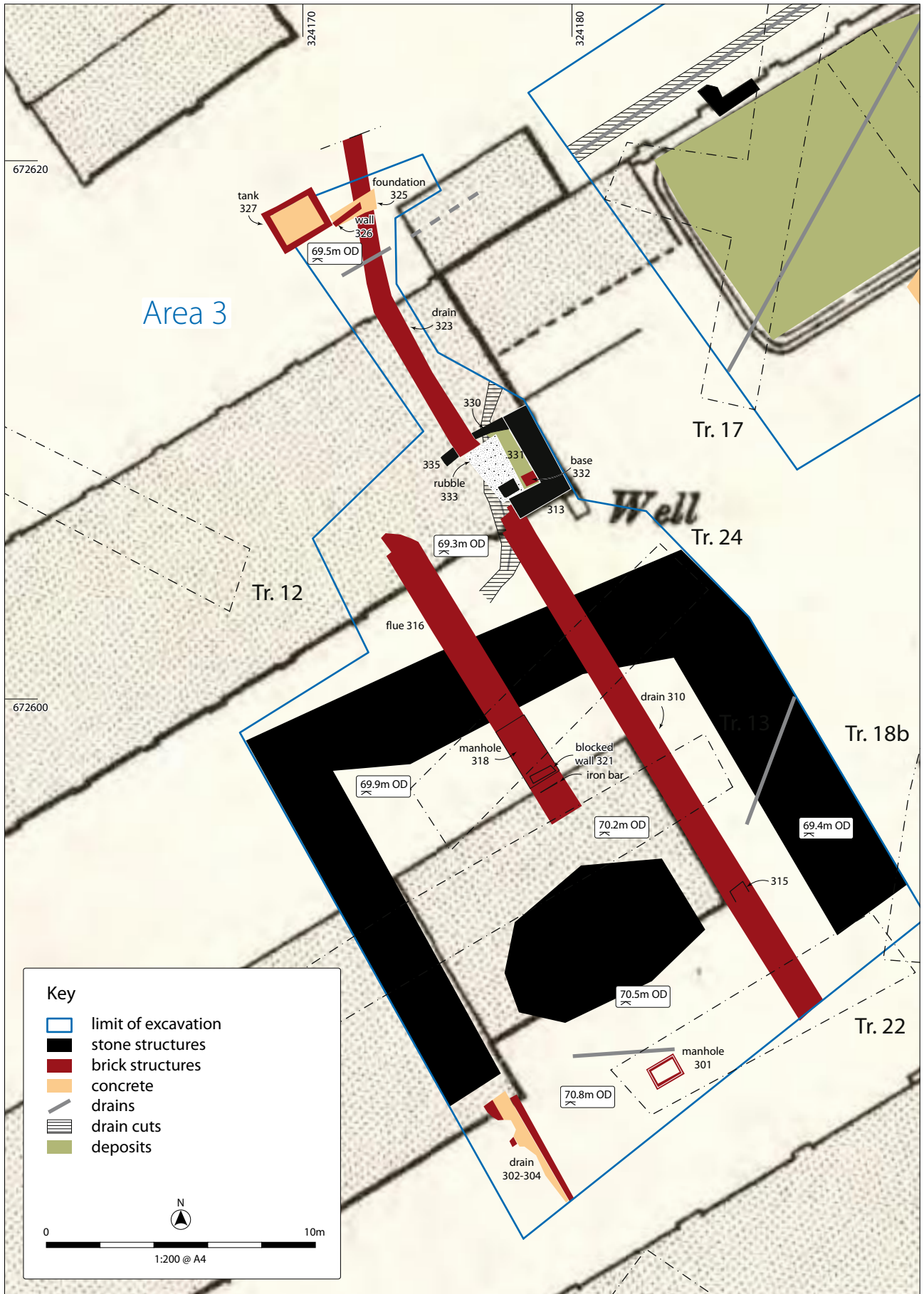
◀ **Illus 27**

Section through clay-lined tank [223], facing NE



◀ **Illus 28**

Detail of clay lining of tank [223], facing NE



21

Illus 29

Results of excavation in Area 3, overlaid on OS 3rd Edition Town Plan (1893)



had been covered by the floor levelling deposit [225]. The brick structure [215] measured 2.4x1.2m and survived to a height of 0.7m, mostly below ground level. It enclosed the end of the drain and also held a square iron ring (Illus 26), presumably to allow access for inspection. A series of further ceramic drains ran through, or near this structure: one along the external wall of the building, and several more heading north, north-east, west-south-west and south-west. The latter two ran towards and through brick Flue/Drain [323] in Area 3 and the clay-lined tank [223] respectively.

The two brick floors [204 and 205] were set on a levelling deposit [225] of mixed ash, mortar and sand, and also overlaid the foundation course of the external walls. Two brick manholes [207 and 213] were built into Surface [205] and had been blocked with brick. Manhole [207] related to the drain running beneath the floor. A dressed stone inspection cover lay below the blocking of the manhole and over a matching open pipe segment.

A third manhole [208] was built into Floor [204]. It had been infilled with concrete and is of unknown function. Two small patches of concrete had been poured on the brick surfaces.

Immediately to the south-west of [215] a small extension had been constructed against the external wall of the main building. Wall [217] was a projection of external wall [211], while parallel Wall [219] rested on the south-west wall of Structure [215]. Both were of a more modern yellow brick construction than the adjacent structures, and enclosed a poured concrete surface [218] measuring 2.4x1.7m. A small footing or machine base was set into this surface. The extension had been truncated on the north-western side.

A number of massive reinforced concrete bases, and a substantial pipe cut relating to the 1950s building truncated Floor [204] and Wall [201].

The clay-lined tank

The tank [009/223] (Illus 27) was fully exposed, and a slot excavated through it by machine. It measured 11.6x7.5m, 0.7m deep and had rounded corners. It survived only as a cut [223], with gently sloping sides, lined with a thick grey clay [220], packed with angular stones of around 0.2m diameter [221]. The fill of the tank was a hydrocarbon-rich dark grey clay-sand [220] (Illus 28). No evidence of any superstructure was encountered, although this may have been removed by later buildings.

A small fragment of stone wall [224] survived to the north of the tank. It measured 1.8x1.2m, and only the lowest course survived, bonded with a cement mortar. It is unclear whether this wall was associated directly with the tank, or with the buildings that superseded it.

Area 3 – Viewforth Works – brick ducts/drains and other structures

Area 3 was located immediately south-west of Area 2, targeted at the brick flues/drains uncovered in Trenches 13, 22 and 24. The structures lay under some 0.7–1.7m of mixed rubble, consisting largely of crushed stone and concrete, with frequent structural fragments of stone, bonded brick and metalwork. All exposed structures were cut into the subsoil, a gravelly orange sand. Two large areas of deeper truncation are likely to be related to the construction of the 1950s buildings.

Ducts and drains

Four parallel linear brick structures were found running north-west to south-east across the area. The most substantial of these [005/316] (Illus 30) was a large duct, measuring 12.3x1.4m, and standing to height of 1.3m in places. It had been substantially truncated, although some parts survived to full height. The north-west end had been completely removed. The structure was built in a narrow foundation cut [319]. It was built entirely of yellow brick, bonded with a lime/cement mortar mix, and consisted of a floor flanked by two parallel walls, capped with a brick arch. In places, thin wooden slats were attached to either side of the floor with large nails. Whether these were the last remnants of a wooden base, or served some other purpose is unclear. The walls were joined at intervals with iron tie rods, 3 courses below the springing of the arch, which also served the function of carrying a large cast iron pipe through the length of the structure. At the south-south-east end, the structure terminated with a further brick wall. The side walls for the last 1.5m here did not carry a springing course for the brick arch, suggesting that the top of the structure was open at this point. A short length of brick arching lay just to the north-north-west. At this point the structure had been blocked with a brick wall [321] (Illus 32). This wall carried a cast iron insert to allow the pipe to continue through. Immediately adjacent to this lay a further opening – this time marked by a stone lintel [318] (Illus 31) and the entry of a ceramic drain pipe running at a high level across the structure. The upper brickwork here was bonded using a liberally applied cement mortar, suggesting that this opening had either been modified to accept the ceramic drain or was entirely a later addition. This may have been associated with the blocking wall and represents a change of use of the duct.

Running parallel, 3m to the east were the truncated remains of a brick drain [006/310] (Illus 33). It measured 1.1m across and was exposed for some 22m, continuing beyond the limit of excavation. The drain sloped to the north-north-west into a small stone structure [313/330]. It consisted of a red brick base and two parallel brick walls. Although the latter were largely truncated, they survived to 0.6m in places. The entire structure was built in a narrow cut [311]. A large proportion of broken stone in the rubble infilling the drain points to a stone capping,

Illus 30 ▶

*Brick flue [316] facing S, with small segment
of wood lining and arched roof visible*



Illus 31 ▶

*View through manhole [318] showing
blocking wall [321], facing S*



Illus 32 ▶

*View of flue [316] facing N, after removal of
S wall, showing blocking wall [318] and iron
pipe support*





◀ **Illus 33**

Brick flue/drain [310], facing N

24



◀ **Illus 34**

Detail of rubber lining (315) in flue [310], facing S



◀ **Illus 35**

General view of stone building [313]/[330] facing E, showing brick support [332] and drains/flues [310] and [323]

Illus 36 ▶

*View of base of cut [334], showing possible
machine base [336]*



Illus 37 ▶

*General view of flue/drain [323] facing S,
showing drain from area 2 in foreground and
structure [313]/[330] in the background*



Illus 38 ▶

*Brick tank [327] facing W, showing concrete/
brick structure [325]/[326] and brick flue/drain
[323] in the foreground*





◀ Illus 39

Concrete floor of tank [327] exposed, facing S



◀ Illus 40

Remains of brick flue/drain [302-4], facing E

26



◀ Illus 41

Manhole [301], facing W



Illus 42

General view of Area 3 facing E, with all features removed

although this did not survive *in situ*. In places, the brick base had been lined with a white rubbery substance [315] (Illus 34) 0.03m thick. It is likely that this continued for the full length of the drain, and would have improved its ability to carry liquids effectively. A small ceramic drain ran underneath the brick base.

Another, similar brick drain [323] (Illus 37) was exposed after enlarging the excavation area to the north. It continued on the same north-north-west to south-south-east alignment as [310]. The fall over the visible length was 0.15m from south to north. This drain was of a slighter construction than [310], the side walls only one brick thick with an overall width of 0.77m. It was truncated by a ceramic pipe (from Area 2) and a later brick/concrete structure [325/326] at the north end.

One last drain-like structure was encountered in the south-west corner of the area [302–4] (Illus 40). Although heavily truncated, the remains of two brick walls and a poured concrete base were visible. The structure measured 4.5x1.3m, standing up to a maximum of 0.5m, in a shallow cut [308].

Buildings and other structures

Between drains [310] and [323], a small stone structure, measuring 3.6x2.2m, was uncovered (Illus 35). The S and E sides of this structure were defined by a substantial L-shaped stone wall base (313), 0.84m thick, standing to 0.3m. It was built of large, undressed sandstone blocks, bonded with a coarse lime mortar and cut into the natural subsoil. The floor of brick drain (310) continued through this wall, the side walls abutting (313). The third remaining side of the structure, to the N, was a stone wall (330/335), also abutting (313), but had a much slighter

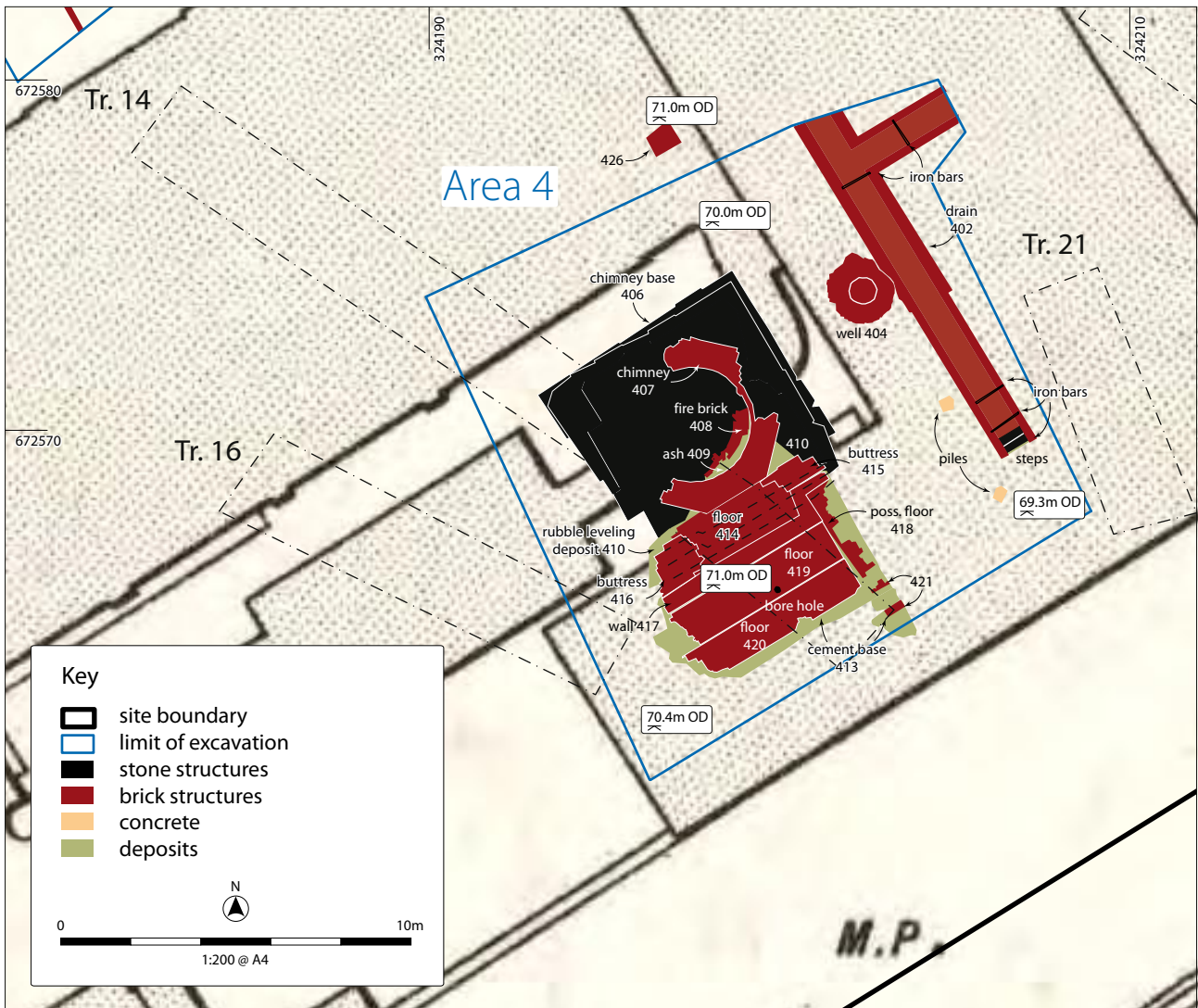
construction – only 0.4m wide. Instead of being cut into subsoil, this wall was built on an ashy deposit (331) that ran across the interior of the structure. A space had been allowed for drain (323) to run through, here with side walls intact. It should be noted that the relative levels of the two flues entering this structure did not match, with (310) some 0.1m lower than (323) – implying that they did not physically join up. A small brick pad (332) in the SE corner of the structure may have been a machine or pillar base. A ceramic drain ran through this structure from the N, leaving to the SW. This drain cut through the ashy deposit (331) but ran under the N wall. The cut widened in the middle of the structure, and was filled with mixed industrial rubble (333). At the bottom of the cut, a stone slab (Illus 36) may have been part of an *in situ* machine base.

Just W of the N end of drain (323), a large rectangular tank was exposed. It measured 2.1x1.7m and was built in a cut (328) some 0.8m deep. It was made of lime mortar-bonded red frogged brick, and had a poured concrete base (Illus 39). There was no evidence of any pipes or machinery running into this structure.

A short length of brick wall (325, Illus 38) ran ENE from this tank. It was set in a coarse concrete base (326), which truncated drain (323). The purpose of this wall was not clear but it represented the latest of the structural remains in this area.

At the S end of area 3 stood a small brick manhole (301, Illus 41) measuring 1.1x0.8m, surviving to a height of 0.3m in a narrow construction cut (305). There was no evidence of a floor, and no pipes were seen to enter the structure (though a short length of ceramic drain ran NW-SE immediately to the N).

Illus 42 shows Area 3 after the removal of all archaeologically significant features.



Illus 43

Results of excavation in Area 4, overlaid on OS 3rd Edition Town Plan (1893)

Area 4 – Viewforth Works – chimney base and associated structures

Area 4 (Illus 12, 43, 44) was located 13m to the south-east of Area 3, and was targeted at the remains of a substantial stone and brick chimney base uncovered in Trench 14. The remains were buried beneath two types of rubble; a mixed, crushed material rubble seen elsewhere on site, but also a more layered, less disturbed brick and mortar rubble as noted in the trial trench stage. The latter was more evident on the western part of the area, suggesting that this area had been less affected by the recent demolition activities. Geological subsoil was encountered approximately 2m below pgl. Although still essentially a gravelly sand, there was a higher clay content and the ground was much wetter, though this may be related to the presence of the Union Canal some 15m to the south-east.

Chimney base

The chimney was supported on three stepped layers of massive sandstone slabs [406] (Illus 53). This base measured

6.6x5.3m, with typical slab sizes of 1.2x0.9m, each one some 0.2m thick. The joints between slabs were packed with a grey clay. Built directly onto this surface was the base of the brick chimney [407] (Illus 45), with an external diameter of 4.8–5.2m, and 3.2m internally. A little over half of the circumference remained (although some of the missing western section was recorded during the evaluation, standing between 1 and 9 bricks high and 6 bricks thick. It was built of red, unmarked bricks bonded with a fine lime mortar. A number of plain white firebricks were found *in situ* inside the south-east edge of the chimney. Over these and the stone floor, lay a black ashy/sooty deposit [409].

Abutting the chimney to the south-east lay a compact rubble deposit [410] (Illus 46) consisting mainly of stone and brick fragments and crushed mortar. Into this was cut (423) a second rubble deposit (413), containing a significant volume of cement, which forms a levelling for a series of walls and floors (see below and Illus 47). This may suggest that the latter structures were not constructed at the same time as the chimney itself.



Illus 44

General view of Area 4 facing NE

The first of these structures to have been built was wall [417] – which ran west-south-west to east-north-east with a small kink at the latter end. It was visible only as a separate line of brickwork in between Floors [414] and [419], measured 0.5m across and was truncated at both ends. To the south-east of this wall lay three separate, but flush, brick surfaces [418–20]. Floor [418] was located to the north-east of the other two, lying within the kink of Wall [417]. These brick surfaces had been substantially truncated during demolition. Surface [419] was stained black by a fine sooty residue. A geotechnical borehole had been drilled through this surface. Surfaces [419] and [420] had been truncated to their south-west end. The above structures were all built of the same unmarked red brick, bonded with a light sandy mortar.

The fragmentary remains of a small brick structure [421] (Illus 48) of two parallel walls were found just south-east of Floor [418], also built on the cement-rubble levelling deposit. Surviving only one brick high, it was filled with a sooty black clay-silt. This may represent the remains of a small burning pit or an infilled drain/flue.

A further brick floor [414] was constructed in between wall [417] and the chimney. Set on a shallow, ashy levelling layer [412], it supported two solid brick structures [415] and [416], which may have acted as crude buttresses for Wall [417]. They were constructed of the same brick and sandy mortar as the floors, and had been substantially truncated, making it difficult to establish their original shape. They stood to a height of 0.5m.

Other structures

Some 3.5m to the east of the chimney base, a substantial brick duct [402] (Illus 49) was exposed. It ran from beyond the northern limit of excavation to a terminus 11m to

the south-east. A perpendicular off-shoot ran off to the north-east near the northern end. The structure was built of red, frogged brick, bonded with a fine cement mortar. The side walls were three bricks wide and braced with iron tie-rods, which also carried a cast-iron pipe. The brick base was lined with cement, and at the south-east end were two stone steps, presumably to allow access (Illus 50). Over the cement was a layer of oil-rich sooty gravel [424] overlain by a compact rubble [403]. The structure was cut 0.3–0.4m into the natural subsoil, and was almost completely level, which suggests use as either a flue or a service duct, as opposed to a drain.

Abutting [402] to the west was a circular brick structure [404] (Illus 51), cut some 0.75m into the geological subsoil. It measured 0.85m across externally, with an internal diameter of 0.8m. The inner row of bricks were curved to achieve the tight inner curve (in contrast to the much wider chimney base, which relied on standard bricks mortared to form the circle). The base of the structure was also of brick (Illus 52), filled with a compact ashy gravel [425], which in turn was overlain by a firm clayey-silt-rich rubble.

A small section of a brick surface [426] was visible in the northern edge of excavation. This was thought to be the southern continuation of Drain [310], but since it was entirely within demolition rubble, it is more likely to be a disturbed fragment.

Two reinforced concrete piles were uncovered adjacent to the southern end of Duct [402]. These probably related to the 1950s building.



◀ **Illus 45**

Detail of brick chimney [407] facing SE, showing ash/soot deposit [409] and firebricks [408], with buttress [415] behind



◀ **Illus 46**

Section of brick chimney [408] facing SW, showing rubble infill [410] behind



◀ **Illus 47**

General view of floors [414], [418] and [420] facing NW, with cement base [413] visible beneath

Illus 48 ▶

Detail of brick structure [421] and ashy clay/silt [422], facing NE



Illus 49 ▶

General view of brick drain/flue [402] and well [494] facing NW. The top stone step is just visible in the foreground



Illus 50 ▶

Brick drain/flue [402] after excavation facing SE, showing cement lined base and stone steps





◀ **Illus 51**

Detail of brick well [404], facing SE



◀ **Illus 52**

Brick well [404] with W side removed, showing brick base, facing E



◀ **Illus 53**

Area 4 with all features (except the sandstone chimney base) removed, facing SW



Illus 54a

Bainfield Place Tenements - main features overlaid on OS 1st Edition (1851)



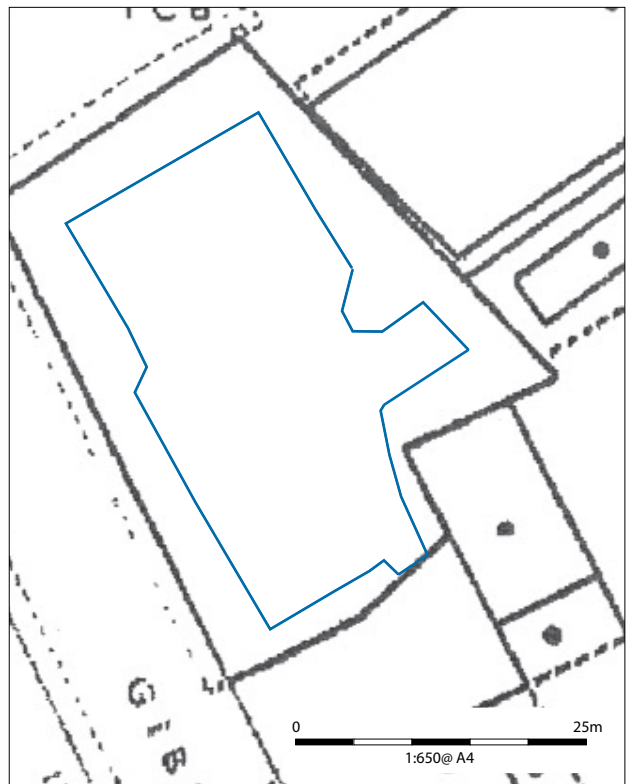
Illus 54b

Bainfield Place Tenements - main features overlaid on OS 2nd Edition (1877)



Illus 54c

Bainfield Place Tenements - main features overlaid on OS 3rd Edition (1893)



Illus 54d

Bainfield Place Tenements - main features overlaid on 1982 OS



4. DISCUSSION

4.1 Bainfield Place Tenements

The primary source of information regarding the construction phases of these buildings is the Ordnance Survey maps (Illus 54). No other documentary evidence was found in a search of easily accessible records. From the map evidence, it can be seen that the first tenements were built between the 1850s and 1870s on land formerly belonging to Bainfield House. The eastern boundary of the estate defined the eastern limits of the tenements and their gardens and indeed the boundary between the Viewforth Works and other industrial buildings. It is possible that the large, early cut [131] in the garden area may have been backfilled with rubble accumulated from replacing the estate wall with a new one.

The tenements were constructed in two phases: the southernmost tenement facing onto Gibson Terrace was added at some point between the late 1870s and early 1890s, along with the necessary additions to the garden walls.

There is no mapped evidence of the WWII bomb shelters, although they are visible on wartime aerial photographs

(Illus 55). It may be suggested that the iron railings fixed to the top of the boundary wall [101] were removed during wartime. Some further buildings are visible in the gardens in this photo. These do not appear on OS maps nor were any traces found during the excavation.

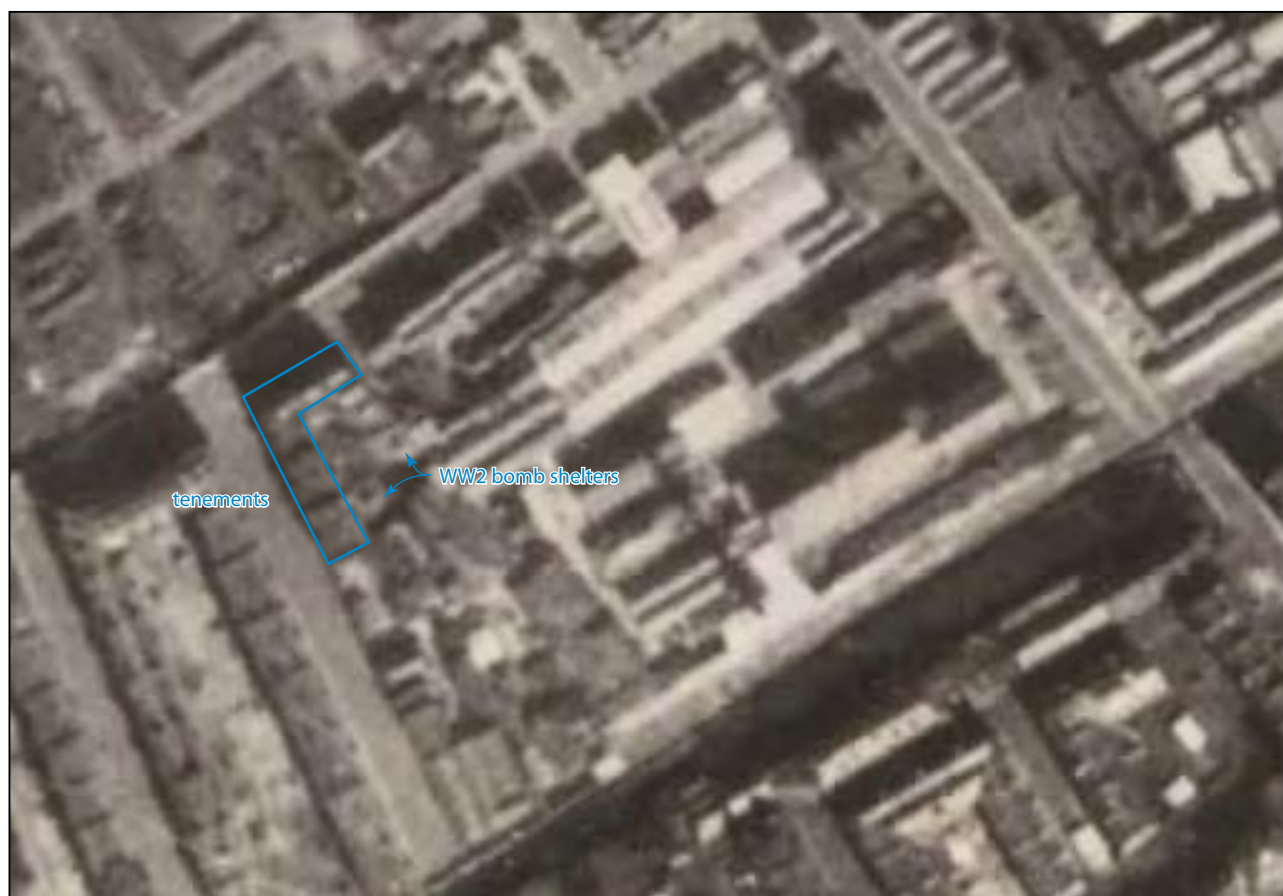
The tenements last appear on the 1976 OS map (not illustrated). By 1982 they had been demolished. The date of construction of the park is not known, but is likely to have been soon afterwards, possibly re-using railway sleepers from the recently decommissioned Caledonian Railway line to the north.

The excavations revealed only the very lowest, sub-surface remains of the described structures, and as such add little further understanding to the archaeological record. Only some details of internal wall supports and drainage have not previously been mapped – and these remains are rather fragmentary. No *in situ* floors, garden surfaces or small finds were encountered.

4.2 Industrial Works south of Bainfield Place

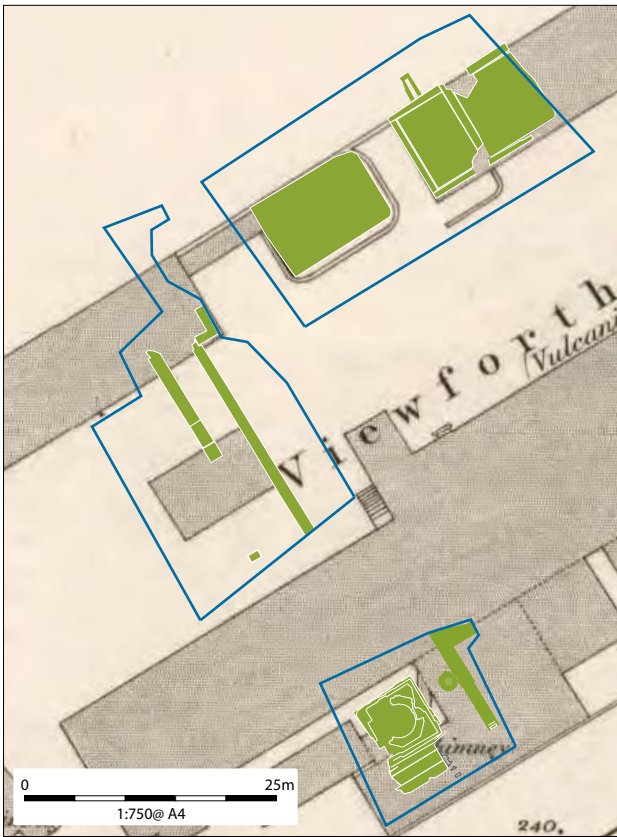
Several small industrial concerns, including the Bainfield Iron Works and Caledonian Engine Works are visible within the south-east corner of the former Bainfield

34



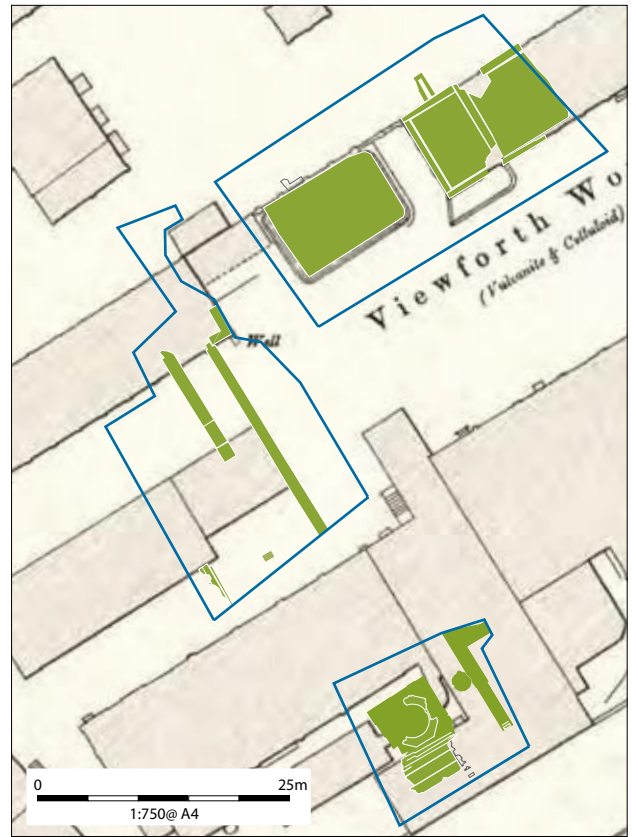
Illus 55

1946 OS air photo, showing location of WW2 bomb shelters



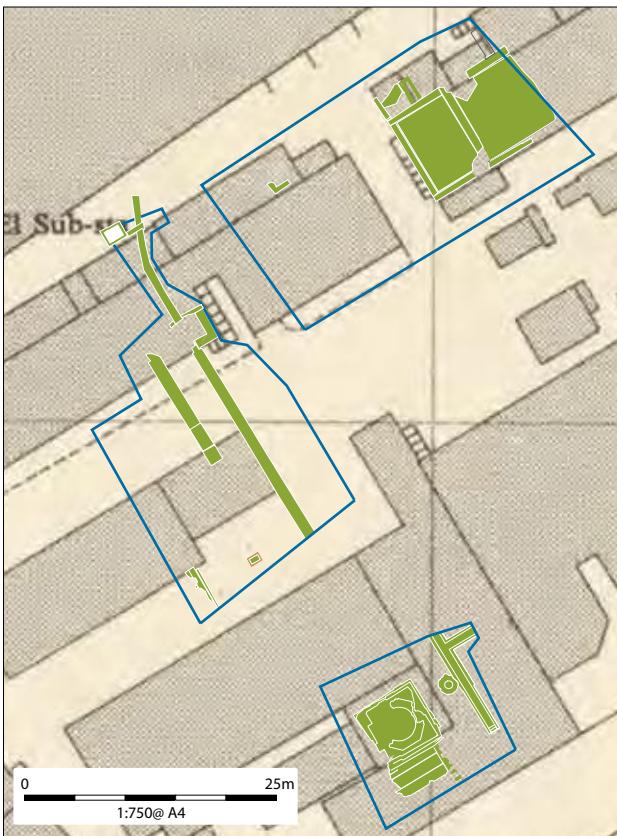
Illus 56a

Viewforth Works - main features overlaid on OS 2nd Edition map (1877)



Illus 56b

Viewforth Works - main features overlaid on OS 3rd Edition map (1893)



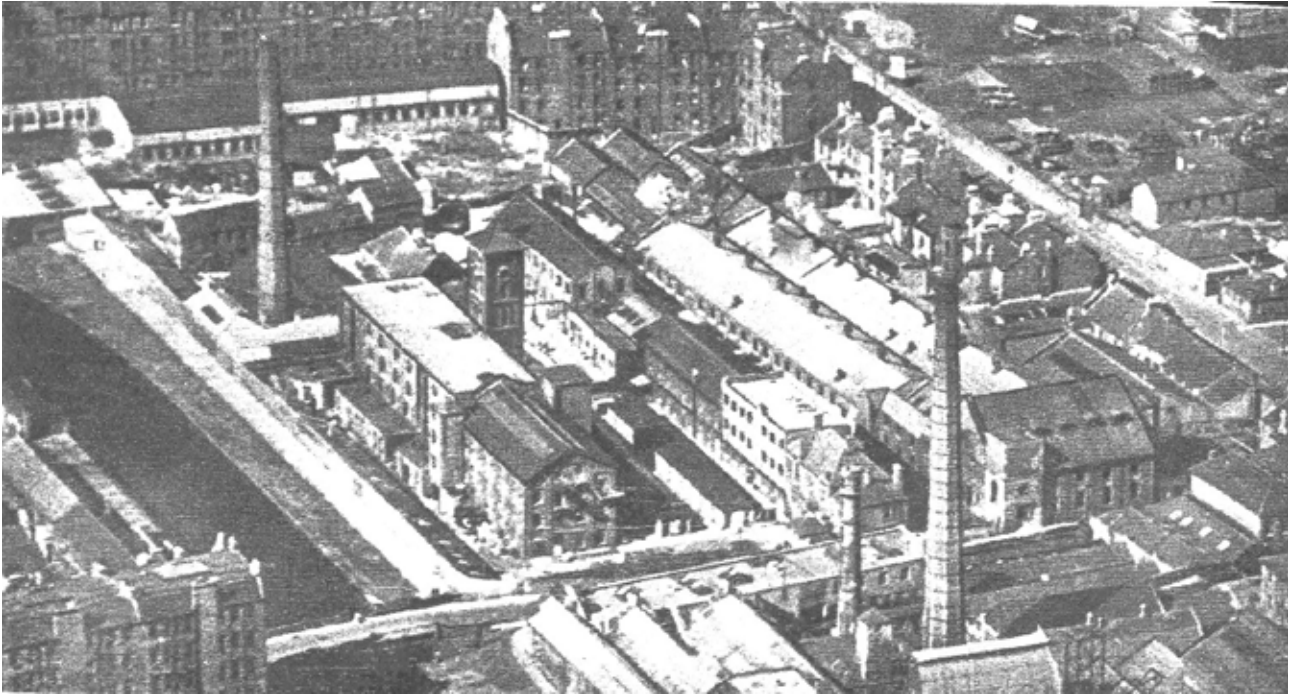
Illus 56c

Viewforth Works - main features overlaid on OS 1942 map



Illus 56d

Viewforth Works - main features overlaid on OS 1982 map



Illus 57

Aerial view from E

36

Estate from the 1876 OS map (not illustrated). By the 1890s (Illus 2) these had been joined by the Etna Iron Foundry. All of these works remained in existence during the lifetime of the adjacent Viewforth Works and were demolished in 1957.

The trial trenching did not reveal any remains of these works. It is likely that they were completely removed during the re-development of the site.

4.3 Viewforth Works

The Viewforth Works was constructed by the Scottish Vulcanite Company in 1861 on a large area of open ground bounded to the east, south and west by Viewforth, the Union Canal and the Bainfield Estate respectively (Bremner 1869, 368). The company was founded by shareholders of the North British Rubber Company, which had taken over the adjacent Castle Silk Mills some 6 years previously. The original works consisted of one large 4-storey building with seven smaller 2-storey structures. The process of producing vulcanite involved breaking, washing and kneading the raw rubber, mixing it with chemicals, rolling the result into sheets and heating it to form a hard, plastic-like substance (*ibid*). Much of the machinery was driven by steam. The main early products of this factory were combs (some 24,000 a day) and jewellery, although a variety of surgical instruments, knife handles, card trays and even neck ties were also made. The Scottish Vulcanite Company was absorbed by North British Rubber in 1910, which in turn was renamed to Uniroyal in 1966.

Nearly all the structures uncovered in the excavation areas relate to the earliest phase of the Viewforth Works, as seen in the 1876 OS map (Illus 56). By the 1890s, the northern end of the site was being developed, along with an extension to the small structure just north of the main building. In the late 1940s, the northern end of the site was completely enclosed in one large building. By 1948 many of the existing buildings had also been altered. The large building in Area 2 had been added on the north side, and the clay-lined tank was subsumed under a large extension of another building to the south-west. The latter building was also added on the north side.

It has not been possible, given the slightness of the remains to identify the specific function of some of the buildings uncovered during the excavation. The large stone building in Area 2 is of unknown purpose; the clay-lined tank may have been an oil sump or settling tank. The stone structure in Area 2 - which, overlain on the OS map, can be seen to be the south-east corner of a much larger building - appears to be related to drainage or a flow of liquids from the main Viewforth building. The brick tank structure to the north of Area 3 may be the electrical substation marked on the 1948 OS map. The large, vaulted brick duct, and the similar structure in Area 4 have no slope and therefore must have carried hot air, steam or another gas, or may simply have been accessible service ducts for the pipes they carried. The chimney (Illus 57) appears to be the only one for the Viewforth Works, and so must have vented all major fumes, smoke and so on from the whole complex. The function of the brick surfaces immediately to the south or of the circular structure to the east is unknown.

The buildings on the south half of the site, including all of those uncovered in the excavations, were demolished in 1957, along with the other industrial works to the west. They were replaced with a much larger building for the mass production of rubber hoses. This building was later re-used as a high-speed canning plant for the Fountain Brewery, which took over the site after the closure of the Viewforth Works in 1973.

5. CONCLUSIONS

The archaeological evaluation of the site of the proposed development at Fountainbridge revealed that the site had been extensively disturbed during two phases of demolition. Nevertheless, some areas of archaeological remains had survived in four areas. These remains were explored further with four areas of open excavation investigating the full extents of the surviving archaeology. Therefore, no further archaeological work is required. The results revealed the foundations of the tenements at Bainfield Place as well as above ground remains related to the Viewforth Works. No artefacts or environmental samples were retrieved from the excavation.

6. REFERENCES

6.1 Bibliography

Bremner, D (1869) *The Industries of Scotland*, Adam and Charles Black, Edinburgh.

6.2 Cartographic sources

Ainslie, J (1804) *Old and New Town of Edinburgh and Leith with the proposed docks*, Edinburgh.

Kirkwood, R (1817) *This plan of the City of Edinburgh and its environs*, Edinburgh.

1851 OS Edinburgh Sheet 38 (Town Plan, 1st Edition 1:1056).

1877 OS Edinburgh Sheet III.11.7 (Town Plan, 2nd Edition 1:500).

1893 OS Edinburgh Sheet III.11.7 (Town Plan, 3rd Edition 1:500).

1944 OS Edinburghshire Sheet III.SE (6-inch, 1:10560).

1946 OS Air Photo Mosaic Sheet NT27SW.

1948 OS Sheet NT2472NW (Edition A, 1:1250).

1976 OS Sheet NT2472NW (1:1250).

1988 OS Sheet NT2472NW (SIM, 1:1250).

6.3 Internet sources

<http://www.nbrinklies.com/thebusiness1946-1972.html>



APPENDICES

Appendix 1 – Site register

Trench register

Trench no.	Orientation	Length (m)	Depth (m below OGL)	Description
01	E-W	16	0.3	Turf and topsoil (0.1m) and crushed stone (0.2m) overburden. Stone walls (027, 028, 029), concrete foundation (030) and ceramic drains.
02	NW-SE	15	0.4	Turf and topsoil (0.1m) and crushed stone (0.3m overburden, Stone walls (031, 032) and ceramic drains.
03	ENE-WSW	15	1.5-2	Overburden principally consisted of crushed brick. Brick manhole (002) and concrete pad (003). Trial pit excavated to 3m below OGL at ENE end.
04	ENE-WSW	21	1-1.6	Concentrated crushed brick deposit in overburden to WSW end. Mixed demolition rubble elsewhere. Cast iron pipes and brick/concrete building fragment (026) cut by deeper demolition.
05	NNW-SSE	21	0.2-0.3	Mixed rubble overburden. Trial pit excavated to 2.5m below OGL ant NNW end.
06	NE-SW	8	2	Compact brown clay overburden, mixed with occasional brick and stone fragments.
07a	NW-SE	7	2	Banded ash and brick overburden. Deeper truncation to SE up to 2.5m below OGL.
07b	NW-SE	6	2.5	Mixed rubble overburden.
08	E-W	13	1	Banded ash and brick overburden. Deeper truncation to S up to 2m below OGL.
09	ENE-WSW	41	0.4-0.7	Mixed rubble overburden. Several deeper truncations to 1.5m below OGL.
10	ENE-WSW	50	1.8-2.2	Mixed rubble overburden, mixed with some ash. Reinforced concrete pad (001) with associated brick wall footings. Trench extended at W end to expose fully. Trial pit excavated to 2.5m below OGL at E end.
11	NW-SE	13	1-1.7	Mixed rubble overburden with concentration of large stone fragments to NW end.
12	NW-SE	14	1.3-1.5	Mixed rubble overburden.
13	ENE-WSW	17	1.3-2	Mixed rubble overburden. Band of silty clay (007) sealing brick structure (005). Base of brick drain (006). Deeper truncation to 1.8m below OGL at WSW end.
14	NW-SE	25	1.3-1.6	Mixed rubble overburden to the NW, banded ash, plaster and crushed brick to SE. Sandstone chimney base (018), brick chimney (016), soot (017) and brick surface (015).
15	WNW-ESE	12	1.7	Mixed rubble overburden.
16	NW-SE	16	1.8-1.9	Banded ash, plaster and crushed brick overburden.
17	NNE-SSW	21	1.3	Mixed concrete and brick rubble overburden. Clay-lined tank (009) and hydrocarbon-rich sandy fill (028). 5m extension dug to the WNW to find extents.
18a	NW-SE	15	2.8	Loose, mixed rubble overburden.
18b	NNE-SSW	12	3	Loose, mixed rubble overburden. Concrete fragment (004) actually not in-situ.
19	NW-SE	18	2.1	Mixed demolition rubble overburden. Brick surface (024) on levelling deposit.
20	-	-	-	(not excavated)
21	NNW-SSE	8	2.4	Mixed demolition rubble overburden.
22	ENE-WSW	10	0.5-1.1	Very compact mixed demolition rubble overburden. Continuation of brick drain (006) and dark silty clay (007) from tr 13, brick manhole (027) at W end.
23	ENE-WSW	14	1.4-1.9	Mixed demolition rubble overburden.
24	NE-SW	13	0.5	Mixed demolition rubble overburden. Continuation of brick drain (006/023), silty clay (007) and brick duct (005/019) from tr 13, stone capped brick manhole (020) built onto 019. Deeper truncation to NW edge (unexcavated) and NE end.
Total	-	421	-	-

Context register

Context no.	Area	Description
Trial Trenching		
001	TR10	Concrete slab
002	TR03	Manhole base
003	TR03	Concrete slab
004	TR18b	Concrete slab
005	TR13	Brick structure (S end of 019)
006	TR13	Base of brick flue/drain
007	TR13	Topsoil
008	TR13	Cut for brick structure 005
009	TR17	Clay-lined tank
010	TR14	Brick wall
011	TR14	Light grey clay
012	TR14	Light brown clayey sand
013	TR14	Dark brown silt
014	TR14	Plaster and brick rubble
015	TR14	Brick surface
016	TR14	Base of brick chimney
017	TR14	Black soot
018	TR14	Sandstone slabs
019	TR24	Brick structure (N continuation of 005)
020	TR24	Brick manhole
021	TR24	Remains of brick flue/drain (N continuation of 006)
022	TR24	Yellow-brown silty sand
023	TR24	Dark brown silt surrounding 021
024	TR26	Brick surface
025	TR26	Black gravel bedding for 024
026	TR04	Brick/concrete building fragment
Excavation		
101	AREA01	Sandstone 'L' shaped wall marking limit of garden/extent of factory site. Damaged by previous demolition of site. Blocks are of differing dimensions and uncoursed. Blocks which make up body of wall are squared and roughly dressed to give smooth façade. Cap stones on section (a) *see diagram* are dressed to a higher standard than those which make up the body of the wall. There are some remnants of cement which was used as a render, visible on the body of wall and cap stones. The bonding material is a lime mortar which is approx 0.04m thick. The cap stones in section (a) have been drilled and filled with iron railings and plugged with lead. Railings subsequently removed during WWII to be melted down for use in ammunition factories. Wall at (a) bulges slightly which may have been caused by collapse of structures in factory site, this would also explain the need for repairs at section (b) as outlined in 102. Capstone dimensions: 0.96m x 0.19m x 0.36m. Wall dimensions: a: L: 14M; b: L: 17M; W: 0.36M; D: 3.2M max height taken from outer limit of excavation.
102	AREA01	Red brick repairs in sandstone wall 101. 10 courses high at maximum height. English garden wall design. Occurred due to possible collapse of associated structure or wall positioned at the North west. Bonded with fine lime mortar, no inclusions. Evidence of cement render on surface. Bricks are unfroglged. L: 2.6M; W: 0.4M visible; D: 1M
103	AREA01	Sandstone wall associated with wall 101. NE-SW running portion of wall running perpendicular to 101. Similar construction, i.e uncoursed. Stone dressed and smoothed. Grey concrete render topped with rounded capstones. Bonded with coarse lime mortar. Capstone dimensions: 0.3m x 0.8m x 0.17m. L: 1M; W: 0.35M; D: 1.3M.



Context no.	Area	Description
104	AREA01	Curved, roughly E-W aligned stone wall with horizontal slabs for foundation overlaid by row of 2 vertical slabs. Garden wall abutted by deposit 108 at north and east. Truncated at west end. L: 17.5M; W: 0.3M; D: 0.56M
105	AREA01	NE-SW. Only foundation slabs visible. Abuts wall 106 at SW and 104 at east. Overlying pipe at NW corner. L: 0.7M; W: 0.5M; D: 0.1M.
106	AREA01	E-W running brick wall of tenements. Possibly same as 124 at south east. Possibly has a brick manhole at corner with 113 higher up but very little remains. Also has a possible recess near east end. Ceramic pipe running parallel to wall. Row same as for 124. Abutted by wall 113 at south and garden wall 105 at north which is built over the pipe. Height: 0.9m; Width: 0.8m.
107	AREA01	E-W back wall of tenement separated from 106 by possible vennel with pipe. Abutted at south by 114, 115 and originally 117. Truncated in middle by modern concrete. Height: 0.6m
108	AREA01	Very compact, black silty clay deposit over garden area at east and between walls 103 and 104
109	AREA01	NE-SW running internal wall abutting 106 at NE. Abuted by 110 and 111 at west which suggests it may have been part of a staircase foundation. Height: 0.2m
110	AREA01	E-W running wall abutting 109 at SE. Possibly foundation for staircase but relationship with isolated stone slabs at west uncertain. Height: 0.12m
111	AREA01	E-W running wall, parallel to 110. Height: 0.25m
112	AREA01	NE-SW running wall abutting 106 at north east. South west end unclear and truncated - possibly carried on further. Some stone slabs are present at south west but do not appear to be aligned, suggesting this is a possible entrance. Height: 0.6m
113	AREA01	NE-SW running wall abutting 106 at north east and continuing into L.O.E at SW. Appears to have been dug into natural slope of ground, as shown on east side of the wall. Tenement to east not present - possibly due to their higher position on slope. Height: 0.5m
114	AREA01	NE -SW running wall on west side of vennel. Abuts 107 at north east. Possibly carried on southwards but area truncated by modern concrete deposit. Abutted by 116 at south west. Height: 0.25m
115	AREA01	NE -SW running wall, abutting wall 107 at north east and continuing into southern limit of excavation. Abutted by 116 at east and 123 at west. Height 0.4m
116	AREA01	E-W running internal wall abutting wall 114 at east and 115 at west . East end slightly truncated by modern concrete. Height: 0.35m
117	AREA01	NE-SW running wall abutted by 123 at south west. South west end truncated, wall probably continues southwards. North east end of wall is cut by pipe. Possibly originally abutted wall 107 at north east. Height: 0.2m
118	AREA01	E-W running wall on same alignment as wall 107 but separated by pipe and cut for pipe. Continues westwards inot limit of excavation. Possibly abutted by wall 119 at north. Height: 0.9m
119	AREA01	NE-SW running wall with manhole 120 built into it. Continues into northern limit of excavation.
120	AREA01	Rectangular brick manhole with pipes coming out at north, south and west. Associated with 119. Dimensions: 1.2m x 0.7m x 0.45m
121	AREA01	Brick constructed WW11 air raid shelter comprising of 2 small rectangular rooms parallel to each other with a central corridor and concrete staircase. Aligned N-S. Room measurements: 1.55m x 4.1m. Corridor: 0.7m wide. Walls are 0.23m thick. Double bonded with occasional steel rebar reinforcement. Bonded with a mid-brown sandy cement. The internal face has a plaster render and the concrete roof has collapsed into the structure. Both rooms are filled with collapsed material. The walls are cut into the natural gravel/stone rich sand. The walls are up to 1m high and at least 0.5m below ground level.
122	AREA01	Part of cut for wall 115. Only part visible, not excavated.
123	AREA01	E-W running internal wall abutting wall 115 at east and wall 117 at west. Height: 0.25m
124	AREA01	E-W running wall, probably same as 106 with same pipe running along its north edge. Runs into east limit of excavation. Has brick manhole 125 inserted in middle and stone structure 126 abutting it at south. Possibly the only preserved part of tenement in this higher ground area.
125	AREA01	Rectangular brick manhole built inside wall 124. Pipes coming out at south, east and west. Also square stone slab with pipe hole in centre at north of brick manhole. All part of waterworks.
126	AREA01	Unclear rectangular ston alignment abutting wall 124 at south. Possible buttress?
127	AREA01	Stone wall with possible corner, making it L'shaped. Continues into west limits of excavation. Dimensions: 1.7m x 0.2m x 0.9m
128	AREA01	NE-SW part of wall. Badly truncated. Continues into south limits of excavation. Abutted by brick structure 129 at west. Dimensions: 0.8m x 0.35m x 1.35m.
129	AREA01	Remains of brick structure abutting wall 128 at east. Probably brick manhole similar to 120. Only visible in south limit of excavation section. Width: 0.7m; Height: 1.2m

Context no.	Area	Description
130	AREA01	Double layer of same bricks as bunker 121 but does not appear to be reinforced. Cement render inside, base not visible due to flooding but feels like concrete and is 0.15m thick. Appears to have been poured after walls were built as it curves up at the base of the wall at 0.15m. Top step of staircase seen against limit of excavation therefor assumed to be same form as bunker 121.
131	AREA01	Large cut over garden area overlaid by walls (103) and (104)
132	AREA01	Rubbly fill of (131)
133	AREA01	Levelling deposit laid across Area 1 except SE corner where natural ground is higher
134	AREA01	Cut for WWII shelter (130)
135	AREA01	Backfill of cut (134)
136	AREA01	Cut for WWII shelter (121)
137	AREA01	Backfill of cut (136)
138	AREA01	Backfill of cut (122) for wall (115)
200	AREA02	Dark grey silt and rubble deposit. Backfill of cut 202. L: 13.50M; W: 0.04M
201	AREA02	NE - SW running outer wall of area 2 (stone and mortar). Cut by modern concrete base connected with modern service trench towards south end. Abutted by brick floor/surfaces 204 and 205 at NW and by concrete deposit at E. L: 13.5M; W: 0.8M; D: 0.38M
202	AREA02	Cut for wall 201. Only visible 0.04m from wall. L: 13.50M; W: 0.04M visible
203	AREA02	Cut for wall 211. W: 0.04M visible
204	AREA02	Red brick floor inside building. Abutting wall 210 at SW and wall 212 at NW. Contains contemporary blocked manhole 208 and overlaid by concrete base 209. Cut by modern service trench running N-S. L: 8M; W: 7.5M
205	AREA02	Red brick floor inside building. Abutting wall 201 at E, 211 at S and 210 at N. Overlaid by concrete flooring 206 and contemporary manholes 207 and 213. L: 0.5M; W: 5.30M
206	AREA02	Concrete floor lining inside of building. Overlying brick surface 205 and abutting wall 201 at SE. Cut by later/modern concrete base at E. Contemporary with manhole 207. L: 2.2M; W: 2M; D: 0.02M
207	AREA02	Manhole set in brick floor 205. Backfilled with rubble and blocked with E-W running rows of bricks. Wider at base and connected to ceramic pipes coming out of wall 201. Abutting possible settling tank 215. L: 0.77M; W: 0.54M
208	AREA02	Rectangular manhole set in brick floor 204.
209	AREA02	Concrete flat base/ flooring with vertical metal pipe. Overlying brick floor 204 at S and possibly overlying foundations of wall 210. L: 0.82M; W: 0.73M; D: 0.03M
210	AREA02	E-W running stone wall dividing rooms within building. Truncated by modern service trench. Abutted by brick floors 204 at N and 205 at S. Includes 2 poss brick column bases. L: 7.6M; W: 0.65M
211	AREA02	E-W running stone outer wall abutting wall 201 at east and wall 214 at west. Abutted by brick floor 205 at north. L: 8M; W: 0.65M; D: 0.95 visible
212	AREA02	Western outer stone wall of building. Probably separated with wall 210 by entrance. Runnin NE-SW. Parallel to wall 201 and continuing to N edge of area 2. Abutted by brick floor 204 at east and concrete deposit at west. L: 4.5M; W: 0.8M; D: 0.36M
213	AREA02	Small manhole set in brick floor 205
214	AREA02	Western outer wall of factory. Made up of stone slabs. Parallel to wall 201, abutted by wall 211 at S and abutting wall 212 at N. Also abutted by brick structure 215 at W and brick surface 205 at E. L: 5.85M; W: 0.95M; D: 0.7M visible
215	AREA02	Red brick cess pit/waterworks/sewage related system outside of outer wall 214. Possibly connected with ceramic pipes. Abutting wall 214 at W. L: 2.4M; W: 1.1M
216	AREA02	Red brick wall running E-W. Perpendicular to wall 214. Overlies S part of brick structure 215 and abutted by wall 219 at N and concrete base 218 at S. Poss part of later western building extension or outdoor activity area. L: 1.1M; W: 0.36M; D: 0.3M visible
217	AREA02	Red brick wall running E-W. Abutting earlier wall of 211 at E to form extension. Some bricks removed to allow for ceramic pipe to pass through. Large cut for metal pipe inserted over top of wall cutting where it joins earlier wall 211. L: 2.3M; W: 0.36M; D: 0.6M
218	AREA02	Concrete machine base. L: 2.4M; W: 1.7M; D: 0.17M
219	AREA02	Narrow red brick wall running NE-SW abutting wall 216 at S. Built on foundations of earlier brick structure 215. L: 0.34M; W: 0.24M ; D: 0.39M
220	AREA02	Dark blueish grey clay deposit. Upper fill of tank 223. L: 12M; W: 8.4M; D: 0.37M



Context no.	Area	Description
221	AREA02	Light grey silt deposit containing medium stones. Fill of tank 223. L: 12M; W: 8.4M; D: 0.14M
222	AREA02	Light pinkish grey clay deposit with occasional small stones. Primary fill of tank 223. L: 12M; W: 8.4M; D: 0.26M
223	AREA02	Rectangular cut at S of building in area 2. Probable tank/ reservoir outside of building. L: 12M; W: 8.4M; D: 0.77M
224	AREA02	Stone wall - remaining part of NE-SW wall along wedge of tank 223. L: 2M; W: 1.3M; D: 0.22M
225	AREA02	Dark brown ash, mortar and sand deposit. Underlies bricks of floor 204 and 205 inside building and overlying natural sand
301	AREA03	Manhole for access to underground tank. Constructed with red brick and bonded with grey lime mortar. Largely destroyed by machining. Associated with cut 305. L: 1.1M; W: 0.78M; D: 0.26M
302	AREA03	Red brick wall of flue. Abutted by floor 303. Modern ceramic service pipe runs under wall at SW. Wall runs into L.O.E at SW. L: 4.5M; W: 0.23M; D: 0.5M
303	AREA03	Concrete floor or base, forming foundation of flue. Largely demolished by machinery. Ceramic pipe at SW truncates floor. Abuts 302. L: 3.8M; W: 1.04M; D: 0.09M.
304	AREA03	SW re brick wall of flue which supercedes concrete floor 303. Heavily damaged by demolition. Trace outline of bricks distinguished by remains of mortar. L: 1.8M
305	AREA03	Rectangular foundation cut of manhole 301. Most visible on SW facing wall. L: 1.2M; W: 0.85M.
306	AREA03	Dark brown sandy, loamy deposit. Fill of cut 305 for manhole 301. Backfilled once manhole was constructed in foundation trench created by cut of 305. W: 0.03M visible.
307	AREA03	Dark brown loamy sand. Backfill of cut 308 deliberately infilled after construction of flue 302 and 304. Width of deposit only visible on one side. L: 1.29M visible; W: 0.25 visible
308	AREA03	Foundation cut for flue 302 and 304. L: 3.38M visible; W: 1.4M.
309	AREA03	Dark grey clayey silt deposit with frequent mortar, lime and brick fragments. Backfill of cut 311 for flue 310. L: 2.2M visible; W: 0.10
310	AREA03	Brick flue running into E edge of area 3 and visible in area 4. Consists of 2 linear brick walls on either side of brick floor. Running roughly E- W and abutted at W by stone wall 314. Badly truncated in middle of area 3. Ceramic pipe visible running south. L: >2.2M; W: 1.15M
311	AREA03	Foundation cut for flue 310. L: 2.2M visible; W: 1.3M
312	AREA03	Dark grey silt and gravel deposit with very frequent brick and lime fragments included. Visible along east outer edge of stone wall 313 and within cut 314. W: 0.10M visible.
313	AREA03	Stone slab, L-shaped outer wall of building. Located at west end of flue 316. Abutted by flue 316 at south, black deposit 331 at south and wall 330 at west. Also abutted by brick structure 332 at NE. L: 5.5M; W: 1M; D: 0.27M
314	AREA03	Cut for L-shaped wall 313. Filled by 313 and 312. L: 5.5M; W: 1.1M visible; D: 0.27M visible.
315	AREA03	White rubble deposit lying on top of brick base of flue and abutting both walls of flue 310. Truncated at west and east end - deposit not visible due to presence of rubble deposit which was not removed. Assumed to line entire length of flue? L: 0.4M visible; W: 0.65M; D: 0.03M
316	AREA03	Red brick wall of flue. Contains brickwork floor at NW section. Evidence of hemispherical roof at 2 sections along length of flue. Badly damaged by demolition. Manhole 318 evident at SE section. Wood found lying flat one base at NW section - possibly fallen in during demolition. Flue blocked at SE section and later bricked up to accommodate ceramic pipe. Extended by 320 - possibly as settling tank. It is possible that there was an operational pipe from beginning as well as air flow as iron bars used to support pipe appear to belong to original structure. L: 11.05M; W: 1.27M; D: 0.8M
317	AREA03	Dark brown sandy clay, which includes some natural stone and building debris. Infill of cut 319. Only slightly visible on east facing wall of flue. L: 12.6M; W: 0.1 visible.
318	AREA03	Manhole consisting of sandstone blocks (cover) and red brick. Cement mortar used to bond red bricks. Possibly associated with blocking of 316 as it is at the SE extent of flue and is therefore ideally placed to access area which has been sealed (pipe running from 316 to 320). Manhole has been placed on top of original flue structure - evident by changes in coursing. L: 2.4M visible; W: 1.27M; D: 0.6M.
319	AREA03	Rectangular cut made to create foundation of flue 316. L: 12.6M; W: 1.5M.
320	AREA03	Red brick tank/flue extension. Abuts 316 - added to extent of flue at SE. Pipe truncates 316 and passes into 320 where it probably terminates. Some collapsed building rubble - possibly cover of tank - found inside structure. Heavily damaged by demolition. After machining, 320 appears to belong to original flue and may originally have had a manhole on top rather than arched roof, hence the differing coursing of brickwork. Bricks are frogged and have makers mark: 'Waldies No 1'. L: 1.75M; W: 1.27M; D: 0.8M
321	AREA03	Brick wall/blockage. Bonded with lime cement. Bricks inserted to block up air flow in flue and cut through to make way for metal pipe. Associated with 316. L: 0.75M; W: 0.32M.

Context no.	Area	Description
322	AREA03	Light brown-grey sandy silt deposit with inclusions of building rubble and burnt material, eg coal. Deposit is backfill of cut 324 for flue 323. Deposit runs under walls of 330 and 335. It also runs into L.O.E. L: 10.94M visible; W: 0.02M visible.
323	AREA03	Brickwork flue. At N section, wall runs N-S then gently turns to run NW to SE. At the south section, the flue is abutted by two later sandstone structures 330 and 335. At eastern section, flue is truncated by an unknown feature. Bricks are unfrogged. A ceramic pipe also cuts through the flue in the middle section. Flue is overlaid at the northern section by a cement foundation, 325, which runs roughly E-W. Only floor remains at northern section beyond cement foundation and runs into L.O.E. L: 10.94M visible; W: 0.77M (narrower than 310)
324	AREA03	Linear cut made for foundation of brick flue 324. Filled by deposit 322. Cut made wider at northern extent, narrowing as it progresses southwards. L: 10.94M; W: 0.93 to 0.8M.
325	AREA03	Grey cement/concrete deposit, foundation of brick wall 326. Includes stones, chipped grey/green stones and building rubble. Rough foundation layer which truncates flue 324 at NW section. Runs E-W and abuts 327. Unknown whether 325 is contemporary to 327. L: 1.9M; W: 0.6M; D: 0.28M
326	AREA03	Red brick wall which runs E-W. Sits directly on 325 (foundation layer). Bricks are frogged and have makers mark: 'Dougal Winchburgh'. Heavily damaged by demolition. Lime mortar used as bonding material - this is mostly visible at intersection of 325 and 326 with an average thickness of 0.03m. L: 1.25M; W: 0.26M; D: 0.16 remaining.
327	AREA03	Square outline of red brick tank. Later than 323 as bricks are frogged and have makers mark 'Dougal Winchburgh', which is the same as 326 (contemporary?). Both E-W running walls run into L.O.E. Mortar is uniform in thickness at 0.02M. Floor base is even and probably concrete. Dark staining on floor which may be a result of burning. After machining, it was discovered that the concrete base was a false floor, sitting on top of black, wet, silty gravel with broken ceramic pipe and broken brock mixed in. L: 2.10M when exposed by digger; W: 1.70 when extent revealed by digger; D: 0.4 visible.
328	AREA03	Linear foundation cut for structure 327. Small slot exposed cut. Located at northern section of excavation. Running parallel to NW, SE running wall of 327. L: 1.8M visible; W: 0.2M visible; 0.40M visible.
329	AREA03	Dark grey silty sand deposit with lime and brick fragment inclusions. Backfill of cut 328, made for structure 327. L: 1.80M visible; W: 0.2M visible; D: 0.4M visible.
330	AREA03	NE-SW running stone wall abutting 'L' shaped stone wall 313 at east and flue 323 at south. Wall is narrower than 313 and sits on top of black deposit 331 and backfill of cut 334 for pipe. Probably same as stone wall 335 on opposite side of flue 323. Later addition against original outer building 313 possibly to create room division or use existing corner of former building. L: 2.3M; W: 0.4M; D: 0.2M.
331	AREA03	Black ash and mortar deposit abutting stone wall 313 at north. Overlaid at NE by brick pillar 332 and at south by mixed deposit 333 (relationship is unclear). Also overlaid by later wall 330 at west - originally carried on westwards. Possible room fill related to fire activity. L: 2.4M; W: 0.7M; D: 0.03M
332	AREA03	Possible remains of small brick platform/ machine support. Abuts inner corner of 'L' shaped stone wall 313 and overlies black ash deposit 331. Visible through iron and rubber deposit 333 at south. L: 0.4M; W: 0.35M; D: 0.08M.
333	AREA03	Mixed deposit of dark brown rubble and clay silt and white rubber. Inclusions: bricks, raw rubber, iron pan and wood. May form part of backfill of pipe cut. If cut through black layer 331, then it is potentially the same context as 336. Upper fill of cut 334. L: 1.7M; W: 1.7.
334	AREA03	Linear cut for pipe. Running through stone building 313 and 330. Continues out to the north and may join one of the pipes in area 2. Continues after wiggling through building to the SSW across area 3. Cut appears to grow wider within the building - space for machinery? Also gains a second rubble fill. Wall 330 runs over this and also over tar 331. L: 4M visible; W: 0.5M; D: 0.45M
335	AREA03	Wall - continuation of wall 330 to SW of flue 323. Only one stone - further SW appears to be natural. Truncated? Or wall at deeper level here? L: 0.6M visible; W: 0.35M; D: 0.2M
336	AREA03	Light brown clay sand, very stony. Contains oil and clay lumps. Appears to be mixed with natural to pack around ceramic pipe and cut 334. Small slab adjacent to pipe near base - machine base?
401	AREA04	Gen backfill/ demolition rubble. Seals all features.
402	AREA04	Brick culvert/flue/drain. Truncated by well 404. L: >11.5M; W: 1.42M; D: 0.4M remaining
403	AREA04	Backfill within drain 402. Demolition debris. L: > 11.5M; W: 0.7M; D: 0.2m
404	AREA04	Water well. Shallow with brick base. Water trickling in from sides at base. Diameter: 1.9m; D: 0.76M
405	AREA04	Rubble backfill within well 404. Diameter: 0.76m; D: 0.51M
406	AREA04	Sandstone base of chimney structure. L: 6.6M; W: 5.3M; D: 0.8M
407	AREA04	Red brick circular chimney stack. Internal wall diam: 3.32M; External wall diam: 4.78M; W: 0.79M; D: 0.78M
408	AREA04	Layer of firebricks inside chimney stack 407. Bonded with white clay. L: 2.3M; W: 0.43M; D: 0.36



Context no.	Area	Description
409	AREA04	Ash and soot deposit - infill of chimney. L: 2.54M; D: 0.3M
410	AREA04	Rubble levelling layer to level ground after chimney 407 was built. Deposit underlies 412. L:1.7M; W: 0.8M; D: 0.48M.
411	AREA04	Foundation cut for platform/well 404. Only visible in certain areas. Diam: 1.9M; D:0.76M
412	AREA04	Course sandy silt. Thin levelling layer for brick floor 414. L: 5.8M; W: 1.5M; D: 0.03M
413	AREA04	Cement base for walls/floors 417 - 421. L: 6.7M; W: 3085M; D:0.3M
414	AREA04	External brick floor abutting wall 417. Two brick buttresses built on top (415 and 416). External wall between chimney and building on concrete base. L: 5.8M; W: 1.5M; D:0.09M
415	AREA04	NE brick buttress. Support for wall 417. L: 1.6M; W: 0.75M; D: 0.5M
416	AREA04	SW brick buttress. Support for wall 417. L: 1.5M; W: 1.25M; D: 0.5M
417	AREA04	Brick wall. Internal bricks are stained/ burnt black similar to 419. External edge abutted by buttresses 415, 416 and floor 414. Built into rubble/cement base 413. L: 5M; W: 0.5M; D: 0.45M
418	AREA04	Poss brick floor, mostly destroyed. Bricks stained similar to 419. L: 3.05M; W: 0.7M; D: 0.07M
419	AREA04	Brick floor. Staining suggests storage for coal/ burning. L: 4.95M; W: 1.23M
420	AREA04	Brick wall. Built into rubble/ cement base 413. L: 4.35M; W: 1.02M
421	AREA04	Brick hearth/fireplace located on top of cement base 413. L: 1.02; W: 0.56M; D: 0.08M
422	AREA04	Black clayey silt. Burnt rubble fill of hearth/ fireplace 421. L: 0.8M; W: 0.56M; D: 0.07M
423	AREA04	Cut for rubble/ cement base 413. L: 6.7M; W: 3.85M; D: 0.3M
424	AREA04	Black clinker/gravel deposit. Bottom fill of culvert 402. Heavily contaminated by oil. L: > 11.5M; W: 0.7M; D 0.3M average
425	AREA04	Black and grey clinker/gravel and ash deposit. Base fill of well 404. Compact nature suggests gradual accumulation possibly while well was still in use. Diam: 0.76M; D: 0.25M

Photographic register

Photo no.	Direction facing	Description
Trial Trenching		
001	W	General shot, pre-start
002	SW	TR04 - Concrete/brick building frag 026 and in-situ pipes
003	NE	TR04 - General shot
004	SE	TR05 - General shot, showing test pit at NW end
005	NE	TR09 - General shot
006	NW	TR18a - General shot
007	E	TR10 - General shot, part excavated
008	W	TR10 - General shot, showing test pit at E end
009	SW	TR10 - Concrete floor 001
010	NE	TR10 - Concrete floor 001
011	SW	TR03 - General shot
012	NW	TR03 - Manhole 002
013	NE	TR03 - Concrete slab 003
014	W	TR11 - General shot
015	E	TR12 - General shot
016	NE	TR13 - General shot
017	E	TR18b - Concrete slab 004
018	N	TR18b - Concrete slab 004
019	SW	TR13 - Brick structure 006
020	N	TR18b - General shot, S end
021	N	TR17 - General shot
022	N	TR06 - General shot
023	W	TR08 - General shot
024	W	TR07a - General shot
025	E	TR07b - General shot
026	NW	TR10 - Concrete floor 001, fully exposed
027	NW	TR13 - Brick structure 005 in SE-facing section
028	N	TR17 - General shot
029	W	TR14 - Brick wall 010 and deposit 011 in E-facing section
030	N	TR14 - Brick surface 015
031	S	TR14 - Brick chimney 016 and stone slabs 018
032	E	TR14 - Brick chimney 016 and soot 017 from above
033	W	TR14 - E-facing section showing 010, 011, 012, 014
034	S	TR14 - General shot
035	S	TR24 - Brick structure 019 and manhole 020

Photo no.	Direction facing	Description
036	S	TR24 - Brick surface 021
037	N	TR24 - Brick structure 019 and manhole 020
038	N	TR19 - Brick surface 024
039	W	TR15 - General shot
040	W	TR16 - General shot
041	S	TR16 - N-facing section showing brick/ash deposits
042	N	TR17 - Showing tank 009
043	SW	TR17 - Showing extension (TR25) to W
044	SW	TR17 - Showing tank 009
045	SW	TR19 - Brick surface 024
046	N	TR19 - Brick surface 024
047	E	TR24 - General shot
048	S	TR24 - Brick structure 019 and manhole 020
049	NE	TR24 - Brick surface 021 and natural 022 at E end
050	SE	TR02 - Walls at E end of trench
051	E	TR02 - Walls at E end of trench
052	NW	TR02 - Walls at W end of trench
053	N	TR02 - Walls at W end of trench
054	NE	TR02 - Walls at E end of trench
055	NE	TR01 - General shot
056	SW	TR01 - General shot
057	NE	TR01 - Elevation of wall in middle of trench
Excavation		
101	SW	AREA02 - General shot of wall 201 and concrete truncation
102	SW	AREA02 - General shot of area 2 - brick floors 204, 205 and 210
103	SE	AREA02 - General shot of area 2 - 205
104	E	AREA02 - General shot of area 2 - 204 and 211
105	NE	AREA02 - General shot of area 2 - 205 and 210
106	E	AREA02 - General shot of 206 and 207
107	S	AREA02 - General shot of 213
108	S	AREA02 - General shot of cut 202, wall foundation 201 and 200
109	SW	AREA02 - General shot of 208
110	NE	AREA02 - General shot of 209
111	SE	AREA02 - General shot of wall 210
112	SW	AREA02 - General shot of wall 212



Photo no.	Direction facing	Description
113	NW	AREA02 - General shot showing modern concrete abutting wall 212
114	SE	AREA02 - General shot of wall 211
115	N	AREA02 - General shot of cut 203 for wall 211
116	SW	AREA02 - General shot of wall 214
117	NE	AREA02 - General shot of wall 214
118	SW	AREA02 - General shot of walls 214 and 217, base 218 and truncation pipe
119	W	AREA02 - General shot showing brick structure 215 and walls 216 and 219
120	SW	AREA02 - General shot showing brick structure 215 and walls 216 and 219
121	W	AREA02 - General shot of wall 217
122	N	AREA02 - General shot of concrete base 218, showing fittings
123	W	AREA02 - General shot of concrete base 218, showing fittings
124	E	AREA02 - General shot of 218, 217 and 216
125	NE	AREA02 - General shot showing walls 217, 214 and truncations from outside the building
126	SW	AREA02 - General shot of western area
127	W	AREA02 - General shot of possible column base on wall 210
128	SW	AREA02 - General shot of area 2
129	SW	AREA02 - General shot of area 2
130	SW	AREA02 - General working shot
131	SW	AREA02 - General working shot
132	SE	AREA02 - General shot of area 2
133	NW	AREA02 - General shot of area 2
134	NE	AREA02 - General shot and section of clay lined tank 223
135	SW	AREA02 - Detail of NW end of clay lined tank 223
136	SE	AREA02 - General shot of wall 224
137	NE	AREA02 - General shot of wall 224 showing proximity with 223
138	SE	AREA02 - Base of manhole 207 showing higher pipe through wall
139	NW	AREA02 - Base of manhole 207 showing pipe continuing to NW
140	SW	AREA02 - Base of structure 215 showing pipes radiating
141	SSW	AREA02 - Cast iron pipe running through 215 through tank
142	SE	AREA04 - Area 4 chimney base 406 etc
143	SE	AREA04 - Area 4 chimney base 406 etc

Photo no.	Direction facing	Description
144	SE	AREA04 - Drain 402 and well 404
145	SE	AREA04 - Drain 402 and well 404
146	SW	AREA04 - Drain 402, well 404 and chimney base 406 etc
147	SW	AREA04 - Drain 402, well 404 and chimney base 406 etc
148	NW	AREA04 - Floors behind chimney base 406
149	NW	AREA04 - Floors behind chimney base 406
150	NW	AREA04 - Drain 402 and well 404
151	NW	AREA04 - Drain 402 and well 404
152	NE	AREA04 - Chimney base 406 and associated building
153	NE	AREA04 - Chimney base 406 and associated building
154	SE	AREA04 - Well 404
155	ESE	AREA04 - Internal chimney 407 and 408
156	E	AREA03 - Internal flue/internal wall 302 and 304
157	SW	AREA03 - Internal flue 302 and 304
158	W	AREA03 - Square brick manhole 301
159	ESE	AREA04 - Butress 416
160	WSW	AREA04 - Buttress 415
161	SW	AREA04 - Chimney stack 407 and base 406 with grooves in
162	SE	AREA04 - Grooves in floor 419
163	ENE	AREA04 - Grooves in floor 419, 420 and 418
164	ENE	AREA04 - Fireplace/hearth 421
165	W	AREA03 - Shot of cut 311, 309 and 310
166	W	AREA03 - General shot of flue 310
167	W	AREA03 - General shot of flue 310
168	E	AREA03 - General shot of rubber lining 315 and pipe
169	W	AREA03 - General shot of west end of flue 310 and abutting wall 314
170		ID shot
171	W	AREA03 - Shot of deposit 307 and cut 308
172	E	AREA04 - Working shot of area 4
173	NE	AREA04 - Working shot of area 4
174	W	AREA04 - Working shot of area 4
175	E	AREA03 - SE-NW running wall of flue showing cut 319
176	SE	AREA03 - West end of flue 316
177	SE	AREA03 - General shot of flue 316

Photo no.	Direction facing	Description
178	NW	AREA04 - Concrete floor under brick surface 413
179	SE	AREA04 - Culvert in area 4 - part machined 402
180	NE	AREA04 - Section through well 404
181	W	AREA03 - East end of flue 316 showing blockage
182	S	AREA03 - Manhole 318 above flue 316
183	SE	AREA03 - Manhole 318 above flue 316
184	NE	AREA03 - Area 3 after grubbing out
185	NE	AREA03 - General shot 335, 330 and 313
186	NW	AREA03 - General shot 335, 330 and 313
187	E	AREA03 - Depth of 331, 332 and 333
188	SW	AREA03 - General shot of west end of area 3, 323, 326 and 329
189	W	AREA03 - General shot of 322, 323, 324, 325 and 326
190	SE	AREA03 - General shot of flue 323
191	S	AREA03 - General shot of flue 323
192	SE	AREA03 - Pipe and slabs in 336 after machining
193	SW	AREA03 - General shot of 327
194	SE	AREA03 - General shot of 327 after machining
195	SE	AREA03 - General shot of 327 after machining
196	NW	AREA03 - General shot of west end of area 3 after machining
197	SW	AREA04 - General shot of area 4 after machining
198	NE	AREA04 - General shot of area 4 after machining
199	E	AREA03 - General shot of brick flue 323 after machining
200	E	AREA03 - General shot of 327 after machining
201	N	AREA01 - General shot of wall 101
202	W	AREA01 - General shot of W-E running wall 101
203	NW	AREA01 - General shot of repairs 102 in wall 101
204	SW	AREA01 - General shot of NW section of wall 103
205	NE	AREA01 - General shot of wall 105
206	SE	AREA01 - General shot of wall 101
207		ID Shot
208	SE	AREA01 - General shot of wall 104
209	N	AREA01 - General shot of wall 104
210	W	AREA01 - General shot of walls 103, 104 and deposit 108
211	E	AREA01 - General shot of walls 103, 104 and deposit 108
212	SE	AREA01 - General shot of wall 106

Photo no.	Direction facing	Description
213	NE	AREA01 - Detail shot of SE corner of wall 106
214	SW	AREA01 - General shot of possible vennel and pipe between walls 106, 107 and 114
215	SW	AREA01 - General shot of walls 110, 109 and 111
216	NE	AREA01 - General shot of walls 110, 109 and 111
217	SW	AREA01 - General shot of wall 114
218	W	AREA01 - General shot of wall 107
219	?	AREA01 - Working shot
220	NW	AREA01 - General shot of area 1
221	NW	AREA01 - General shot of area 1
222	W	AREA01 - General shot of area 1
223	NE	AREA01 - General shot of bunker 121
224	SW	AREA01 - General shot of bunker 121
225	SW	AREA01 - General shot of bunker 121
226	NW	AREA01 - General shot of bunker 121 and detail of brick/timber supports
227	SW	AREA01 - General shot of wall 124
228	NE	AREA01 - General shot of structure 126
229	NW	AREA01 - General shot of garden area
230	SW	AREA01 - General shot of north range
231	SE	AREA01 - General shot of west range
232	SW	AREA01 - General shot of 128 and 129
233	NE	AREA01 - General shot of 127
234	SE	AREA01 - General shot of wall 118
235	NE	AREA01 - General shot of wall 119
236	SW	AREA01 - General shot of manhole 120
237	SE	AREA01 - General shot of wall 119 and manhole 120
238	SW	AREA01 - General shot of wall 115
239	SE	AREA01 - General shot of wall 123
240	SE	<i>AREA01 - General shot of wall 117</i>
241	NE	<i>AREA01 - General shot of wall 113</i>
242	E	<i>AREA01 - General shot of 130</i>
243	N	<i>AREA01 - General shot of 130 (excavated)</i>
244		ID Shot
245	N	<i>AREA01 - Slot through huge cut</i>
246	NE	<i>AREA01 - General shot of 121 (excavated)</i>



Drawing register

Drawing no.	Plan	Section	Description
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Trial trenching

001	–	1:20	E facing section of part of Trench 14 showing brick surface (015) and surrounding deposits. EJ
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Excavation

002	NTS	–	Sketch plan of Area 2. SBM
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Sample register

Sample no.	Context no.	Description
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001	220	10L: Upper fill of tank 223
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Appendix 2 – Discovery and Excavation in Scotland entry

LOCAL AUTHORITY:	Edinburgh City Council
PROJECT TITLE/SITE NAME:	Fountainbridge Student Residences, Edinburgh
PROJECT CODE:	FSRE11
PARISH:	Edinburgh
NAME OF CONTRIBUTOR(S):	Jürgen van Wessel
NAME OF ORGANISATION:	Headland Archaeology (UK) Ltd
TYPE(S) OF PROJECT:	Evaluation; Excavation
NMRS NO(S):	NT27SW 3125
SITE/MONUMENT TYPE(S):	Rubber Works; Tenements
SIGNIFICANT FINDS:	–
NGR (2 letters, 8 or 10 figures)	NT 24192 72585
START DATE (this season)	24th October, 2011
END DATE (this season)	24th November, 2011
PREVIOUS WORK (incl. DES ref.)	–
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	<p>Headland Archaeology undertook a programme of archaeological works on part of the former Scottish & Newcastle brewery site in west Fountainbridge, Edinburgh. The work was required to meet a planning condition placed on a proposed student accommodation development. Historical map evidence showed that the development area overlay the site of several mid-19th century tenements and industrial works, including part of the Viewforth Works of the Scottish Vulcanite Company. A programme of trial trenching revealed that the site had been substantially disturbed during two phases of demolition, but some areas of archaeological remains had survived. These remains were explored further with four areas of open excavation; one targeted at the tenements at Bainfield Place, the other three at remains of the Viewforth Works.</p> <p>The first area exposed the foundations of four tenements, associated drainage works and garden walls, and two WWII air-raid shelters. The demolition of the tenements in the late 20th century had removed all above surface remains, with no occupation levels remaining in situ. The remaining areas revealed a number of structures relating to several phases of the Viewforth Works, including a large brick-floored building, a clay-lined tank, the base of the main chimney with associated brick surfaces, and several brick drains and ducts. Most had been heavily truncated during the redevelopment of the Works in the 1950s, and by the recent demolition of these later buildings.</p>
PROPOSED FUTURE WORK:	–
ARCHIVE LOCATION (intended/deposited)	Archive to be deposited with NMRS. Report to be lodged with CECAS
SPONSOR OR FUNDING BODY:	Cityheart Ltd
CAPTION(S) FOR ILLUSTRS:	–
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