

**University of Salford  
Centre for Applied Archaeology**

**Worsley New Hall**

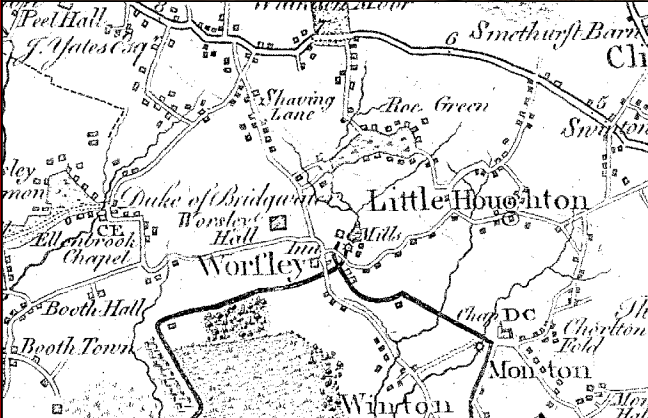
**Archaeological Excavation of  
Worsley New Hall, Salford,  
Greater Manchester**

**Version: 1.2**

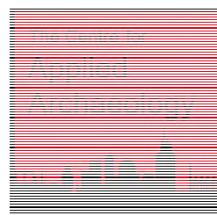
**Client: Peel Investments (North)  
Ltd.**

**Reference: CfAA/021/2012**

**Adam J Thompson, Vicky Nash,  
Matthew Bishop, Sarah Cattell,  
Charlotte Vallance and Michael  
Nevell**



University of  
**Salford**  
MANCHESTER





## Summary

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**Site Location:** The area is bounded by Leigh Road (A572) to the north, to the south by the boating lake within the grounds of Worsley New Hall..

**NGR:** NGR SD 73950 00581

**Internal Ref:** (CfAA/021/2012)

**Proposal :** N/A.

**Planning Ref:** N/A

**Prepared for:** Mr Peter Nears

**Document Title:** Archaeological Excavation of Worsley New Hall, Salford, Greater Manchester

**Document Type:** Excavation Report

**Version:** Version 1.2

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**Date:** November 2012

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**Date:** November 2012

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- 1.1** The Centre for Applied Archaeology (CfAA) were commissioned by Peel Investments (North) Ltd. to undertake an archaeological evaluation and subsequent excavation on the site of Worsley New Hall, Worsley, Greater Manchester (NGR SD 73950 00581).
- 1.2** The work comprised of a full area open excavation which spans the entire footprint of the New Halls east wing. The work was carried out in order to determine the presence, extent, depth, state of preservation and significance of the archaeological resource enabling informed recommendations to be made for the future treatment of any surviving remains. This historic environment work was undertaken as part of a planning application, as recommended by the *National Planning Policy Framework - NPPF* - (Department for Communities and Local Government, March 2012, paragraphs 188 to 192).
- 1.3** This work was carried out in accordance with an Written Scheme of Investigation compiled by Adam Thompson of the CfAA in association with Peel and was informed by an archaeological Desk-Based Assessment of the site undertaken by Vicky Nash and Dr Mike Nevell in October 2011 (Nash & Nevell, CfAA 2011) and an Archaeological Evaluation of the site carried out by Charlotte Vallance and Matthew Bishop in November 2011 (Vallance, CfAA 2011).
- 1.4** All work was conducted in accordance with the Written Scheme of Investigation provided prior to commencement, and according to the principles of the Institute for Archaeology (IfA) Code of Conduct and all relevant standards and guidance.
- 1.5** The work was conducted by professional archaeologists from the Centre of Applied Archaeology (CfAA). The excavation was undertaken over a thirteen week period between 16<sup>th</sup> April to 12<sup>th</sup> July 2012. On site excavations were conducted by Charlotte Vallance, Matt Bishop, Sarah Cattell and Kirsty Whittall.
- 1.6** The project contained a strong community element and as such, during six weeks of investigations, up to 15 persons per day from the local community, various archaeological and historical groups and six form colleges from the Greater Manchester area were involved in the investigations. This represented over 450 person days utilising over 50 different people who completed all aspects of an archaeological excavation under the supervision and tutelage of professional archaeologists. In addition, during two weeks of the investigations six local schools were invited to take part in the excavations as part of their local history projects. This represented a further 270 individuals who were involved in the excavations and who were supervised by Sarah Cattell the projects Educational Archaeologist.
- 1.7** This report represents the results of the excavation and was written and compiled by Adam Thompson, Vicky Nash, Matt Bishop, Sarah Cattell, Charlotte Vallance and Michael Nevell and illustrated by Matt Bishop and Vicky Nash. The project was managed by Adam Thompson.



## 2. The Centre for Applied Archaeology

### 2.1 Centre for Applied Archaeology

The Centre for Applied Archaeology is based within the School of the Built Environment within the University of Salford. The aims of the centre can be split into three separate areas, firstly to conduct commercial archaeological projects, secondly to manage, conduct and promote community archaeology and thirdly to undertake teaching and research. In developing this holistic approach CfAA aim to provide the means by which these three individual sectors can interact and collaborate together.

Within the commercial archaeological area CfAA conduct and manage a multitude of archaeological projects including: watching briefs, evaluations, excavations, building surveys, field walking, 3D laser scanning, geophysical analysis, desk based assessments, Environmental Impact Assessments and other consultancy services. CfAA predominantly work across the Northwest and Midland regions.

Community archaeology comprises of managing and conducting evaluations, excavations, building surveys and all other types of archaeological projects; with volunteers of all ages and backgrounds, assisting local heritage and archaeological groups in funding applications, assisting with the Greater Manchester Archaeology Unit in supporting and running the Greater Manchester Federation of Archaeological Societies.

Teaching and Research includes publications, undergraduate and postgraduate teaching, extramural teaching, and providing workshops for the construction industry and assessing NVQ's in archaeological practice.

The Centre is housed within the School of the Built Environment at the University of Salford and shares particular links and partnerships with the Centre for Construction Innovation.

The Centre for Applied Archaeology is a Registered Archaeological Organisation (RAO) of the Institute for Archaeologists (IFA) and a member of the Federation of Archaeological Managers and Employers (FAME).







### 3. The Setting

- 3.1 The Centre for Applied Archaeology (CfAA) were commissioned by Peel Investments (North) Ltd. to undertake an archaeological evaluation and subsequent excavation on the site of Worsley New Hall, Worsley, Greater Manchester (NGR SD 73950 00581).

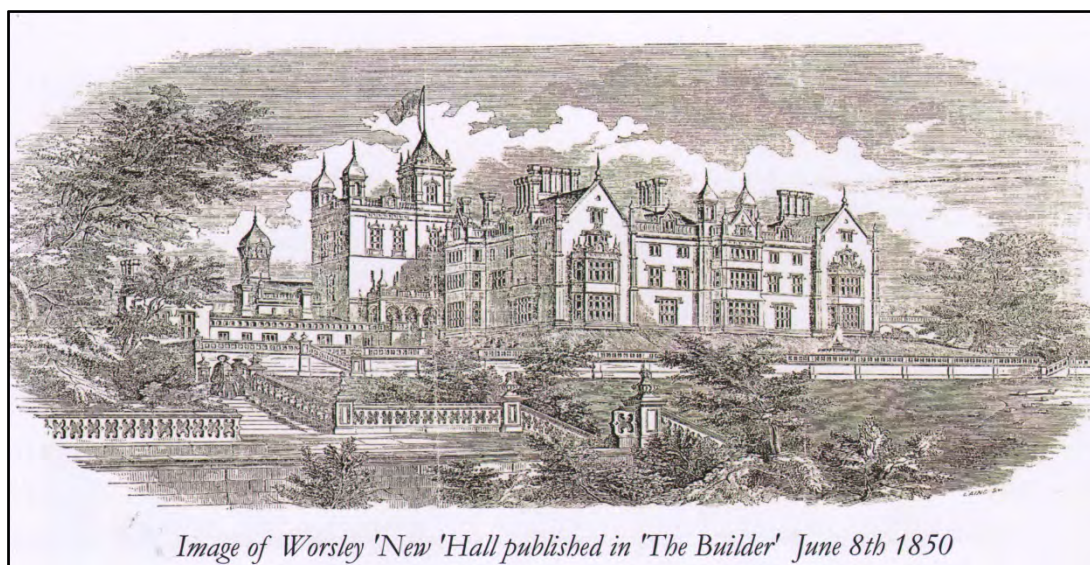


Figure 1: Image of Worsley New Hall, published 1850.

### 3.2 Location

The study area lies within the metropolitan borough of the City of Salford, in the western half of the town of Worsley, approximately 4km west of Salford City centre, 0.5km east of Boothstown and 0.2km north of the Bridgewater Canal. The study area is centred at NGR SD 73950 00581 and lies within the Worsley New Hall Estate, Middlewood. The area is bounded by Leigh Road (A572) to the north, to the south by the boating lake within the grounds of Worsley New Hall. Middlewood Scout Camp lies to the south of site (**Fig. 2**). The excavation area lies on rising ground which measures 45m AOD at its southern boundary and 55m AOD at its northern boundary.

### 3.3 Geology

The drift geology of the study area is comprised of Glacio-Fluvial Sand and Gravel. This includes diamicton deposits, very poorly sorted sediments that are characterised by great lateral and vertical variations in thickness, composition and texture. The underlying solid geology comprised of mudstones, siltstone and sandstones of the Upper Carboniferous Millstone Grit Group (<http://www.bgs.ac.uk>)

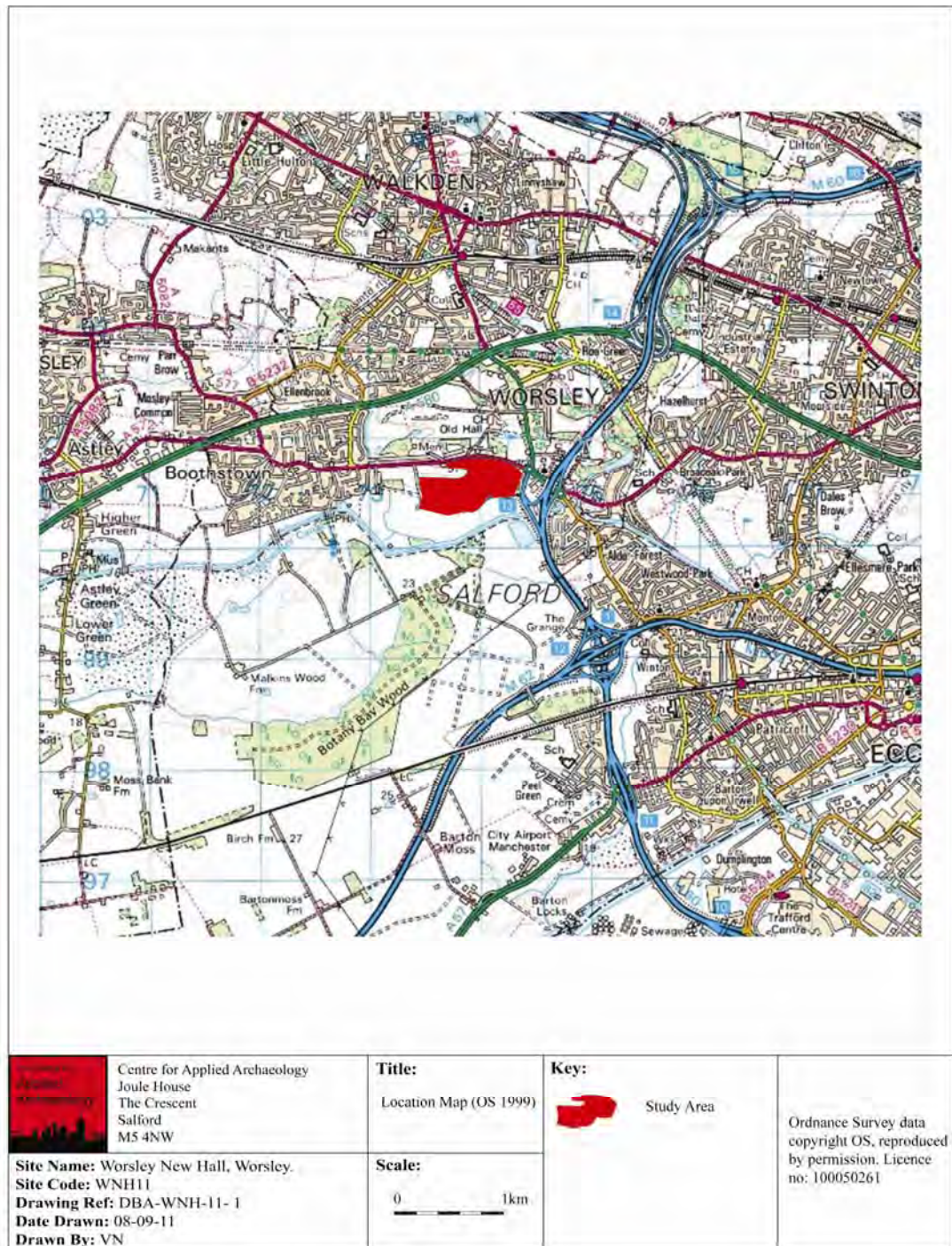


Figure 2: Site Location (Study area refers to the Desk Based Assessment).

### 3.4 Personnel

The project was conducted and supervised by professional archaeologists from the Centre of Applied Archaeology. On site excavations were directed by Adam Thompson and conducted by Charlotte Vallance, Matt Bishop, Sarah Cattell, Kirsty Whittall and community volunteers. This report was written and compiled by Vicky Nash, Matt Bishop, Sarah Cattell, Charlotte Vallance and Michael Nevell.



Associated illustrations were completed by Matt Bishop, Vicky Nash. The project was managed by Adam Thompson.

### **3.5 Monitoring**

The archaeological written Scheme of Investigation for the scheme of works was produced by Adam Thompson of the CfAA in association with Peel who also monitored the programme of archaeological works. The works were also viewed by Norman Redhead of the Greater Manchester Archaeological Advisory Service (GMAAS).



## 4. Archaeological and Historical Background

### 4.1 Historical Background

Worsley New Hall was constructed between 1839 to 1845 for the 1st Earl of Ellesmere (Lord Francis Egerton formerly Leveson Gower) at a cost of £100,000. The hall was designed by Edward Blore, a recognised establishment architect who was most noted for his work on Buckingham Palace. In 1846 William Andrew Nesfield one of the most sought after landscape gardeners in England was retained by the Earl of Ellesmere to advise in the development of the Halls formal Gardens. By 1857 the Halls head gardener Mr John Mitchell had completed the laying out of the formal gardens and all three fountains were in place.

In the same year the Earl of Ellesmere died and the Estate passed to his son George Granville Francis Egerton, who continued to add to the elaborate garden designs with the assistance of his head gardener Mr. James Davidson. In 1862 the 2nd Earl of Ellesmere died and the estate passed to his eldest son Francis Charles Granville Egerton, 3rd Earl of Ellesmere. By 1875 Nesfields planting designs had been modified by the head gardener Mr. William Upjohn, due to the expense involved in maintaining them and the eastern parterre had been replaced by a croquet lawn. During his time at Worsley the 3rd Earl continued to make improvement to the estate which included the construction of lamp pillars to light the carriage way in 1903 and the installation of electricity in the Hall in 1908. The 3rd Earl died in 1914 and the estate passed to his eldest son Lieutenant-Colonel John Francis Granville Scrope Egerton, 4th Earl of Ellesmere.

Between 1914 and 1919 the Hall was lent to the British Red Cross as a hospital for wounded soldiers. After the war the family was unable to cover the cost of repairing the hall after its hospital use or maintain the formal gardens, so in 1920 the 4th Earl began dismantling the Hall and in 1921 the Halls books and furniture were sold at auction. By 1923 the family severed their connections with Worsley and the Estate passed into the control of the Bridgewater Estates Ltd, who hired a caretaker by the name of Richard Edge to look after the property. Between, March 1939 to October 1940 the Hall and its grounds were occupied by the Lancashire Fusiliers as a training ground. During this period extensive damage was done to the Halls interior with reports of its interior fittings being used for fuel. As a result of the damage the War Department were fined nearly £400 to cover the cost of the repairs. During the summer of 1942 the ground floor, cellars and gardens of the Hall were used as a training ground for the 45th County of Lancaster Battalion Home Guard as well as the Royal Air Force.

By 1943 the Hall was in a bad state of structural repair due to being undermined by Manchester Collieries who removed the Halls supporting coal pillars. In the September of the same year the upper floors of the Hall were badly damaged due to a fire and as a result Bridgewater Estates Ltd put tenders out for the demolition of the Hall. In 1945 the Hall was sold to Mr. Littler a scrap merchant from Ashton in





Makerfield for £2,500. The Hall was demolished by 1949 and the stone and brick work were used in the construction of council estate housing in Hebden Bridge, Yorkshire.

## 4.2 Archaeological Background

In May 2011 the CfAA were commissioned by Peel Investments (North) Ltd to conduct an archaeological Desk-Based Assessment of the grounds and associated structures of Worsley New Hall (Nash 2011). The Desk-Based Assessment established that the study area contained potential archaeological remains of the estate which had regional and local significance. A Building Survey for the remaining standing buildings within the Worsley New Hall study area was also produced (Nash 2011).

Following consultation with the curatorial body (GMAAS) it was recommended that the below ground archaeological remains identified by the Desk-Based Assessment would require archaeological intervention prior to commencement of any development work. This intervention took the form of an archaeological evaluation which sought to assess the extent and degree of preservation of any in-situ remains and to assess the sites suitability for a community archaeology project. The evaluation was conducted over a two week period in October/November 2011 and revealed substantial intact archaeological remains relating to the New Hall, which included some of the internal and external footprint of the Hall's eastern wing, along with some external features relating to the Halls formal gardens. The majority of archaeological remains were found in a good or excellent state of preservation.



## 5. Methodology

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### 5.1 Excavation Methodology

Following the leveling of the site, an area approximately 20m x 22m was exposed at the southern extent of the study area to incorporate and expand on the trenches excavated during the previous evaluation. The excavation of this area was carried out using a mechanical digger with a 1.6m wide toothless ditching bucket which was supervised at all times by a professional archaeologist.

The area was mechanically excavated to a depth of 0.75-1.50m at which archaeological features were encountered, thereafter excavation proceeded by hand to minimise damage to structures exposed. Excavated spoil was placed at least 1.00m from the edge of each trench and spoiled on one side only.

Pre-existing boundary fencing was located along the western, southern and eastern extents of the excavation area and additional plastic barrier fencing was located to minimise risk around areas of deeper excavation.

Upon encountering the sub basements, staff conducted a rapid photographic survey requiring professional archaeologist to be trained in the field of confined spaces.

### 5.2 Recording Methodology

Separate contexts were recorded individually on (CfAA) pro-forma context sheets. In this report all features and layers are contained within rounded brackets (\*\*\*) and all cuts are in square brackets [\*\*\*]. Plans and sections were recorded on CfAA pro-forma drawing sheets at an appropriate scale of 1:10, 1:20, or 1:50, depending on the complexity of the data and features encountered. All drawings were individually identified and cross referenced; contexts and principal layers were enumerated.

Photography of all relevant phases and features was undertaken with digital formats (Appendix 3).

All finds were recorded by context and significant “small finds” located within three dimensions to the nearest 10mm were bagged and labelled separately. All fieldwork and recording of archaeological features, deposits and artefacts was carried out to acceptable archaeological standards.

Further details regarding the excavation and recording methodologies can be found within the Written Scheme of Investigation.



## 6. Archaeological Descriptions

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### 6. General

The excavation at Worsley New Hall focused on the Halls East Wing and Upper Terrace Garden. Within the excavation area three distinct elements of the Halls footprint were exposed; the Upper Terrace Garden, the Basement and the Cellar, which lay beneath the Basement.

For ease of description each room within the Halls interior has been designated with its own letter and number. The letter B refers to the Basement level rooms whilst C refers to the rooms within the Cellar, which lay below the Basement. For health and safety reasons rooms B19 and B23 could not be accessed.

#### 6.1 Basement Level

##### 6.1.1 Corridor 5

Roughly 'L' shaped corridor surrounding the south-east corner of the Hall. The east/west wing of the corridor abutted the southern end of Rooms B6 to B9 and measured c17.50m in length and had a maximum width of c2.30m. The north/south wing of the corridor abutted the eastern end of Rooms B9 and B16 and measured c10.30m in length with a maximum width of c2.30m. The corridors east/west wing contained a brick floor (142), constructed from handmade red bricks laid in Stretcher bond, aligned north/south and running through the centre of the floor was a gully (147), 0.11m in width. To the immediate south of Room B7a, an area of (142) had been subject to damage having patches of missing or sunken brick. To the immediate south of Room B7b, (142) contained a roughly rectangular drainage trough (146). The trough measured c0.36m x 0.30m and contained a small circular metal grid 0.10m in diameter and the remains of a cast iron drain pipe 0.06m in diameter. Within the north/south wing of the corridor the floor (146) continued as previously described except that the bricks were aligned in an east/west direction. However at the northern end of the wing, abutting (061) the floor surface contained no central gully and recessed into the north-eastern corner of the floor was a rectangular drainage trough with a yellow sandstone cover (203), which measured 0.75m x 0.68m and had a depth of c0.60m.

The northern (004) and western (061) walls of the corridor formed the outer face of the Halls southern and eastern elevations and encompassed Rooms B6 to B9 and B16. At the western end of (004) was the rectangular projection of Room B6 which measured c1.94m in width and projected out by c1.50m and at its eastern end (004) contained the semi octagonal projection of Rooms B8 and B9 which measured c3.90m in width and had a projection of c1.50m. At the centre of the western wall (061) was the rectangular projection of Room B9 which measured c3.50m in width with a projection of c2.00m.

Both (004) and (061) were constructed from handmade red bricks (0.23m x 0.11m), which were covered by a c0.05m thick layer of rough grey mortar and along the northern end of (061) a single course of ashlar facing stones (**144**), measuring 0.32m x 0.23m were identified. The walls varied in height from c0.70 to c1.50m and measured between c0.47m and c0.70m in thickness. At the top of (004), the base of four windows were identified which are discussed further in Rooms B6, B7a, B7b and B8 and along the top of (061) a further window was identified within Room B9. Both walls sat on a stone plinth (**141**) which projected out from (004) and (061) by c0.37m and had a height of 0.05m. Along the entire length of (141) a shadow line could be seen which marked the location of the missing ashlar facing stones along the length of (004). Abutting the north-east corner of Room B6 (141) contained a rectangular projection (c0.90m x c0.50m) and flanking the octagonal projection of Rooms B8 and B9, (141) contained a two octagonal projections c1.00m x c1.00m.

The southern and eastern walls of the Corridor formed part of a retaining wall (**140**), which surrounded the entire footprint of the Halls eastern wing. The wall was constructed from handmade red bricks laid in English Garden Wall bond, which had been whitewashed. The wall survived to a height of seventeen courses (c1.30m), and at its summit were the remains of a brick vaulted roof which was two courses (c0.24m) in thickness. At the top of (140), directly outside Room B8, the end of a cast iron pipe, 0.15m in diameter was identified. Abutting the southern wall of (140) were a series of six, triangular brick buttresses (**143**) which measured 0.65m x 0.46m at their base and stood the full height of the wall. The buttresses stood c3.35m apart and the most westerly of the buttresses, outside Room B6 had been truncated during machine excavation. Similarly abutting the eastern wall of (140) were an additional four buttresses, the most southerly of which abutted the eastern buttress of the southern wall. The most northerly two of which outside Room B9 had been truncated during machine excavation.



**Figure 3:** Aerial view of the east/west wing of Corridor 5. looking east.

**Figure 4:** Aerial view of east/west wing of corridor 5 looking west.





**Figure 5:** Detail of drain (146) within the east/west wing of Corridor 5, looking north-east.



**Figure 6:** View of north/south wing of Corridor 5, looking south.



**Figure 7:** Detail of buttresses (143) at the (141) south-east corner of the retaining wall, looking south-east.



**Figure 8:** Detail of plinth projection at the eastern end of Corridor wall 5, looking east.



*Figure 9: View of north/south wing of Corridor 5, looking north.*

### 6.1.2 Corridor 6

Rectangular shaped corridor aligned east/west which ran alongside the eastern extent of the Halls southern elevation (002), abutting the southern end of Rooms B1 to B5. The corridor had an excavated length of c15.30m and abutted the western end of Corridor 5 to the east and whilst its western extent was truncated by the edge of excavation. As previously described in Corridor 5 there was a brick floor (142), constructed from handmade red bricks laid in Stretcher bond, aligned north/south alignment and running through the centre of the floor was a gully (147), c0.11m in width. To the immediate south of Room B3, (142) contained a roughly rectangular area of missing bricks (145), which measured c0.45m x 0.30m. Within the north-west corner of (145) was the remains of a cast iron drain pipe with a diameter of 0.06m, similar to the one identified in Corridor 5.

The northern (004) wall of the corridor formed the outer face of the Halls southern elevation and encompassed Rooms B1 to B5. At the eastern end of (004) was the rectangular projection of Room B6 which measured c1.94m in width and projected out by c1.50m and at its eastern end (004) contained the semi octagonal projection of Rooms B8 and B9 which measured c3.90m in width and had a projection of c1.50m. The wall (004) was constructed from handmade red bricks (0.23m x 0.11m), which were covered by a c0.05m thick layer of rough grey mortar and along the outer face of Room B5, four courses of ashlar facing stones (144), measuring between 0.55m x 0.32m and 1.02 x 0.32m were identified. The wall varied in height from c0.90m to 1.50m and measured between c0.47m and 0.70m in thickness. At the top of (004),



the base of four windows were identified which are discussed further in Rooms B2, B3, B4 and B5. The wall sat on a stone plinth (141) which projected out from by  $c0.37\text{m}$  and had a height of  $c0.05\text{m}$ . Abutting the north-east corner of Room B5 (141) contained a square projection ( $c0.70\text{m} \times 0.50\text{m}$ ) and flanking the eastern end of the octagonal projection of Room B2, (141) contained an octagonal projection  $c1.00\text{m} \times 1.00\text{m}$ , identical to that identified in Corridor 5.

As described in Corridor 5, the southern wall of Corridor 6 formed part of a retaining wall (140), which surrounded the entire footprint of the Halls eastern wing. The wall was constructed from handmade red bricks laid in English Garden Wall bond, which had been whitewashed. The wall survived to a height of seventeen courses ( $c1.30\text{m}$ ), and at its summit were the remains of a brick vaulted roof which was two courses ( $c0.24\text{m}$ ) in thickness. Abutting the wall a series of four, triangular brick buttresses (14) were exposed, which measured  $0.65\text{m} \times 0.46\text{m}$  at their base and stood the full height of the wall. The buttresses stood  $c3.35\text{m}$  apart and the most easterly of the buttresses, outside Room B5 had been truncated during machine excavation.



**Figure 10:** Detail of ashlar facing stones (144) on northern wall (004) of Corridor 6, looking north



**Figure 11:** Aerial view of Corridor 6, looking west.

### 6.1.3 *Room B1*

Roughly rectangular shaped room approximately 8.60m x 3.40m, located in south-west corner of the Hall's east wing. The room could be accessed from B2 and was bounded to the south, east and west by white washed, brick walls constructed from handmade red bricks (0.23m x 0.11m), laid in English Garden Wall bond. The room contained a brick floor (179), constructed from Staffordshire Blue machine made bricks (0.23m x 0.11m) laid in Stretcher bond, aligned north/south, with the exception of the southern projection which was aligned east/west. At its centre the room contained a 'U' shaped drainage gully (180) constructed from moulded bricks, which fed into a square drain cut (0.42m x 0.42m), at the southern end of the room which housed a circular metal drain cover (181). Within the north-west corner of the room the floor contained a rectangular void (186), which measured 0.48m x 0.50m and was surrounded on all sides by stone flags c0.20m in width, with a single row of handmade red bricks along its western edge.

At its southern end the room contained part of a semi-octagonal projection (004) which formed part of the Hall's southern elevation. The projection continued eastwards into Room 2 and appeared to form the base of a bay window. The projection was constructed from handmade red bricks (0.23 x 0.11), laid in English Garden Wall bond which survived to a height of nine courses (c0.99m) and had a thickness of c0.38m. The projection sat on a stone plinth (141) which projected out from (004) by 0.13m and had a height of 0.05m. The western wall (178) of the room was aligned north/south and formed part of the Hall's western elevation. The wall survived to a height of seventeen courses (c1.29m) and had an excavated thickness of between c0.45m and 0.72m. As with (004) the wall sat on a stone plinth which projected eastwards from (178) by 0.35m and had a height of 0.06m. At its southern end the wall contained the remains of a tapered, yellow sandstone sill which measured 1.10m in width and 0.62m in depth. Whilst at its northern end, sitting just above the plinth was a metal grate (0.88m x 0.18m) and the remains of some electrical wiring. The northern wall (002) of the room was aligned east/west and survived to a height of six courses (c0.40m) and had a thickness of c0.69m, with the exception of its eastern end which contained a rectangular projection (187) c1.45m in length and c0.94m in width. The top of the projection was covered by a c0.01m thick layer of mortar and contained a linear depression aligned roughly east/west which fed into a drain (188) in B2. The eastern wall (182) of the room was aligned north/south and survived to seventeen courses in height (c1.29m) and had a thickness of (c0.24m). At its northern end the wall contained a doorway, 1.13m in width which led in from B2 and which contained a single line of bricks laid in Header bond.

### 6.1.4 *Room B2*

Located to the immediate east of B1, within the south-west quadrant of the Hall's east wing, B2 was a mirror image of B1. The room could be accessed via two doorways leading in from B1 and Corridor 4 and was bounded to the south, east and west by white washed, brick walls constructed from handmade red bricks (0.23m x 0.11m), laid in English Garden Wall bond. The room contained a brick floor (183) with central drainage gully (184) and drain (185), as previously described in Room 1 and in its north-west corner was a rectangular, mortar lined drain cut (188), which measured 0.69m x 0.47m and contained a small circular grate. Within the north-east



corner of the room was an area of missing floor (c1.15m x 0.65m), which revealed the top of a brick, vaulted ceiling (**204**) belonging to a cellar room. This feature was identified running north/south and continued beyond wall (002). The ceiling was constructed of handmade bricks measuring 0.23m x 0.11m laid in Stretcher bond.

At its southern end the room contained the eastern half of the semi octagonal projection (004), previously described in B1. The projection survived to the same height and thickness as in B1, however along its eastern edge was the remains of a tapered, yellow sandstone sill (**040**) which measured 0.62m in width. The western wall (182) of the room also formed the eastern wall of B1. The wall contained a single doorway at its northern end (previously described in B1) and two voids (0.11m x 0.06m) c0.78m above floor level and c1.08m apart which contained the remains of timber inserts. The northern wall (002) of the room survived to a height of twenty courses (c1.49m) and was c0.69m thick. At its eastern end the wall contained a doorway 1.14m in width, which led in from Corridor 4. On each side of the doorway were two rectangular voids (0.46m x 0.06m) positioned 0.45m and 1.04m above ground level, which contained timber fitting for former doors. The eastern wall (**191**) of the room survived to a height of seventeen courses (c1.29m) and had a thickness of c0.24m. Along the length of the wall, 0.57m above floor level, were four voids (0.11m x 0.06m), 1.16m apart

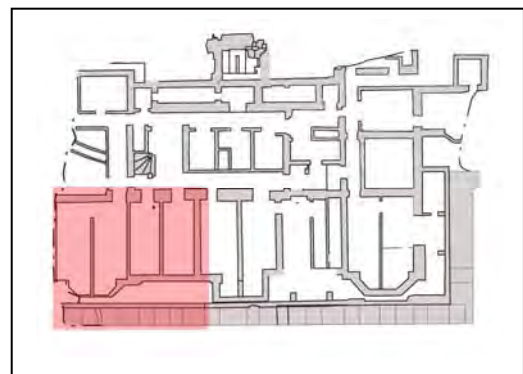
### 6.1.5 *Room B3*

Rectangular shaped room approximately 6.80m x 2.90m, located to the immediate east of B2, within the south-west quadrant of the Hall. The room could be accessed via a doorway leading in from Corridor 4 and was bounded to the south, east and west by handmade red brick (0.23m x 0.11m) walls, laid in English Garden Wall bond. The floor of the room (**007**) was constructed from Staffordshire Blue machine made bricks (0.23m x 0.11m) laid in Stretcher bond, aligned north/south.

The southern wall (004) of the room stood to a height of nineteen courses (c1.50m) with a thickness of c0.54m. The southern wall sat on a stone plinth (141) which projected out from the wall by 0.13m and had a height of 0.05m. At its centre the southern wall contained the remains of a window which measured 0.54m in width and sat 0.85m above floor level. The western wall (**003**) of the room stood to height of nineteen courses (c1.50m) and was concealed by a row of seven brick built storage bays (**006**), 0.95m in height, 0.86m in width with a depth of 0.90m. Each bay was constructed from machine made red bricks, and had partition walls and a brick arched ceiling, both 0.12m thick. Above each bay sat a series of stone flag (c0.90m x 0.86m), which were separated by a single line of bricks suggesting there may have been an upper row of storage bays. The northern wall (002) of the room survived to a height of twenty courses (c1.49m) and was c0.69m thick. At its centre was a doorway c1.14m in width, which led in from Corridor 4. On each side of the doorway were two rectangular voids (0.46m x 0.06m) positioned 0.52m and 1.12m above ground level, which contained timber fittings for the room's former door. The eastern wall (**005**) of the room survived to a height of twenty four courses (c1.81m) and had a thickness of 0.24m. Along the northern end of the wall there were two voids, 0.83m above floor level, and a third 1.21m above ground level. Each void was 1.15m apart and measured 0.11m x 0.06m. All three voids had the remains of timber inserts.



**Figure 12:** Aerial view and location of Rooms B1, B2, B3, B4 and Corridor 6 with significant contexts marked.





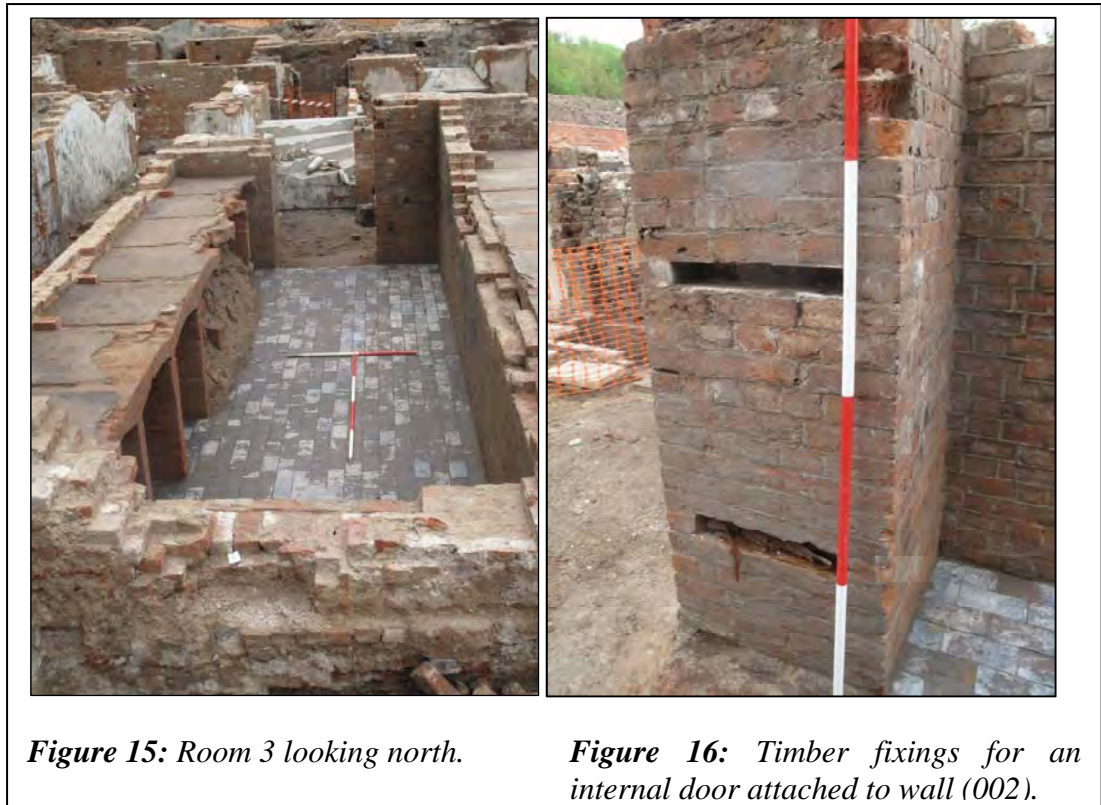


*Figure 13: Storage bays (006) within Room 3, looking northwest.*



*Figure 14: Voids within the eastern wall (005) within Room 3, looking east.*





*Figure 15: Room 3 looking north.*

*Figure 16: Timber fixings for an internal door attached to wall (002).*

### 6.1.6 **Room B4**

Rectangular shaped room 6.80m x 2.90m, located to the immediate east of B3, within the south-west quadrant of the Hall. The room could be accessed via a doorway leading in from Corridor 1 and was bounded to the south, east and west by handmade red brick (0.23m x 0.11m) walls, laid in English Garden Wall bond. The northern end of the room contained the remains of a stone flagged floor (010), with flags varying in size from c0.60m x 0.70m to c1.07m x 0.65m. At the southern end of the room the flagged floor had been removed to reveal two single courses of laid brick (011) and (012) aligned north/south. (011) ran through the centre of the room whilst (012) ran alongside the room's eastern wall (008), both being indicative of a floor support system. Either side of (011) were the tops of two brick, vaulted ceilings (009) belonging to a cellar room. The features were identified running north/south below (010) and continued beyond (002) into Corridor C1. Both features were approximately 1.22m and were constructed of handmade bricks measuring 0.23m by 0.11m which, were laid in Stretcher bond.

The southern wall (004) of the room stood to a maximum height of eleven courses (c0.80m) with a thickness of c0.62m. The southern wall sat on a stone plinth (141) which projected out from the wall by 0.13m and had a height of 0.05m. At its western end the wall contained the remains of a tapered, yellow sandstone sill (055) which sat c0.85m above floor level and measured 0.74m in width. At its eastern end the wall had been truncated and only survived to five courses in height (c0.38m). The western wall (005) of the room stood to height of twenty four courses (c1.81m)



and was concealed by a row of seven brick built storage bays (015), identical to those previously described in Room 3. The northern wall (002) of the room survived to a height of twenty courses (c1.49m) and was c0.69m thick. At its centre the wall contained a doorway 1.14m in width, which led in from Corridor 1. On each side of the doorway were two rectangular voids (0.46m x 0.06m) positioned 0.38m and 1.13m above ground level, which contained timber and metal fittings for the room's former door. The eastern wall (008) of the room survived to a height of twenty courses (c1.55m) and had a thickness of 0.24m.



**Figure 17:** Room B4 looking north.



**Figure 18:** Vaulted ceiling of the sub basements (009) within Room B4.



**Figure 19:** Brick built storage bays (015) within Room B4.

### 6.1.7 Room B5

Roughly 'L' shaped room located to the immediate east of B4, within the south-west quadrant of the Hall. The main body of the room measured approximately 6.80m x 3.60m and at its south-east corner was a small rectangular projection which measured 2.50m x 1.70m. The room could be accessed via a doorway leading in from Corridor 1 and was bounded to the east and west by white washed, walls constructed from handmade bricks (0.23m x 0.11m), laid in English Garden Wall bond. The room contained a brick floor (071), constructed from machine made, red bricks laid in Stretcher bond, aligned east/west. At its centre the floor contained square drain (0.42m x 0.42m) with circular metal grate (072) and within the north-east corner of the room, c2.20m south of (002) and c0.56m west of (070) was the remains of a rectangular timber post (200) which measured 0.11x 0.06. Approximately 4.80m south of the rooms north wall (002), a 1.00m wide slot, aligned east/west was excavated across the entire width of the room. The slot revealed a mortar deposit (199) c0.05m in depth directly below (071). Below the mortar layer were the tops of three brick vaulted ceilings (022), identical to those described in B4. The features (022) were separated by two lines of brick, c0.39m wide and all three ran north/south below (071), continuing northwards beyond (002) into Corridor C1.

The southern wall (004) of the room formed part of the Hall's southern elevation and sat above a stone plinth (141) which projected out from (004) by 0.13m and had a height of 0.05m above floor level. At its western end (004) had a thickness of c0.62m, stood to a height of seventeen courses (c1.30m) and contained the remains of a tapered, yellow sandstone sill (058) which sat 0.90m above floor level and measured 0.86m in width. The central and eastern sections of (004) were truncated during machine excavation and as such only the stone plinth (141) survived and marked the former position of the wall. The western wall (008) of the room stood to a height of twenty courses (c1.55m), had a thickness of 0.24m and was covered with a thin layer of blue paint. The northern wall (002) of the room survived to a height of twenty courses (1.49m) and was 0.69m thick. At its western end the wall contained a doorway 1.14m in width, which led in from Corridor 1. On each side of the doorway were two rectangular voids (0.46m x 0.06m) positioned 0.38m and 1.11m above ground level, which contained timber fittings for the room's former door and at its base was a stone threshold (1.14m x 0.62m). The eastern wall (070) of the room survived to a height of twenty courses (c1.55m), which dropped to thirteen courses (1.00m) at its centre before being truncated at its southern end so that it was only visible as two lines of bricks within the floor (071). The wall was 0.24m thick and at its northern end were three voids (0.15m x 0.08m) with timber infill, which were c1.80m apart.



*Figure 20: Room B5, looking south.*





*Figure 21: Room B5, looking north-west.*



*Figure 22: The remains of three voids containing timber remains within the eastern wall (070) within Room B5.*





*Figure 23: Detail of tapered sandstone window sill in southern wall (004) of Room B5, looking south.*



*Figure 24: Detail of floor drain (072) in floor of Room B5 looking north.*

### 6.1.8 Room B6

Roughly 'L' shaped room located to the immediate east of Room 5, within the south-east quadrant of the Hall. The dimensions of the room were identical to those previously described in Room 5. The room could be accessed via two doorways leading in from Corridor 1 and B7a and was bounded to the east and west by white washed, walls constructed from handmade bricks (0.23m x 0.11m), laid in English Garden Wall bond. The room contained a brick floor constructed from machine made bricks (0.23m x 0.11m) laid in Stretcher bond, aligned east/west.

The northern half of the floor was constructed from machine made Staffordshire Blue bricks (074), whilst the southern half of the floor was constructed from machine made red brick (075). As in Room 5 there was a square drain (076) at the centre of the floor, however this had been in filled with mortar. Approximately 4.80m south of the rooms north wall (002) a 1.00m wide slot, aligned east/west was excavated across the entire width of the room. The slot revealed a mortar deposit (199) c0.05m in depth directly below (075). Below the mortar layer the tops of three brick vaulted ceilings (205), identical to those described in B5, were identified. The features (205) were separated by two lines of brick, c0.39m wide and all three ran north/south below (074 & 075), continuing northwards beyond (002) into Corridor C1.

The southern wall (004) of the room formed part of the Hall's southern elevation and sat above a stone plinth (141) which projected out from (004) by 0.13m and had a height of 0.05m above floor level. At its eastern end (004) had a thickness of c0.62m, stood to a height of seventeen courses (c1.30m) and contained the remains of a tapered, yellow sandstone sill (206) which sat 0.90m above floor level and measured 0.86m in width. The central and western sections of (004) were truncated during machine excavation and as such only the stone plinth (141) survived. The western wall (070) of the room survived to a height of twenty courses (c1.55m), which dropped to thirteen courses (c1.00m) at its centre before being truncated at its southern end so that it was only visible as two lines of bricks within the floor (075).

The northern wall (002) of the room survived to a height of twenty courses (c1.49m) and was c0.69m thick. At its eastern end the wall contained a doorway 1.14m in width, which led in from Corridor 1. On each side of the doorway were two rectangular voids (0.46m x 0.06m) positioned 0.38m and 1.11m above ground level, which contained timber fittings for the room's former door and at its base was a stone threshold (1.14m x 0.62m). The eastern wall (073) of the room survived to a height of eighteen courses (c1.40m) and measured c0.60m in thickness. At its northern end (073) contained a doorway 1.14m in width, which led in from B7a. On each side of the doorway were two rectangular voids (0.34m x 0.08m) positioned 0.40m and 1.17m above ground level, which contained timber fittings for the room's former door and at its base was a stone threshold (1.14m x 0.62m).





**Figure 25:** View of B6, looking north-east.

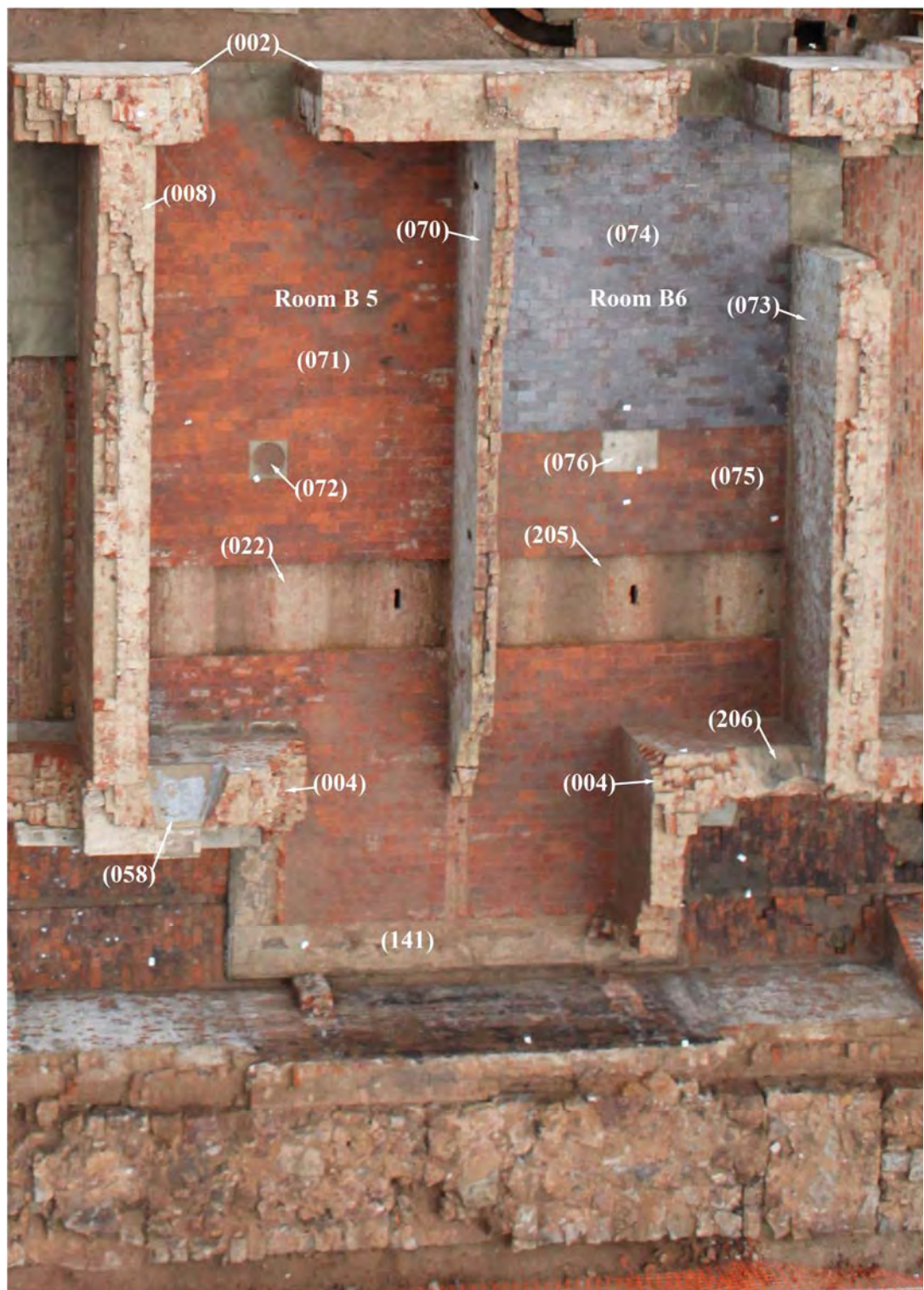


**Figure 26:** Detail of doorways in the northern (002) and eastern (073) walls of B6, looking north-east.

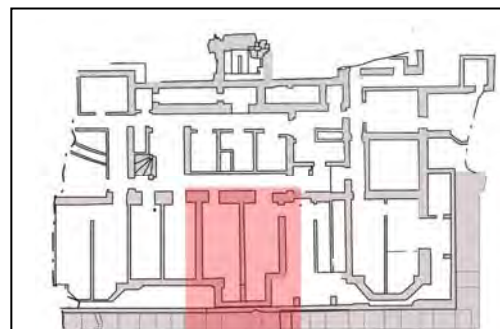


**Figure 27:** View of brick vaulted ceilings (205) within floor of B6, looking south.





**Figure 28:** Aerial view of Rooms 5 and 6 with significant contexts marked.



### 6.1.9 *Room B7a*

Rectangular shaped room 6.80m x 2.74m, located to the immediate east of B6, within the south-east quadrant of the Hall. The room could be accessed via two doorways leading in from B6 and B7b and was bounded to the north, south, east and west by white washed, handmade red brick (0.23m x 0.11m) walls, laid in English Garden Wall bond. The room had no remaining floor surface, other than a single line of stone flags (078) c 0.60m x 0.70m, which sat on a mortar layer (199) c 0.08m in depth. Below (199), the tops of two brick vaulted ceilings (080), identical to those described in B6, were identified running north/south below (078), continuing northwards beyond (002) into Corridor 1. The features (080) were separated by a line of bricks, c0.24m wide and at the centre of the line was a circular, cast iron drain pipe (079), 0.45cm in diameter which had been covered with black mortar.

The southern wall (004) of the room stood to a height of twenty one courses (c1.60m) and had a thickness of c0.62m. At its centre (004) contained the remains of a window complete with a tapered, yellow sandstone sill (207) which sat 0.90m above floor level and measured 1.06m in width. The western wall (073) of the room survived to a height of eighteen courses (c1.40m) and measured c0.60m in thickness. At its northern end (073) contained a doorway previously describe in B6. The northern wall (002) of the room survived to eighteen courses in height (c1.40m) and was 0.69m thick. At the centre of (002) there was a rectangular recess 1.14m wide and c0.30m deep, which contained two rectangular voids (0.34m x 0.08m) along its eastern edge which were positioned 0.34m and 0.95m above ground level. The voids contained timber fittings similar to those identified in B1 to B6 which suggested the recess was an earlier doorway into the room from Corridor 1. To the west of the blocked doorway c0.47m above ground level there was a rectangular iron frame (0.33m x 0.29m) recessed into (002) which contained a horizontal bar with central bolt. Above the frame, housed within (002) was second iron frame (0.36 x 0.36) complete with a hinged lid. The eastern wall (077) of the room survived to twenty one courses in height (c1.63m) at its northern and southern ends however the wall had been truncated in parts during machine excavations and as such only survived to five courses in height (c0.43m) at its centre. The wall was 0.24m in thickness and contained a doorway at its northern end which led into B7b and which measured 1.20m in width.

### 6.1.10 *Room B7b*

Rectangular shaped room 6.80m x 2.74m, located to the immediate east of B7a, within the south-east quadrant of the Hall. The room could be accessed via a doorway leading in from B7a and was bounded to the north, south, east and west by white washed, handmade red brick (0.23m x 0.11m) walls, laid in English Garden Wall bond. As in B7a the room had no remaining floor surface, other than two disturbed stone flags at the southern end of the room which measured (082) c0.72m x 0.66m and (083) c1.02m x 0.62m. Both flags sat on top of a mortar layer (199) c0.08m in depth and the larger, most westerly flag (083) contained the remains of a circular cast iron fitting c0.20m in diameter. Below (199), the tops of two brick vaulted ceilings (085), identical to those described in B7a, were identified running north/south below (078), continuing northwards beyond (002) into Corridor Room 15. The features (085) were separated by a line of bricks, c0.24m wide which had been partially damaged at the northern end



of the room. At the centre of the line was a circular, drainage shaft (**084**), c0.45m in diameter which had been lined with white mortar.

The southern wall (004) of the room stood to a height of twenty one courses (c1.60m) and had a thickness of c0.62m. At its centre (004) contained the remains of a window complete with a tapered, yellow sandstone sill (**208**) which sat 0.90m above floor level and measured 1.06m in width. The western wall (077) survived to twenty one courses in height (c1.63m) at its northern and southern ends however the wall had been truncated in parts during machine excavations and as such only survived to five courses in height (c0.43m) at its centre. The wall was 0.24m in thickness and contained a doorway previously described within B7a. The northern (002) and eastern (**081**) walls of the room both stood to a height of twenty one courses (c1.60m) and had a thickness of c0.60m.



**Figure 29:** Aerial view of Room B7a and looking north-east.



**Figure 30:** Aerial view of Room B7a, looking south.





**Figure 31:**  
*Detail of drain  
pipe (079) within  
floor of B7a,  
looking north.*



**Figure 32:**  
*View  
of northern wall  
of B7a, looking  
north.*



**Figure 33:**  
*View  
of window sill  
in southern wall  
(004) of B7a,  
looking south.*





*Figure 34: View of southern end of B7b, looking south.*



*Figure 35: Detail of stone flags (083) on floor of B7b, looking south.*



### 6.1.11 Room B8

Roughly rectangular shaped room 8.60m x 3.40m, located to the immediate east of B7b, within the south-east quadrant of the Hall. The room could be accessed via a doorway leading in from Corridor 3 and was bounded to the north, south, east and west by white washed, handmade red brick (0.23m x 0.11m) walls, laid in English Garden Wall bond. The room contained a brick floor (149), constructed from Staffordshire Blue machine made bricks laid in Stretcher bond, aligned east/west. At the northern end of the room, the floor contained a stone lined hatch c0.74m x 0.62m which provided access into the cellars and contained a stone lid with circular metal handle. In the south-west corner of the room there was also a small circular, cast iron drain pipe, 0.13m in diameter which ran down into the cellars. Approximately 4.80m south of the rooms north wall (002) a 1.00m wide slot, aligned east/west was excavated across the entire width of the room. The slot revealed a mortar deposit (199) c0.08m in depth directly below (0149). Below the mortar layer the tops of two brick vaulted ceilings (150), identical to those described in B6, were identified. The features (150) were separated by two lines of brick, c0.39m wide and ran north/south below (149), continuing northwards beyond (002) into Corridor C3 and B16.

At its southern end the room contained part of a semi-octagonal projection (004) which formed part of the Hall's southern elevation. The projection continued eastwards into B 9 and appeared to form the base of a bay window. As in B5 and B6, (004) sat on a stone plinth (141) which projected out from (004) by 0.13m and had a height of 0.05m above floor level. At its western end (004) had a thickness of c0.62m, stood to a height of twelve courses (c0.90m) and contained the partial remains of a window with tapered, yellow sandstone sill (209) which sat 0.90m above floor level and measured 0.86m in width. The central and eastern sections of (004) were truncated during machine excavation and as such only the stone plinth (141) survived. The western (081) and northern (002) walls of Room 8 stood to a height of twenty one courses (c1.60m) and had a thickness of c0.60m. At the centre of (002) there was a doorway 1.14m in width, which led in from Corridor 3. On each side of the doorway were two rectangular voids (0.55m x 0.07m) positioned 0.04m and 0.79 m above ground level, which contained timber fittings for the room's former door and at its base was a stone threshold (1.14m x 0.62m). The eastern wall (148) survived to eighteen courses in height (c1.40m) and was 0.24m in thickness. At its northern end (148) contained a doorway at which led into B9 which measured 1.20m in width.



**Figure 36:**  
*Detail of  
brick vaulted  
ceilings (150)  
below the  
floor (149) of  
B8, looking  
south.*

### 6.1.12 *Room B9*

Roughly rectangular shaped room 8.60m x 3.40m, located to the immediate east of B8, within the south-east corner of the Hall. The room could be accessed via a doorway leading in from B8 and was bounded to the north, south, east and west by white washed, handmade red brick (0.23m x 0.11m) walls, laid in English Garden Wall bond. The room contained a brick floor (**151**), constructed from machine made red bricks (0.23 x 0.11) laid in Stretcher bond, aligned in east/west. Approximately 4.80m south of the rooms north wall (002), the brick floor (151) had been removed and the southern half of the room had been excavated down to a depth of c0.77m. The slot exposed a sandy deposit (**201**), of varying depth directly below (151). Within the south-west corner of the slot a substantial linear, brick feature (**152**) aligned north-east/south-west was identified. The feature was constructed from handmade red bricks, laid in English Garden Wall bond and was 1.09m thick with an excavated depth of c0.51m. Within the south-east corner of the slot, to the immediate east of (152) a second, irregular shaped, brick feature (**153**) was identified. The feature sat below (152) and had an excavated depth of c0.23m. It is likely that both (152) and (153) formed part of the Halls underpinning.

At its southern end the room contained part of a semi-octagonal projection (**004**) which formed part of the Hall's southern elevation. The projection continued westwards into B8 and appeared to form the base of a bay window. The wall (004) survived to eighteen courses in height (c1.40m) and measured c0.62m thick along its eastern end before dropping to c0.38m in thickness along its central and western sections. As in B8, (004) sat on a stone plinth (141) constructed from dressed stone blocks which projected out from (004) by 0.20m. The slot at the southern end of the room exposed two courses of the plinth (141) which had an excavated depth of c0.77m below floor level and a test pit along the inner face of (004) revealed that the plinth comprised of four courses of stone in total. The western wall (**148**) of the room survived to eighteen courses in height (c1.40m), 0.24m in thickness and at its northern end was a doorway, previously described in B8. In contrast to the rooms other walls (148) appeared to be constructed from a mixture of English Garden Wall bond (lower section) and Flemish bond (upper section).

The northern wall of the room (002) stood to a height of twenty three courses (c1.76m) and had a thickness of 0.60m. At the eastern end of (002), c1.14m west of the room's eastern wall (**061**) and c0.83m above floor level, there was a timber fitting. The fitting was fixed to (002) at an oblique angle and measured 0.42m x 0.07m. The room's eastern wall (061), formed part of the Halls eastern elevation and stood to a height of twenty courses (c1.53m) at its northern end and had a width of c0.47m. At the centre of (061), c1.98m south of (002) there was a small rectangular projection which measured 3.08m x 2.15m. The section of (061) which had bounded the projection had been truncated during machine excavation and only the stone plinth (141) remained intact. To the south of the projection, (061) stood twenty courses in height (c1.53m) and c 0.90m above ground level were the remains of a window 1.07m in width which contained a tapered, yellow sandstone sill (**210**). Within the slot at the southern end of the room, two courses of the walls stone plinth (141) were visible and this measured c0.77m in height.





**Figure 37:**  
*Aerial view of  
B9, looking  
south.*



**Figure 38:**  
*Detail of  
excavated slot  
at south end of  
B9, showing  
Halls  
underpinning  
(152) and  
(153), looking  
south.*



**Figure 39:**  
*View of south  
end of B9  
western wall  
(061), showing  
the walls  
window sill  
and plinth  
(141), looking  
south-east.*

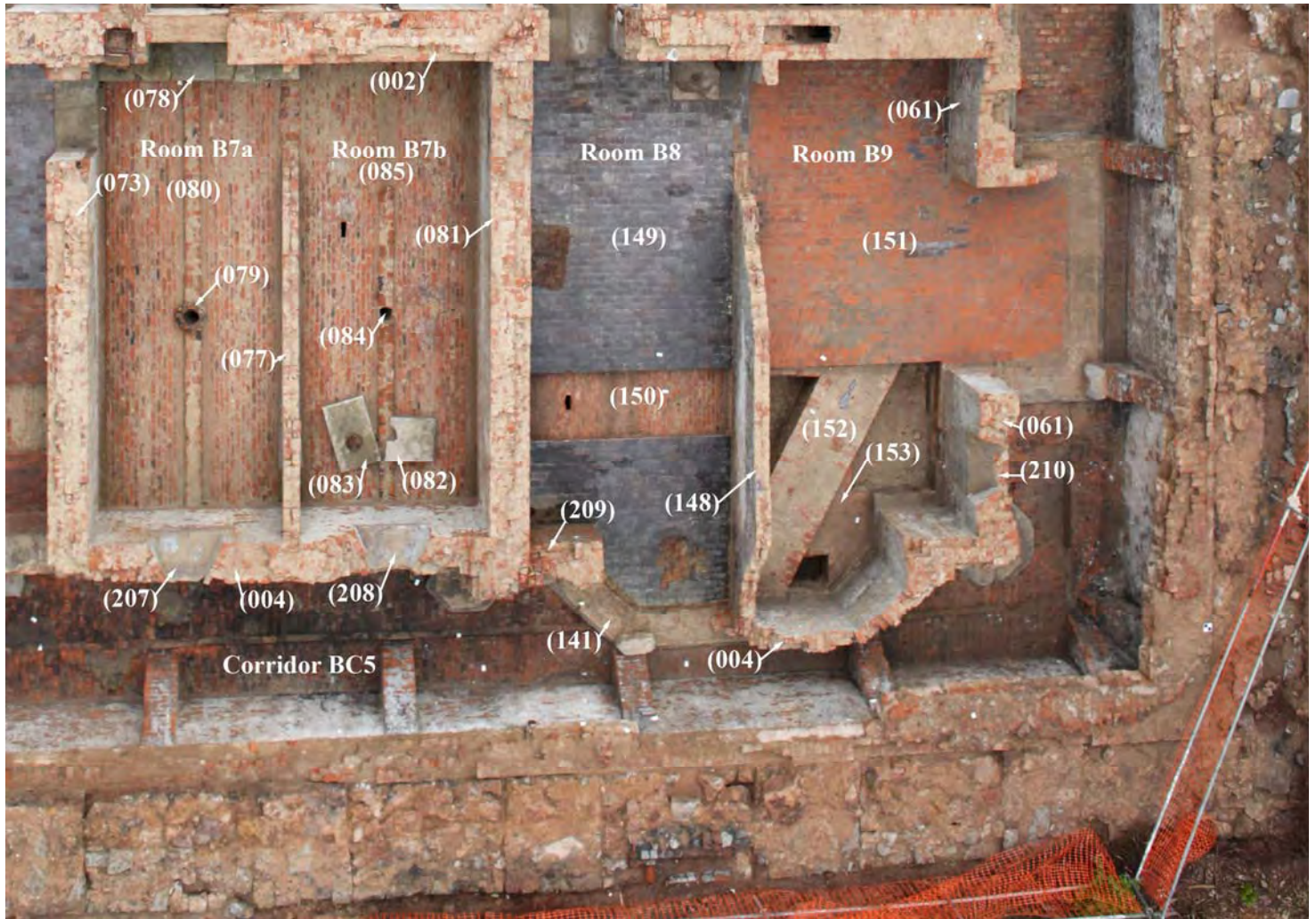


*Figure 40: Detail of western projection in B9, looking east.*

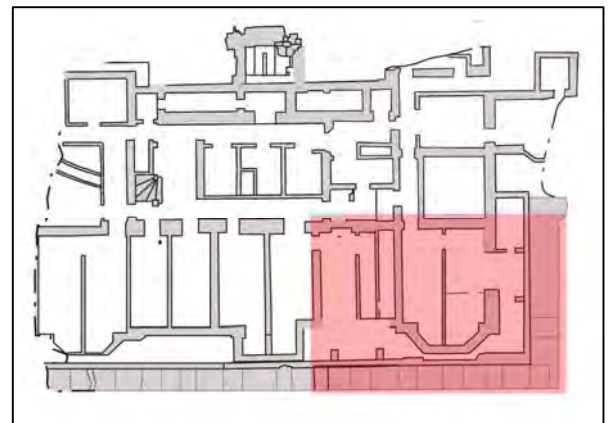


*Figure 41: Detail of test pit abutting southern wall (004) of B9, looking south.*





**Figure 42:** Aerial view of Rooms B7a, B7b B8 and B9 with significant contexts marked.





### 6.1.13 Room B10

Roughly square shaped room measuring 5m x 5.60m located in the north western corner of the Hall's east wing. The room was bounded to the north, east and south by unpainted handmade brick (0.23m x 0.11m) walls, **(162)**, **(160)** and **(002)** respectively, constructed in English bond and measuring 0.23m in thickness. At the southern end of wall **(160)** was an area of irregularly laid brick with a paler mortar (161) suggesting the blocking of an earlier doorway. The western extent of the room was truncated by the edge of excavation. The room had no remaining evidence of a floor surface, merely a sandy demolition deposit (165) which had frequent inclusions of brick rubble. Two single courses of laid brick **(164)** were identified in the main part of the room which along with brick projections from the surrounding walls are indicative of a floor support system. Both brick alignments in (164) were identified running east-west although only the northernmost spanned the extent of the room as the southernmost was truncated by a brick tunnel **(166)**.

The internal area of the room was dominated by a sunken handmade brick tunnel (166) with a vaulted top at floor level. This feature was identified running in a broad curve from west to east and continued beyond wall **(160)**. The tunnel was constructed of handmade bricks measuring 0.23m x 0.11m laid in English bond with a black brick floor surface lying 1.00m below the floor. The north eastern corner of the room contained a cast iron fireplace **(163)** with evidence of whitewashed wall plaster to either side of it. The feature comprised a handmade brick hearth at floor level, a cast iron grate and surround and a marble mantelpiece. Black mortar could be seen next to the surround, however the tiles/stonework that this deposit was designed to hold were not present. White glazed bricks were found behind the fireplace which continued upwards to line the chimney. The chamfered white marble mantelpiece measuring c.1.50m was broken at the northern end but well preserved along the visible remains. The feature stood at a height of 1.50m from the excavated surface.



**Figure 43:** Aerial view of B10, looking east.





**Figure 44:** Detail of brick tunnel (166) in B10, looking east.

**Figure 45:** Interior view of tunnel (166) in B10, looking east.



**Figure 46:** View of cast iron fireplace in B10, looking north-east.

### 6.1.14 Room B11

A long rectangular room measuring 5.50m x 1.50m located along the northern extent of the Hall's east wing. The room was bounded to the north by a whitewashed wall (168), which survived to a height of 2.50m and retained evidence of a brick vaulted ceiling. The wall measured 0.80m in thickness which included an exterior facing course of ashlar masonry the interior face was found to be constructed from handmade bricks measuring 0.23m x 0.11m laid in English bond. The southern wall of the room (125), measured 0.90m in thickness and possessed an interior course of ashlar masonry (117). There were two windows along the course of this wall which opened from Corridor 2 into this room. These took the same form as the window identified in B18, however the easternmost still possessed the remains of a wood panelled sill on the corridor side and a small stone sill within Room 21. At the base of wall (125) a stone footing course (118) was revealed which projected 0.05m into the room. The stone facing and footing continued along the western wall of the room (112) and terminated at wall (168). To the east the room was bounded by wall (121) which measured 0.60m in thickness with a facing of ashlar masonry on the western face only. This wall contained a doorway towards its southern extent linking B21 and B24 to the east. Evidence of a shaped stone block within the masonry facing on the northern side of this opening suggests that the doorway may have been arched.

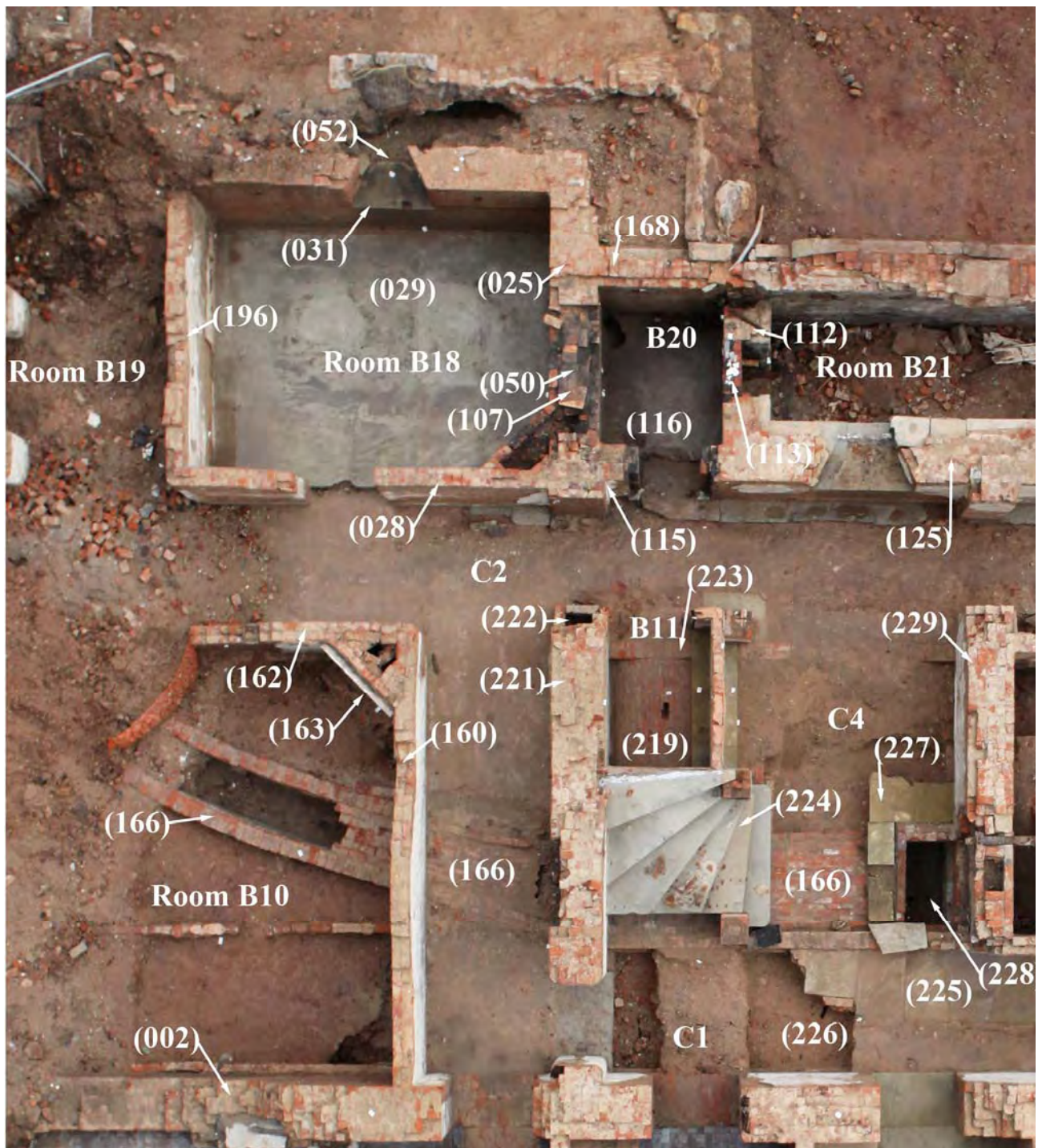


**Figure 47:** Room B11, looking south.

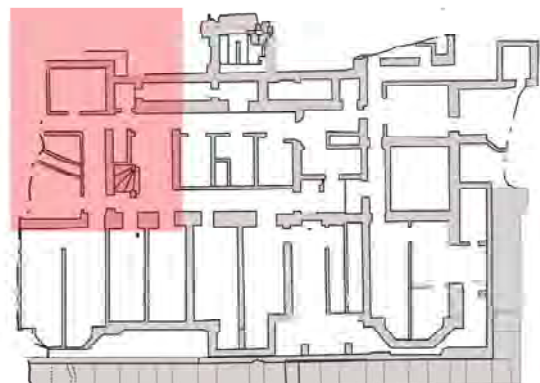


**Figure 48:** Wall (221) and ventilation flue (222).





**Figure 49:** Aerial view and significant contexts for Rooms B10, B11, B18, B20 and Corridors C1, C2 and C4.





### 6.1.15 Room B12

A long rectangular room measuring 5.50m x 1.50m located along the northern extent of the Hall's east wing. The room was bounded to the north by a whitewashed wall (168), which survived to a height of 2.50m and retained evidence of a brick vaulted ceiling. The wall measured 0.80m in thickness which included an exterior facing course of ashlar masonry the interior face was found to be constructed from handmade bricks measuring 0.23m x 0.11m laid in English bond. The southern wall of the room (125), measured 0.90m in thickness and possessed an interior course of ashlar masonry (117). There were two windows along the course of this wall which opened from Corridor 2 into this room. These took the same form as the window identified in B18, however the easternmost still possessed the remains of a wood panelled sill on the corridor side and a small stone sill within Room 21. At the base of wall (125) a stone footing course (118) was revealed which projected 0.05m into the room. The stone facing and footing continued along the western wall of the room (112) and terminated at wall (168). To the east the room was bounded by wall (121) which measured 0.60m in thickness with a facing of ashlar masonry on the western face only. This wall contained a doorway towards its southern extent linking B21 and B24 to the east. Evidence of a shaped stone block within the masonry facing on the northern side of this opening suggests that the doorway may have been arched.



**Figure 50:** Cast iron pipes within the heat exchanger (231) in Room B12.





*Figure 51: Room B12, looking south-west.*



*Figure 52: north-west quadrant of Room B12, sub-basement access hatch (252)*





*Figure 53: Access point to heat exchanger (253) within Room B12.*



*Figure 54: Cast iron ventilation plates leading to the heat exchanger (253) within Room B12.*



### 6.1.16 Room B13

Roughly rectangular shaped room 3.70m x 2.85m, located to the immediate east of B12, within the north-east quadrant of the Hall. The room could be accessed via a doorway leading in from Corridor 2 and was bounded to the north, south, east and west by handmade red brick (0.23m x 0.11m) walls, laid in Flemish bond. All four walls of the room contained considerable amounts of painted wall plaster (**039**) *in-situ*. The room contained a brick floor (**041**), constructed from machine made, red bricks laid in Stretcher bond, aligned east/west. Approximately 1.40m south of the room's north wall (**032**), a 1.00m wide slot, aligned east/west was excavated across the entire width of the room. The slot revealed a mortar deposit (**199**) c0.08m in depth directly below (041). Below the mortar layer the tops of two vaulted brick ceilings (**202**), identical to those described in B8, were identified.

The features (202) were separated by two lines of brick, c0.39m wide and both ran north/south below (041), continuing northwards and southwards beyond (035) and (**032**). The room's southern (035) and western (**040**) walls were both eighteen courses in height (c1.40m) and 0.24m in thickness. The northern wall (032) of the room survived to a height of twenty one courses (c1.59m) and was 0.24m thick. At its eastern end the wall contained a doorway 1.06m in width, which led in from Corridor 2. On each side of the doorway were two rectangular voids (0.20m x 0.06m) positioned 0.34m and 0.96m above ground level. The eastern wall (**131**) of the room stood to a height of twenty three courses (c1.79m) and was 0.60m thick.



*Figure 55: Room B13 looking south.*

### 6.1.16 Corridor 1

The wall measured 0.80m in thickness which included an exterior facing course of ashlar masonry the interior face was found to be constructed from handmade bricks measuring 0.23m x 0.11m laid in English bond. The southern wall of the room (125), measured 0.90m in thickness and possessed an interior course of ashlar masonry (117). There were two windows along the course of this wall which opened from Corridor 2 into this room. These took the same form as the window identified in B18, however the easternmost still possessed the remains of a wood panelled sill on the corridor side and a small stone sill within Room 21. At the base of wall (125) a stone footing course (118) was revealed which projected 0.05m into the room. The stone facing and footing continued along the western wall of the room (112) and terminated at wall (168). To the east the room was bounded by wall (121) which measured 0.60m in thickness with a facing of ashlar masonry on the western face only. This wall contained a doorway towards its southern extent linking B21 and B24 to the east. Evidence of a shaped stone block within the masonry facing on the northern side of this opening suggests that the doorway may have been arched.



**Figure 56:** Corridor 1, looking east, with flue (254) in the foreground.



### 6.1.17 Corridor 2

A long rectangular room measuring 5.50m x 1.50m located along the northern extent of the Hall's east wing. The room was bounded to the north by a whitewashed wall (168), which survived to a height of 2.50m and retained evidence of a brick vaulted ceiling. The wall measured 0.80m in thickness which included an exterior facing course of ashlar masonry the interior face was found to be constructed from handmade bricks measuring 0.23m x 0.11m laid in English bond. The southern wall of the room (125), measured 0.90m in thickness and possessed an interior course of ashlar masonry (117). There were two windows along the course of this wall which opened from Corridor 2 into this room. These took the same form as the window identified in B18, however the easternmost still possessed the remains of a wood panelled sill on the corridor side and a small stone sill within Room 21. At the base of wall (125) a stone footing course (118) was revealed which projected 0.05m into the room. The stone facing and footing continued along the western wall of the room (112) and terminated at wall (168). To the east the room was bounded by wall (121) which measured 0.60m in thickness with a facing of ashlar masonry on the western face only. This wall contained a doorway towards its southern extent linking B21 and B24 to the east. Evidence of a shaped stone block within the masonry facing on the northern side of this opening suggests that the doorway may have been arched.



*Figure 57: Corridor 4, looking east.*



**Figure 58:** Ventilation access to (166).



**Figure 59:** External wall and pipework of the heat exchange.



**Figure 60:** Corridor 4, with steps leading from the basement to the ground floor.



### 6.1.18 *Room B14*

A long rectangular room measuring 5.50m x 1.50m located along the northern extent of the Hall's east wing. The room was bounded to the north by a whitewashed wall (168), which survived to a height of 2.50m and retained evidence of a brick vaulted ceiling. The wall measured 0.80m in thickness which included an exterior facing course of ashlar masonry the interior face was found to be constructed from handmade bricks measuring 0.23m x 0.11m laid in English bond. The southern wall of the room (125), measured 0.90m in thickness and possessed an interior course of ashlar masonry (117). There were two windows along the course of this wall which opened from Corridor 2 into this room. These took the same form as the window identified in B18, however the easternmost still possessed the remains of a wood panelled sill on the corridor side and a small stone sill within Room 21. At the base of wall (125) a stone footing course (118) was revealed which projected 0.05m into the room. The stone facing and footing continued along the western wall of the room (112) and terminated at wall (168). To the east the room was bounded by wall (121) which measured 0.60m in thickness with a facing of ashlar masonry on the western face only. This wall contained a doorway towards its southern extent linking B21 and B24 to the east. Evidence of a shaped stone block within the masonry facing on the northern side of this opening suggests that the doorway may have been arched.



*Figure 61: Boiler (240) located within Room B14, looking south.*





**Figure 62:** Closeup of Boiler (240 )  
Within Room B14.



**Figure 63:** internal view of boiler (240 )  
Within Room B14.



**Figure 64:** Ashlar stone archway (242 ) within the sub-basement beneath Room B14.





*Figure 65: Masons mark carved into end of ashlar block within wall (241), beneath Room B14.*

### 6.1.19 **Room B15**

A long rectangular room measuring 5.50m x 1.50m located along the northern extent of the Hall's east wing. The room was bounded to the north by a whitewashed wall (168), which survived to a height of 2.50m and retained evidence of a brick vaulted ceiling. The wall measured 0.80m in thickness which included an exterior facing course of ashlar masonry the interior face was found to be constructed from handmade bricks measuring 0.23m x 0.11m laid in English bond. The southern wall of the room (125), measured 0.90m in thickness and possessed an interior course of ashlar masonry (117). There were two windows along the course of this wall which opened from Corridor 2 into this room. These took the same form as the window identified in B18, however the easternmost still possessed the remains of a wood panelled sill on the corridor side and a small stone sill within Room 21. At the base of wall (125) a stone footing course (118) was revealed which projected 0.05m into the room. The stone facing and footing continued along the western wall of the room (112) and terminated at wall (168). To the east the room was bounded by wall (121) which measured 0.60m in thickness with a facing of ashlar masonry on the western face only. This wall contained a doorway towards its southern extent linking B21 and B24 to the east. Evidence of a shaped stone block within the masonry facing on the northern side of this opening suggests that the doorway may have been arched.

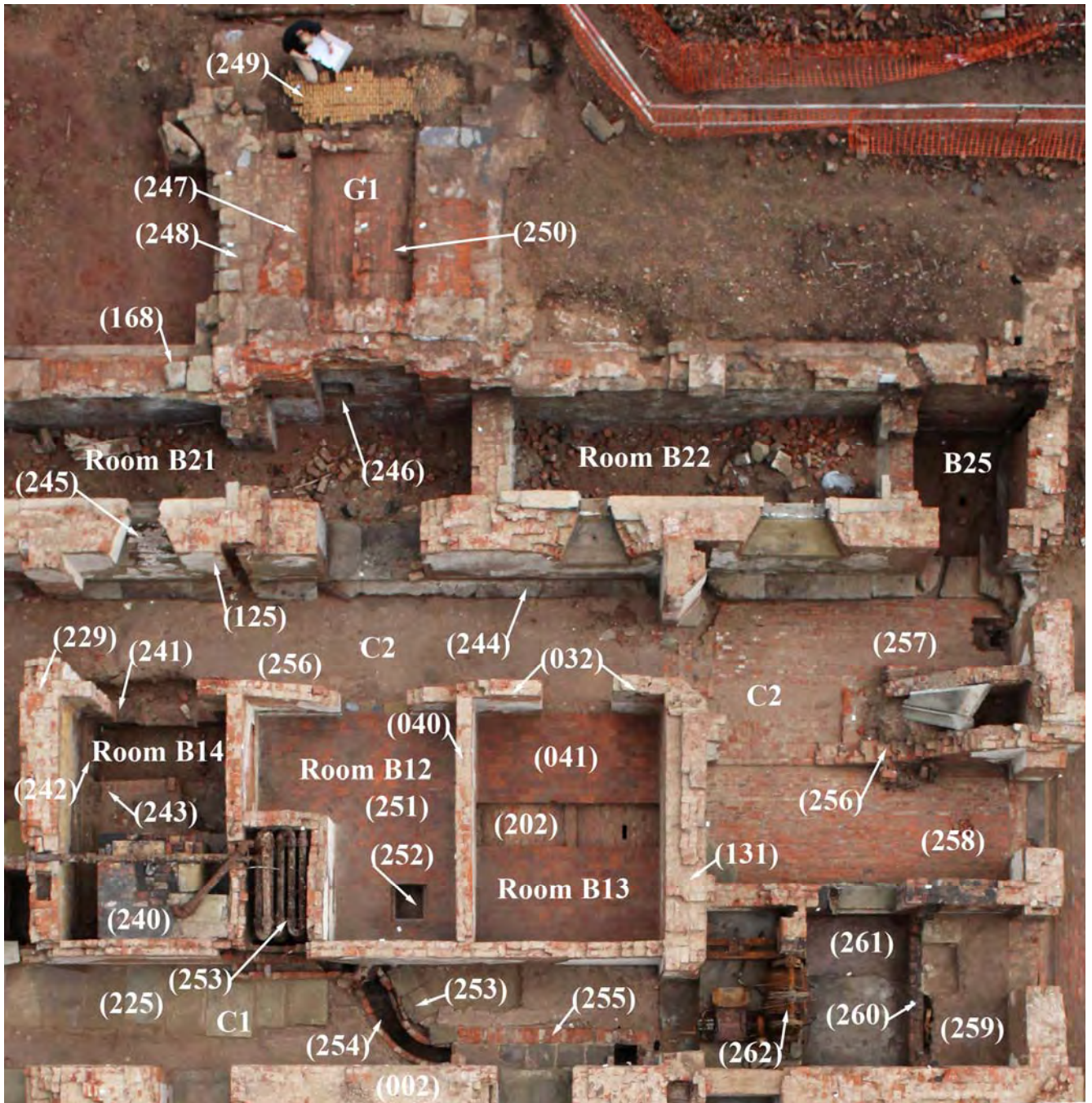


*Figure 66: Mechanical remains of lift within lift shaft, Room B15.*

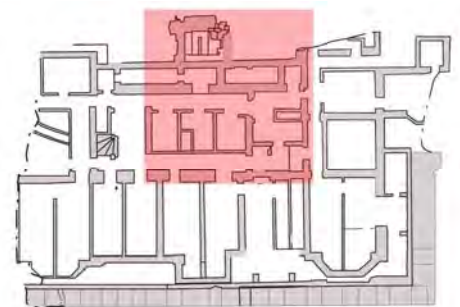


*Figure 67: Mechanical remains of lift within lift shaft, Room B15.*





**Figure 68:** Aerial view, location plan of Rooms B12, B13, B14, B21, B22, C1, C2 Showing key contexts.





### 6.1.20 *Room B16*

A long rectangular room measuring 5.50m x 1.50m located along the northern extent of the Hall's east wing. The room was bounded to the north by a whitewashed wall (168), which survived to a height of 2.50m and retained evidence of a brick vaulted ceiling. The wall measured 0.80m in thickness which included an exterior facing course of ashlar masonry the interior face was found to be constructed from handmade bricks measuring 0.23m x 0.11m laid in English bond. The southern wall of the room (125), measured 0.90m in thickness and possessed an interior course of ashlar masonry (117). There were two windows along the course of this wall which opened from Corridor 2 into this room. These took the same form as the window identified in B18, however the easternmost still possessed the remains of a wood panelled sill on the corridor side and a small stone sill within Room 21. At the base of wall (125) a stone footing course (118) was revealed which projected 0.05m into the room. The stone facing and footing continued along the western wall of the room (112) and terminated at wall (168). To the east the room was bounded by wall (121) which measured 0.60m in thickness with a facing of ashlar masonry on the western face only. This wall contained a doorway towards its southern extent linking B21 and B24 to the east. Evidence of a shaped stone block within the masonry facing on the northern side of this opening suggests that the doorway may have been arched.



*Figure 69: Room B16, looking east.*





**Figure 70:** Cast iron fireplace within wall (267) in Room B16.



**Figure 72:** Inserted brick skin (275) on the internal face of Room B16.



**Figure 73:** Blocked up cellar light (276) within wall (277), Room B16.

### 6.1.21 *Room B17*

A large rectangular room measuring 5.00m x 4.00m located in the far north eastern corner of the Hall's east wing. To the west the room was bounded by the heavily truncated and damaged remains of wall (198). The wall stood to a maximum height of 1.05m and thickness of 0.23m and was constructed of handmade bricks laid in stretcher bond. The wall had a large central opening and considerable amounts of painted wall plaster *in-situ*. Wall (134) to the north was in a similar state of preservation to (198), again measuring 0.23m thick and c.1.05m high constructed of handmade bricks laid in English bond.

To the east of the room the main exterior wall (144) was identified. This was constructed of handmade bricks laid in English bond (0.23m x 0.11m) to a thickness of c.0.70m with a stone facing course on the external eastern face. The room was bounded to the south by wall (059), a handmade brick wall measuring 0.65m thick and 2.30m high. This wall also possessed evidence of remaining painted wall plaster. The central area of the room was covered with a sandy grey-brown demolition deposit (135) similar to (001) however no floor surface was identified in this room.

### 6.1.22 *Room B18*

Rectangular room measuring 4.50m x 3.50m located in the far north western corner of the Hall's east wing. The room was bounded on all sides by handmade brick walls laid in Flemish Bond that survived to a height of 24 courses with patches of plaster *in situ*. This plaster appears to have been laid in two layers, the upper was whitewashed and the lower retained a diamond pattern in relief. Walls (028) and (196) measured 0.23m in thickness and retained the largest amounts of both layers of plaster. The walls on the eastern side of the room (025) and (052), measuring 0.70m and 0.50m respectively in thickness were discovered to lie on top of a course of stone footings measuring 0.10m in depth and projecting 0.05m over the concrete floor surface. The floor comprised an evenly laid layer of concrete (029) which survived in a good condition.

Access into the room was through a doorway in the southern wall (028) which led off Corridor 4. Opposite this door, a window was identified in the northern wall (052) which faced out towards the retaining wall beyond. The window was recessed into the wall at an angle of c.45° and possessed a sloped stone sill (031) in which a central row of three square holes were revealed. Evidence from Corridor 2 suggests that these were related to the fixing of a layer of wooden panelling onto the window sills.

In the south eastern corner of the room two blocked features were revealed. The first was a blocked doorway at the southern end of wall (025) which was blocked with a combination of handmade red bricks and larger (0.15m x 0.11m) yellow machine made bricks in a black mortar. In the centre of the blocking were two pipes of approximately 0.10m diameter which had been laid within blocking phase. At the base of the blocking deposit a recess was identified measuring c.0.20m x 0.30m which extended back into the depth of the wall. The second of these blocked features



was a fireplace in the south eastern corner of the room. A segmented arch was present above the blocked area which spanned 1.00m. The blocking material comprised handmade bricks laid in stretcher bond with a mix of black and white mortars.



**Figure 74:** Blocked up doorway  
Within Room B18.

**Figure 75:** Blocked up fireplace within  
Within Room B18.



**Figure 76:** Blocked up cellar light within room B18.

### 6.1.23 *Room B20*

A small rectangular room measuring 2.00m x 2.00m located to the east of B18 in the Hall's eastern wing. The room was bounded on all four sides by handmade brick walls which stood to a height of 16 courses. Access to the room was through the central doorway in the southern wall (**115**) which was 0.23m thick. Directly opposite this in the northern wall (**168**) an irregularly curved recess was revealed which had evidence of a plastered interior. This feature measured c0.50m x 0.30m and was cut into the wall at a height of c.1.60m. Within the interior face of the western wall of the room (**107**) the blocking of the doorway (050) identified in B18 was visible as an area of irregularly bonded handmade brick. The eastern wall (**112**), measuring 0.60m thick, also contained a blocked doorway (**113**) between B20 and B21. This blocking comprised handmade bricks measuring 0.23m x 0.11m laid with a black mortar and was 0.23m thick.

The room contained an evenly laid concrete floor (**116**) in which two features were identified. The first was a section of metal pipe work (**110**) extending across the edge of the north eastern corner of the room and through the blocking deposit (113) into B21. The second was a hole through the floor (116) which measured c0.20m in diameter and was thought to have been associated with drainage/sewerage.

### 6.1.24 *Room B21*

A long rectangular room measuring 5.50m x 1.50m located along the northern extent of the Hall's east wing. The room was bounded to the north by a whitewashed wall (168), which survived to a height of 2.50m and retained evidence of a brick vaulted ceiling. The wall measured 0.80m in thickness which included an exterior facing course of ashlar masonry the interior face was found to be constructed from handmade bricks measuring 0.23m x 0.11m laid in English bond. The southern wall of the room (**125**), measured 0.90m in thickness and possessed an interior course of ashlar masonry (**117**). There were two windows along the course of this wall which opened from Corridor 2 into this room. These took the same form as the window identified in B18, however the easternmost still possessed the remains of a wood panelled sill on the corridor side and a small stone sill within Room 21. At the base of wall (125) a stone footing course (**118**) was revealed which projected 0.05m into the room. The stone facing and footing continued along the western wall of the room (**112**) and terminated at wall (168). To the east the room was bounded by wall (**121**) which measured 0.60m in thickness with a facing of ashlar masonry on the western face only. This wall contained a doorway towards its southern extent linking B21 and B24 to the east. Evidence of a shaped stone block within the masonry facing on the northern side of this opening suggests that the doorway may have been arched.

Due to health and safety concerns with the stability of the truncated vaulting on wall (168) this room was not fully excavated. It is uncertain therefore what kind of flooring this room possessed as the only deposit identified within the room was (001) the sandy demolition layer containing frequent fragments of brick, stone, wood and slate.





*Figure 77: Room B20 looking west.*

*Figure 78: Blocked up doorway within Room B20.*



*Figure 79: Room B22 looking west.*

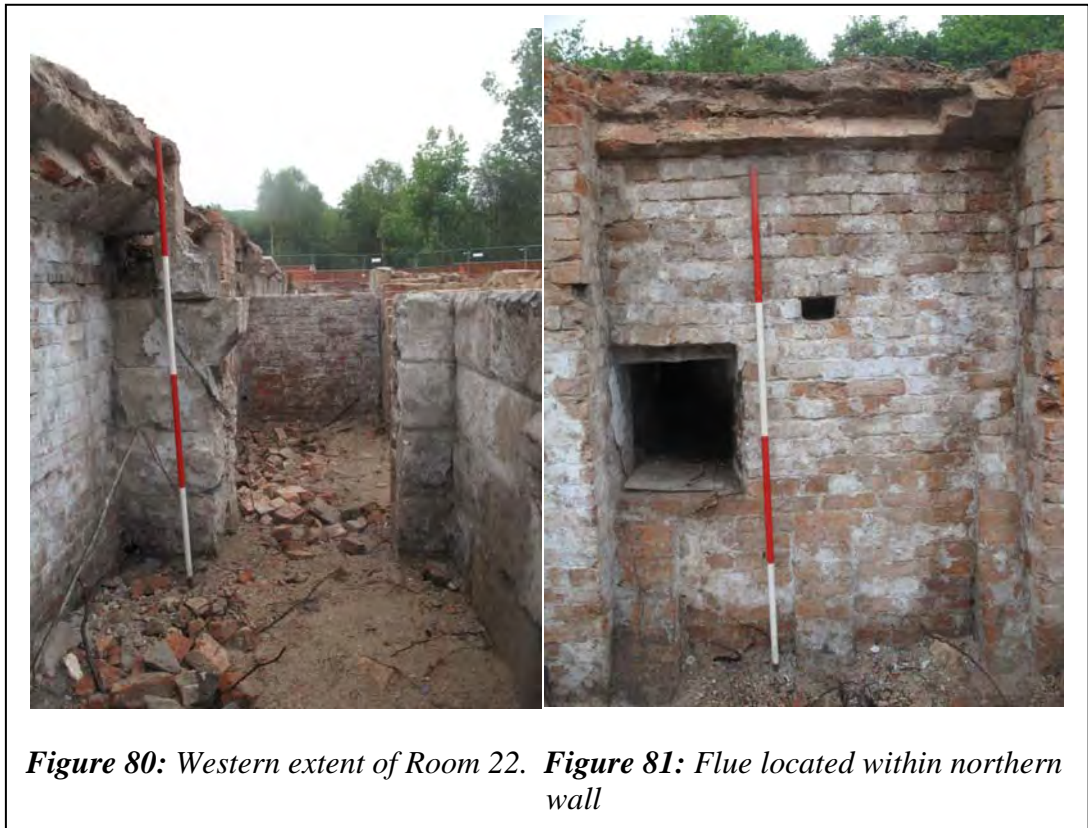
### 6.1.25 *Room B22*

A long rectangular room measuring 5.30m x 1.60m located on the north eastern side of the Hall's east wing. This room was very similar in character to B21 but had no access from the surrounding rooms. Again the northern wall was a continuation of (168) including the remains of the brick ceiling vaulting and, at the western end of the room, evidence of two supporting brick arches. The room was bounded to the west and east by handmade brick walls (124) and (155) respectively both measuring 0.60m thick and standing to a height of 18 courses. Both these walls and the southern wall (125) possessed an internal stone facing course. Two window openings were identified along wall (125) which linked Corridor 2 with this room. As with the windows identified in B21, these too had a stone sill sloping towards the corridor with three central, square holes. Due to the inaccessibility of this room and health and safety concerns the interior of this room could not be excavated, as a result the only internal deposit identified was (001).

### 6.1.26 *Room B24*

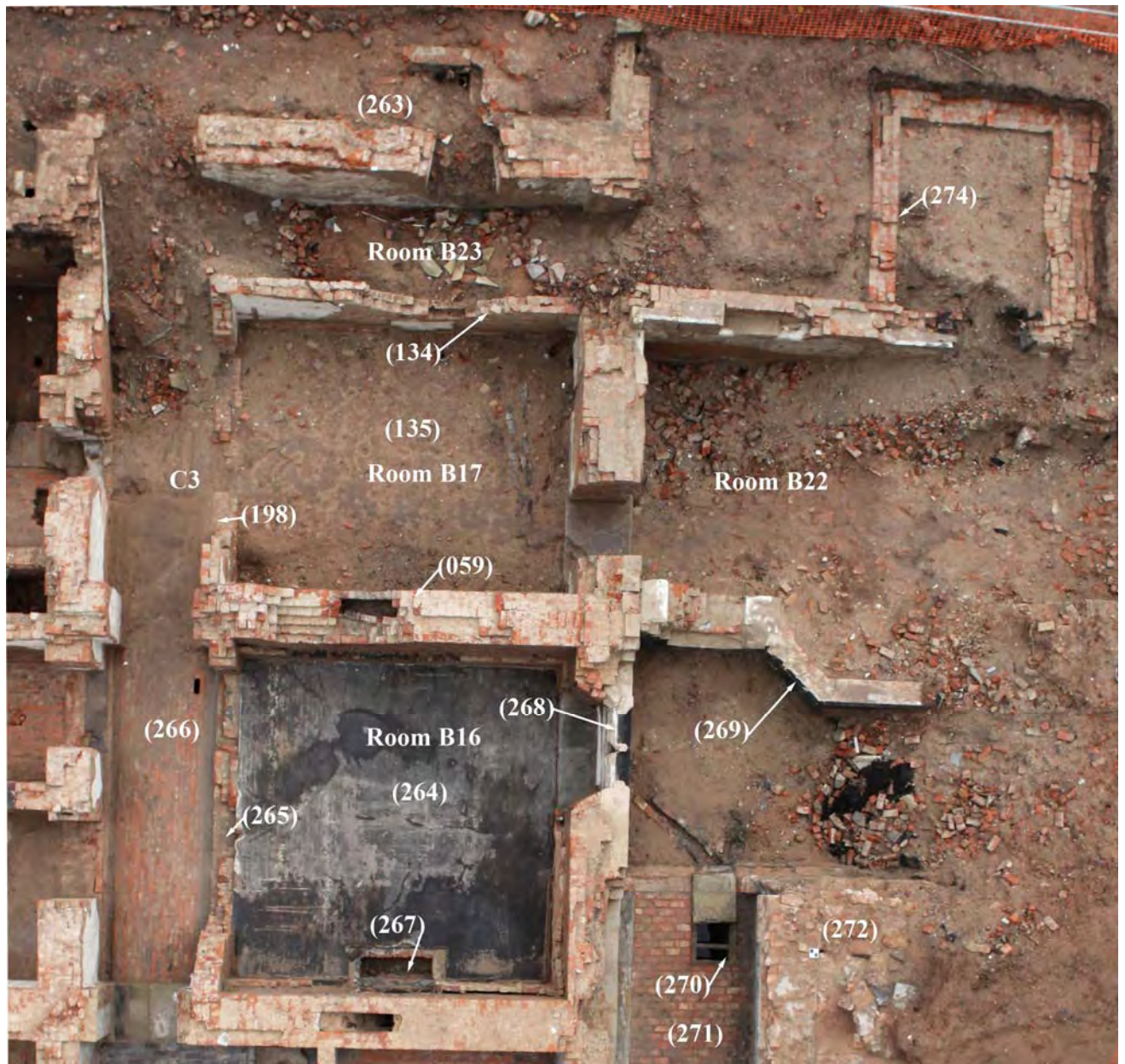
A small roughly rectangular room measuring 3.20m x 1.50m located to the rear of the main entrance of the Hall's eastern wing. The room was bounded to the south by wall (125) which comprised handmade bricks measuring 0.23m x 0.11m laid in English bond. The wall was whitewashed, standing to a height of 19 courses and a thickness of 0.90m with a central doorway leading to Corridor 2. Unlike the section of this wall in B21, no stone facing course was present. The western wall of the room (121) was also whitewashed on the interior face and again did not possess a stone facing course like that identified on its western side in B21. The northern wall of the room represented a continuation of wall (168) complete with the remains of the brick ceiling vaulting. The centre of the wall in this room was dominated by a full height recess measuring 1.70m wide reducing the overall thickness of the wall to 0.30m. Within the recess three small triangular brick buttresses were identified measuring 0.25m wide, 0.75m high and projecting 0.25m into the room. Above the westernmost buttress at a height of 0.80m a large opening was revealed lying directly against the edge of the recess and measuring 0.50m x 0.50m. This feature contained an internal iron frame and extended north through the wall to a larger chamber the dimensions of which could not be ascertained. The room was bounded to the east by wall (124), a 0.60m thick whitewashed handmade brick wall laid in English bond. As with Room 21 health and safety concerns meant that the floor could not be fully excavated and so the only deposit identified was (001).



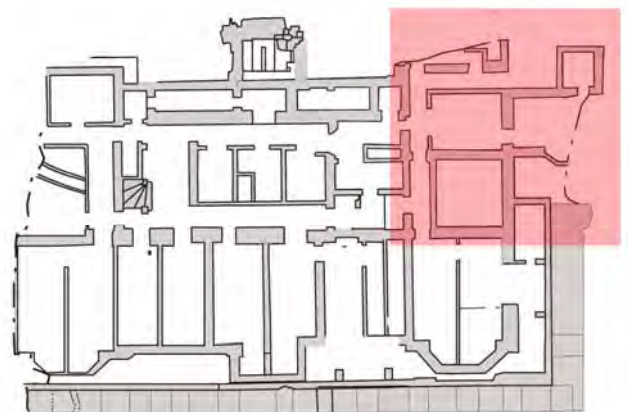


### 6.1.27 **Room B25**

A small rectangular room measuring 1.60m x 1.60m located in the north eastern corner of the Hall's east wing. The room was bounded to the west by wall (155) which did not possess a stone facing course in this room, only handmade bricks laid in English bond. Again the room was bounded to the north by a continuation of wall (168) which was also without a stone facing course. To the east the room was bounded by wall (156), a handmade brick wall laid in English bond measuring 0.23m wide that lay directly against a second brick wall to the east (197). Access to the room was through a doorway in wall (125) which linked the room to Corridor 2. The walls in this room all stood to a uniform height of 3.00m from the lowest level. There was no surviving floor surface in this room which enabled the supporting stone arches (159) of the cellar to be revealed. This structure was constructed from dressed stone blocks and was identified lying beneath all four walls of the room. The central area of the room was dominated by a linear concrete deposit running north-south. This feature was found to run under the archway in the southern wall and curved eastwards at its northern extent to join with a vertical iron pipe (158) which was set in a recess between walls (168) and (156). The southernmost of the cellar arches which spanned the doorway was found to have a narrow channel cut into its upper surface which was aligned with (158).



**Figure 82:** Aerial view, location and key contexts within Rooms B16, B17, B23 and Corridor C3.





## 6.2 *Cellar Level*

This section provides a detailed description of the cellar level, below the excavated basement level. Unlike the basement level, the cellar remained completely intact and required no excavation. Twenty-seven rooms were surveyed within the cellar level. Access was gained by three hatchways in the floors of basement rooms 1, 8 and 13. These led into cellar rooms C3, C22 and C25. Approximately half of the cellar level was accessible to survey. This was the southern, garden side of the building, with four more rooms in the centre of the building. These rooms were open and contained no obstructions. The northern part of the building was inaccessible. Below the rest of the exposed basement level the cellar rooms were filled with brick rubble up to the vaulted ceilings or floors. This was shown to be the case throughout the northern part of the building by small excavations in the basement level, in various locations. All areas and rooms that were accessible have been surveyed and drawn to scale. All the rooms surveyed were orientated north-south. The flooring throughout the cellar was stone and brick rubble and was a constant level throughout. The ceilings were all vaulted and c.1.40m high, from the rubble flooring. The ceilings were constructed of brick and laid in a stretcher bond.

### 6.2.1 *Room C1*

This room was located in the south-east of the building and was the most easterly room accessible in the cellar. It was rectangular in plan, with the south east corner of the room angled on a north-east to south-west orientation. The room measured c.2.00m long by 1.23m at its widest point, tapering to 0.99m at its southern end, where the angled corner narrowed the room. The western and southern walls were constructed from handmade brick with no defined bonding. Some bricks showed signs of over-firing and were blackened. The western wall was one stretcher brick thick, or 0.23m. The southern half of the east wall was handmade brick with a garden wall bonding. The northern half of the east wall, and northern wall were stone. These were rough ashlar blocks with a rock-faced finish.

The stone walls were an unknown thickness. The western wall had a c.0.60m wide and c.0.80m high opening within it. This had a brick arch above. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The southern wall had a c.0.30m opening. This led to a sloping 45° angled cavity, heading up towards the basement above. This room also contained a cast iron pipe that came in through the opening in the western wall, orientated east-west. The pipe terminated in this room but may have extended through the opening in the southern wall previously.



*Figure 83: Southern and eastern walls in Room C1. Looking southeast.*



*Figure 84: Shot of southern and southwestern walls in Room C1. Looking southwest.*



### 6.2.2 *Room C2*

This room was located west of C1. It was rectangular in plan, with the south east corner of the room angled on a north-east to south-west orientation. It measured c.4.80m in length and 1.44m in width. The eastern wall was constructed of handmade brick with an English Garden Wall bonding, one stretcher brick thick. The northern wall was constructed of rough ashlar blocks with a rock-faced finish, as was the southern part of the western wall. North of the south-west stone wall was an arch. This was also constructed of rough ashlar blocks with a rock-faced finish.

The south-west stone wall was built upon a stone plinth footing. The southern wall was formed by a blocking. This was handmade brick with an English Garden Wall bonding. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall had a c.0.60m wide and c.0.80m high opening within it. The room had a cast-iron pipe running along the floor, orientated east-west.

### 6.2.3 *Room C3*

This room was located west of C2. It was rectangular in plan. It measured c.8.60m in length and 1.46m in width. The eastern wall was constructed of rough ashlar blocks with a rock-faced finish, with an archway at its northern end. This wall sat on a stone plinth. The southern wall was also rough ashlar blocks with a rock-faced finish. The western wall was handmade brick with no constant definable bond. The western wall had a brick plinth running along its face. At the southern end of the building this led to a rough stepped section of brick. The southern end of the room had a stone plinth that protruded north from the southern stone wall and west from the eastern stone wall.

The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. This arch rose from the eastern wall and its half way peak was level with the western brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western wall had three openings. All were c.0.60m wide and c.0.80m high. The central opening had a cast iron pipe running along the floor, orientated east-west.

### 6.2.4 *Room C4*

This room was located west of C3. It was rectangular in plan. It measured c.8.60m in length and c.1.40m in width. The western wall was constructed of rough ashlar blocks with a rock-faced finish and sat on a stone plinth. This wall had an archway at its northern end. This archway was blocked with brick laid in a stretcher bond. At the midpoint of the arch blocking was a roughly cut opening through the brick that measured c.0.90m high and c.0.40m wide. The eastern wall was handmade brick with no constant definable bond. The southern wall was formed by an upside down

archway of rough ashlar blocks with a rock-faced finish. To the east of the arch, within its curve was a brick blocking. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. This arch rose from the western wall and its half way peak was level with the eastern brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall had three openings. All were c.0.60m wide and c.0.80m high. The central opening had a cast iron pipe running along the floor, orientated east-west. This pipe spilt at a junction east of the western wall. One length ran north-south along the floor and exited the room through a hole in the northern end ceiling. The other length of pipe continued east-west into Room C5.



**Figure 85:** Blocking at southern end of Room C2. Looking south.



**Figure 86:** Room C3 Looking southwest





**Figure 87:** *Southern wall in Room C4.*



**Figure 88:** *Room C4 looking north.*

### 6.2.5 *Room C5*

This room was located west of Room C4. It was rectangular in plan. It measured c.6.60m in length and c.1.15m in width. The eastern wall was constructed of rough ashlar blocks with a rock-faced finish and sat on a stone plinth. This wall had an

archway at its northern end. This archway was blocked with brick laid in a stretcher bond. At the midpoint of the arch blocking was a roughly cut opening through the brick that measured c.0.90m high and c.0.40m wide. The southern wall was constructed of rough ashlar blocks with a rock-faced finish. The western wall was constructed of handmade bricks with no constant definable bond and was one stretcher brick thick. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The archway was blocked with handmade brick. The stone walls and the arch were 0.84m in width. This arch rose from the eastern wall and its half way peak was abutted by the western brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western wall had a c.0.60m wide and c.0.80m high opening within it. This had a brick arch above. This room contained a cast iron pipe that came in through the opening in the eastern wall and ran out through the western wall, orientated east-west.

### **6.2.6**     *Room C6*

This room was located west of C5. It was rectangular in plan. It measured c.6.60m in length and c.1.15m in width. The western wall was constructed of rough ashlar blocks with a rock-faced finish and sat on a stone plinth. This wall had an archway at its northern end. The southern wall was also rough ashlar blocks with a rock-faced finish. The eastern wall was handmade brick with no constant definable bond. Half way along this wall was a brick column that was constructed to the height of the room, into which a length of cast iron pipe ran south from the main, east-west pipe. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. This arch rose from the western wall and its half way peak was abutted by the eastern brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall had a c.0.60m wide and c.0.80m high opening within it.

### **6.2.8**     *Room C7*

This room was located west of C6. It was rectangular in plan. It measured c.6.60m in length and c.1.15m in width. The eastern wall was constructed of rough ashlar blocks with a rock-faced finish, with an archway at its northern end. This wall sat on a stone plinth. The southern wall was also rough ashlar blocks with a rock-faced finish. The western wall was handmade brick with no constant definable bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. This arch rose from the eastern wall and its half way peak was abutted by the western brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western wall had a c.0.60m wide and c.0.80m high opening within it. The main cast iron pipe running



through the cellar east-west turned north, east of the western brick wall. The pipe entered the brick blocking within the northern wall at c.0.60m high.



**Figure 89:**  
Southern end of  
Room C5.  
Looking south.



**Figure 90:** Room  
C6. Looking  
south.



**Figure 91:** Pipe  
running into brick  
blocking in Room  
C7. Looking  
north.

### 6.2.9 *Room C8*

This room was located west of C7. It was rectangular in plan. It measured c.6.60m in length and c.1.15m in width. The western wall was constructed of rough ashlar blocks with a rock-faced finish and sat on a stone plinth. This wall had an archway at its northern end. The southern wall was also rough ashlar blocks with a rock-faced finish. The eastern wall was handmade brick with no constant definable bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. This arch rose from the western wall and its half way peak was abutted by the eastern brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall had a c.0.60m wide and c.0.80m high opening within it.

### 6.2.10 *Room C9*

This room was located west of C8. It was rectangular in plan. It measured c.6.60m in length and c.1.15m in width. The eastern wall was constructed of rough ashlar blocks with a rock-faced finish, with an archway at its northern end. This wall sat on a stone plinth. The southern wall was also rough ashlar blocks with a rock-faced finish. The western wall was handmade brick with no constant definable bond. The northern wall of the room consisted of a portion of stone arch constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western wall had a c.0.60m wide and c.0.80m high opening within it.

### 6.2.11 *Room C10*

This room was located west of C9. It was rectangular in plan. It measured c.6.60m in length and c.1.15m in width. The western wall was handmade brick with no constant definable bond. The northern wall of the room consisted of a portion of stone arch constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. The eastern wall was handmade brick with no constant definable bond. The southern wall was formed by an upside down archway of rough ashlar blocks with a rock-faced finish. Within the curve of the arch, to the west was a small gap that led into a chamber south of this room. The chamber was inaccessible but was measured from the opening and drawn. The chamber had a stone wall at its east, west and southern parts. These were constructed of rough ashlar blocks with a rock-faced finish. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western and eastern walls had single c.0.60m wide and c.0.80m high opening within them. In the centre of this room was a brick column that spanned the room from floor to ceiling.





**Figure 92:** Shot of southern wall in Room C10. Looking south.



**Figure 93:** Brick column in Room C10. Looking south.

6.2.12 *Room C11*

This room was located west of C10. It was rectangular in plan. It measured c.6.60m in length and c.0.90m in width. The eastern wall was handmade brick with no constant definable bond. The southern end of this wall contained a small brick cavity with an archway above it. A stone plinth that underlies the brick wall was visible within this cavity. The northern wall of the room consisted of a portion of stone arch constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. The southern wall was also rough ashlar blocks with a rock-faced finish. The western wall in this room was constructed of rough stone with a regular course. Through this wall, an opening measuring c.0.90m in height and c.0.60m in width had been roughly cut through to allow access west of this room. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall had a c.0.60m wide and c.0.80m high opening within it.



*Figure 94: Western stone wall in Room C11. Looking west.*

*Figure 95: Small brick archway at southern end of Room C11.*





### 6.2.13 *Room C12*

This room was located west of C11. It was rectangular in plan. It measured c.8.80m in length and c.0.90m in width. The eastern wall in this room was constructed of rough stone with a regular course. Through this wall, an opening measuring c.0.90m in height and c.0.60m in width had been roughly cut through to allow access east of this room. The eastern wall was handmade brick with no constant definable bond. The northern wall of the room consisted of a portion of stone arch constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. The southern wall was also rough ashlar blocks with a rock-faced finish. At the southern end the room widened out and contained the lowest section of an upside down archway. The brick wall on the western side of the room abutted this archway. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western wall had a c.0.60m wide and c.0.80m high opening within it.

### 6.2.14 *Room C14*

This room was located west of C13. It was rectangular in plan. It measured c.6.60m in length and c.1.15m in width. The western wall was constructed of rough ashlar blocks with a rock-faced finish, with an archway at its northern end. This wall sat on a stone plinth. The southern wall was also rough ashlar blocks with a rock-faced finish. The eastern wall was handmade brick with no constant definable bond. The northern wall of the room consisted of a portion of stone arch constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall had a c.0.60m wide and c.0.80m high opening within it.

### 6.2.15 *Room C15*

This room was located west of C14. It was rectangular in plan. It measured c.6.60m in length and c.1.24m in width. The eastern wall was constructed of rough ashlar blocks with a rock-faced finish, with an archway at its northern end. This wall sat on a stone plinth. The southern wall was also rough ashlar blocks with a rock-faced finish. The western wall was handmade brick with no constant definable bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. This arch rose from the eastern wall and its half way peak was abutted by the western brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western wall had a c.0.60m wide and c.0.80m high opening within it.



*Figure 96: Southern end of C12. Looking south.*



*Figure 97: Room C13 with brick column. Looking south.*



*Figure 98: southern wall of Room C13. Looking south.*



### 6.2.16 *Room C16*

This room was located west of C15. It was rectangular in plan. It measured c.6.60m in length and c.1.24m in width. The western wall was constructed of rough ashlar blocks with a rock-faced finish and sat on a stone plinth. This wall had an archway at its northern end. The southern wall was also rough ashlar blocks with a rock-faced finish. The eastern wall was handmade brick with no constant definable bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. This arch rose from the western wall and its half way peak was abutted by the eastern brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall had a c.0.60m wide and c.0.80m high opening within it.



**Figure 99:** Stone archway in Room C16. Looking southwest.

### 6.2.17 *Room C17*

This room was located west of C16. It was rectangular in plan. It measured c.6.60m in length and c.1.24m in width. The eastern wall was constructed of rough ashlar blocks with a rock-faced finish, with an archway at its northern end. This wall sat on a stone plinth. The southern wall was also rough ashlar blocks with a rock-faced finish. The western wall was handmade brick with no constant definable bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick.

This arch rose from the eastern wall and its half way peak was abutted by the western brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western wall had a c.0.60m wide and c.0.80m high opening within it.

#### **6.2.18 Room C18**

This room was located west of C17. It was rectangular in plan. It measured c.6.60m in length and c.1.32m in width. The western wall was constructed of rough ashlar blocks with a rock-faced finish and sat on a stone plinth. This wall had an archway at its northern end. The southern wall was also rough ashlar blocks with a rock-faced finish. The eastern wall was handmade brick with no constant definable bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. This arch rose from the western wall and its half way peak was abutted by the eastern brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall had a c.0.60m wide and c.0.80m high opening within it.

#### **6.2.19 Room C19**

This room was located west of C18. It was rectangular in plan. It measured c.6.60m in length and c.1.34m in width. The eastern wall was constructed of rough ashlar blocks with a rock-faced finish, with an archway at its northern end. This wall sat on a stone plinth. The southern wall was formed by an upside down archway of rough ashlar blocks with a rock-faced finish. To the west of the arch, within its curve was a brick blocking. The western wall was handmade brick with no constant definable bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick. This arch rose from the eastern wall and its half way peak was abutted by the western brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western wall had a c.0.60m wide and c.0.80m high opening within it.

#### **6.2.20 Room C20**

This room was located west of C19. It was rectangular in plan. It measured c.6.60m in length and c.1.32m in width. The western wall was constructed of rough ashlar blocks with a rock-faced finish and sat on a stone plinth. This wall had an archway at its northern end. The southern wall was also rough ashlar blocks with a rock-faced finish. The eastern wall was handmade brick with no constant definable bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade



brick. This arch rose from the western wall and its half way peak was abutted by the eastern brick wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall had a c.0.60m wide and c.0.80m high opening within it.

### 6.2.21 *Room C21*

This room was located west of C20. It was rectangular in plan. It measured c.7.25m in length and 1.34m in width. The eastern wall was constructed of rough ashlar blocks with a rock-faced finish, with an archway at its northern end. This wall sat on a stone plinth. The southern wall was also rough ashlar blocks with a rock-faced finish. The western wall was handmade brick with no constant definable bond. The northern wall of the room was constructed of rough ashlar blocks with a rock-faced finish. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The western wall had three openings. All were c.0.60m wide and c.0.80m high. The room contained brick and stone rubble, above the floor level. The rubble was almost ceiling high at the southern end of the room. The southern end also contained a brick section protruding east, from the western wall.



**Figure 100:** *Southern end of Room C19. Looking south.*



**Figure 101:** *Western wall in Room C21. Looking southwest.*

### 6.2.22 *Room C22*

This room was located west of C21. It was rectangular in plan. It measured c.7.25m in length and c.1.34m in width. The western wall was handmade brick with no constant definable bond. It was one header brick thick and was cladding a rough stone wall behind it. The northern wall of the room was constructed of rough ashlar blocks with a rock-faced finish. The eastern wall was handmade brick with no constant definable bond. The southern wall was formed by an upside down archway of rough ashlar blocks with a rock-faced finish. The arch was atop a large ashlar block and plinth. In the south-eastern corner of the room adjacent to the arch, was a brick column that spanned the room from floor to ceiling.

The flooring was obscured by a large amount of brick and stone rubble. The ceiling was vaulted and constructed of brick and laid in a stretcher bond. The eastern wall had three openings. All were c.0.60m wide and c.0.80m high. The western wall had an opening within it that measured c.0.40m square. This formed an opening to the stone wall behind and led into a cavity that extended c.1.00m west. The room contained brick and stone rubble, above the floor level. The rubble was almost ceiling high in the centre of the room. The ceiling was vaulted and constructed of brick and laid in a stretcher bond.

### 6.2.23 *Room C23*

This room was located c.2.00m north of Room C9/C8. It was rectangular in plan and measured c.3.57m in length and c.1.40m in width. The western wall was handmade brick with an English bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick in an English bond. This arch rose from the eastern wall and its half way peak was abutted by the western brick wall. The southern wall of the room also consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick in an English bond. This arch rose from the eastern wall and its half way peak was abutted by the western brick wall. The eastern wall consisted of a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick in an English bond. This arch spanned the entire wall. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond.

### 6.2.24 *Room C24*

This room was located c.2.00m north of Room C10/C9 and west of C23. It was rectangular in plan and measured c.3.57m in length and c.1.40m in width. The eastern wall was handmade brick with an English bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick in an English bond. This arch rose from the western wall and its half way peak was abutted by the eastern brick wall. The southern wall of the room also consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was



blocked with handmade brick in an English bond. This arch rose from the western wall and its half way peak was abutted by the eastern brick wall. The western wall was constructed from roughly dressed stone blocks with a random coursing. The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond.



**Figure 102:** *Western wall in Room C21. Looking southwest.*



**Figure 103:** *Southern end of Room C22. Looking east.*



**Figure 104:** *Opening in western wall of Room C22. Looking west.*

### 6.2.25 *Room C25*

This room was located west of C24. It was rectangular in plan and measured c.3.57m in length and c.1.40m in width. The western wall was handmade brick with an English bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick in an English bond. This arch rose from the eastern wall and its half way peak was abutted by the western brick wall. The southern wall of the room also consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick in an English bond. This arch rose from the eastern wall and its half way peak was abutted by the western brick wall. The eastern wall was constructed from roughly dressed stone blocks with a random coursing. The western wall contained an opening that measured c.0.60m wide by c.0.80m high. This opening had a double height brick arch above it. This room was accessed by one of the three original hatches. This hatch had been open at the time of demolition and therefore the room contained demolition rubble below the hatch that spread from there.

### 6.2.26 *Room C26*

This room was located west of C25. It was rectangular in plan and measured c.3.57m in length and c.1.40m in width. The eastern wall was handmade brick with an English bond. The northern wall of the room consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick in an English bond. This arch rose from the western wall and its half way peak was abutted by the eastern brick wall. The southern wall of the room also consisted of half a stone archway constructed of rough ashlar blocks with a rock-faced finish. The arch was blocked with handmade brick in an English bond. This arch rose from the western wall and its half way peak was abutted by the eastern brick wall. The western wall was constructed from roughly dressed stone blocks with a random coursing.

The flooring was stone and brick rubble and was a constant level throughout the room. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The eastern wall contained an opening that measured c.0.60m wide by c.0.80m high. This opening had a double height brick arch above it. Within the middle of the room, a brick column rose from the floor to the ceiling. It was c.0.23m square. The column sat atop a stone flag pad. Atop the column were two pieces of timber that made contact with the vaulted ceiling. Abutting the southern wall was a one brick thick skin protruding north from that wall.

### 6.2.27 *Room C27*

This room was located directly below the corridor west of Basement Room 16. At the cellar level, it was located north of Room C4. It was roughly rectangular in plan. It measured c.4.64m in length and c.1.28m in width. The northern extent of this room was formed by one half of a stone archway constructed of rough ashlar blocks



with a rock-faced finish. This arch rose from the western wall and its half way peak was abutted by the eastern stone wall. North of this archway was brick rubble that formed an obstruction and made any thing north of this point in the cellar inaccessible. The eastern wall was constructed from roughly dressed stone blocks with a random coursing. It formed the eastern support for the vaulted ceiling above. This wall abutted the archways to its north and south and was not bonded or keyed into any other wall. This wall was c.0.55m wide. The southern extent of this room was formed by one half of a stone archway constructed of rough ashlar blocks with a rock-faced finish. This arch rose from the western wall and its half way peak was abutted by the eastern stone wall. The western wall consisted of two stone arches constructed of rough ashlar blocks with a rock-faced finish. They were both partially open, but blocked by handmade bricks on their western sides, sealing this room from anything further west within the building. The ceiling was vaulted and c.1.40m high, from the rubble flooring. The ceiling was constructed of brick and laid in a stretcher bond. The flooring was stone and brick rubble and fluctuated in height throughout the room.



**Figure 105:** Room C25.  
 Looking north.



**Figure 106:** Northern  
 end of Room C26.  
 Looking north.



*Figure 107: Room C27. Looking northwest.*



*Figure 108: Room C27. Looking south.*



6.2.28 *Test pits/slots*

Three test pits were dug within the cellar to explore relationships between features and attempt to locate the natural level below the foundations. One slot was against the southern end of the eastern wall in Room C27. The second was against the northern side of the southern wall in Room C15. The third test pit was placed within the southern corner of the area within the arch that formed the western wall of Room C27. Within all three slots the natural geology was quickly reached. The natural consisted of yellow sandstone. The foundation walls seen in the cellar had been built directly onto the bedrock. In each test pit, below the features identified during the survey were two large ashlar blocks. The bedrock was located c.0.40m below the brick rubble floor level as surveyed. This was the same level throughout the cellar, in all the test pits.



*Figure 109: Test pit 1*



*Figure 110: Test pit 2*



*Figure 111: Test pit 3.*



## 7. *Archaeological Results*

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### Cellar Level

The cellar level of Worsley New Hall appears to have been a simple design for a simple purpose. It was adapted over time and the cellar level surveyed has certainly altered since its initial construction. The original features and construction appear to have been the stone arches and stone walls. These were laid in a deliberate way to offer stability and safety to the large building above. The stone arches were laid in a ‘compass point’ layout to offer stability and brace for the weight above. The stone walls in the cellar corresponded with the larger, load bearing walls above in the basement level. The smaller brick walls in the cellar merely formed a meeting point for the vaulted ceilings. The brick walls in between the stone ones were not all uniform distances apart.

The stone walls and arches all sat on stone plinths and blocks that step out and become wider as they descend. These plinths and blocks sit atop the natural geological sandstone bedrock. The stone structure laid first at Worsley New Hall was the foundation level for the house. The stone ashlar blocks used were substantial and well dressed. They were not the fine ashlar of an exterior facing stone but were rock faced. The blocks may have been finished in this way so that they would have shown up cracks or damage easily. Engineers or maintenance staff from the estate would have been able to test for integrity if they could see the surface of the stone plainly.

The cellar exhibited no signs of storage use. There were no fixtures or fittings, no blackening from coal and no evidence of crates or bottles. The cellar level did contain a number of pipes, but not throughout the entire level. The areas the pipes ran through appear to have been adapted for the pipes at a later date and so they were unlikely to have featured in the cellar since its construction. The cellar had no flooring anywhere. The flooring consisted throughout of brick and stone rubble, built up around the base of the foundations, leaving approximately 1.40m room height throughout. The access and openings between the rooms were big enough for an adult to crawl through, but not stand up, or carry a large amount of goods or equipment.

The cellar was therefore a series of rooms created when the stone foundations were laid. Some rooms in the cellar were filled entirely with brick rubble, and some were left open to c.1.40m in height. The cellar rooms surveyed were suitable for maintenance, pipe laying and checking the integrity of foundations. They were not suitable for storage or dwelling.

The northern half of the cellar was largely inaccessible. These rooms were full of brick rubble. It was not clear whether these rooms were filled at the point of construction, or filled later from an unknown external point. It is likely that the rooms were filled at the same time as the brick blocking was placed within the arches along the northern walls of Rooms C1-22, to close those areas off. The rooms may have been filled at the time of construction to act as a frame for the vaulted ceilings





to be built over. All the rooms in the cellar may have been vaulted from above, as the mortar is untidy below. The other rooms may have been vaulted over a wooden frame.



## 8. Conclusions

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### 7.1 *Worsley as a New Estate Centre*

The sites identified at Worsley New Hall (the hall itself, formal terraced gardens, boating lake, ice-house, kitchen gardens, gardener's cottage, stables and bothy) form the centre of a purpose-built and designed 19<sup>th</sup> century estate centre. The estate was established in the 1840s and fell into decline between 1918 and 1939 when the formal gardens were abandoned. The hall itself was demolished in the late 1940s. The 19<sup>th</sup> century estate monuments together form a regionally important grouping reflecting the wealth of status of a small group of landowners in the region whose income was derived from the wealth of industrialisation, in this case coal mining. Furthermore, the New Hall represents third hall on the Worsley Estate. Each of these halls was in a different location, representing three estate centres from the late medieval/early post-medieval period, the late 18<sup>th</sup> century and the 19<sup>th</sup> century. Such a pattern of three successive estate centres is highly unusual in the North West (Tatton Park provides a parallel for two successive estate centres, where the medieval hall was superseded by an 18<sup>th</sup> century hall c. 1km to the north-west), making this landscape regionally significant in representing changes to estate management by the large landholders of these periods (Brennan with Chitty & Nevell 2006, 145-50, 166-70).

### 7.2 *The Layout and Building Materials of Worsley New Hall*

The extensive excavations at Worsley New Hall from April to June 2012 revealed the remains of a vaulted cellar and above a basement associated with Worsley New Hall. This was a purpose-built country house erected for the Early of Ellesmere in the early 1840s. The excavations provided a detailed record of the construction materials and layout of the lowest two floors of the hall, although little of the western service wing was available for excavation. The following discussion focuses upon the layout and building materials of the hall

The house has a basement and below this vaulted cellars (undercroft). Such a double-depth cellar is a very usual 19<sup>th</sup> century feature (Ian West pers. comm.) The function of this lower vaulted area is unclear. Coal could have been stored at basement level in the vaulted chambers to the east of the main entrance – where hatches in the courtyard might be expected to enable coal to be tipped into these.

The heating system is a variant of a system known as Price's Apparatus (Ian West pers. Comm.). A journal from 1838 shows this to have been newly-invented. Hot water heated in the coal-fired boiler circulated via convection through coils of tubes housed in brick chambers either side of the boiler. Fresh air drawn from outside the house was warmed by passing over these coils and was ducted to the upper storeys of the house, where it exited via grilles in the floor or skirtings. Unusually, the boiler flue did not go straight upwards but ran under the floor of the passageway for a





distance. At least one of the other ducts running under the basement floor to the heating chamber would have been a fresh air inlet.

There is a set of around 50 bell wire cranks mounted in a frame at floor level in a room under the dining room, and another set of about two somewhere roughly under the Entrance Hall. These are particularly well-engineered, with tensioning springs connecting the wires to the cranks. The style of these fittings suggest that they probably post-date the 1840s primary construction of the house, so may have been an upgrade to the original mechanism. It was common for all the bell wires to be taken straight up from the various family and state rooms to the attic, where they would be brought together and descend to the basement in a single shaft. It seems likely that this set of 50 cranks was at the bottom of such a shaft. Normally, the main set of bells would be located high on the wall of a corridor near the Servants' Hall and/or Butler's and Housekeeper's Rooms. It is possible that the bell wires ran in a horizontal underground duct outside the main block from this location to the service wing.

It is highly likely that there would have been gas lighting in the service areas, indeed for the whole house, if not from the outset then soon after the hall was completed. Although no evidence of gas pipes was excavated in 2011 nor in 2012 this is not surprising, since they would have been attached to the ceilings or high on the walls of the basement. The location of the supply is currently unknown. The Ordnance Survey maps do not suggest a private gas works nearby, although The Yard, at Worsley, was just a c. 500m east of the hall and could have been used to generate a private gas supply; there was certainly a ready supply of local coal and coke. This issue could be the subject of further research

From its inception Worsley New Hall had an extensive water supply. Taps and lead pipes for a domestic water supply have been excavated in the basement, whilst a hot water system helped to heat the hall (see above). This formed part of a complex water system fed by the Blackleach Reservoir c. 3km north of the hall and laying at around 101m AOD as opposed to the New Hall c. 50m AOD. A plan of the water system, dated June 5 1911 in the Bridgewater Archives held by the Peel Group. Gravity helped to bring the water to the Old Hall and then to the Old Stables. The main water supply to the New Hall entered on the northern side of the building, whilst further pipes supplied water for the fountains in the gardens and fed directly into the boating lake at the boat of the terraces.

The electricity supply for the New Hall was installed around 1908. A series of plans in the Bridgewater Archives held by the Peel Group, dated august 1908, show the layout of the electric supply in the new Hall. These plans include the location of tubes for the wires, lights, wall plugs, switches, junction boxes and distribution boxes on each floor. Unfortunately, they do not indicate where the power supply came from. However, another plan, this time for the water supply, dated 5 June 1911, shows the position of a building named as the Generating Station. This rectangular structure lay c. 31 m to the north of Leigh Road, and c. 120m west of the Old Stables. On later Ordnance Survey maps in the 20<sup>th</sup> century this building was called the 'power house'. The structure survives into the early 21<sup>st</sup> century and has a glazed tiled interior typical of steam engine houses, and it seems likely that this was the location of a steam engine that generated the electricity for the New Hall. This electricity supply,

as almost all early private generating systems were, was DC (direct current), as can be by the c. 1914 lift motor and controls. An AC (alternating current) supply would not have been available until the mid-20<sup>th</sup> century, by which time the hall was demolished.

### 7.3 *Worsley and the Contemporary Victorian Country House*

The excavation of a purpose-built 19<sup>th</sup> century country house is highly unusual. CfAA are not aware of any other country house of this period that has been excavated on this scale in England. There are, however, dozens of examples in England of purpose-built country houses of this period that survive in various states of preservation and with various levels of historic recording. This allows some comparison to be made between Worsley New Hall and these other buildings.

The New Hall was technologically “state of the art” when it was built c. 1840, with a large warm air heating system and extensive internal sanitation. It also seems likely that it was lit by gas from the 1840s onwards, or soon after, although this needs to be confirmed by further documentary research. The use of advanced technology within the building was maintained into the early 20<sup>th</sup> century when a private electricity supply was installed in 1908. A parallel for the use of advanced technology in a country house is Craggside in Northumberland. Built on a Greenfield site for the arms manufacturer Lord Armstrong in the 1860s and 1870s, this had its own private electricity supply from the 1870s and was the first house in the world to be lit by hydro-electricity. It was also set within its own extensive gardens.

The plan-form of the hall is also very much of its age, abandoning the desire for symmetry and classic styles, as seen in the 18<sup>th</sup> century brick-built Worsley Hall, which hung on to the start of the 19<sup>th</sup> century. Ancillary buildings and activities were set-back from the main domestic range of the hall, leading to a semi-detached service wing housing the kitchen. In these respects, it is quite similar to Wrest Park in Bedfordshire, built 1834-6, although this is somewhat larger than Worsley (Ian West, pers. comm.).

The use of the Gothic style for the elevations and interiors of the New Hall, by a fashionable architect, Edward Blore, was another indication of the cutting-edge nature of the complex. The Gothic became fashionable from the 1820s onwards, with Edward Blore being one of the early popularisers of the style, and is often seen in the mansions of factory owners, particularly in northern Cheshire and Greater Manchester, of this 19<sup>th</sup> century. These followed a trend set by the use of the style in a number of notable country houses. Regionally halls built or converted to this style included Cholmondeley Castle, Combermere Abbey, Crewe Hall and Pecforton (Figueiredo & Treuherz 1988; Robinson 1991).





## *10. Sources*

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### *Maps*

OS 6" to 1 mile. Edition of 1849 Lancaster sheet 103.

OS 6" to 1 mile. Edition of 1896 Lancaster sheet 103.

OS 6" to 1 mile. Edition of 1909 Lancaster sheet 103.

OS 6" to 1 mile. Edition of 1949 Lancaster sheet 103.

OS 1:10,000. Plan SD70SW Edition 1975. Lancaster sheet.



### *Plans*

Basement plan of Worlsey New Hall prepared by Edward Blore, Architect c.1830. Courtesy of Peel Holdings

Basement plan of Worlsey New Hall (Servants Quarters) prepared by Edward Blore, Architect c.1830. Courtesy of Peel Holdings.

Ground floor plan of Worsley New Hall reproduced from an original drawing prepared by Edward Blore, Architect, c.1830. Courtesy of Peel Holdings.

### *Web Sources*

British Geological Survey: <http://www.bgs.ac.uk>, (accessed 25/06/2012).





## Appendix 1: Context List

Context	Trench/Area	Type	Description
000	Trench 1	Layer	Top Soil
001	Trench 1	Layer	Demolition layer containing frequent inclusions of brick, stone, glass, wood and metal.
002	B1 to B9	Structure	Wall aligned E/W, forms north wall of rooms B1 to B9.
003	B3	Structure	Dividing wall between B2 and B3, aligned N/S.
004	B1 to B3	Structure	Wall aligned E/W, formed south wall of B1 to B9 and also southern elevation of the Hall.
005	B3	Structure	Dividing wall between B3 and B4, aligned N/S.
006	B3	Structure	Brick arched storage bays in B3
007	B3	Structure	Brick floor
008	B4	Structure	Dividing wall between B3 and B4, aligned N/S.
009	B4	Structure	Brick vaulting in floor of B4, aligned N/S
010	B4	Structure	Stone flagged floor at N end of B4.
011	B4	Structure	Single line of bricks laid in header bond, between vaulting in floor of B4
012	B4	Structure	Single line of bricks laid in header bond at floor level, abutting west face of (008).
013	B4	Structure	Stone slabs capping storage bays in B3
014	B4	Structure	Stone slabs capping storage bays in B4.
015	B4	Structure	Brick arched storage bays in B4.
016	Corridor 4	Layer	Black mortar at south end of (093)
017	Corridor 4	Layer	Yellow plaster at south end of (093)
018	Corridor 4	Layer	Grey plaster on W face of (093)
019	Corridor 4	Structure	Six stone steps forming base of spiral stair case abutting B11.
020	Corridor 4		Brick built manhole abutting south end of (093)
021	Corridor 4		East wall of manhole at south end of (093) constructed from stone blocks.
022	B4	Structure	Brick vaulting in floor of B4, aligned N/S.
023	Corridor 4	Structure	Stone flags surrounding manhole at south end of (093)
024	Corridor 4	Fill	Rubble infill of manhole at abutting south end of (093)
025	B18	Structure	Wall aligned E/W, formed north wall of B18.
026	B18	Structure	Stone plinth of B18 north wall.
027	B18	Structure	Brick footing of B18 west wall.
028	B18	Structure	Brick wall aligned E/W formed southern wall of B18
029	B18	Structure	Concrete floor in B18.
030	B18	Layer	Grey plaster on walls of B18.
031	B18	Structure	Sandstone window sill on north wall of B18
032	B12	Structure	Wall aligned E/W, forming north wall of B12 to B14
033	B12	Structure	Dividing wall between B12 and B13, aligned N/S.
034	B12	Structure	L shaped wall blocking concealing boiler pipes in

			south-west corner of B12
035	B12	Structure	Wall aligned E/W, forming southern wall of B12 to B14.
036	B12	Structure	Dividing wall between B12 and B14, aligned N/S
037	B12	Structure	Cylindrical metal boiler pipes in south-west corner of B12.
038	B12	Structure	Brick floor
039	B13	Layer	Wall plaster covering interior of B13
040	B2	Structure	Tapered sandstone sill on south wall (004) of B2.
041	B13	Structure	Brick floor in B13
042	B18	Layer	Pink plaster on eastern wall of B18.
043	B18	Structure	Brick fire surround on eastern wall of B18
044	B18	Layer	Degraded grey plaster on walls of B18, similar to (030).
045	B18	Structure	Blocked opening on eastern wall of B18
046	B18	Structure	Brickwork blocking lower half of fireplace (043) on eastern wall of B18.
047	B18	Structure	Brickwork blocking upper half of fireplace (043) on eastern wall of B18.
048	B18	Structure	Brickwork blocking former oil cupboard doorway (lower section).
049	B18	Structure	Yellow brickwork blocking former oil cupboard doorway (central section).
050	B18	Structure	Brickwork blocking former oil cupboard doorway (upper section).
051	B18	Layer	Pink plaster partially covering blocked fireplace (043) in B18.
052	B18	Layer	Pink plaster in window opening on north wall of B18.
053	B16	Structure	Brick floor in B16, covered by black concrete (054).
054	B16	Layer	Black concrete covering brick floor (053) of B16.
055	B4	Structure	Remains of sandstone sill in south wall (002) of B4.
056	B16	Structure	Single brick skin abutting base of B16 south wall (002)
057	B16	Structure	Dividing wall between B16 and Corridor 3, aligned N/S.
058	B5	Structure	Sandstone window sill on south wall (004) of B15
059	B16	Structure	Dividing wall between B16 and B17, aligned E/W.
060	B16	Structure	Single brick skin abutting base of B16 north wall (059)
061	B16	Structure	Wall aligned N/S, formed east wall of B9, B16 and B17 and Eastern elevation of the Hall.
062	B16	Structure	Single brick skin abutting base of B16 east wall (059)
063	Trench 1	Layer	Sandy foundation deposit
064	B11	Structure	Stone flag floor surface in B11
065	B11	Layer	Painted plaster covering walls of B11
066	B11	Structure	Dividing wall between B11 and Corridor 4, aligned N/S.
067	B11	Structure	Brick vaulting in floor of B11, aligned N/S.
068	B11	Structure	Dividing wall between B11 and B10, aligned N/S.
069	B11	Structure	Flue feature within (068).
070	B5	Structure	Dividing wall between B5 and B6, aligned N/S.



071	B5	Structure	Brick floor in B5.
072	B5	Structure	Floor drain within brick floor (071) of B5
073	B6	Structure	Dividing wall between B6 and B7a, aligned N/S.
074	B6	Structure	Blue brick floor at north end of B6.
075	B6	Structure	Red brick floor at south end of B6.
076	B6	Structure	Blocked drain in floor (075) of B6
077	B7a	Structure	Dividing wall between B7a and B7b, aligned N/S.
078	B7a	Structure	Stone flag floor at north end of B7a.
079	B7a	Structure	Circular drain between brick vaulting (080) in floor of B7a
080	B7a		Brick vaulting in floor of B7a, aligned N/S.
081	B7b	Structure	Dividing wall between B7b and B8, aligned N/S
082	B7b	Structure	Stone flag at south end of B7b
083	B7b	Structure	Stone flag with circular metal fitting at south end of B7b
084	B7b	Structure	Circular drain between brick vaulting (085) in floor of B7b
085	B7b	Structure	Brick vaulting in floor of B7b, aligned N/S.
086	Corridor 1	Fill	Fill of Flue in Corridor 1
087	Upper Terrace	Structure	External roughly laid stone pavement capping retaining wall (140) along southern elevation of the Hall
088	Upper Terrace	Structure	Sandstone footings for former steps leading southwards from the Halls southern elevation towards the Upper Terrace Fountain.
089	Upper Terrace	Structure	Octagonal shaped fountain at centre of Upper Terrace
090	Upper Terrace	Structure	Central plinth containing fountain water pipes
091	B14	Structure	N wall of B14, with wide doorway to Corridor 2, handmade brick with painted plaster.
092	B14	Structure	E wall of B14, handmade brick with yellow plaster.
093	B14	Structure	W wall of B14, same as (092) but with two metal pipes running westwards through wall.
094	B14	Structure	S wall of B14, same as (092) and (093), obscured by boiler.
095	B14	Structure	Stone flagged floor underlying boiler
096	B14	Layer	Yellow/grey sand and gravel leveling layer for (095).
097	B14	Structure	Two course, stepped brick foundation for boiler, truncated on north side.
098	B14	Structure	Stone foundation underlying (092)
099	B14	Structure	Dressed stone arch underlying (091), central stone missing. WWII inscribed on inner face of top west block.
100	B14	Structure	Handmade brick infill of (100), four courses uncovered
101	B14	Structure	Two course thick, handmade brick wall same level as (098). Cuts (099). No foundation resting on (103)
102	B14	Structure	Brick wall underlying floor (095), 1m south of (091),

			Nine courses exposed, two courses thick. Top five courses missing at E end.
103	B14	Structure	Rubble and mortar infill of space between (099) and (102). C 1m below floor level
104	B14		
105	B14	Structure	Brick boiler structure at south end of B18.
106	B14	Structure	Dressed stone arch underlying (093). Extending from NW corner of B14 abutted by (102) and (103) with void underneath.
107	B20	Structure	West face of brick wall running North to South containing features 050,090 and 091
108	B20	Structure	Sub circular deposit in west wall, filled with black mortar.
109	B20	Structure	Square cut in base of west wall.
110	B20	Structure	Metal pipe work in the centre of the west wall, pipes continue through to B18
111	B20	Structure	Small plastered recess at the top left of the western wall
112	B20	Structure	Eastern brick wall, running North to South containing blocked doorway 113 with black mortar.
113	B20	Structure	Blocked doorway in 112, comprising of brick and black mortar, between B20 and B21
114	B20	Structure	Small metal pipe at the base of 112
115	B20	Structure	Southern brick wall with entrance to B20.
116	B20	Structure	Concrete floor of B20, with small cut in north west corner.
117	B21	Layer	Stone cladding on the south and west walls of B21
118	B21	Structure	Stone base running the length of the North wall.
119	B14	Structure	Metal tap and pipe extending east from 105 with copper handles
120	B14	Structure	Pipe running between 105 and 093 with the remains of copper tap visible.
121	B21	Structure	Eastern Brick Wall running North to south
122	B21	Layer	Flag floor of B21
123	B22	Layer	Stone Cladding on the south wall of B22
124	B22	Structure	Eastern brick wall of B22
125	Corridor 2	Structure	Main supporting wall running East to West for a length of 20.58m.
126	S1	Structure	Southern brick wall of staircase 1 located in Corridor 3
127	S1	Structure	Northern brick wall of staircase 1, located in Corridor 3
128	S1	Structure	Brick base of Staircase 1 in Corridor 3.
129	Corridor 3	Structure	Southern brick wall, running E/W containing doorway to B15 lift room
130	Corridor 3	Structure	Western Brick Wall of C3 running N/S
131	Corridor 3	Structure	Western Brick Wall of C3 running N/S forming part of eastern wall of B13
132	Corridor 3	Layer	Floor of C3 forming the top of the arched subbasement, running E/W



133	Corridor 3	Layer	Floor of C3 forming the top of the arched subbasement, running N/S
134	B17	Structure	Northern brick wall of b17 running E/W
135	B17	Layer	Floor of B17 comprising of mid to light brownish brown fill, some remnants of possible brick flooring which has been removed before excavation.
136	B15	Layer	Concrete floor area of B15 lift shaft.
137	B15	Structure	Eastern Wall of B15 Lift room, running N/S
138	B15	Structure	Small western wall made of brick in B15, located beneath lift winch platform, possibly supporting the lift winch.
139	B15	Layer	Concrete fill layer within the lift shaft
140	Corridor 5 and 6	Structure	Main retaining wall in corridor 5 and 6, with buttresses and arched area at South East end.
141	Corridor 5 and 6	Layer	Stone cladding layer running along the outside of the hall.
142	Corridor 5 and 6	Layer	Brick floor laid on the outer walkway in Corridors 5 and 6, with drainage cut along the length of the floors and drainage holes present.
143	Corridor 5 and 6	Structure	Brick buttresses along the length of corridors 5 and 6 and abutting the retaining wall
144	Corridor 6	Layer	Stone Cladding within Corridor 6 along the length of the Northern wall.
145	Corridor 6	Structure	Metal drain feature in Corridor 6 cut into stone base of stone cladding layer
146	Corridor 5	Structure	Metal drain feature in Corridor 5 cut into the stone base of stone cladding layer
147	Corridor 5 and 6	Layer	Drainage gullies cut into 142 brick laid floor, running E/W within Corridors 5 and 6
148	B8	Structure	Western brick wall between B8 and B9, containing door way into B9
149	B8	Layer	Brick floor of B8 .
150	B8	Layer	Brick top of arched sub cellar, seen in section running N/S.
151	B9	Layer	Brick laid floor of B9.
152	B9	Structure	Brick underpinning of the hall at the South East of B9
153	B9	Structure	Second Brick underpinning structure, located beneath 152 at the South East of B9
154	B25	Structure	Northern brick wall in B25
155	B25	Structure	Western wall in B25 containing a possible window.
156	B25	Structure	Eastern wall containing metal piping in B25
158	B25	Structure	Metal waste pipe running North east to South West
160	B10	Structure	Northern wall of B10 Containing part of Fire place.
161	B10	Structure	Blocked doorway in B10, within eastern wall 162
162	B10	Structure	Eastern Wall in B10 containing blocked doorway 161
163	B10	Structure	Fireplace within B10, including marble mantle and stone hearth
164	B10	Layer	Brick laid flooring close to fireplace and hearth
165	B10	Layer	Sandy Layer underneath flooring 164 in B10

166	B10	Structure	Curve linear arched sub structure within B10, running North West to North East
168	B25-20 incl 23	Structure	Northern wall of hall, including the entrance porch
169	B23	Structure	Western brick wall of B23
170	B23	Structure	Eastern brick wall of B23
171	B23	Structure	Small brick division wall within B23
172	B23	Structure	Brick laid flooring in B23
173	B23	Layer	Large Masonry stones located in B23
174	B23	Layer	Yellow fire brick flooring laid to the North of B23
175	B23	Layer	A layer of grey hardcore underneath yellow fire brick flooring 174
176	B23	Layer	Mixed Masonry layer under 175
177	B23	Layer	Metal piping laid underneath 176 mixed masonry layer
178	B1	Structure	Western brick wall of B1 containing a possible window sil.
179	B1	Structure	Brick laid floor of B1, containing a drainage gully (180) running the perimeter for the room with drain (181) at southern end. Also containing four smaller holes at the north eastern end of the room and second drain (188) at the northern end close to the northern wall.
180	B1	Structure	Drain gully laid into 179 brick laid floor in B1
181	B1	Structure	Metal drain at southern end of B1
182	B1 and B2	Structure	Dividing wall between B1 and B2 containing doorway from B2 into B1
183	B2	Structure	Brick laid floor of B1, containing a drainage gully (184) running the perimeter for the room with drain (185) at southern end.
184	B2	Structure	Drainage gully laid into brick floor 183 of B2
185	B2	Structure	Metal drain at southern end of B2 laid into floor 183
186	B1	Structure	Square access hatch to lower levels with the brick laid floor (179) of B1
187	B1	Structure	Small shelf feature in Northern wall of B1 with small linear recess running North west to South East, located directly above secondary drain feature (188).
188	B2	Structure	Drain feature at the most Northerly west corner of B2, directly below 187 possibly sink feature.
189	B2	Structure	Doorway within division wall 182 between B1 and B2
190	B17*	Layer	Stone layer with masonry blocks located above B17
191	B17*	Structure	Eastern brick wall running North to South above B17
192	B17*	Structure	Western Brick Wall running North to South
193	B17*	Structure	Southern brick wall running East to West
194	B17*	Structure	Northern brick wall running East to West.
195	B17*	Structure	Supporting brick wall to the South running East to West
199	B18	Structure	West wall of B18, aligned N/S.
200	B18	Structure	Brick wall abutting (156).
201	B17	Structure	Western wall of B17, badly truncated with some



			plaster work in situ.
202	B2 to B9	Layer	Layer of white mortar between brick floor and brick vaulting in B2 to B9.
203	B5	Structure	Timber post inserted into brick floor (071) of B5
204	B9	Layer	Sandy deposit identified in slot at southern end of B9.
205	B13	Structure	Brick vaulting in floor of B13, aligned N/S
206	Corridor 5	Structure	Rectangular drainage trough at north end of Corridor 5 N/S wing.
207	B2	Structure	Brick vaulting in floor of B2, aligned N/S.
208	B6	Structure	Brick vaulting in floor of B6, aligned N/S.
209	B6	Structure	Sandstone window sill in southern wall (004) of B6.
210	B7a	Structure	Sandstone window sill in southern wall (004) of B7a.
211	B7b	Structure	Sandstone window sill in southern wall (004) of B7b.
212	B8	Structure	Sandstone window sill in southern wall (004) of B8.
213	B9	Structure	Sandstone window sill in eastern wall (061) of B.
214	B16	Structure	Tapered stone flag at base of window in eastern wall (061) of B16
215	B16	Layer	Grey mortar covering lower half of window at northern end of (061).
216	B16	Structure	Rectangular ventilation grate a bottom of (061)
217	B16	Structure	Cast iron fireplace in southern wall (002) of B16.
218	B16	Structure	Brick lined ash pit in floor of B16 , below fireplace (214).



## *Appendix 2: Passenger Lift Technical Report*

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### **Worsley New Hall Archaeological Excavation: Machinery Equipment for a Passenger Lift in Room 14.**

The appearance of an 'A' frame mounted wheel, protruding from the demolition rubble in Room 15 strongly suggested that there had been a lift in the Hall. The likelihood was strengthened when a pair of lattice-work gates of a type used in early lifts was uncovered nearby.

Progressive clearance of the rubble within Room 15, revealed a motor room drive assembly, which apart from rusting was relatively undamaged. The assembly comprised:

- A direct current electric motor.
- A brake drum complete with friction band, associated operating solenoid and spring mechanism.
- A worm and wheel transfer gearbox.
- A cable drum with several turns of wire cable wound on.
- Various items of electrical equipment including what appears to be the main circuit breaker.

Then earliest records for the introduction of electrically powered lifts anywhere are 1878 (Germany) and 1887 (USA). The Hall was built in 1840 and hence the Worsley lift has to be a later addition. From the construction of the motor and the date when electricity was introduced into the New Hall it can be estimated that the lift was installed between 1908 to 1920 (Nash & Nevell, 2011: 25).

Research into the maker of the lift uncovered a 1920 Otis Manual Elevator at 124 E Fulton Street, Grand Rapids, USA which used the same motor room equipment as the lift discovered at the New Hall. Further research established that the American Company, Otis Elevator first entered the UK market in 1890 and the first electric elevator was installed on the London Underground in 1892. However it was not until 1906/1907 that Otis became fully established in the UK.

Given the above information it could be assumed that the lift at the New Hall was installed during the Great War when the Hall was lent to the British Red Cross for use as a hospital for wounded officers.





## Lift Details

### Motor:

- Direct current type with oil lubricated sleeve bearings.
- Rating plate info; Serial No 22219; Type 1.5; Volts 400; Amps 15; RPM 950.
- Dimensions ; Length 840mm; Height and Width 490mm.
- A heavy duty cranking handle was also found which fits the extended and squared non-drive end shaft.

### Transmission Gear:

- Worm and wheel type.
- Serial No W2350 or M2350 is embossed on a small oval shaped inspection cover on the gear wheel casing.

### Cable Drum:

- 38 groove; 650mm diameter; 640mm overall length.

### Cable:

- Stranded wire 12mm diameter.

### Guide Wheel:

- Single groove 6 spoke pulley wheel.
- It would appear the whole assembly is mounted on a single integrated bedplate.
- The floor of Room 15, adjacent to the drive equipment had been altered to form a well to accommodate the bottom of the passenger car.
- A shard of thick glass found within Room 14 was characteristic of a type used in early lead-acid storage batteries.

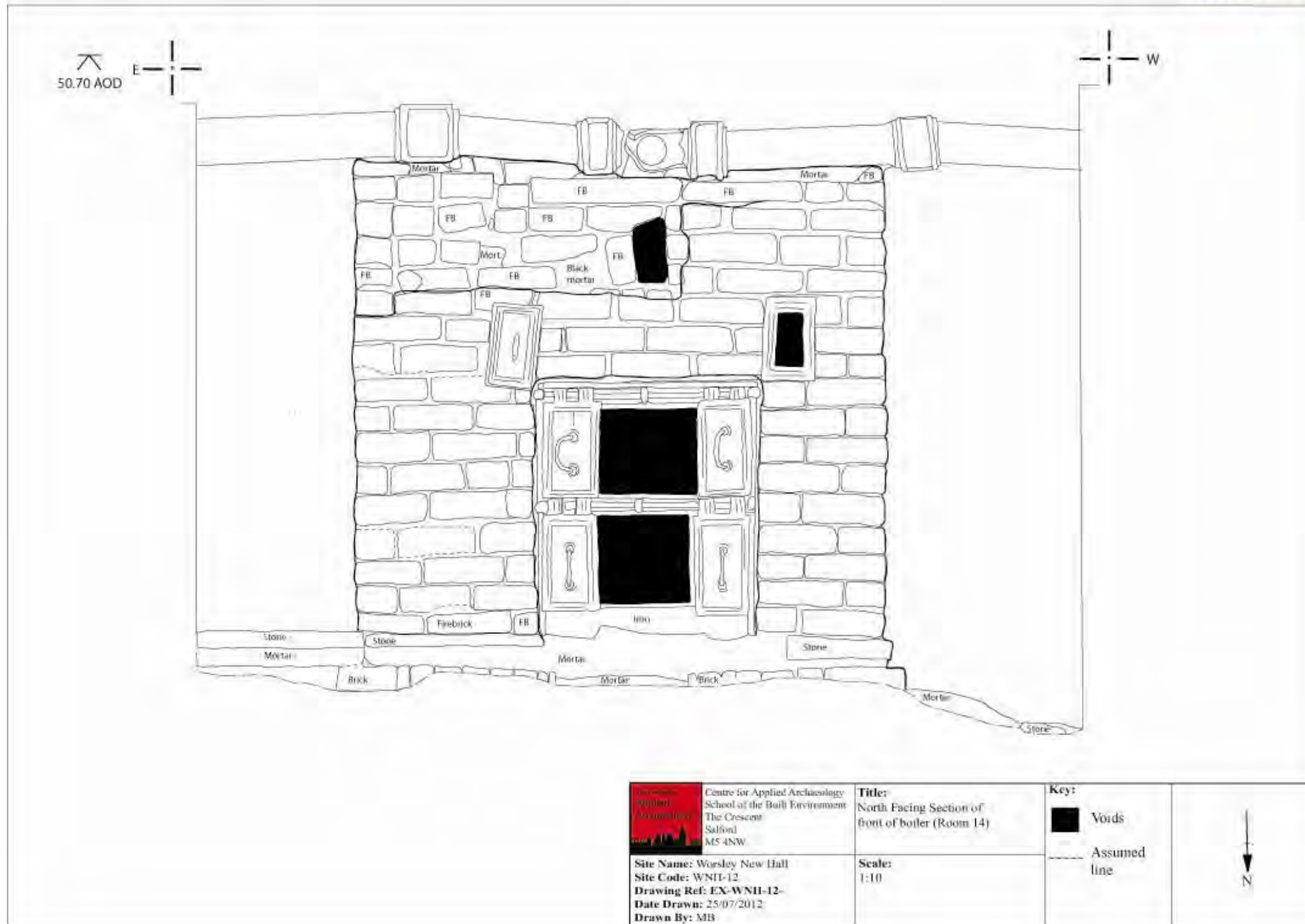
The motor room equipment is relatively unusual in that is 'bottom mounted', ie situated in the basement, whereas the more usual arrangement is for the equipment to be 'top monted' in a room at the head of the shaft.

### Report By:

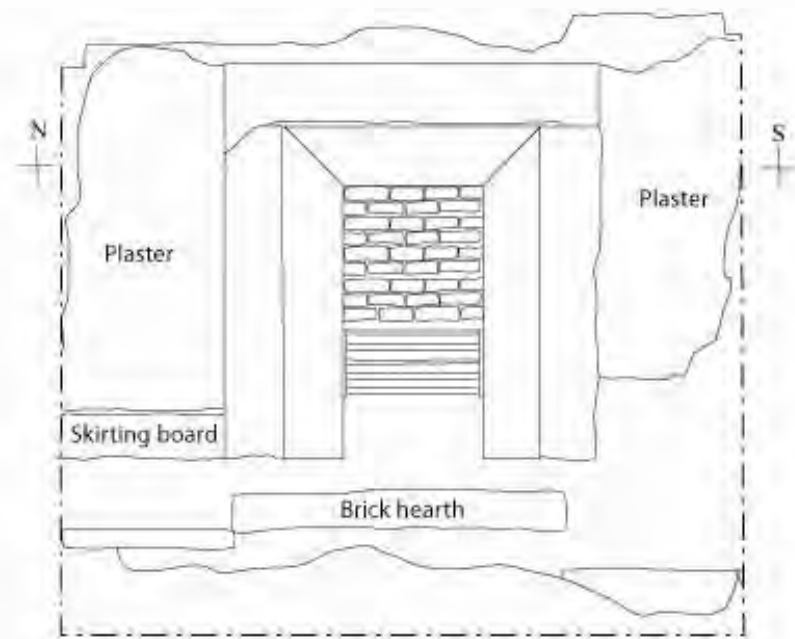
R. S. Bragg (South Trafford Archaeological Society).

Former Electrical Manufacturing Supervisor, Otis Elevator Liverpool Works.

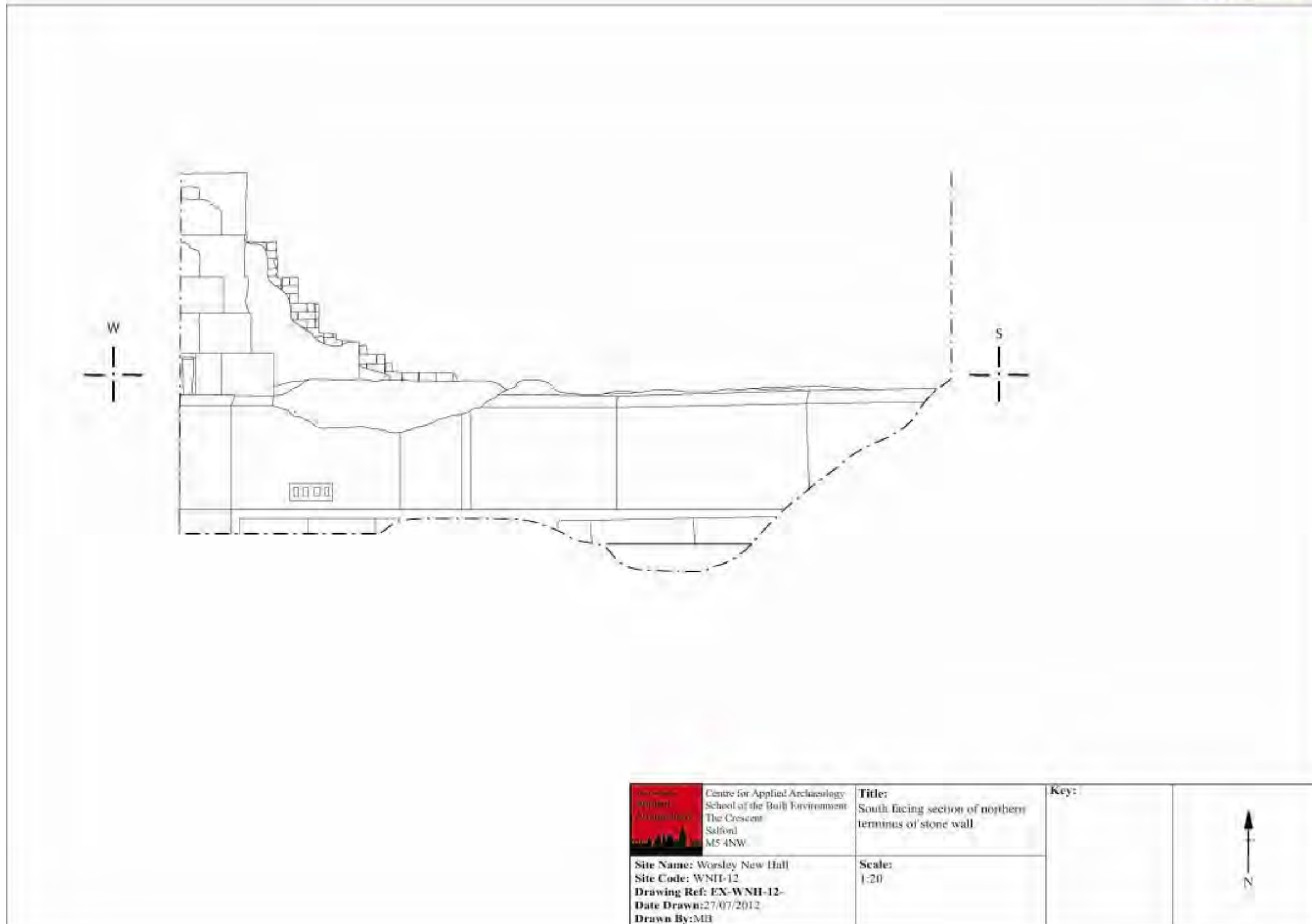
*Appendix 3: Figures*







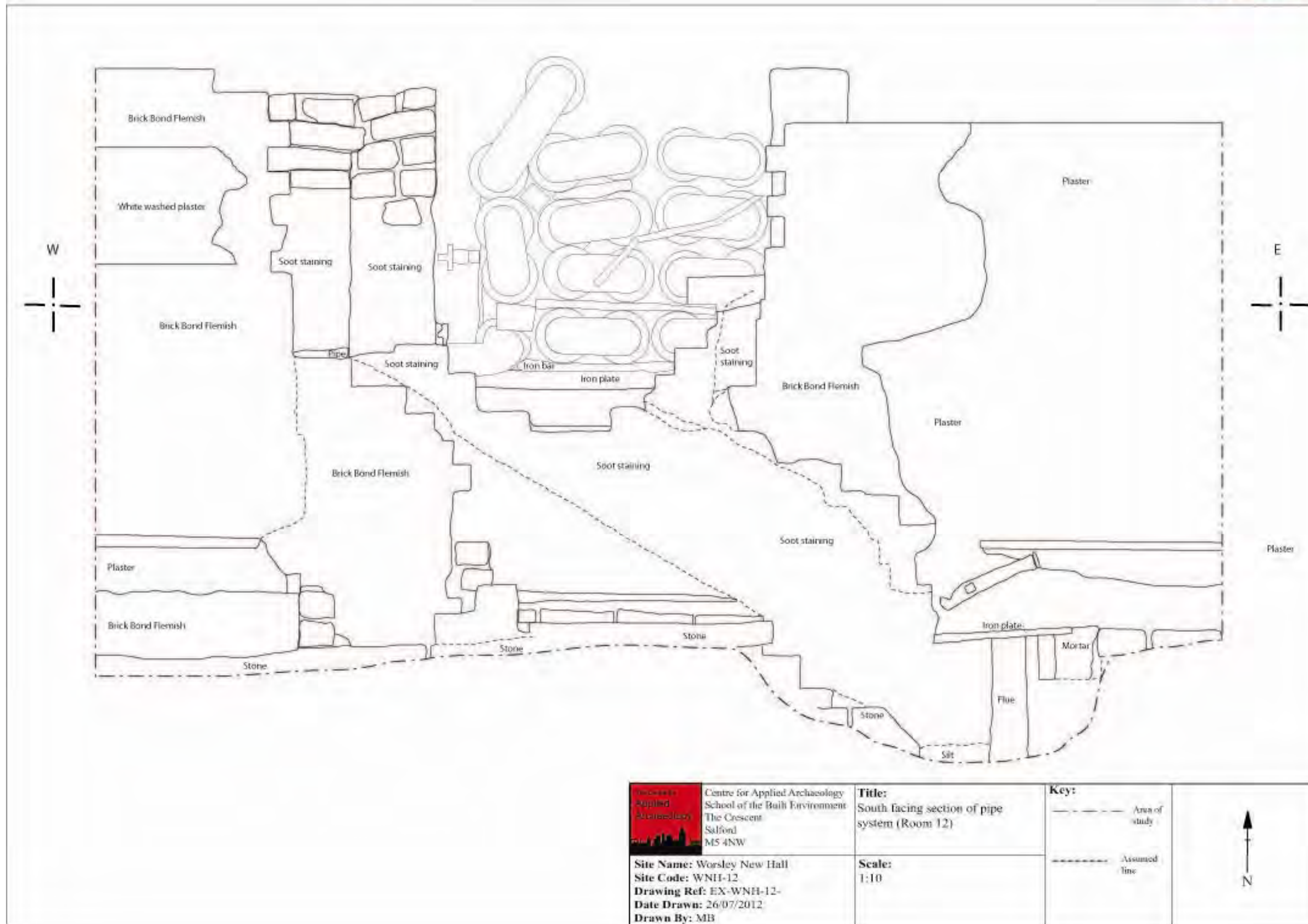


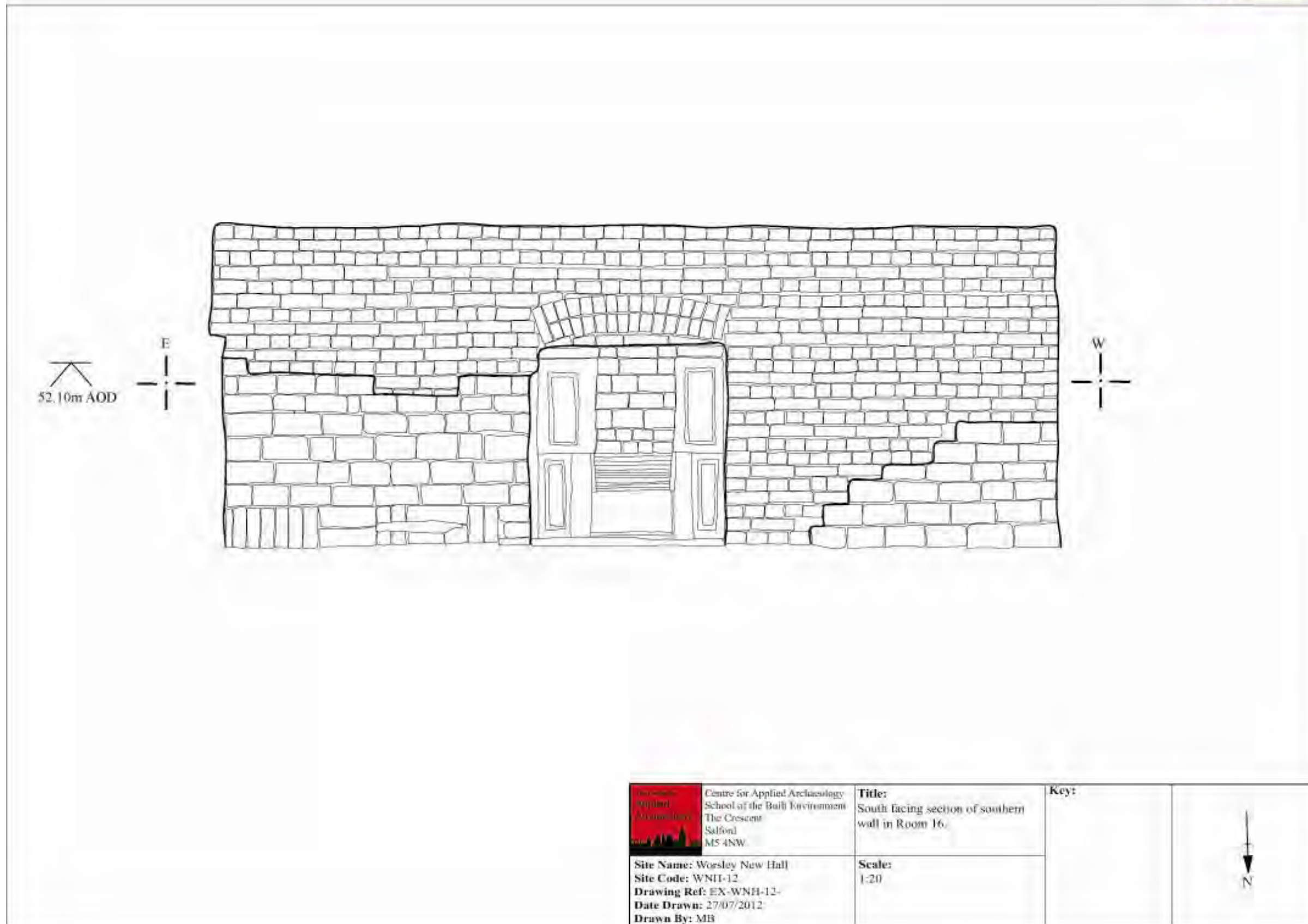
 Centre for Applied Archaeology Joule House The Crescent Salford M5 4NW	<b>Title:</b> West facing section of fireplace in Room 10.	<b>Key:</b> - - - - - Edge of study area   N
	<b>Site Name:</b> Worsley New Hall <b>Site Code:</b> WNH-12 <b>Drawing Ref:</b> EX-WNH-12- <b>Date Drawn:</b> 27/07/2012 <b>Drawn By:</b> MIB	



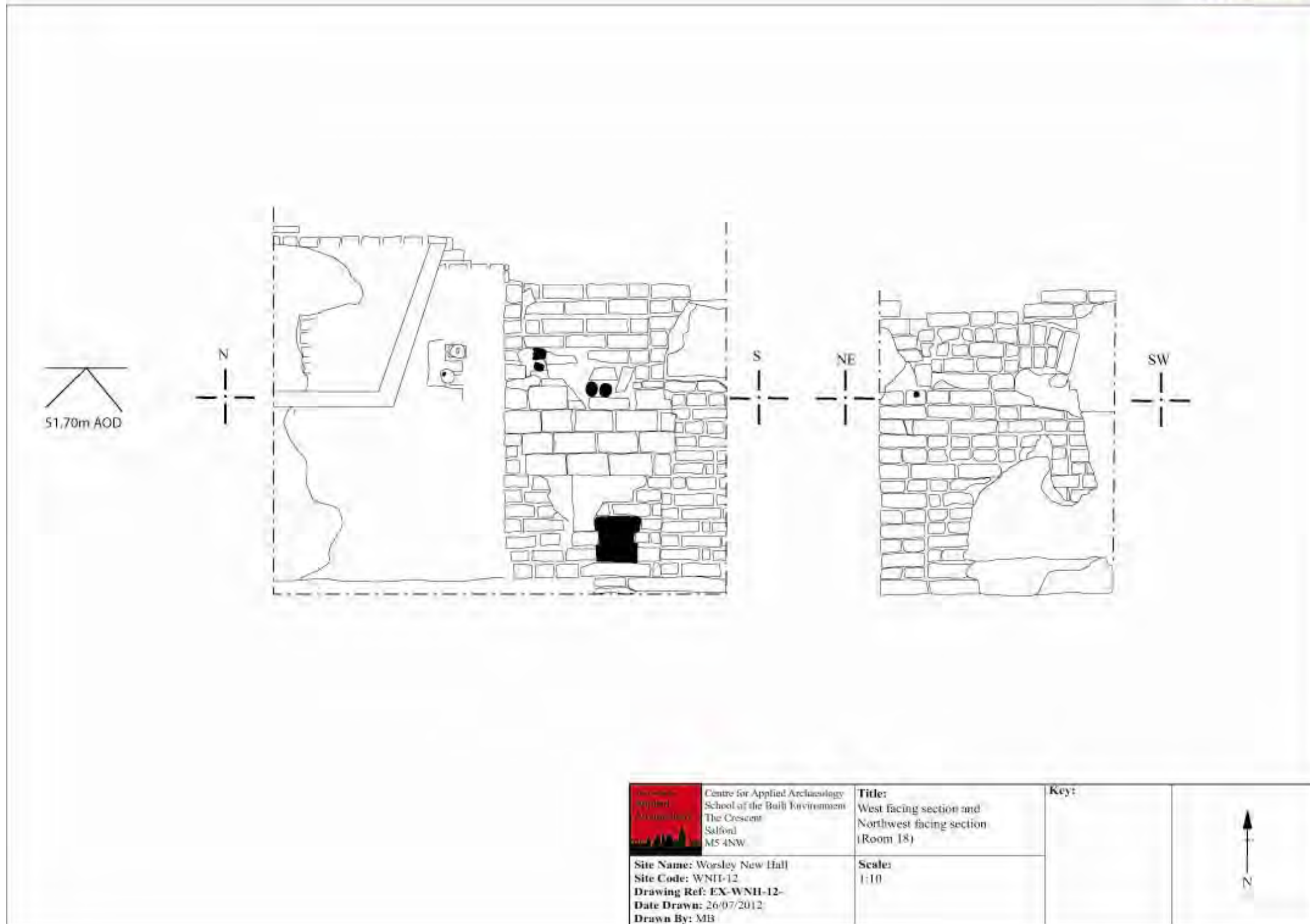
 Centre for Applied Archaeology School of the Built Environment The Crescent Salford M5 4NW	<b>Title:</b> South facing section of northern terminus of stone wall	<b>Key:</b>  
	<b>Site Name:</b> Worsley New Hall <b>Site Code:</b> WNII-12 <b>Drawing Ref:</b> EX-WNH-12- <b>Date Drawn:</b> 27/07/2012 <b>Drawn By:</b> MB	











An Archaeological Excavation of Worsley New Hall, Salford, Greater Manchester (CfAA/021/2012).





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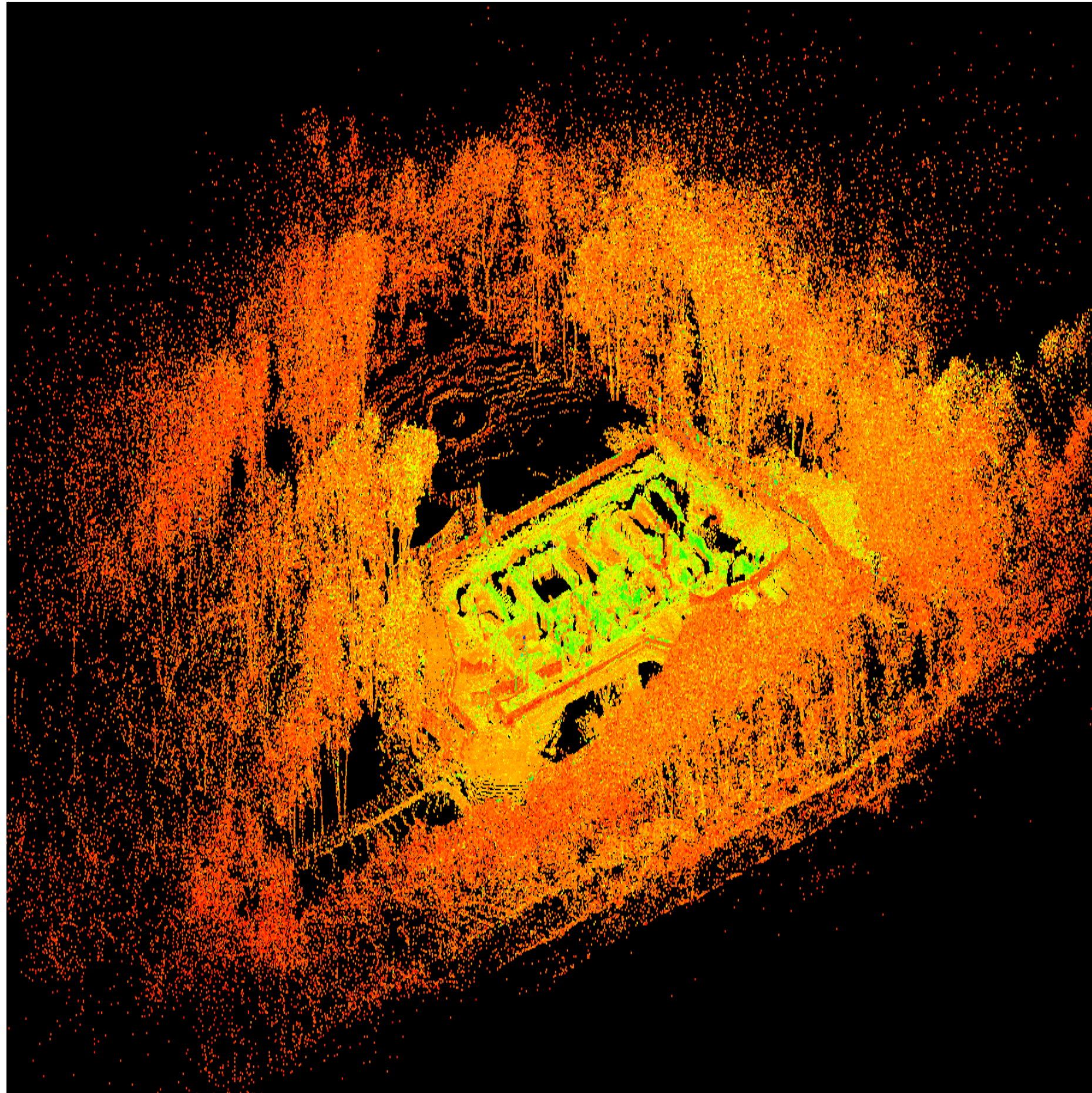






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