

Harpers Hill Jewellery Quarter Birmingham

Archaeological Excavation



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Archaeology Warwickshire Report No 2140

MAY 2021



*Working for
Warwickshire*

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Birmingham

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SUMMARY

An archaeological excavation was undertaken on behalf of RPS Group on the site of James Watt's residence between 1777 and 1790. The house was constructed in 1775 as a semi-detached property and was demolished shortly after 1870.

The footprint of the main house was recorded at cellar level but adjacent, uncellared, buildings had been obliterated. Each cellar had three rooms and they were accessed by external staircases. The northern parts of the cellars appear to have been used as larders, with whitewashed walls and low brick walls which would have supported cold slabs.

The villa underwent a degree of modification which included the insertion of half-spiral staircases in the centre of the building in the 19th century. It can be said with reasonable confidence that the villa was carefully demolished in the early 1870s and its structural elements such as bricks and roof tiles removed, probably for re-use.

Historical research by George Demidowicz tells us the occupations of tenants during the late 18th and 19th century. Some archaeological evidence was recovered for the occupants use of the house. Albalone shell button waste suggests one of the occupants was involved in mother-of-pearl button manufacturing. Small amounts of slag, and copper-alloy wire and other waste in the layers associated with the demolition of the house suggest that some small-scale industrial activity may have been taking place in the house during the later 19th century.

The fabric of the building appears to have been systematically stripped out before demolition. Following the building's demolition its site was levelled up and overbuilt with a factory building (constructed at some point between 1890 and 1905), some of the footings of which cut through the earlier demolition material. Factory buildings associated with electroplating and light industry occupied the site area until demolition in 2020.

1 INTRODUCTION

- 1.1 Planning permission (Ref. 2018/04885/PA) has been granted by Birmingham City Council for the demolition of structures attached to listed buildings and conversion of 109 Northwood Street (Harpers Hill Works) from B2 to A1-A4 or B1 uses and conversion of 199 Newhall Street from B2 to B1 use with associated works at Harpers Hill, Jewellery Quarter, Birmingham (hereafter referred to as 'the site').

- 1.2 The site is important insofar as the engineer and inventor James Watt is known to have lived there in the late 18th century. Archaeology Warwickshire (AW hereon) were commissioned to undertake a suitable scheme of archaeological watching brief and excavation and recording to mitigate the impact of the development and provide information on the survival, if any, of archaeological remains relating to James Watt's residence. The work was carried out during, and following, the removal of the slab of the former A E Harris factory buildings and demolition material below them.

- 1.3 The fieldwork was carried out in November and December 2020 in accordance with a Written Scheme of Investigation approved by the planning authority and prepared in accordance with the relevant Standards and Guidance of the Chartered Institute for Archaeologists (2014). This report presents the results of that work. The project archive will be stored by Archaeology Warwickshire under Site Code BHH20 until deposition with Birmingham Museum and Art Gallery

2 SITE LOCATION

- 2.1 The site is centred on National Grid Reference SP 06260 87485 in an area known as the Jewellery Quarter in the north of Birmingham city centre core. Prior to the work, the site comprised a group of historic and modern industrial and mixed use plots which were acquired towards the end of the 20th century by A E Harris Ltd as the company expanded along Northwood Street, together with the Baker and Finnemore site on Newhall Street at the junction with Brook Street and Graham Street.
- 2.2 The topography rises steeply from the south to the north of the site. The changes in level are predominantly accommodated in the workshops ranges to the rear of 110-138 Northwood Street which create what is in effect a retaining wall stretching east to west across the site. The western section of Northwood Street continues as a private road into the site; dividing it in two.
- 2.3 The British Geological Survey (BGS 2020) records the underlying bedrock geology of the site as Wildmoor Sandstone Member, a sedimentary bedrock formed during the Triassic period. Superficial Devensian Glaciofluvial Deposits of sand and gravel are also recorded.

3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 3.1 The following archaeological background has largely been summarised from a Heritage Statement produced for the site in 2018 (Turley 2018) and with information supplied by George Demidowicz, who has carried out research into the Harpers Hill house.
- 3.2 The site is in the centre of the Jewellery Quarter Conservation Area in the 'Industrial Middle' Character Zone. There are two Grade II Listed Buildings within the site: 109 Northwood Street (National Heritage List for England ref. 1246346) and 199 Newhall Street (NHLE: 1392743), with a number of Listed Buildings in proximity to the site.
- 3.3 Metalworking in Birmingham is documented from the medieval period, although urban development within the Jewellery Quarter began with a private act in 1746 which released the Colmore estates for development. The Newhall estate was the first area to be developed and the south-facing slopes above Newhall became fashionable towards the end of the 18th century as an area for suburban villas.
- 3.4 In the late 18th century, part of the site examined was occupied by a large villa (Harper's Hill), its grounds and ancillary buildings, which were leased by Matthew Boulton for his business partner James Watt, who lived there from 1777-1790. In the 1780s Boulton and Watt experimented with domestic steam heating, as described in a treatise of 1845 on heating and ventilation by W. Bernan, and their experiments with steam heating continued into the 19th century:

The first practical application of these hints was made by the celebrated improver of the steam-engine. In the winter of 1784-5, Mr. Watt used it for warming the room in which he commonly wrote. The apartment was 18 feet long, 14 wide, and 8½ feet high. The apparatus was a box or heater made of two side plates of tinned iron, about 3½ feet long by 2½ feet wide, kept at the distance of an inch asunder by stays, and joined round the edges by other tin plates. This box was placed on its edge near the floor of the room, and furnished with a cock to let out the air, and a pipe proceeding from its lower edge to a boiler in an under apartment to supply steam and return the water of condensation. The effect produced by this apparatus was less than Mr. Watt expected, but the failure could not be explained until Leslie made his experiments on the heat transmitted by polished surfaces. Soon after this, Mr. Boulton heated a room in his house by steam; and about 1789, a bath also, which he continued to use for twenty four years.†

- 3.5 By the mid-19th century, the area was becoming increasingly industrial and Harper's Hill villa is shown on the c.1855 Pigott-Smith Map (Fig 2) surrounded by high density development in mainly terrace and courtyard forms. The villa is shown set back from Regent's Place. There was a large turning circle on the south side of the house accessed from the corner of Northwood Street and James Street and a series of smaller turning circles and outbuildings to the north, set back from Regent Street. Accounts record it was a brick building with and stone facings.
- 3.6 The remaining parts of the site on James Street, Graham Street St Helen's Passage, behind Vittoria Street and the Baker and Finmore site were also developed by the mid-19th century and appear to have been a mixture of high density, residential and industrial courtyard and terraced development typical of the 19th-century development in the Jewellery Quarter.
- 3.7 The house at Harpers Hill continued to be used into the 19th century under a succession of leaseholders and tenants (see below). Some time after 1870 the villa was demolished and its grounds destroyed and Northwood Street was extended from the east into the site. Redevelopment of the area of the cleared villa and its grounds began at the east of the site with the Harper Hill Works (c.1882). The 1889 mapping shows the area formerly occupied by the villa undeveloped. The northern area has been separated from the main central block and buildings are shown to the north-east, fronting Regent Place. By 1905 the central area where the villa had stood, and the area immediately to its east, had been built over by early factories and further buildings are shown to the west of the villa site by 1917-27.
- 3.8 An aerial photograph from 1948 (not reproduced) shows a clear form of courtyards, long ranges and back-of-pavement development across the site and the wider area. Historic maps and trade directories indicate that in the early to mid-20th century the site accommodated a mix of industrial uses and residential dwellings in the form of back-to-back terraces on Graham Street and terraced dwellings to the rear of Vittoria Street. The villa site area is fully occupied by a series of parallel engineering works, covering the area, which were in existence up to the late 20th century at least.
- 3.9 In the late 20th to the early 21st century the pattern of change across the site was characterised by the adaptation, amalgamation and demolition of buildings to create

modern industrial premises. This included the demolition of the previously mentioned dwelling houses (now 125 Northwood Street and 5-6 Graham Street).

- 3.10 George Demidowicz has reconstructed plans of the villa in 1775, 1825, 1855 and 1872. A photograph purportedly dating from 1872 must have been taken just prior to its demolition as some windows are shown broken on the elevation (Photo 1). The main house is shown as a roughly square building, of three stories (and cellar beneath) with five windows to each floor on the south side. The 1775 mapping and elevation drawing shows the main house with two-storey pavilions either side, each joined to the house by walls pierced with a rusticated doorway under a pedimented arch (see Fig 4). The pavilions have tall chimneys and are likely to have been the kitchens and bakehouse. This southern façade appears to have continued unchanged into the 19th century, though by 1824 the areas either side of the house have been built up further and by 1855 a new outbuilding has been erected to the north-east of the main block of housing. The final plan of c.1872 suggests the footprint has increased significantly to the west. The house is recorded in rate books as void in 1871, so it is likely it was demolished shortly after this.

A short history of Harpers Hill House by George Demidowicz

- 3.11 Harper's Hill House is of historical significance as it was the third family home of the world-famous engineer, James Watt, after his arrival from Scotland in May 1774. He initially stayed with Matthew Boulton at Soho House but after leaving for London and Scotland returned with James Watt jnr to live at Key Hill House, which Matthew Boulton had leased for him for six months from September 1775 to March 1776.
- 3.12 James Watt moved out of Key Hill in April 1776 and took up residence in part of the early 17th-century house, New Hall, which had suffered considerable decline since the Colmores had abandoned it as their principal residence. Matthew Boulton occupied another part as warehousing.
- 3.13 His next house had been built on one of the former group of fields called Harpers Hill, about two acres in size and situated on the north-western boundary of the Newhall estate belonging to the Colmore family. In about 1771-72 John Twigg took out a 99-year lease of this field for an annual ground rent of £6. The site was chosen presumably because it commanded a fine view from its elevated position over the 'Newhall Brook' towards the town of Birmingham. The development of the Newhall estate by the

Colmores from the direction of Birmingham had brought new roads into its vicinity. In 1775 Twigg built a house on the generous plot, but not for his exclusive occupation.

- 3.14 Twigg had in fact constructed a pair of semi-detached houses as the earliest rate book evidence confirms. In 1775 he occupied one of the pair (west side) and Mr Kettle, possibly the owner of the well-known steel house on Steelhouse Lane, the other. With a five-bay frontage, Harpers Hill house did not easily divide into two, as it would not have been practical to partition the middle window. It would appear, therefore, that the building was divided down the middle at cellar level, but that on the three floors above lightweight partitions allowed one side to have three windows front and back and the other 'semi' only two. This explains the difference in the rating value of the pair of semis, the larger west side occupied by John Twigg.
- 3.15 In March 1777 Matthew Boulton successfully negotiated for James Watt to take over the lease of the smaller east side of the house at Harpers Hill from Mr Kettle. He moved in on the 22nd March. Quoting from the memoirs of Mary Anne Schimmel Penninck:

Mr. and Mrs. Watt...then lived ... in a very modest house in the suburbs of Birmingham, at Harper's Hill... there Mr. and Mrs. Watt resided with a very simple establishment of two maids and a man-servant ...besides which they had two little pug-dogs. ...

- 3.16 James Watt set up a drawing office in the house and attempted some improvements including heating a room by steam from a boiler below (in the cellar?), which proved unsuccessful. Two of his children were born there, Gregory Watt (1777) and Janet (Jessie) 1779.
- 3.17 In August 1786 Mrs Watt applied to Samuel Glover for the tenancy of Key Hill House, which had fallen vacant after the death of his father, Joshua Glover. She was unsuccessful and the lease went to Samuel Pemberton. In 1789 James Watt purchased the lease of a small house on Handsworth Heath and employed the architect, Samuel Wyatt, to design major extensions to make it into a 'convenient' family home. It was not until September/October 1790 that the Watt family were able to move into Heathfield House, the name they gave to their newly-extended home in deeper rural surroundings.

3.18 The Twigg family gave up the head lease of Harpers Hill in 1798, Charles Twigg, John's son, having been declared bankrupt. The house was taken over by David Blair, a Scotsman who entered into a partnership with Richard and Ramsay Sutherland, gun makers, as Blair and Sutherland. They were also bankrupt by 1819. The sequence of head lease holders from the construction of the house to its demolition in about 1872, four in total, is as follows:

1775-1798	John Twigg then Charles Twigg (Bankrupt 15th May 1798) Factor Button maker, dealer & chapman
1799-1819	David Blair then Blair & Sutherland then Richard & Ramsay Sutherland (Bankrupt 27th July 1819) Gun makers
1819-1847	Francis Sheppard then Francis jnr Brass founders Vinegar brewer then Francis & Samuel [Juliana Sheppard resident > 1839]
1848-1872	John Aston [lease expires 1872] Button manufacturer – Wharston House

3.19 The occupations of the principal tenants and of the subtenants closely reflects the development of industry in the Birmingham area and the gradual decline of the building's status. The rapid growth of Birmingham subsumed the originally prestigious site, its rural setting and extensive views. With the development of the Jewellery Quarter from the 1820s onwards private housing gradually gave way to industrial premises.

1775 -1872 (over 40 tenants of Harpers Hill)

Rate book numbers: no 3 west side, no 2 east side (James Watt's), no 1 the east pavilion and extensions.

1781:	3) factor/merchant, 2) engineer
1791:	3) factor/merchant, 2) wealthy widow
1801:	3) gun maker, 2) wealthy widow & 1) gun maker
1811:	3) gun maker, 2) wealthy widow & 1) merchant
1821:	3) brassfounder, 2) merchant & 1) wealthy widow
1831:	3) wealthy widow, 2) factor/merchant & 1) artist
1841:	3) timber/slate merchant, 2) brassfounder & 1) jeweller

1851: 3) jeweller, 2) jeweller & 1) horticultural agent

1861: 3) draper, 2) policeman & 1) jobbing jeweller

1871: All void.

- 3.20 It is important to emphasise that the house was never known as Regents Place, a misunderstanding which seems to have begun in 1865 with Samuel Smiles and has been often repeated up to the present day. Access to the house was originally obtained from Graham Street and later from the junction of James Street and Northwood Street. The back gardens did not reach the present Regents Place until after 1816. The plaque commemorating James Watt's residence in Regents Place should be moved into the west end of Northwood Street, as it has been placed in the wrong street on the wrong site.

4 AIMS AND METHODS

- 4.1 The main aim of the work was to record any archaeological remains disturbed by the development, to collate the records in an archaeological archive and present the significant aspects of the archive in a report for dissemination. The secondary aim is to form an understanding of the remains recorded in terms of their character and date, and to place the evidence in its local and regional context.
- 4.2 The purpose of the archaeological investigations was to reveal and record any remains associated with Harpers Hill villa.

Watching Brief

- 4.2 Following the demolition of the factory buildings, a watching brief was carried out during the removal of the floor slab in the villa area. An experienced archaeologist supervised the ground reductions which were carried out by machines fitted with a toothless ditching bucket. Once the slabs were removed, pre-existing factory brick walls and floors were encountered. These were largely removed, along with demolition material to reveal the remains of the villa's cellars.

Excavation

- 4.3 Having exposed the upper parts of walls associated with the cellars of the main part of the villa, a programme of excavation to uncover and map the walls, floors etc was carried out by hand. Areas of surviving floors or structural elements were recorded. Drone images of the site were obtained.

5 Excavation

- 5.1 Geological natural reddish yellow sand or sand and gravel (12) was recorded in the north of the site and in the western part of the area excavated. Either side of the main house the geological natural was overlain by redeposited sandy loam (west; 11) and (east; 98). Once the cellaring had been exposed (Photo 2) the building was divided into nine areas, A to I, to allow finds to be related to different areas of the cellars and potentially the former rooms above (Fig 3).

Phase 1 House

- 5.2 The NNW-SSE oriented building was c.12.40m across and 13.40m long with the width of each semi being c.5.6m wide and divided into three rooms mirrored either side central brick dividing wall (16). The foundation cut (35) for the north wall (17) was 0.53m deep. In the southern part of the site the central wall was generally lower, and its southern end had been completely removed. All of the primary walling was bonded using a light reddish brown lime mortar. The external walls of the house (17/78, 26/71, 30/51, and 75) were three bricks wide (0.36m) with wall 17 the best preserved, up to a height of 0.74m. The eastern wall was almost completely robbed out and its southern end was represented by its foundation cut and fill only (145 and 146).
- 5.3 In each of the semi-detached footprints the building appears to have had three rooms, which is likely to reflect the arrangement of rooms at ground-floor level, and indeed would correspond with the dimensions mentioned by Bernan, if Watt's writing apartment was the north-west room of the house at ground-floor level. In each side the southern cellar room was the largest, with an interior of c.5.8m x 4.8m. The central room is the smallest (c.3m wide) and the northern room 4.20m wide. The rooms are divided by double-skin brick walls (15, 23, 36, 52, 55, 70, 80/119, 108). In the western part of the house there is a brick threshold (67) between the southern and middle room, and a doorway between the walls 15 and 80 between the middle and northern room. This latter doorway has an *in situ* iron pintle (143) on the north side of wall 80, suggesting a door opening inwards into the northern room. There is no evidence for doorways on the eastern side of the building but a great part of this area has been destroyed by the later factory building. Walls 80 and 36 thicken to three bricks in the area closest to the central dividing wall 16. On the better-preserved western side of the building the central room has evidence of external access in the form of the lower

part of a staircase (72; Photo 3), which was likely to have been mirrored on the eastern side but has since been destroyed.

- 5.4 The majority of the brick flooring has been systematically robbed out, leaving only a few scant areas of brick (76, 77/122, 79, 97, 100, 104, 105, 107, 114, 115, 116, 134). In many areas these only remained *in situ* where they were partly below brick support walls. In the southern room of the western cellar (A) a thin layer of compact lime mortar (53) overlain by 0.15m of reddish sand (62), were used as levelling for a formerly overlying brick floor surface (Photo 4). No evidence for stone flagging was recorded *in situ* and as the majority of the rooms had some remnants of brick flooring it seems likely that the entire cellar was brick floored.
- 5.5 The northern rooms of the cellar appear to have been used as larders, although whether they were used as such from the period of construction is unclear. Larders on the north side of buildings is common in cellars, as these are the coolest rooms. The northern rooms both have short walls running off the central wall 16 (28 and 69 in the NW and 74 and 73 in the NE). Walls 28 and 74 are both 0.36m wide and in both instances the walling to the south is this thickness for the same length (1.06m = 3ft 6"). Walls 69 and 73, while of similar length, are only double skin walls. These walls divided the central part of the northern cellars into individual compartments. Distinctive features are the remnants of single-skin brick support walls for cold slab benching between these sets of 'compartment' walls and along the north wall (the cold slab, or *thrawl*, would typically have been slate or marble). A single slab of slate measuring 457mm x 635mm was recorded in the demolition debris which may be part of one of these benches, or a slate flagstone (121). The support walls off wall 16 in the east cellar are 106, 144 and 103 and in the west cellar 117, 118 and 120. The most complete of these stub walls is 103 (Photo 5), which is of three bricks set on their stretcher edge. The wall scar shows this to have been at least two bricks higher (0.60m+) and the shadow on the floor suggests that it was originally at least one brick longer (to 0.67m). On the north wall a series of support walls were laid out at intervals of 0.70m; these survive as walls scars of mortar adhering to the south face of the wall, standing out against the whitewashed walling either side and have been robbed in their entirety (138, 139, 140, and 141; Photo 6). Only one similar scar was noted on wall 78 (142), but it is likely that the whole of the northern walling was used for larder slab in this way. Much of the later concretion against northern wall 78 was not excavated,

hence the face of this wall was not fully exposed. The majority of the walling appears to have been whitewashed, as is traditional in a cellar (Photo 7).

- 5.6 In the northern room of the western house the remains of a 0.35m wide wall (27) parallel to the outer wall 26 had been robbed to its lowest course. The proximity to the outer wall suggests it was not structural but may have been the base for a low bench for storing something such as beer barrels. In the southern room of the eastern cellar a foundation trench (86) suggests something similar may have existed in this room.

Phase 2 House alterations

- 5.7 In the central part of the house a series of later brick walls were inserted (Photo 9), in some instances directly over pre-existing brick floors. In all cases they appear to have been constructed using light brown lime mortar, in contrast to the redder mortar used in the primary walls. The Phase 2 remains are confined to the central part of the building; photographs show the chimneys of the house being central to the building rather than on the outer walls. However, the absence of chimney breasts and the remains of coppers suggest that the cellars did not have fireplaces and were not used as kitchens or sculleries, which likely were in the outer pavilions either side of the main building. It appears that in the second phase the access to the cellars changed, with internal half-spiral staircases being inserted against the central spine wall (16) that divided the two cellar complexes. This is most clear in the western side, where the remains of a series of brick steps (57) were recorded (Photo 10). On the eastern side this area has been obliterated by later factory-related construction. It seems that these stairways curved around, and were supported, on walls 68 and 56 in the west, and 19, 20 and 99 in the east. If the cellars are rough mirror images then wall 19 would have formed part of the steps into the eastern cellar. At the rear were single-brick wide curving walls (25 and 58 in the west and 24 and 59 in the east). In both instances the staircases would have led to a doorway at the rear of the entrance hall on the ground floor.
- 5.8 A small area of coal (133) survived in the SW corner of the central western cellar, suggesting part of this room may have been a coal cellar prior to the house's demolition. Floor 76, in the SE cellar room, has an area of bricks that appear to delineate a rectangular space and the surrounding brick flooring was overlaid with a thick layer of charcoal-rich material (94) suggesting there may have been a stove or boiler located in this area (Photo 11). Although James Watt attempted to heat part of

the house using a steam boiler in the 1780s he was unsuccessful (Bernan 1845, 241; Palmer and West 2016, 109), and this may have been associated with a later, 19th-century attempt at heating the house. The charcoal layer contained 12 fragments of 19th-century blue transfer-printed pottery.

Phase 3 Demolition phase

- 5.9 The early 1870s photograph of the house shows some of the panes of glass in the windows broken, but otherwise the house intact, with the roof fully tiled. It is likely that demolition took place in a reversal of the order of the construction of the house, with the roof tiles being removed first and demolition of the building from the attic level downwards to ground floor, and taking out the upper part of the cellar walls. The relative lack of roof tile and bricks from the excavations suggest that a comprehensive salvage programme took place. Cellar walls were demolished to various heights, some standing to c.0.75m, others demolished to ground level e.g. footing 27, and others robbed out to leave only a foundation cut or robber trench e.g. 86. The fill of this (87) contained a few fragments of thin window glass and two fragments of 18th-century pottery.
- 5.10 In the east side of the central eastern cellar a circular cut (101) c.1.3m in diameter, and filled with a sticky pale grey mixture of lime and clay (102; Photo 12) could have been an infilled well but was not investigated further due to the presence of the lime.
- 5.11 The lowest level of demolition material included a number of solidified deposits made up of broken bricks and lime mortar and plaster with some stone and sand (61, 123, 126, 127, 128, 129, 130, 131 and 132). These deposits varied in size and depth but the largest was in the NW cellar room (129) where it covered about half of the room, approximately 4.6m across and up to 0.40m high. These deposits were the result of removing the lime-based mortar and plaster off the bricks from the walls as they were cleaned for re-use and the lime then re-absorbing water and subsequently re-solidifying over time, binding the bricks together.
- 5.12 In the central cellars the areas below the former half-spiral staircases were infilled with demolition material up to 0.42m deep (95 and 96). Fill 95 contained pieces of copper-alloy wire, some vitrified slag and a fragment of thick, colourless, reeded glass. In the SW cellar area the lower demolition level was up to 0.25m deep and contained bricks, gravel, plaster and some worked stone and tile (60). Finds from this layer included

19th-century pottery, roof slate and fragments of possible cold-slab slate and marble, a small amount of roof tile, window glass, bottle and vessel glass, copper-alloy wire, oyster shell, and some slag. In the middle western cellar the lower demolition layer was 0.24m thick (83) and contained part of a ceramic jam jar and stoneware pottery, a graphite rod pencil and copper-alloy wire.

- 5.13 In the NW cellar the lower demolition layer (64) contained, amongst other things, a large number of fragments of albalone shell button-making waste and button blanks (see Photo 17). Although none of the tenants listed by Demidovicz appeared to have been involved in button-making, the last lease-holder for the property was a button manufacturer. In the northern middle area of the house was a 0.53m thick layer of charcoal-based silty sand (65) containing 19th-century pottery clay pipe stems and a lump of industrial slag, overlain by a brown pebbly sand (82) which contained a painted wall plaster fragment, in turn overlain by the demolition layer (66). The latter contained window glass, 19th-century pottery, clay pipe stems, a single albalone shell button blank waste fragment and a black glass decorated object, possibly the end of a hatpin (see Photo 18).
- 5.14 In the NE cellar no finds were recovered from the lowest layer of brown silty sand, nor the overlying demolition layer (89). Similarly, no finds were recovered from the eastern middle cellar's demolition material (135), although fragments of brick and stone were noted. In the central part of the southern cellar area, where the spine wall 16 had largely been robbed out, a later of brown silty sand (92) was overlain by 0.18m of demolition rubble (91). Layer 91 contained 19th-century pottery, copper-alloy wire and a possible iron hinge.
- 5.15 The uppermost level of demolition material was a layer of brick rubble and mortar fragments in a matrix of reddish yellow sand and gravel, up to 0.60m deep (14). This produced some scant evidence from the room that once stood above the north-western cellar room, in the form of fragments of wall plaster painted with curving lines of blue paint.

Phase 4 Early factory

- 5.16 Following the demolition of the house the area appears to have been levelled up using a thick layer of black gritty material (3) up to 1.10m deep. A glass bottle recovered from this layer embossed with W. Canning & Co suggests this material incorporated

late 19th/early 20th-century waste material. On the eastern part of the site this overlay a layer of brown sandy loam (98), possibly a former soil layer. A number of brick wall footings were associated with the early factory phase (Photo 13). The footings were up to 0.80m high and generally double skin, so 0.24m wide. In the central area the walls included a 0.45m wide wall with a large arch running lengthways up the site (1) and brick walls 4, 5, 7, 8, 9 and 10, with a possible brick tank (6) measuring 0.80m x 1.80m internally with a whitewashed interior. One area of brick floor survived to the west of wall 1 (13). A brick chimney occupied the SW corner of this area (148). The deepest footings of the factory appear to have been a series of four brick plinths with stepped sides, likely to have been the bases for a series of arches (18, 37, 21 and 22) such as that noted on wall 1. It appeared that a 1.40m wide cut (31) had been excavated 0.74m down into the house demolition material on the site for the construction of these plinths and subsequently backfilled with layers of dark brown and black charcoally rubble (32, 93 and 111), likely a mixture of the house demolition rubble and levelling layer 3 (Photo 14). Layer 93 produced finds of 19th/20th-century pottery, colourless window glass, clay pipe stems a fragment of roof slate and a ceramic object with several 10mm diameter holes of unknown purpose. Layer 32, the upper of the fill layers, contained parts of a stoneware storage vessel and fragments of bottle glass and window glass. The plinth line is parallel to the factory walls but clearly off the line of the former house.

- 5.17 The eastern area also retained evidence of the early factory building here in the form of a series of brick walls with a 1m high footing (33) separating the two factory areas. The walls were again either generally 0.24m or 0.36m wide (38, 39, 40, 43, 44, 48) and areas of paved brick flooring were recorded (41, 49). The dark grey brown demolition material from the early factory included a 20th-century letter which would have been mounted on a door or wall.

Phase 5 Modern Factory

- 5.18 The concrete flooring of the modern factory buildings sealed the truncated walling of the Phase 4 factory buildings. The concrete slab (2 and 34) was 0.15-0.22m thick in the central part of the site and 0.22m thick in the east, where it overlay a thin layer of red sand bedding and blue plastic sheeting. A number of modern concrete blocks and concrete and brick structural elements formed part of the modern factory support (43, 46, 47). In the western part of the area, west of the villa's footprint, the area was significantly disturbed and the geological natural cut for massive concrete blocks

associated with the former factory (Photos 15 and 16). The high level of disturbance meant that this area was not examined in detail.

6 CONCLUSIONS

- 6.1 The archaeological work at Harpers Hill has successfully identified the late 18th-century residence of James Watt, the engineer and inventor who developed the commercial use of steam power which drove the industrial revolution across the world. Unfortunately no evidence was identified relating to an *in situ* steam engine that he used in his attempts to master steam powered central heating.
- 6.2 The excavations have demonstrated that the Harpers Hill villa, erected in the late 18th century underwent a degree of modification which included the insertion of half-spiral staircases against the central spine wall in the 19th century. It can be said with reasonable confidence that the villa was carefully demolished in the early 1870s and its structural elements such as bricks and roof tiles removed, probably for re-use.
- 6.3 Some physical evidence was recovered for the occupants use of the house. The albalone shell button waste suggests one of the occupants was involved in mother-of-pearl button manufacturing. Birmingham was probably most famous for making shell buttons from mother-of-pearl, with the shells being imported from Australia, the South Pacific, Malaysia and the Americas. The shells were fragile, and it was delicate work to turn them into buttons, with circular button blanks drilled through the shells and subsequently divided into individual thin buttons. Pearl button making tended to be found in small workshops rather than large factories. The small amounts of slag, copper-alloy wire and the shell button-making waste in the layers associated with the demolition of the house suggest that some small-scale industrial activity or jewellery making may have been taking place in the house during the later 19th century.
- 6.4 Following the building's demolition its site was levelled up and overbuilt with a factory building (constructed at some point between 1890 and 1905), some of the footings of which cut through the earlier demolition material. Factory buildings associated with electroplating and light industry occupied the site area until demolition in 2020.

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APPENDICES

A List of contexts

Context	Description	Length (m)	Width (m)	Thickness (m)	Interpretation/comments
1	Long brick wall with (possible) relieving arch and large concrete block.		0.35		Factory wall
2	Modern overburden and concrete slab.	-	-	0.15 – 0.22	Modern factory floor
3	Black sandy, gritty material layer. Surrounding walls of 19th/20th century. They represent the final in-fill material. Varied depth.	-	-	Up to 1.10	Post-house demolition levelling layer. The later factory walls are cut into this.
4	L-shaped area of brick walling located west of the long wall (1)	-	0.23	-	Factory wall
5	Stretch of wall parallel to long wall. It is located at the south-west section with enlarged areas of brickwork at either end.	-	0.23	-	Factory wall
6	Rectangular brick feature (tank?) with white-washed interior (internally 0.80m x 1.80m). Walls are blue brick.	2.30	1.26	-	Surrounded and filled with black material (3). Factory feature
7	Brick wall NNW-SSE stretch. East of 6.	-	0.35	0.90	Factory wall
8	Brick wall WSW-ENE stretch. South of 6	2.70	0.23	-	Factory wall
9	Brick wall parallel to long wall with area run from section into large concrete lump. 1m longer than 7. Bricks unfrogged.	-	0.23	-	Factory wall
10	Brick wall. Three bricks wide parallel with other walls, into soil layer 11.	c. 4.0	0.35	c. 0.80	Factory wall
11	A light reddish brown pebbly sand layer, overlying 12.	-	-	0.50?	Overlying natural to west of main house
12	Natural substrate. A reddish yellow sand/sand and gravel (compact) located at the north end of site.				Geological natural
13	Brick floor to the east of wall 1.	-	-	-	Factory floor
14	A reddish yellow sand and gravel layer containing much brick rubble below the black layer and mortar. To the west of wall 16 there are	-	-	0.50-0.60	19th century (1870s) final demolition and levelling of the house.

	fragments of painted wall plaster.				
15	Brick wall. WSW – ENE wall on west side of the site in the middle. Missing at west end by a brick. Central part not uncovered; it joins with a higher, wider part to the west of wall 16. Widens to 0.46 1.07 by wall 16 (119).	c. 5.10	c. 0.23	0.26	North side of wide part (119) plastered.
16	Brick wall. NNW – SSE. In centre of house, higher to N, less apparent to S. Fragments of wall plaster, painted with blue to west of the wall, north of 15, in discrete area. ?West face of wall above plastered and painted.		0.23	0.60	West face has extant plaster between 28 and 15. Central 'spine' possibly dividing semi-detached house in early phase.
17	WSW – ENE wall. NE wall of building is 0.36m wide. Lime mortar bonding. Cut for this wall is into natural layer, which is visible immediately to its north. South face is plastered/whitewashed.	9.42	0.36	0.74	House wall, external. Bears scars of 4 single brick supports on south face (east part) at intervals of 0.70m.
18	Wide brick wall/pier heading SSW from wall 17. Base = 4 stepped layers (base length = 2.21 and width = 0.83).	1.76 (top)	0.36 (top)	0.74	Stepped footing as 37, 21 and 22. Factory pier base.
19	Brick footing. 0.95m length exposed. Offset from line of 18-21-22. Positioned north of curved wall 20.	1.12	0.34	0.42	Secondary wall, possibly associated with former steps into cellar.
20	Brick wall. C-shaped brick wall between 19 and 20. Brick floor 77 is located below.		0.22	0.38	Secondary wall, possibly associated with curve of steps into cellar.
21	Brick plinth. Stain of stepped-in area of upright section. Upper part is 1 brick high. 4 steps. Lower course frogged bricks. Inner section = 0.34 x 1.03. Base width = 0.82 and length = 1.59.	1.16	0.36	0.45	Stepped footing as 18, 37 and 22. Factory pier base.
22	Brick plinth to south of 21 with shadow suggesting upright area is 50mm narrower. In line with 21. Three steps are truncated on south side (?). Base width = 0.90 and length = c. 1.00	0.66	0.48	0.30	Stepped footing. Sides partly overlain by solidified fill. Factory pier base
23	Length of brick wall on east side of 16 with curved wall 24 to north.	1.35	0.23	0.43	Primary internal wall

24	Single skin curved brick wall in corner of 16 and 23 . Stepped slightly towards the base.	0.90	0.11	0.26	Secondary wall
25	Curving brick wall. Corresponds to 24 , but on west side of 16 there should be a wall to the south – potentially robbed?	1.22	0.12	0.26	Secondary wall
26	Brick wall to the west end of wall 17 , and returns to south, petering out to bedding.	1.75+	0.36	0.20	External wall to house
27	Brick wall running north of 15 's northern section down to bedding. Parts exhibit just an outline of where bricks were. Relationship with 26 is uncertain to the north, though to the north burning is covered on the west side. Parallel to external wall 26	c. 3.00	0.35	-	Possible base for substantial raised area, such as a base for beer barrels. Down to single brick in places. It is 3 courses wide.
28	Brick footing. Short length of footing off west side of 16 . South side is plastered. Upper bricks are lost relative to 74 at other side of 16 .	1.10	0.36	0.44	Primary wall, part of division of larder in west part of building
29	Brick wall. VOID – DUPLICATE .				Part of steps 57 - cellar
30	Brick wall. Substantial section of brick wall at south end of the site. Missing to the west- modern disturbance face. Lower, to the east, demolished to floor level.	15	0.34	0.42	South wall of house/cellar. 51 is a continuation of this wall to the east.
31	Cut. Linear NNE – SSW from north wall. Cut for footings 18 , 37 , 21 and 22 .	-	1.40	0.74+	Appears to be a cut with discrete area of dark fill. Possible evidence that piers 18 , 37 , 21 and 22 relate to the early. 20thC century factory.
32	Fill. Dark grey – greyish brown, gritty ashy area running in a line around walls 18 , 21 and 22 .	c.12m	1.40	c. 0.40 ?	Related to 20thC footings
33	Brick wall separating east from central part of site. Stepped footings, unfrogged. It forms the boundary between both areas of the site.	-	0.35	c. 1.00	West wall of eastern factory. Had been another wall immediately to the west.
34	Modern concrete slab of east part of the site, over red sand bedding, over plastic sheet. Overlies 3 in eastern area. Eastern area is			0.20	Modern factory floor slab (20thC)

	16.80m wide, the middle is c. 10m. End of concrete is c.12m.				
35	Foundation cut for wall 17 , (same as 54)	-	-	-	Cuts into natural at north side of site.
36	Wall footing. East side of wall 16 corresponds to narrow part of wall 108 . Eastern part (beyond 37) is missing?	0.70+	0.48		Primary wall dividing larder area of cellar
37	Plinth. 2nd stepped footing to the south of 18 , separated by 1m. 4 steps down. Base width = 0.80m and length = 1.63m.	1.12 (top)	0.36 (top)	0.48	Early factory pier base
38	Internal brick wall of old factory. It is situated below the modern concrete slab.	-	0.36	-	Factory wall
39	Wall forming the SE elevation of a squarish structure (33) to NE side of wall.	4.40	0.24	>0.30	Factory wall
40	Wall, NE-SW, parallel to 39 , forming 20th century building. Between 5 and 3 courses wide. Bricks measure 0.24m x 0.11m x 0.9m.	5.80	0.35-0.60	>0.30	Factory wall
41	Large floor surface surviving under modern activity, truncated by support walls, concrete blocks and metal struts for modern structures. Bricks are blue. One retained.	7.50	6.90	0.25	Factory floor of blue bricks
42	Concrete platform (large concrete block). It is likely a foundation block for modern structures, located on the western side of floor 41 .	2.60	2.40	0.80	Modern factory footing
43	Wall 2 bricks wide, forming end of square structure. Bricks are 0.24m x 0.11m x 0.90m.	1.93	0.24	>0.30	Factory wall
44	Section of wall situated northwards from wall 40 .	0.84	0.23	>0.30	Factory wall
45	Small concrete pad, smashed/broken on north and east side, attached to wall on the west side. Possible floor surface.	0.90	0.40	0.18	Factory-related
46	Concrete and brick line, forming wall foundation; it would have sat under floor level provided support, forming part of modern structure.	3.40	0.35	>0.30	Modern factory-related
47	Large concrete block likely	1.60	1.10	0.80	Modern factory-related

	forming part of the foundations of the modern, 20th-century structure.				
48	Line of brickwork between 41 and 49 , probable position of a wall, separating two rooms in which floorings survive (41 and 49).	5.00	0.11	0.11	Factory-related
49	Brick flooring laid side-by-side staggered bricks, unlike 41 .	6.50	0.90	0.15	Factory-related (flooring: see 45).
50	Dark greyish brown sand and gravel, including demolition material from the previous building. Contained 20th century item: a letter which would have been mounted on a wall or door.	-	-	-	Factory demolition material – 20thC demolition prior to modern factory
51	Section of SE wall, fronting onto the street, 3 courses wide. Bricks = 0.23m x 0.11m x 0.09m.	5.20	0.34	0.31	Continuation of 30 . Part of external south wall of house
52	Section of inner wall, located to the east of structure, orientated NE – SW, and two bricks wide. Bricks = 0.23m x 0.11m x 0.09m.	1.71	0.23	0.18	Primary internal wall of cellar, continuation of 23
53	Area of sub-floor in SW room of cellar, fine lime mortar, overlaying natural, located at the southern corner of the building (room 'a'), 0.02m deep, with possible compacted sand and gravel.	<3.0	<4.0	0.02	Base layer of lime mortar overlaying natural
54	Cut for building foundations. It extends approximately 0.53m below the average natural layer level, forming basement level.	c.14.0	c. 13.0	0.53	= 35
55	Continuation of line of wall (23) in western part of building. Abutted by wall section (56). It is an internal wall, and two courses wide, situated between central spine 16 and side wall 26 .	6.0	0.23	0.35	Primary internal wall of cellar
56	Section of wall is internal to the structure but 3 bricks wide, abutting stairs (57) and wall (55). Bricks = 0.23m x 0.11m x 0.09m. Pale brown lime mortar at 68 and steps.	1.15	0.34	0.35	Secondary internal wall of cellar associated with staircase
57	Brick structure, probably forming stairs, located	1.12	0.76	0.51	Secondary stairs into western cellar

	between 56 and 15 , represented by 3 steps, leading to a cellar level from ground floor.				
58	Curving brick wall, mirroring 25 and 59 . One brick wide.	1.13	0.11	0.20 (exposed)	Secondary curving brick wall, part of stairs
59	Curving brick structure, mirrors 24 and 58 , situated central to the house; it is one brick wide.	0.98	0.11	0.66	Secondary wall relating to curved stairs
60	Mixed pebble forming demolition layer of main house, containing brick, gravel, finds, plaster and worked stone, tile, and adhesive material. It is possibly formed from the salvaging of original floor.	-	-	0.18 0.25	Some bricks protrude from the walls at this height, suggesting the floor was ripped up, forming this rubble layer (60) – Room 'a'.
61	Concretion, underlying rubble and overlaying sand deposit (62), occasionally containing very bright colours (yellows and blues). 30% small stone and sand/cement or concrete has formed a moderately hard concretion. It is very brittle though this feature is likely caused by weight and pressure.	-	-	0.07 0.19	Related to demolition of house
62	Dark reddish brown fine sand, containing occasional stone inclusions (small and round). overlay a compact thin layer (53 - thin cement?), which was the lowest deposit and overlay natural.	-	-	<0.15	Levelling layer underlying a former brick floor?
63	Brown silty sand layer (area G) overlying 64	-	-	<0.60	-
64	Rubble layer (area G), demolition material			<0.30	Equivalent of 60 ?
65	Black, charcoal-based silty sand layer (area H)	>1.5	0.43	0.35	-
66	Rubble layer (area H), demolition material			<0.60	Equivalent of 60 ?
67	Central doorway joining south and SW rooms. In wall 55 .	0.65	0.23	0.05	Brick threshold in western cellar
68	C-shaped brick arrangement on opposite side of 16 to wall 20 . Single brick thick at top level while lower level is 2 bricks thick. It is contemporary with steps and wall 56 . Bonded with light brown lime mortar		0.11	0.38	Part of cellar, secondary wall associated with stairs
69	Wall perpendicular to 16 .	1.06	0.23	0.26	Wall not plastered like

	Remnants of brick floor either side. Does not appear to have been higher than this – no mortar on wall above.				28. Part of cellar larder.
70	Brick wall continuing line of 55 , the other side of 67 .	0.46	0.23	0.27	Brick wall to west of threshold 67
71	Badly broken wall, next to steps 72 . It is 3 courses high and 3 bricks wide. Few bricks and mortar remained – broken and partly dismantled.		0.34	0.31	Broken brick wall, part of external wall of house.
72	SW steps in west wall. It forms steps into cellar	1.2	0.70	0.40	External entrance to western cellar
73	Brick wall mirroring 69 , abutting 16 . Two bricks wide. Sooted on south side with traces of whitewash.	1.06	0.23	0.64	Brick wall, unplastered, part of cellar larder
74	Brick wall mirroring 28 and abutting 16 .	1.06	0.36	0.46	Brick wall, part of cellar larder
75	Brick wall – return of north or rear wall, forming what is left of the NE wall.	1.30	0.36	0.58	Brick wall, remnant of external eastern wall of house
76	Brick flooring in east corner, stained with charcoal. It abuts wall 30/51 .	1.90	1.07	0.12	Brick flooring – part of eastern cellar floor, SE room
77	Flooring within C-shaped 20 . Appears to be below wall 20 – robbed?	1.95	0.70	0.12	Flooring – cellar, remnant in middle room of eastern cellar
78	North wall of house, western part – a continuation of 17 . Formed the rear wall to the property. Is abutted by 27 and 142 .	5.76	0.41	0.45	Brick wall – N wall of house/cellar, continuation of 17
79	Brick floor remnants in room D, located at the west corner of the room.	0.18	0.17	0.11	Remnant of brick floor – in middle room of western cellar
80	Section of brick wall – a continuation of line of 15 , NE wall of room D.	2.20	0.25	0.30	Brick wall – part of western cellar
81	NE doorway between rooms D and G.	0.83	0.19	0.05	Doorway in W cellar
82	Brown, pebbly silty sand layer – area H. Underlies rubble 66 and charcoal 85 .	-	1.36	0.40	
83	Rubble layer in Area D.	-	-	0.24	Equivalent of 60 ?
84	Brown sandy silt layer in Area D			0.10	
85	Black, charcoal-based deposit in area C	1.39	2.0	0.46	
86	Linear cut with shallow, flat base. NW – SE. Filled by 87 . Area C	4.0+	0.94	0.05	Foundation cut for interior wall, parallel to external wall in S room of eastern cellar.
87	Fill. A compact, dark brown silty sand with lenses of dark	4.0+	0.94	0.05	Fill of foundation cut for interior wall (86) in S

	coal, rubble inclusions and clear horizons. Area C				room of eastern cellar, parallel with outer cellar wall line.
88	Rubble layer, Area C	-	-	0.30	Demolition
89	Rubble layer, Area I	-	-	0.49	Demolition
90	Brown silty sand layer, Area I	-	-	0.13	
91	Rubble layer, Area B	-	-	0.18	Demolition
92	Brown silty sand layer, Area B	-	-	0.12	
93	Dark brown and black charcoal-based rubble surrounding 20 , 21 , and 77 . May be below 32 .	-	-	0.30 (?)	Possibly lower part of 32
94	Black charcoal layer overlying floor 76 . Area C	-	-	0.12	
95	Light brown sandy demolition layer within NW cavity. Area E	-	-	0.34	Demolition
96	Light brown sandy demolition layer within NE cavity. Area E	-	-	0.42 max.	Demolition
97	Brick floor between walls 15 , 16 and 28 . Whitish mortar (unlike most walls and supports walls).	1.20	1.10	0.09	Brick floor
98	Brown sandy loam layer on east side of wall 3 , containing high frequency of pebble and occasional brick fragments. Situated either side of wall 38 .	-	-	-	19th century, below black layer.
99	Small length of brick wall off SW side of C-shaped wall 20 . Floor also abuts 23 .	0.98	0.23	0.26	Brick wall. Secondary to original cellar
100	Flooring inside 68 .	0.70	0.45	0.10	Lower bricks, likely a part of an earlier floor.
101	Cut in eastern part of site with wet limey clay. c.1.30m in diameter.	-	-	-	
102	Sticky, very pale grey limey clay fill with pebbles and occasional ceramic building material.	-	-	-	Not excavated
103	Bricks set on edge between walls 36 and 74 to form stub wall.	0.44	0.08	0.36	Support wall
104	Remnants of brick floor below wall 103 .	0.74	0.34	-	Brick floor remnants
105	Remnants of brick floor (3 bricks) between walls 73 and 74 . Scar and mortar of stub wall above.	0.43	0.25	0.10	Brick floor remnants
106	Structural remnants – one brick set in edge, over floor 107 , between walls 17 and 73 .	0.26	0.08	0.12	Support wall

107	Remnants of brick floor area below 106 .	0.45	0.24	-	Brick floor remnants
108	Brick wall – continues line of the part of 36 to the NE.	1.65	0.23	0.30	Brick wall, western part destroyed by later activity
109	Remnants of brick floor butting curved wall 68 . Composed of 3 bricks, mortar over NW side (?). Another course does not sit directly over lower floor (50mm gap).	0.23	0.19	0.11	Brick floor remnants
110	Brown pebbly silt layer between brick floor remnant (109) and lower floor 100 .	-	-	0.05	-
111	An ashy charcoal mixed layer. It is darker than 93 .	-	-	0.12	Lower fill of cut for 21.
112	Half circular cut, almost vertical with a flat base.	0.90	0.54	0.08	Filled by brick floor 100.
113	A firm and clear, brown sandy loam fill of 112 with occasional small pebbles and mortar flecks.	0.90	0.54	0.08	-
114	Brick floor in Area G, laid flat with lime mortar. Bricks = 0.23m x 0.11m x 0.09m.	1.13	0.11	0.09	Brick floor remnants, between walls 16 , 69 and 78 .
115	Brick floor in Area G, laid flat with lime mortar. Bricks (smooth) = 0.235m x 0.11m x 0.09m.	0.23	0.14	0.09	Brick floor remnant between walls 69 , 28 and 16 – essentially part of same floor as 116
116	Brick floor in Area G, laid flat with lime mortar. Bricks (smooth) = 0.235m x 0.11m x 0.09m.	0.16	0.11	0.09	Brick floor remnant, between walls 16 , 28 , and 69 .
117	Brick stub wall in Area G, laid flat with lime mortar. Bricks (smooth) = 0.235m x 0.11m x 0.09m.	-	0.11	-	Brick wall remnants within 16 , 69 , and 78 .
118	Brick stub wall in Area G, laid flat with lime mortar. Bricks (smooth) = 0.235m x 0.11m x 0.09m.	-	0.11		Brick support wall between walls 16 , 28 , and 69 .
119	Brick wall (and lime mortar) Bricks (smooth) = 0.235m x 0.11m x 0.09m.	0.95	0.18	0.42	Forms wider section of 80 . Provided more substantial structural support.
120	Stub wall off wall 16 above floor 97				Support wall
121	Smooth slate flagstone (0.457 x 0.635m), in area D	0.64	0.46	0.07	Slate flag possibly from upper level.
122	Brick floor in Area E, laid flat with lime mortar. Semi-circle (20) sits on top. Bricks (smooth) = 0.235m x 0.11m x 0.09m.	-	-	-	Suggests that a floor level was established prior to the construction of 20 .

123	Areas A – J. Deposits: 123 , 126 , 127 , 128 , 129 , 130 , 131 , 132 , and 137 all formed as concretions within and over the floors/robbed floors and structural remains. They vary in depth and area (1.2 – 4.6m), but all formed as a mixture of brick, lime mortar, stone, and sand. Dried hard and unable to lift out.	-	-	0.10–0.40	Represents earliest demolition deposits
124	Loose brownish yellow layer. Toxic material between 26 and 27 (?).	-	-	-	-
125	Loose greenish grey layer. Toxic material between 26 and 27 (?).	-	-	-	-
126	Concretion deposit			0.10-0.40	
127	Concretion deposit			0.10-0.40	
128	Concretion deposit			0.10-0.40	
129	Concretion deposit			0.10-0.40	
130	Concretion deposit			0.10-0.40	
131	Concretion deposit			0.10-0.40	
132	Concretion deposit			0.10-0.40	
133	A loose but clear coal deposit with occasional rubble and small fragments. On southern corner of Area D, over floor remnant 133	-	0.42	0.34	Coal survival suggests its deposition occurred before building demolition.
134	Brick floor remnant in corner of Area D. Bricks = 0.235m x 0.11m x 0.09m. Stained black due to overlaying coal deposit. Poor survival of mortar meaning bricks were loosely joined.	>0.6	0.46	0.11	Remnants of brick floor once covering Area D (possibly same as 100). Slate tile (121) may have underlaid and acted as damp proofing.
135	Rubble layer in Area F, consisting of brick, stone, sand, and gravel.	5	5	>0.50	-
136	Loosely compacted and clear brown silty sand deposit with very occasional small stone inclusions.	-	-	>0.10	Brown silty sand suggests having perhaps once made up a flagged floor, overlies natural sand.
137	A clear, very firm, (set) hard dark brown deposit. Concretion composition: >10% brick, >5% stone and >5% sand and gravel. Diameter = 0.63m.	-	-	0.23	Formed one of many concretions that overlay the walls that made up the structure. It formed the west of wall 102 (possible continuation?). Concretions all formed over brown silty sand, suggesting it perhaps once made up a flagged floor.
138	Remains of stub wall	0.03 -	0.11	0.74	Would have formed

	remains attached to wall 17 , Area I.	0.07			bases for a cold slab which fronted SSE off wall 17 . These would have had a tabletop of fine stone, slate or marble.
139	Remains of stub wall remains attached to wall 17 , Area I.		0.11	0.74	ditto
140	Remains of stub wall remains attached to wall 17 , Area I.		0.11	0.74	ditto
141	Remains of stub wall remains attached to wall 17 , Area I.		0.11	0.74	ditto
142	Only surviving remnant of stub wall for cold store table in Area G.	0.02	0.11	0.45	SSE abutting wall 78 may have formed the outer support, with 117 , 118 and 120 being the rear legs.
143	Iron pintle for lower part of door leading from Area D into Area G, opening outwards into Area G.	0.16	0.08		Cellar feature
144	Brick wall remnant over floor 105 Only mortar really remains against wall 16 .	0.23	0.11	0.09	Remains of wall that have formed table leg for a cold store (same as 106 and 103). Seems to be later table than those formed by 117 , 118 and 120 , but earlier than 138 , 139 , 140 , and 141 .
145	Linear cut with very shallow and flat base. NW – SE. Filled by 146 . Foundation cut for outer wall of house?	3+	0.56	0.01	Cut for exterior wall of house in SE part of eastern cellar.
146	Very compact and clear black charcoal silt fill with frequent small stone inclusions.	3+	0.56	0.01	Fill of 145 .
147	Brown silty sand deposit in Area C with very occasional small stone inclusions.	-	-	0.1	-
148	Remains of a brick chimney noted in SW corner of main area of excavation			c.1.00	Part of early factory, soot-blackened interior

B List of Finds

Context	Material	Quantity	Date/Comments
3	Glass	1	Bottle, colourless. W. Canning & Co, Gt Hampton St, Birmingham. Early 20thC.
3	Glass	1	Colourless vessel glass, thick
3	Pottery	7	Blue transfer-decorated and whiteware
14	Plaster	12	18thC blue painted wall plaster
32	Pottery	4	Stoneware storage vessel
32	Glass	4	3 brown bottle, 1 colourless window
60	Pottery	4	1 blue transfer-decorated, 1 sprigged-ware porcelain, 1 hand-painted, 1 coarseware ?
60	Slate	2	1 roof slate, 1 slate up to 20mm thick, are cut out in one corner matches that from 63 – part of same object? Mortar traces on underside and edge. Slate cold slab/worksurface
60	Marble	1	Sheet, 12mm thick, possibly from a larger cold slab
60	Tile	5	Roof tile fragments
60	Iron	1	Corroded spike, 170mm long
60	Slag	1	Iron slag
60	Slag	1	Glass slag?
60	Glass	7	6 window colourless (2 x 6mm thick, 1 x 5mm thick, 3 x 2mm thick, 1 window colourless reeded, obscure, fire-distorted
60	Glass	2	1 bottle base brown, thick glass, straight-sided 19thC, 1 wine glass foot colourless, hand-made
60	Cu alloy	1	Wire, 2mm diameter, bent into U-shape 66mm long
60	Cork	1	From a bottle (not retained)
60	Shell	1	Oyster
60	Plaster	2	Mouldings – small fragments
60	Plaster	3	Decorative mouldings (cornice/coving) blue paint
60	Firebrick	1	Fragment of firebrick
60	Ceramic	1	Floor tile 8 inch square, 204 mm x 45 mm, worn on one edge, ?stair tread
63	Pottery	3	1 blue transfer-printed 19th C, 1 MB, 1 STE03, MB01 and MGW
63	Glass	1	Window colourless, 2mm thick
63	Glass	3	Vessel glass, brown, from hand-blown wine bottle
63	Bone	2	Animal rib and vertebra fragment with Cu alloy staining
63	Slate	1	Cut on three sides and scored across, 12mm thick, part of slate item from 60?
63	Tile	1	Roof tile
64	Pottery	5	1 Shining Black, 1 blue transfer-decorated Pearlware, 19thC
64	Glass	1	Window colourless
64	Glass	4	3 brown bottle glass, 1 colourless vessel – glass thick
64	Clay pipe	1	Stem
64	Slate	1	Roofing slate fragment
64	Steel	1	Net/basket with looped handle
64	Shell	27*	Albalone button blank waste
64	Iron	1	Possibly window stay
65	Pottery	10	1 whiteware, 5 transfer-decorated, 3 Pearlware, 2 coarseware, 2 unglazed stoneware
65	Clay pipe	2	Stem
65	Slag	1	Industrial
66	Pottery	6	2 blue transfer-decorated, 2 coarseware, 1 brown glazed, 1 blue banded
66	Glass	2	Window glass, colourless, 3mm thick
66	Clay pipe	4	Stems

66	Cu alloy	1	Object possibly a foot from a bowl
66	Shell	1	Button blank waste – albalone shell
66	Glass	1	Decorative black glass faceted handle? Or possible glass part of hatpin
66	Firebrick	1	Firebrick fragment
66	Iron	1	Corroded tapering object, 130mm long
82	Plaster	1	Painted wall plaster fragment (blue)
83	Pottery	2	Stoneware marmalade jar x 1, 1 stoneware fragment from large vessel
83	Slate	1	Roof slate fragment
83	Cu Alloy	1	Wire
83	Graphite	1	Rod pencil
85	Pottery	5	1 blue transfer-printed. 4 grey transfer-printed
85	Shell	2	Oyster
87	Pottery	2	Sgraffito (1720-1760) (SB)
87	Glass	7	Window colourless, 1-2mm thick
88	Plaster	2	Decorative wall
91	Pottery	1	19th-century whiteware
91	Glass	7	Vessel - 3 brown bottle, 1 dark green, two very pale blue, embossed with lettering
91	Cu alloy	2	Wire – two curving fragments, both 2mm diameter
91	Iron	1	Object, very corroded, possible hinge
93	Pottery	5	3 whiteware, 1 brown transfer-printed, 1 coarseware
93	Glass	1	Window glass, colourless, 4-5mm thick
93	Clay pipe	4	Stems
93	Slate	1	Roof slate fragment
93	Ceramic	1	Curved object (several 10mm holes through it), possible vent
94	Pottery	12	19th century blue transfer-printed
95	Slag	1	Vitrified
95	Cu alloy	2	Wire, one 3mm diam and 155m long, other curved, 2mm diam
95	Glass	1	Window colourless, reeded, obscure, 4mm thick
98	Ceramic	1	Small fuse block (MINOR GEC) – 1960s?
U/S	Ceramic	1	Large fuse block holder – 20thC

* A sample of button blank waste was collected, from a large collection from this context, which included button blanks as well as waste, suggesting button manufacturing at the house



1: Harpers Hill House, c.1872



2: Overhead shot of the cellars of Harpers Hill House



3: External steps into west cellar



4: South-west cellar, compact lime mortar floor base (53)



5: Support wall standing on extant remnant of brick floor between walls 36 and 74



6: North wall of cellar with scars of brick support walls



7: Whitewashed walls in larger compartment, brick floor 97



8: NW room of cellar, external wall 26 and parallel wall 27, in foreground



9: Central part of cellars with later walls to support half-spiral staircase



10: Steps 57 (upper left), coal deposit in corner of middle cellar western room



11: Floor 76 in SE cellar room



12: Lime-filled feature 101



13: The upper parts of brick walls associated with early factory



14: The dark fill of foundation trench for pier bases of the early factory can be seen on the right of the picture



15: Modern brick footing being removed on western part of area



16: Massive concrete footings of modern factory



17: Albalone shell button-blank waste



18: Faceted black glass terminal

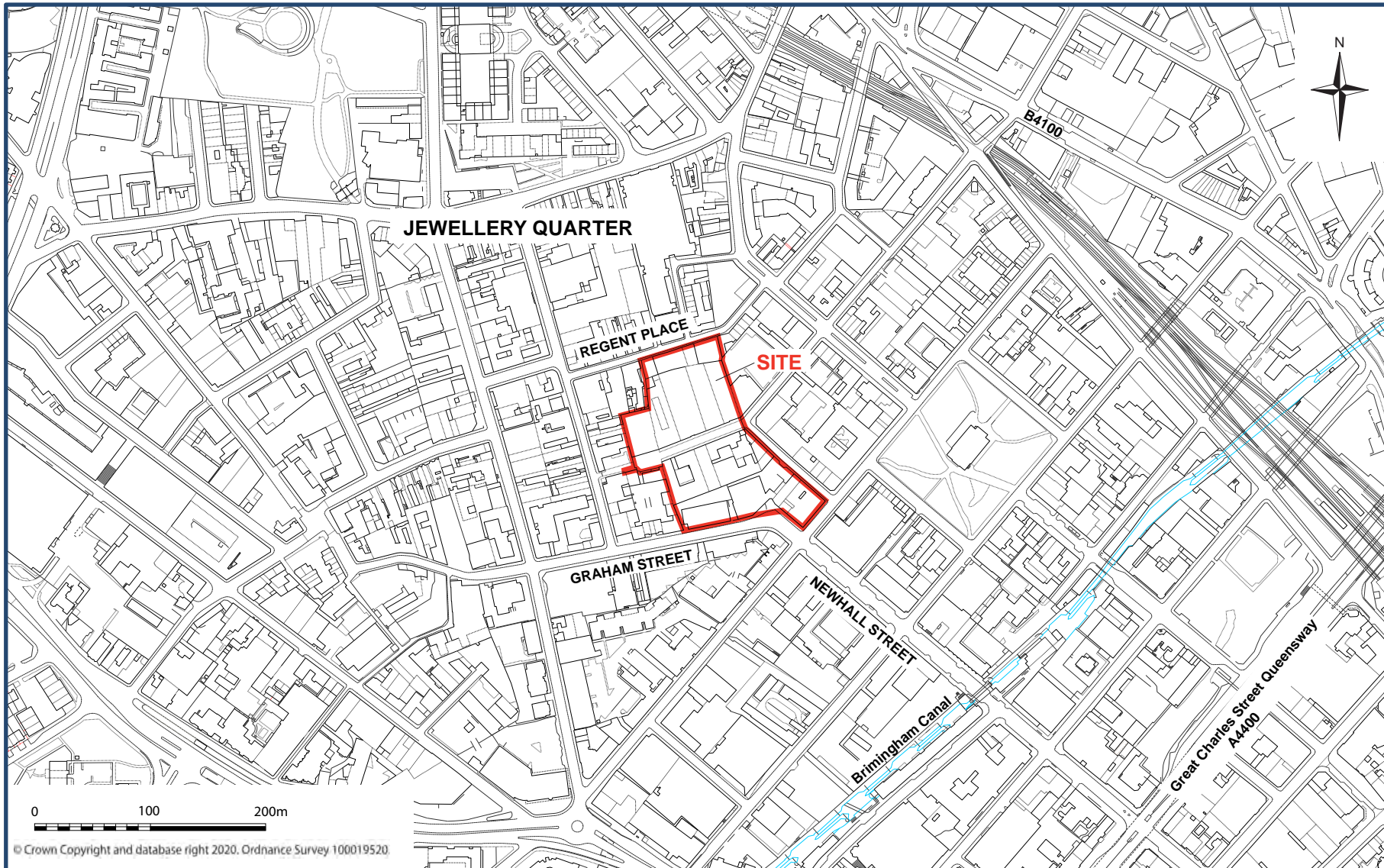


Fig 1: Location of site

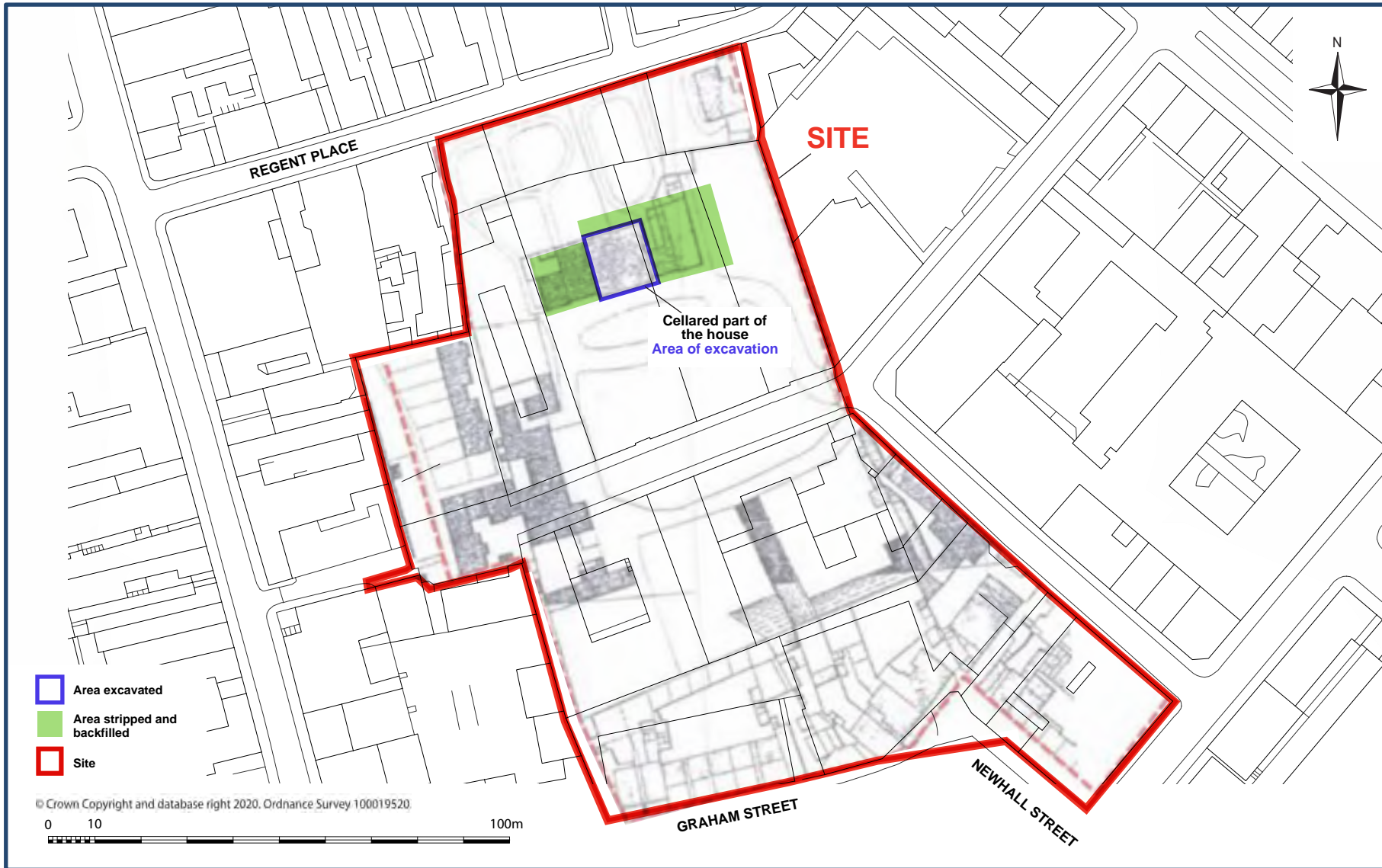


Fig 2: Location of excavated area over detail from Pigott Smith map of 1855

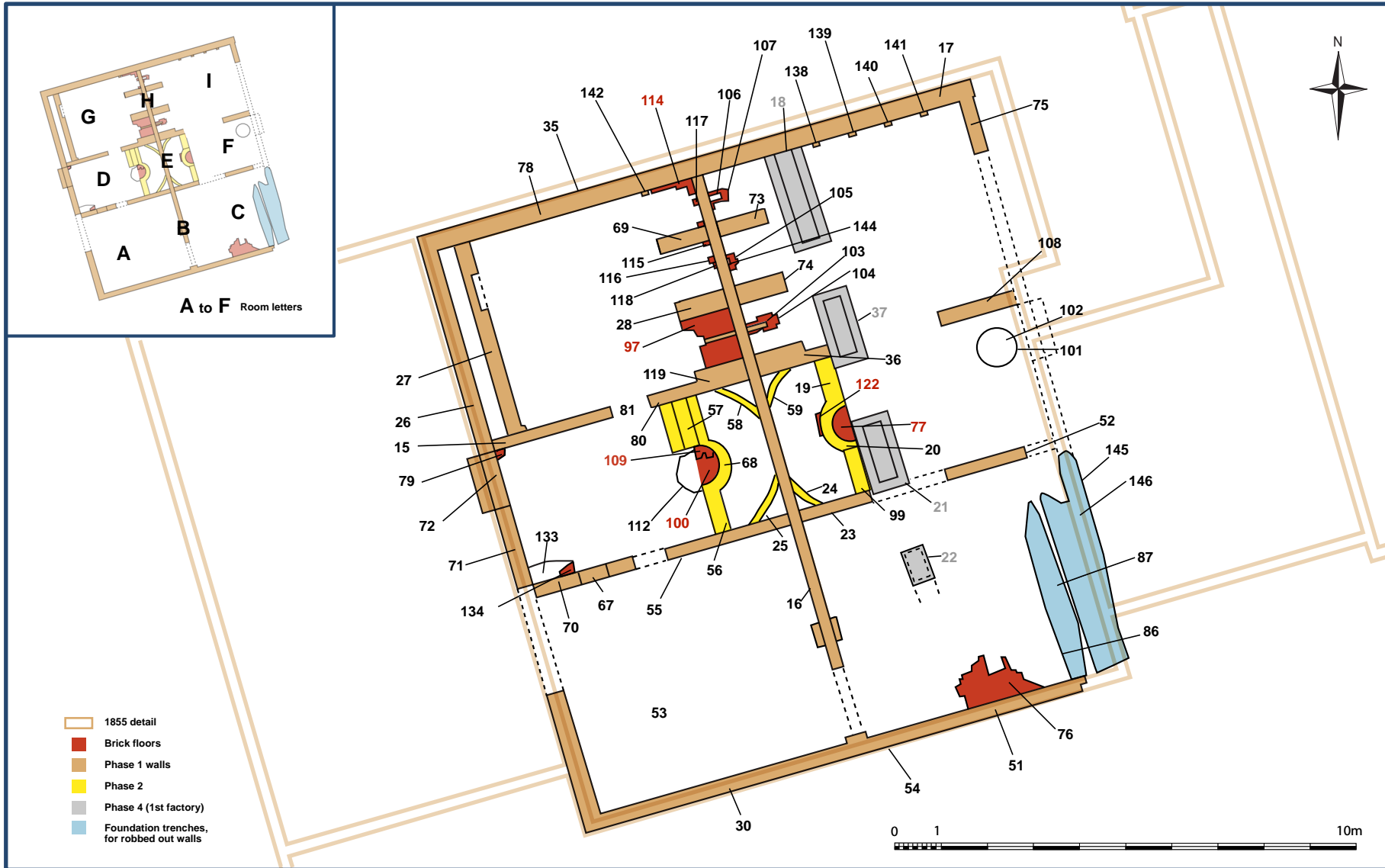


Fig 3: Detail of excavated area

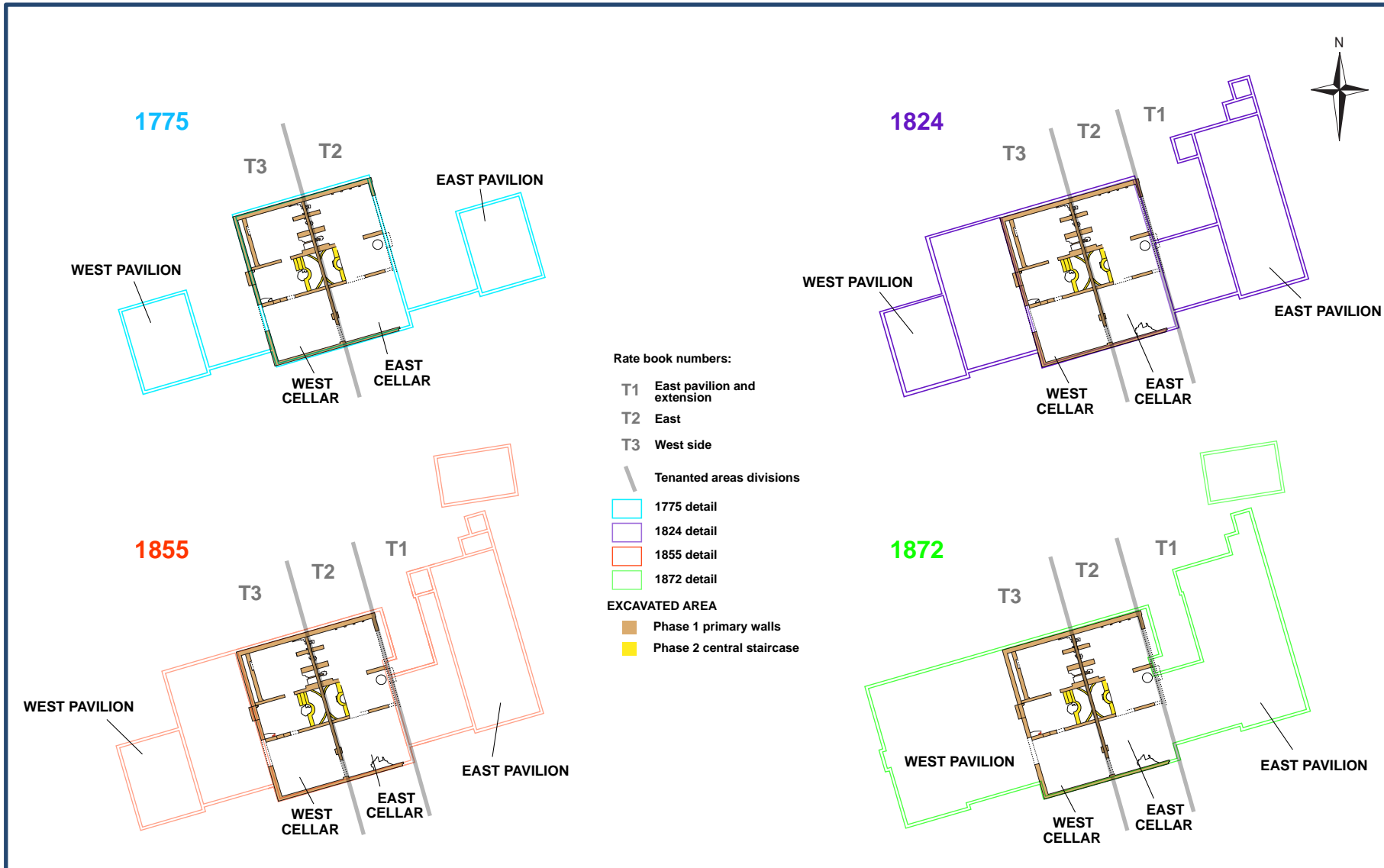


Fig 4: Phasing of Harpers Hill from 1775 to 1872