

**Archaeological Investigations at
Furlong Passage
Burslem
Stoke-on-Trent
Staffordshire
NGR SJ 86715 49690**

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by

Richard Cramp & Jonathan Goodwin

of

Stoke-on-Trent Archaeology

Bethesda Street, Hanley, Stoke-on-Trent

Staffordshire ST1 3DW

Tel: 01782 235413

Fax: 01782 232500

Email: jon.goodwin@stoke.gov.uk

Website: www.stoke.gov.uk/archaeology

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Non-technical summary.

Stoke-on-Trent Archaeology undertook a programme of archaeological investigations at Furlong Passage, Burslem, Stoke-on-Trent (NGR SJ 86715 49690). The work was carried out during February and March 2008, in advance of the residential development of the site, which was formerly occupied by workers' housing, the Newcastle Street Pottery and a public house. The scheme initially involved the excavation of six evaluation trenches, two of which, numbers 2 and 4, revealed sufficient evidence to merit their extension and more detailed examination. All other trenches contained little or no significant remains, with most displaying evidence of 20th-century disturbance.

Trench 2 contained a pottery kiln that formerly stood within the Newcastle Street Pottery. Historical maps first indicate a kiln in the position of that recorded in trench 2 in 1832 and although this structure appears to have been demolished by 1851, another had been built by 1878 which remained until at least 1924. Although the kiln was relatively well preserved, it had been disturbed during the 20th century by the insertion of two stanchion bases. Excavation revealed that the kiln had been constructed with a 'cork' foundation; a method commonly used in north Staffordshire from at least the 19th to the early 20th century.

Trench 4 featured the remains of up to five 19th-century properties that formed part of a courtyard housing development. A brick-lined well discovered adjacent to these houses may well have related to their occupation. Directly beneath three of the 19th-century houses were the sandstone foundations of an earlier building. Although the precise date and nature of this building were not determined, it may have dated back to at least the late 17th century.

1.0 Introduction

1.1 Burslem is one of the six towns that comprise the modern city of Stoke-on-Trent. The development area (DA) is located off Furlong Passage, sited on the western edge of the town centre (NGR SJ 86715 49690) (Fig. 1). Residential properties and the Newcastle Street Pottery intermittently occupied the site from at least the 17th century to the late 20th century.

2.0 Planning background

2.1 An application by Talbot Developments Limited to redevelop the site with residential units and underground parking was registered in July 2007 with the Local Planning Authority (LPA), Stoke-on-Trent City Council. The scheme was granted full planning permission on 18th October 2007 (ref. SOT/47355), with an archaeological intervention in the form of a field evaluation as defined by the *Institute for Archaeologists* (IfA) recommended by the Planning Archaeologist for Stoke-on-Trent. This would assess and record the archaeological and historical relevance of any buried remains on the site in order to establish their extent, preservation and character.

2.2 The specifications were in accordance with the LPA's planning and development process as defined by the *Stoke-on-Trent City Plan* policy BP9 (*Unscheduled Remains*). They were also in line with statutory government legislation and national guidelines established in *PPG16 (Archaeology and Planning, 1990)*. Stoke-on-Trent Archaeology (SOTARCH) was subsequently commissioned to undertake the project by Kettle and Talbot (Building Contractors) Ltd.

3.0 Location & character of the development area

3.1 Burslem sits on a westward protruding spur sloping into the Fowlea Brook Valley from a north-south aligned escarpment, a geological outcrop of shales, clay marls, ironstone and coal measures from which the local pottery industry derived its raw materials (Beaver & Turton 1979, 28-30). The DA lay near the summit of the spur, which slopes south from the site towards the parish church of St. John the Baptist and the low ground of Cobridge Brook beyond.

3.2 The DA occupied a tract of waste ground immediately adjacent to the Burslem by-pass (Woodbank Street), at the south-western corner of St. John's Square. To the north

east the DA was bounded by Furlong Passage, to the north west by Newcastle Street, to the south west by Woodbank Street and to the south east by a paved footpath to St. John's Square with a public car park beyond.

3.3 The site comprised unmanaged grassland on a south east-facing slope, landscaped along its western and northern perimeters with trees and shrubs. The site was criss-crossed by several 'desire' paths converging on St. John's Square. The area lies at an elevation of approximately 154.0m AOD and covered a gross area of 1,625m². Adjacent to the northern side of the site was a derelict, three-storey warehouse.

4.0 Archaeological & historical background

4.1 The settlement of Burslem is first mentioned in the Domesday survey of 1086 as *Barcardeslim* (Slade 1985, 50). Before the Conquest, Burslem was held by Alward, but had passed to Robert of Stafford by 1086 (Slade 1985, 50). Settlement in the medieval period was probably centred on the Church of St. John the Baptist, which lies to the south of the modern town. Expansion of the town occurred during the post-medieval period, principally as a result of Burslem's burgeoning pottery industry. Pottery production was an established part of Burslem's economy during the medieval period, but enjoyed unprecedented expansion during the 17th and 18th centuries. Even by 1760, however, Burslem was still a somewhat isolated moorland settlement, described as a 'scattered town on top of a hill' (Greenslade 1963a, 105). Nonetheless, the core of the modern town had been established by this time, providing the foundation for more rapid development during the 19th century. In 1829, for example, it was stated that provision of new streets had 'nearly doubled the size of the town within the present quarter of a century' (Greenslade 1963a, 105).

4.2 The archaeological investigations within the DA were targeted upon four key areas, which are described below.

4.2.1 Housing. The earliest evidence for occupation within the DA is provided by several maps that claim to show Burslem town centre during the period 1720-1769. The information provided by these maps is relatively consistent and it is likely that they are copies of a single, original 18th-century map (Hawke Smith 1986, 76), reproduced during the early 19th century. These maps show the DA within a developed area at the eastern tip

of a peninsula of agricultural land divided into a number of parcels, the largest of which is indicated as 'Big Furlong'. These maps pre-date the construction of Furlong Passage, but its future position lies in the vicinity of two cottages shown which appear consistently on the maps, occupied by Ann Bould, Mary Harding and Philip Rathbone (Hawke Smith 1986, 91, nos. 134-135) (Fig. 3).

4.2.2 Later map evidence indicates a courtyard development of properties within the eastern half of the DA. This development first appears on a sketch plan of the town centre produced in 1812 (Fig. 4). It is shown again on Hargreaves' map of 1832 (Fig. 5), but is not depicted in any detail until the production 1851 drainage map of Burslem (Fig. 6). This latter map indicates that the northern range of the development comprises five properties positioned along Furlong Passage, with the southern range also consisting of five buildings, including a beer house (indicated as B.H.) bordering Hanover Square. Connecting the two ranges at their western ends is a block of four privies, which, as they are clearly not connected to the main sewer, are likely to have been earth closets.

4.2.3 By 1878, the adjacent Newcastle Street Pottery (see below **4.2.4**) had begun to encroach upon the western end of the courtyard development (Figs. 7 & 8). By the early 1890s the development appears to have been in decline and, as no residential properties are listed on Furlong Passage in Keates' directory of 1893 (Keates & Co.) it is possible that the development had been demolished by this date. The courtyard had certainly been cleared by the time of the 1900 OS map (Fig. 9); its former site is truncated to the east by the widening of Bath Street (later Wycliffe Street) as it connected with St John's Square. The public house later known as the *Rose, Thistle & Shamrock* (see below **4.2.7**), had also supplanted the southern arm of the courtyard development by this date.

4.2.4 *The Newcastle Street Pottery.* The Newcastle Street manufactory claims to have been established in 1830 by John Maddock (1807-77), who operated the potworks in conjunction with another factory in Dale Hall (D. Turner pers. comm. 2008). Maddock was initially in partnership with a Mr Pearson (D. Turner pers. comm. 2008), but by 1839 was in business with Joshua Seddon (Godden 1991, 407). The partnership ended in 1842 and for the next thirteen years Maddock traded alone (Godden 1991, 405). In 1855, Maddock took his eldest son John Maddock Jnr. into the business and the firm subsequently operated under the name of J. Maddock & Son (Godden 1991, 406). John

junior presumably took over the business upon his father's retirement in 1871 and appears to have worked in conjunction with his brother James. By the end of the 19th century, James was in sole charge of the firm, although two of his sons, Arthur and Robert John Maddock, also worked in the family business (D. Turner pers. comm. 2008). The firm became a limited company in 1896 (Godden 1991, 406).

4.2.5 The business passed to Arthur Maddock after James' death and remained in his control until he in turn died in 1925. Arthur's son, Victor, briefly managed the company after his father's death but had been replaced by his cousin, Geoffrey Maddock, by 1926. Under his control the business specialised in the production of hotel ware, supplying establishments in Australia, New Zealand, Canada and the United States, as well as firms such as Cunard (D. Turner pers. comm. 2008). By the outbreak of World War II, the Newcastle Street factory had undergone a programme of modernisation, which saw parts of the works rebuilt to accommodate new tunnel kilns (Ship 1925, 162; Hall 1955, 77). These changes to the configuration of the works can be seen on the 1950 OS map (Fig. 12; see below **4.2.6**). The fortunes of the business declined from the late 1960s and the firm finally went into liquidation and closed in 1978 (D. Turner pers. comm. 2008). The works had been demolished by the mid 1990s, with the construction of Woodbank Street bisecting the former factory site.

4.2.6 The Newcastle Street Pottery is first shown on Hargreaves' map of 1832 (Fig. 5), situated on the western side of Furlong Passage and featuring two or possibly three annular kilns, all of which fall within the limits of the DA. Three kilns are indicated within the works on the 1851 drainage map (Fig. 6), although only one of the three possible earlier examples is amongst them. The factory had further developed by the time of the 1878 OS map (Figs. 7 & 8), operating a total of eight kilns, one of which was sited in the approximate location of a kiln indicated on the 1832 map. The factory is marked as a china and earthenware works on the 1878 OS map. One further kiln had been built in the north-western corner of the manufactory by 1900 (Fig. 9), although by 1924 the total number had once again dropped to eight; the last of the kilns that were first shown on the 1832 map having been demolished by this date (Fig. 10). Between 1937 and 1950 the factory underwent more significant changes, with the remodelling of the main range along Bath Street, expansion to the west and, most notably, a reduction in the number of

kilns from eight to a maximum of four (Figs. 11 & 12). No kilns are present within the DA by the 1970s (Fig. 13).

4.2.7 *The Rose, Thistle & Shamrock*. This public house is first mentioned in the 1891 census, at which time it was known as the *Greyhound*. The 1900 OS map features the property, albeit unmarked, constructed on the site of the earlier courtyard development. The establishment continued as the *Greyhound* until at least 1907 (Kelly's Directories Ltd., 32), but by 1921, no public houses are listed on Furlong Passage, only dining rooms (Keates & Co., 91). If this represents a change of use for the premises, it was relatively short lived as the 1924 OS map (Fig. 10) indicates that the property was once again a public house by this date. By the 1950s, the property was known as the *Rose, Thistle & Shamrock* (Fig. 12). The public house continued until at least the 1970s, but had been demolished by the mid 1990s.

4.2.8 *Pottery kiln/number 13a Newcastle Street?* Evaluation trench 1 was targeted upon a pottery kiln, apparently shown on Hargreaves' map of 1832 (Boothroyd 2008, 5) (Fig. 5). The purported kiln appears as a possible circular feature, shown within a north west – south east-aligned range seemingly connected with the main body of the Newcastle Street Pottery to the south. The definition and form of this feature are, however, less distinct than those of other kilns indicated on the map, raising the possibility that this might not be a pottery kiln, or indeed a true feature at all.

4.2.9 Historical map evidence would suggest that the building or buildings indicated on Hargreaves' 1832 map pre-date the construction of the potworks. The 1812 plan of Burslem shows the location occupied by an L-shaped arrangement of properties, which just appear on the edge of the map (Fig. 4). A similar, or perhaps even the same, disposition of buildings appears on the 1851 drainage map of Burslem (Fig. 6). The north east – south west arm of this configuration is formed by a large, roughly L-shaped building which fronts onto Newcastle Street. From its northern end, a linear range, subdivided into three units, extends to the south east down Furlong Passage. Although contiguous with the factory's northern boundary, the map offers no clear evidence of a relationship between these buildings and the Newcastle Street Pottery. The 1878 OS map (Figs. 7 & 8) shows some reconfiguration of these buildings, although they once again appear to be distinct from the potworks. Only slight changes to this layout are evident on

the 1900-1937 OS maps (Figs. 9-11), but by the time of the 1950 OS map only the north east – south west-aligned range remained, the southern end of which had been incorporated into the Newcastle Street Pottery (Fig. 12). The surviving part of this building is indicated as number 13a Newcastle Street. A listing in a trade directory of 1907 (The Potteries, Newcastle & District Directory, 49) records this address as a stationery and music dealer's shop.

5.0 Methodology

5.1 Aims and objectives of the evaluation and excavation

5.1.1 The stated aims and objectives of the project are described in full in the *Brief and Specification for an Archaeological Evaluation and Excavation at Furlong Passage, Burslem, Stoke-on-Trent* (Boothroyd 2008) and are summarised below:

- to confirm the presence or absence of buried remains of archaeological significance on the development site,
- to clarify the chronology, nature, extent, state of preservation and relationships of any archaeological features,
- to preserve by record the archaeological features found in the DA,
- to clarify and record the physical evidence relating to 19th- and 20th-century pottery production,
- to attempt to provide information on the social and industrial character of the site within the local and national context of the historic development of Burslem.

5.2 Evaluation and excavation

5.2.1 The initial evaluation programme involved the excavation of six trenches (Fig. 2) targeted upon the locations of pottery kilns, private dwellings and a public house indicated on historical map evidence. These gave a total excavation area of 346.0m², representing a 21.3% sample of the site. If the evaluation trenches furnished evidence worthy of further investigation a revised specification was applicable, allowing excavation of an area up to a maximum of 980.0m² (60.3% of the site), including the initial evaluation trenches (Boothroyd 2008). In the event, only two trenches (numbers 2 and 4) were extended, giving a final excavation area of 429.85m² (Fig. 2), representing 26.5% of the DA.

5.2.2 Staff from SOTARCH carried out the fieldwork between 11th February and 7th March 2008. The project was conducted in compliance with current best archaeological practice and conformed with relevant national codes of conduct, standards and guidance advocated in the *By-laws of the Institute for Archaeologists* (revised October 2007).

5.2.3 The fieldwork involved the supervision of a 180° backhoe excavator to remove modern industrial overburden, followed by the monitored excavation of subsoils using a 1.70m ditching bucket down to the first discernible archaeological horizon. If no archaeological features or deposits were identified, excavation was continued to a point where undisturbed natural subsoil could be confirmed or to a safe and practical working depth.

5.2.4 All archaeological horizons were cleaned by hand and all trenches were documented by means of a written record (site notes and individual *pro-forma* context sheets) and measured drawings using scales of 1:10 for sections and 1:20 or 1:50 for plans. A digital colour and 35mm colour slide and monochrome print photographic record was maintained, showing specific stages of the fieldwork and the layout and relationship of archaeological features. Stratigraphic sequences were recorded in all trenches even when no archaeology was encountered. All the trenches were backfilled after recording. The site archive is stored at The Potteries Museum & Art Gallery, Bethesda Street, Hanley, Stoke-on-Trent, Staffordshire (site code **FPB 08**; museum accession number **2009.LH.71**).

6.0 Results

6.1 Trench 1 (max. 5.30m NE-SW x max. 5.10m NW-SE) (Fig. 14; Plates 1-3)

6.1.1 This trapezoidal trench was inserted at the most northerly point of the DA. To the east, the trench was contiguous with Furlong Passage, defined at this point by a red-brick wall (102), which was a probable remnant of the former pottery works. Most up-standing remains encountered in trench 1 appeared to relate to modern industrial structures depicted on the 1970 OS map, which seems to depict the location fully occupied by the pottery manufactory. Given the nature of the archaeology encountered, trench 1 was not extended.

6.1.2 The removal of a 0.45m thick red/brown loamy topsoil (100) revealed a concrete slab (101), 0.25m thick. This slab was observed to extend beyond the confines of trench 1 and probably represented a floor surface within the former pottery factory. Underlying the concrete was a coarse black ash sub-base (103), 0.20m thick, which in turn sat above a compact grey/white stone aggregate (104), 0.06m thick.

6.1.3 Directly beneath (104) was the natural orange/red clay subsoil (105), which had been cut by three features [119], [115] and [108], and at least one brick structure (107). The earliest of these features appeared to be a shallow, ill-defined, sinuous cut [119], which extended north east from the east-facing trench section, before heading north where it was cut by [108] (see below **6.1.5**). It was no more than 0.15m deep and was filled with a dark grey/black ashy material (106) with fragments of mid-late 17th-century pottery (see below **7.2.1**) (Plates 2 & 3). The northern edge of the SW-NE-aligned arm of [119] was particularly indistinct, as it appeared that a quantity of fill (106) had at some point been smeared across and pressed into clay (105) to the north and north west of [119].

6.1.4 Another shallow feature [115] was located in the south-eastern corner of the trench. This feature extended north west from the north-facing trench section and had been badly disturbed by a concrete stanchion base associated with wall (102). Feature [115] was 0.05m deep and contained a fill of black/dark grey ash (110).

6.1.5 The northern end of [119] had been clipped by feature [108]. This was at least 0.22m deep and contained a 0.70m long, unmortared row of red bricks (111), laid on edge as headers. A loose grey ash with fragments of brick (112) had been used to backfill [108] around (111).

6.1.6 Cut [108], and possibly (111), had been cut to the north west by a later, substantial red-brick wall and its associated concrete foundation (107). This appeared to relate to the former pottery factory and may well have once related to wall (102) located along the eastern edge of the trench.

6.2 Trench 2 (max. 10.10m NW-SE x max. 8.20m NE-SW) (Figs. 15 & 16; Plates 4-7).

6.2.1 Initially excavated to a size of 10.0m x 5.0m, Trench 2 was extended to an area of 84.20m² due to the relatively good preservation of its target, a pottery kiln first shown in this location on Hargreaves' map of 1832 (Fig. 5). This kiln appears to have been demolished by 1851 (Fig. 6), but another had been built by 1878 (Figs. 7 & 8), which remained until at least 1924 (Fig. 10). The eastern edge of the kiln was not uncovered due to the presence of a skip and fencing belonging to demolition contractors. The kiln's preservation was compromised somewhat by two later stanchion bases (207) and (208), and their associated footings (233) and (223).

6.2.2 The removal of 0.32m of modern concrete surfacing (200)/(201) and overburden (202) revealed the remains of a circular pottery kiln and part of the building in which it was enclosed. The kiln comprised a circular brick structure, some 7.80m in diameter and standing to a height of 0.90m. The centre of the kiln was formed of a domed surface of yellow refractory bricks (203). Sectioning of the kiln revealed that (203) was composed of a single course of refractory bricks, 0.08m thick, which were laid flat and jointed with sand. The bricks were arranged in circles concentric to a more random arrangement of bricks in the very centre of the dome. Brick surface (203) rested upon an internal 'cork', comprising an upper layer of grey sand and brick fragments (254), 0.62m thick, beneath which was a compacted, gritty red sandy clay (253), 0.30m thick to the limit of excavation. This 'cork' material was contained by the outer shell of the kiln (214) (see below **6.2.5**) against which surface (203) also butted (Fig. 16, Plate 5).

6.2.3 The remains of brick radial med-feather flues (204) were present above (203) and were formed from refractory bricks laid flat and arranged in rows. The rows of med-feathers were typically set between 0.10m and 0.12m apart. Several bricks featured the impressed mark 'DOUGALL', produced by J. Dougall & Sons of the Bonnyside Fireclay Works near Falkirk, Scotland, which was active from 1896-1967 (Sallery). The med-feathers stood to a maximum height of 0.36m and were heavily vitrified.

6.2.4 Around the circumference of (203) were the remains of six brick-lined, rectangular ash pits, each representing the position of one of the kiln's former fireboxes. Given the distribution of the surviving ash pits, the kiln appears to have originally featured at least nine fireboxes. Of the six surviving examples, ash pits 1 (216) and 2 (229) were the most

complete and, as such, ash pit 1 was emptied of the silty-sand demolition material (217) that was present in all of the surviving pits. Ash pit 1 had internal dimensions of 1.0m NW-SE x 0.62m NE-SW, with a depth of 0.25m (measured from the upper edge of the pit to the base). Where the front of the ash pit projected out into the surrounding working floor (see below **6.2.8**) it was finished with blue bull-nosed bricks, presumably to facilitate raking out. A set of three lateral, rectangular-sectioned iron bars (218) remained *in situ* across the top of ash pit 1. The bars were set 0.24m apart, each 0.07m wide and 0.08m thick, and keyed into the surrounding brickwork. Fixed fire bars such as these were used to support removable iron bars, which were placed longitudinally over the ash pit. Firebricks would have then been positioned on these bars, providing a platform upon which the coals from the fire mouth above would have burned. Examples of these removable bars (230) were also observed above ash pit 2 (229), which was not emptied of its fill.

6.2.5 Elements of one of the kiln's fireboxes however survived above ash pit 2. This was cleared of its demolition fills (227) and (228), revealing that the back of the firebox (231), as it connected with the med-feathers, remained intact (Plates 6 & 7). Internally, the firebox was a maximum of 0.70m wide and stood to a height of 0.92m. The back of the box featured two 0.37m high x 0.16m wide brick columns, each positioned 0.05m in from the side walls and set 0.12m apart from each other. This created three apertures through which heat could pass from the box to the med-feathers. A single refractory voussoir had been placed on end between the two columns, presumably as some form of heat-flow regulator. All exposed bricks within the firebox were highly vitrified.

6.2.6 Where present, or visible, the outer shell of brickwork (214) between each ash pit was a mix of common red and yellow refractory bricks laid in English common bond, and survived to a maximum height of 1.53m. The outer shell effectively contained the 'cork' (254)/(253) that lay beneath surface (203) in the centre of the kiln. Two 0.04m thick iron plates (225) and (226) had been fixed to the exterior face of (214) to either side of ash pit 1. The purpose of these plates was unclear, although they were possibly employed as some form of reinforcement to the kiln wall. Another iron plate and bar (224) had been inserted into (214), behind plate (226) and immediately in front of a large sandstone slab (248), thought to indicate the position of the former entrance into the oven chamber.

6.2.7 The kiln was contained within a rectangular structure rather than a hovel. This corresponds with the historical map evidence, which shows the kiln located within one of the factory ranges (Figs. 3, 7-11). The structure surrounding the kiln was defined to the north by wall (209)/(210), to the west by (211)/(244) and to the south by (212)/(245). Each of the surviving walls showed evidence of rebuilding or repair. Wall (209)/(210) was curvilinear in form and stood to a maximum height of 0.93m. It comprised two abutting lengths: to the west (209), which was laid in standard English bond and to the east (210), laid in English Garden Wall bond. The western wall (211)/(244) survived to a maximum height of 1.20m and also consisted of two distinct sections. The southern length (244) was built to a stretcher bond and was butted at its northern end by (211), laid in English bond. The northern terminus of (211) was marked by a projecting column of bricks with rounded corners, representing one side of an entranceway that was at least 1.15m wide. Sectioning of wall (211) revealed that it had been constructed upon the natural clay (257).

6.2.8 Two large iron plates (251), each approximately 1.26m long, 0.60m wide and 0.04m thick were propped up against wall (211). These may have functioned as cover plates, positioned over the portion of an ash pit that projected into the work floor to reduce the amount of draught that entered the kiln from this aperture. Their width was such, however, that they could only have been laid flat between the kiln and surrounding wall at certain points. Butted against (244) was the southern wall (212)/(245), which stood to a maximum height of 0.97m. The western half of this wall (212) was constructed in a coarse stretcher bond and was butted at its eastern end by (245), most of which was laid in header bond. The eastern end of (245) was finished with bull-nosed bricks, indicative of an entranceway at this point.

6.2.9 The working area around the kiln was narrow, with some points offering no more than 0.42m between kiln and surrounding wall. When first uncovered the working area was filled by a grey sand and brick rubble deposit (205), which sat beneath overburden (202). The removal of this material revealed that the working area was floored with blue bricks (206) laid on edge in circles concentric to the kiln. The floor surface was one course thick (0.10m), jointed with fine dark grey sand and laid on a 0.12m thick base of sticky yellow clay with small angular stone inclusions (235). This sat above the natural orange/brown clay (257). To the north of the kiln, floor (206) was covered by a 0.19m

thick layer of concrete (213). It was not clear if this was a repair contemporaneous with the functioning of the kiln or evidential of post-demolition activity.

6.3 Trenches 3 & 4 (max. 21.0m NE-SW x max. 10.0m NW-SE) (Figs.17-19; Plates 8-23)

6.3.1 Trenches 3 and 4 were initially opened as separate evaluation areas; the former targeted upon a pottery kiln, the latter upon a 19th-century courtyard development (Figs. 4-8). No evidence of the anticipated kiln was found in trench 3, having seemingly been replaced by 20th-century factory structures, although the remains of the 19th-century houses were identified in trench 4. As a result trench 4 was extended to join up with trench 3, which remained in its initial evaluation form, to create a single, irregularly shaped excavation area.

6.3.2 The factory and 19th-century house remains lay beneath up to 0.50m of rubble overburden (314) and (400). Extension of trench 4 exposed the partial footprint of up to five properties, some of which had been truncated by the eastern continuation of the 20th-century structures identified in evaluation trench 3. Further investigation of the 19th-century properties revealed that they had been constructed over the stone foundations of at least one earlier building.

6.3.3 The sequence of structures uncovered in trenches 3 and 4 is described below, beginning with the earliest phase of building.

6.3.4 *Pre-19th-century building and associated features* (Figs. 18 & 19, Plates 8-12). Located some 1.04m below ground level, beneath the 19th-century houses (see below **6.3.7**), were the stone foundations of an earlier building. This was represented by a substantial sandstone wall (4105), which was at least 2.60m long and a maximum of 0.90m wide (Plate 8). Wall (4105) did not appear to extend to the south; a 1.80m long sandstone feature (497) encountered in this area was not in line with (4105) and was too insubstantial to represent its continuation (Plate 11). The east-west return of (4105), sandstone wall (485), was at least 1.39m long and 0.47m wide (Plate 9). Both walls (4105) and (485) sat directly on top of the natural orange/brown clay subsoil (447). A possible internal floor surface of flat sandstone fragments (487) was identified on the southern side of (485) and seemed to sit within a shallow cut [492] in the natural clay

(447) (Plate 9). Only the eastern edge of cut [492] was discernible, and seemed to peter out to the north. To the south, both floor (485) and cut [492] were obscured by a later made-ground deposit (486), which was left *in situ* to avoid disturbance to a ground-monitoring well sunk prior to the excavation. An area of smaller, more dispersed sandstone fragments (4107), pressed into the natural clay (447), was identified on the western side of wall (4105). This area gradually lost definition as it progressed westwards, but was bounded on its northern edge by an east-west aligned linear arrangement of larger sandstone fragments (448), 1.90m long by 0.48m wide (Plate 8). It was not clear if (448) represented another wall or a surface. If the former, it was highly unlikely that it was a return of wall (4105), which was much more substantial, and may instead have represented an external yard/boundary wall or possibly part of a lean-to structure.

6.3.5 A shallow linear gully [449] emerged from the eastern trench edge and extended westwards. At its eastern end, the gully was visible as a discrete linear feature, a maximum of 0.78m wide and at most 0.10m deep, with a fill of brown sandy silt and mid-late 17th-century pottery (408) (see below **7.2.11**). Part of the southern edge of [449] at this end of the feature was marked by several large sandstone fragments (405) that had been cut into the natural clay (Fig. 19, Plates 10 & 12). Approximately 4.0m west of the eastern trench edge, the gully appeared to continue beneath another spread of both large and small sandstone fragments (482) (Plate 9), laid immediately to the north of (4105), (485) and (448). The sandstone spread became less concentrated and died out some 6.0m further to the west. No trace of gully [449] was observed beyond spread (482).

6.3.6 Wall (485) and sandstone spread (482) were cut by a 0.32m long by 0.13m wide rectangular iron socket (489) (Plate 9). The purpose of this item was not clear, although it could have formed a slot for a wooden post, possibly for a structure that post-dated the building represented by walls (4105) and (485). The socket did not appear to have been inserted through the floor make up material of the overlying 19th-century properties and must, therefore, have pre-dated their construction.

6.3.7 19th-century housing & associated structures (Fig. 17). Elements of five adjacent 19th-century properties (houses 1-5) were revealed during the excavation, three of which (1-3) had been built directly over the stone foundations of the earlier building. At least

two of the properties (2 and 3) shared a common layout, consisting of at least two ground floor rooms separated by a lateral wall, with, presumably, the same number of rooms above. House 1 may well have been of similar configuration, whereas house 4 was somewhat different and seemed to feature a greater number of smaller ground floor rooms. Too little of property 5 was revealed to conclude much regarding its ground floor layout.

6.3.8 House 1 (Plate 13). Only one rectangular room of house 1 was exposed during the project and was at least 15.0m² in area. It was defined by three red-brick walls: east-west-aligned (401) to the north (which also formed the front wall of houses 2 and 3), east-west-aligned (412) to the south (which continued west into houses 2, 3 and 4) and north-south-aligned party wall (406) to the west. Wall (406) butted against, rather than bonded with walls (401) and (412). All walls were laid in English bond, with (401) and (412) standing to a maximum height of 0.49m, and (406) to 0.31m. Each of the three walls had been constructed upon a tightly-packed sandstone foundation material (417), 0.05m thick beneath (401) and (412), and 0.20m thick below (406). This foundation material sat directly on top of the natural clay (447) and, in the case of (406), lay across gully [449].

6.3.9 An original floor make-up deposit was present within walls (401), (406) and (412), in the form of a 0.34m thick brown sandy loam (415), which sat above the natural clay and gully [449]. No trace of the original floor surface survived within house 1.

6.3.10 House 2 (Plates 14-16). This property was situated on the western side of house 1, separated from its neighbour by wall (406). Two separate areas were revealed within house 2, the most complete of which was a 14.4m² room defined by east-west-aligned front wall (401), north-south-aligned party walls (406) and (407), and east-west-aligned (412), which divided the space from a second space to the south (see below **6.3.13**). As with (406), wall (407) butted the internal faces of (401) and (412), and was constructed in English bond. It survived to a maximum height of 0.33m and was butted on its eastern side by two brick columns (4104), each 0.43m long, 0.22m wide and 0.43m high, and set 0.13m apart. These columns were somewhat suggestive of fireplace jambs, although they were not placed centrally to the wall and were positioned more closely together than might be expected for such a feature. Both wall (407) and columns (4104) sat upon a 0.35m thick sandstone foundation (417), identical to that beneath walls (401), (406) and

(412). All wall foundations within house 2 sat upon the natural clay (447) or the remains of the earlier property; wall (407), for example, lay across stone wall (485) and sandstone spread (482).

6.3.11 A small area of what appeared to be a contemporaneous floor surface was recorded in the south-western corner of the front room in house 2. This took the form of a single skin of blue bricks (490), laid flat, end-to-end, which butted against the inner faces of walls (407) and (412) (Plate 15). This surface sat upon a 0.35m thick deposit of ash, loam and small saggar fragments (495), which in turn partly covered the remains of a lower, presumably earlier, surface of red bricks (496), again laid flat. As with (490), this lower surface butted against the inner faces of walls (407) and (412) and sat above a 0.13m thick layer of compacted ashy loam (486), which had been deposited over the sandstone floor (487) of the earlier building.

6.3.12 With the exception of the south-western corner, a 0.40m thick layer of the same sandy loam floor make-up material (415) observed in house 1 was present in the front room of house 2, but had been cut by a modern ground-monitoring well. Layer (415) did not extend beneath brick surface (490) and its relationship with the possible floor's bedding material (495) was unclear, as no cut was identified to explain the isolated presence of (495) in the south-western corner of the room. It was also not clear if surface (490) originally extended across the whole room. Quite how brick surface (496) functioned in relation to the 19th-century property was equally uncertain.

6.3.13 The southern or rear room of house 2 survived in part, with only a truncated length of its west wall (440) still extant. Wall (440) was butted against the southern face of wall (412) and was only 0.11m wide, half the width of wall (407) to the north. As a result, it formed an extremely thin party wall with a corresponding space in house 3 (see below **6.3.16**). A fireplace was positioned against wall (440) (Plate 16), the northern jamb (439) of which was bonded to the wall. The opposing jamb (445), positioned 0.98m to the south was, however, butted against (440). Just in front of the fireplace was a brick-lined rectangular ash pit (442), with external dimensions of 0.60m N-S x 0.48m E-W. The ash pit was filled with a compact silty ash (446) and appeared to have been cut into a brown sandy loam floor make-up layer (4113), identical to (415) observed in the front room and within house 1. The remnants of a red quarry-tiled hearth (441) were present within the

fireplace, butting against jamb (439) and laid on top of (4113), but also partly overlying the western edge of ash pit (442). Approximately 0.06m to the east of the ash pit was another small patch of red quarry tiles (443), again laid upon (4113), which may have been evidential of a floor surface within the room.

6.3.14 House 3 (Plate 17). This property lay to the west of house 2 and again featured two ground floor rooms separated by wall (412). The northern or front room was slightly larger than that in house 2, with a floorspace of some 15.18m². It was defined by red-brick walls (401), (412), (407) (the party wall with house 2) and (411), which separated the property from house 4 to the west. Wall (411) survived to a maximum height of 0.63m and butted against (401) and (412) to the north and south respectively. As with the other walls, (411) had been constructed upon a sandstone foundation (417), which was a maximum of 0.50m thick and was laid directly upon the natural clay subsoil (447). Floor make-up (415) was again present within this room and was a maximum of 0.40m thick. A sub-circular feature (450), 1.08m N-S x 1.04m E-W x 0.15m deep, had been cut through (415) just to the west of wall (407). This had been made to accommodate a rectangular brick-lined ash pit (477), the external dimension of which were 0.76m N-S x 0.30m E-W. The pit was filled with a mixed ash and charcoal deposit (4115). Immediately to the west of (477) was a short length of red brickwork (476), 0.56m N-S x 0.10m E-W, which was probably associated with the ash pit. A red/brown silty loam (451) had been used to backfill (450) around the two brick features.

6.3.15 A small patch of red quarry tiles (475) survived against the southern face of wall (412) and, once again, may have been indicative of an original floor surface in the room. The tiles were bedded on a 0.03m thick layer of buff sand (414), which in turn sat upon floor make-up deposit (415).

6.3.16 A second ground floor room was revealed to the south, but had been truncated by later development, principally the construction of wall (421) (see below **6.3.26**). The room was bounded by party walls (440) to the east and (454) to the west. A fireplace was positioned against the eastern wall (407) (Plate 17) and mirrored that present in house 2. The fireplace's northern jamb was formed by the westward continuation of (439), observed in house 2. The southern jamb (444) was, like (445) in house 2, butted against wall (440) at its eastern end. The hearth within the fireplace comprised buff refractory

tiles (457), most of which were quite degraded. The refractory tiles appeared to sit above a red- and blue-brick floor surface (452), two distinct patches of which were present within the room (Plate 17). The brick floor surface sat upon a 0.24m thick layer of sandy loam (498), similar in composition to (415) and (4113), but with frequent flecks of mortar. The subsequent sectioning of this area down to the natural subsoil revealed that (499) sat above a 0.31m thick yellow/grey silty clay (499), beneath which was a 0.26m thick deposit of sandstone (4100), identical to that observed beneath the 19th-century wall foundations. This lay above the natural clay (447) and sandstone feature (497) (see above 6.3.4).

6.3.17 House 4 (Plate 18). Although the footprint of this property was not fully revealed, it clearly differed in layout to houses 2, 3 and possibly 1. The archaeological evidence suggested that the house had at least two ground floor rooms and a sunken pantry. The full dimensions of what appeared to be the main ground floor room were not established, but at 2.94m wide, it was narrower than the comparable spaces in houses 1, 2 and 3. The front wall of the room was not uncovered, although it is likely that it would have been formed by (401). Of those that were revealed, party walls (411) and (427) defined the room to the east and west respectively, with transverse wall (413) separating the space from a possible pantry to the south. Wall (413) was bonded with the southern end of (427), but butted against (411) at its eastern end. Wall (427) was not positioned on a parallel alignment to (411) and, as a result, the room must have narrowed to the north. A short stump of brickwork (425), 0.37m E-W x 0.11m N-S, was butted against the inner face of wall (427) and may have represented one side of a former fireplace. No corresponding brickwork was, however, found to the south. As with houses 1, 2 and 3, a sandy loam floor make-up layer (415) was present within the room.

6.3.18 To the south of this room was a narrow space formed by walls (413), (412), (411) and (4101) that possibly served as a pantry (Plate 18). The room had been truncated by the construction of wall (421), but originally occupied an area of 3.54m². It featured a sunken floor, surfaced with red and grey ceramic tiles (453), accessed via a 0.29m high brick step (419) at its eastern end. A possible brick stillage base (420) was present in the space, butted against wall (413). This was rectangular in form with dimensions of 1.10m E-W x 0.44m N-S, and stood to a height of 0.31m. The structure featured a narrow rectangular slot within the upper course of brickwork.

6.3.19 A third room was located to the south of the possible pantry, but had been significantly truncated by wall (421). The room was divided from the pantry area by wall (412) and its eastern limit was formed by wall (454), but little else of the space remained. No floors or floor make-up layers were identified within the surviving portion of the room; instead the space was filled with a grey gritty loam and brick rubble deposit (435).

6.3.20 House 5? (Plate 19). Evidence of a fifth possible residential property was recorded on the western side of wall (427). This comprised the remains of a brick fireplace, represented by jambs (430) and (432), both of which butted against (427), and red-brick hearth (431)/(434). No floor surfaces or make-up deposits survived in this area, with only rubble deposit (435) discernible to the west of the fireplace and hearth.

6.3.21 Well (461) (Plates 20-22). A red-brick-lined well (461), 1.54m in diameter, was revealed to the south of house 3. The extent of 20th-century disturbance within this area hindered attempts to relate the well's construction to a precise phase of the site's development. The stratigraphy associated with the 19th-century houses to the north did not appear to extend into the area in which the well was found. Instead, the reduced remains of the well lay beneath 0.88m of grey loam and brick rubble (4118), the presence of which presumably related to the construction of wall (421) and the *Rose, Thistle & Shamrock* public house, located to the south (see below **6.3.24**). Given its location within the yard to the rear of the former properties, it is probable that the well was constructed as part of the 19th-century housing development. The well and the houses certainly appear, at least for a time, to have functioned contemporaneously, as the compacted grey loam fill (470) of the well contained pottery sherds datable to the 1820s and 1830s (see below **7.2.20**).

6.3.22 Natural clay was not encountered in the vicinity of well (461), but instead a deposit of dark grey loam and brick rubble (4111) was revealed to the south east of the structure. There was no evidence that the well had cut through (4111) and, consequently, the material may again be associated with later disturbance. An irregular arrangement of broken red bricks (464) sat on top of (4111) and was initially thought to represent a floor surface, perhaps even related to well (461). Given, however, that the upper portion of (461) had apparently been removed by later development, it is unlikely that a floor

surface associated with the well would be located at this depth. There is a possibility that the bricks were not actually *in situ*, or if they were, related instead to the laying of an adjacent 0.23m diameter ceramic drainpipe (463), which extended from the west-facing trench section to the edge of the well. No cut for this pipe was discernible in the trench section, although its absence could be explained by the considerable modern disturbance evident in this area. A deposit of grey/yellow clay and brick (471), at least 0.25m thick, had been deposited partly over pipe (463) and around the north-eastern quarter of well (461). At its northern edge, (461) seemed to overlie a tumble of sandstone fragments that may well have related to layer (4100) observed beneath the rear room of house 3 (see above 6.3.16).

6.3.23 The fill of well (461) was removed by machine to a depth of 2.0m below the uppermost course of the surviving brickwork (Plate 22). The base of the well was not encountered at this depth, but, as this represented the limit of the mechanical excavator's reach, no further material was removed.

6.3.24 *The Rose, Thistle & Shamrock and adjacent structures* (Fig. 17). Between 1878 and 1900 most of the buildings within the development area to the south of Furlong Passage had been cleared and the site's southern boundary with Bath Street (now the car park off Woodbank Street) reconfigured. By 1900, therefore, the site was largely vacant, although a new property had been constructed on a plot to the south east of the former terraced houses (Fig. 9). This property is not named until the 1950 OS map (Fig. 12), where it appears as the *Rose, Thistle & Shamrock* public house. Adjoining the north-western corner of the public house in 1900 was a small rectangular building, which seemed to form part of a boundary line that cut across the site on an approximate north-west – south-east axis (Fig. 9). The 1924 OS map (Fig. 10) suggests that the boundary had become solidified by this date, probably by the construction of wall (421). By 1950, the rectangular structure that adjoined the public house had been extended along the wall line (Fig. 12).

6.3.25 Traces of what is likely to be the cellar of the *Rose, Thistle & Shamrock* were identified to the south of well (461). The structure comprised a north-west – south-east-aligned red-brick wall (462), at the western end of which was a possible north-east – south-west return (467) (Plate 20). The walls seemed to form the north-western corner of

the cellar, within which were the remains of an internal floor, surfaced with grey and red ceramic tiles (468) (Plate 20). A short stump of brickwork (472) was butted against the external, northern, face of (462) and partially overlay well (461).

6.3.26 The two buildings that extended west from the north-western corner of the public house also survived in part. It was not clear if these buildings were associated with the *Rose, Thistle & Shamrock*, the potworks to the west or, indeed, neither. A substantial red-brick wall (421) that had truncated houses 3, 4 and 5, and well (461), constituted the northern limit of both buildings. Wall (421) continued to the north west to form the boundary evident on the 1924 OS map (Fig. 10). The eastern wall of the earlier of the two outbuildings was formed by north-east – south-west-aligned red-brick wall (465), which butted against (421) towards its eastern end. Wall (465) cut across well (461) and was approximately in line with (467), which may have represented its southern continuation. To the west, the dividing wall between the two outbuildings survived as a stump of north-east–south-west-aligned red brickwork (4116) butted against the southern face of (421). Further west, the distinctive dog-legged western wall (422) of the later of the two buildings was also present. The interior elevations of walls (421), (422), (465) and (4116) retained a coating of white plaster, indicating that both buildings had been basement-level rooms. This was confirmed, at least for the earlier of the two buildings, when the partial removal of a 0.80m thick layer of loam and brick rubble (438), deposited in and around the former outbuildings, revealed a small patch of original floor in the internal corner formed by walls (421) and (465). This floor was surfaced with red-quarry tiles (466), laid upon a grey loamy bedding layer (4112).

6.3.27 *The Newcastle Street Pottery* (Plate 23). Evidence of the potworks was identified in the area originally excavated as evaluation trench 3. A curvilinear red-brick wall (301), positioned on an approximate north-south alignment, was thought to echo the former position of a pottery kiln within the factory. Historical maps show a kiln in the area from 1832 to at least 1900 (Figs. 5-9), but this appears to have been removed prior to the production of the 1924 OS map (Fig. 10). The OS edition indicates, however, that the eastern edge of the former kiln was preserved as a bulge in the line of the factory wall and remained visible on historical maps until at least 1970 (Figs. 11-13). Wall (301) offered no evidence that it once formed part of a kiln structure or even a surrounding hovel, and may instead have constituted a rebuild which mimicked the curvature of the

former kiln structure. Immediately to the west was another curvilinear wall (300) that butted (301) at its southern end, but then branched off to the north west. Two transverse walls, (307) (to the north) and (308) (to the south), crossed between (300) and (301). Contained between walls (300), (301) and (307) was a 0.12m thick concrete surface (309), laid upon a loose deposit of grey silt and pottery fragments (313). The pottery sherds within (313) featured marks of John Maddock & Sons Ltd. and were produced during the 1930s and/or 1940s (Godden 1991, 406-7). Between walls (300) and (301) to the south of (307) was another layer of concrete (310), 0.05m thick, and, as with (309) to the north, laid upon (313). Deposit (313) was also visible between (300) and (301) to the south of (308).

6.3.28 A substantial void, filled with brick and concrete rubble (4117), lay on the western side of wall (300). This was not excavated, but was thought to be a large basement within the potworks.

6.3.29 Butted against the eastern face of (301) at its southern end was another red-brick wall (302), which extended north for 1.20m from the southern trench edge, before turning to the north east and heading into the west-facing trench section. The wall was interrupted by an 0.84m wide entranceway, marked by a 0.74m wide, 0.22m deep and 0.20m high step (305), constructed of blue bricks. Wall (302) also enclosed a patch of worn red bricks (306), which was presumably an internal floor surface. The 1924 OS map shows a narrow range that had been constructed to enclose a slight projection in the factory building positioned at the south-eastern corner of the potworks (Fig. 10). This building persisted until at least 1937 (Fig. 11), but had been removed, at least in part, by 1950 (Fig. 12). It is probable that (302), (305) and (306) represented part of the northern end of this structure.

6.3.30 To the east and north of (301) and (302) respectively, was a surface of blue bricks (304), which extended east towards wall (421). It is likely that (304) represented an external yard between the potworks and (421). Surface (304) was overlaid by two large fragments of collapsed masonry (311) and (436).

6.4 Trench 5 (max. 10.0m NE-SW x 5.0m NW-SE) (Fig. 20; Plates 24 & 25).

6.4.1 This evaluation trench was located across the south-facing slope of the site, overlooking the adjacent car park, and was targeted on the site of the *Rose, Thistle and*

Shamrock public house. The trench was cut in two phases, the first of which involved the excavation of a small test pit, measuring 4.30m NW-SE x 3.50m NE-SW, situated at the northern end of the proposed location for trench 5. This revealed a huge quantity of 20th-century overburden, comprising a dark grey/black sandy loam with abundant brick rubble and concrete fragments (500), which persisted to a depth of at least 4.0m below ground level. Due to the depth and instability of the cutting, this test pit was recorded and backfilled.

6.4.2 As the initial test pit investigated only c.30% of the proposed trench area, additional trenching (some 6.50m NE-SW x 5.0m NW-SE) was undertaken 0.50m to the south west. Here, overburden (500) was a maximum of 0.88m thick and lay above the remains of two areas separated by a red-brick wall with stepped foundation (505). The northernmost of these two spaces was defined to the south east by red-brick wall (503), aligned north east – south west, with (505) to the south west. Wall (505) was for much of its length aligned north west–south east, but shifted to a north-south axis at its north-western end. Bonded with (505) towards its north-western end was a short stump of north east–south west-aligned wall (516), which extended for a distance of 0.80m from the north-eastern face of (505). The south-eastern end of (505) butted against the internal face of (503). A compacted layer of grey/brown sandy loam (504) was present within the area delineated by (503) and (505).

6.4.3 The second area was positioned on the south-western side of (505). An entranceway was located along the south-eastern side of the space, formed by two opposing stone pillars (512) and (513) set either side of a 1.60m wide opening. This opening was marked by a blue-brick threshold (519), partially covered by a 0.04m thick skim of grey concrete (511) (Plate 25). Elsewhere in the space, the south-western face of (505) had been clipped by a steel stanchion, from which a short length of red-brick wall (507) extended west. A grey concrete floor surface (508) was present within the area, into which had been set a 0.05m diameter iron pipe (509). This pipe was intermittently visible around the base of the stanchion, along the foot of wall (505) and across threshold (519)/(511).

6.4.4 The remains in trench 5 related to the *Rose, Thistle & Shamrock* and the neighbouring Newcastle Street Pottery. In terms of both location and alignment, wall

(505) appears to correspond with the party wall between the two buildings as indicated on the 1950 OS map (Fig. 12). Much of the southern half of the potworks was remodelled between 1937 and 1950 (Figs. 11 & 12), resulting in changes to its boundary with the public house. If wall (505) does indeed represent this dividing wall, the room within the north-eastern half of the trench relates to the public house and that in the south-western half, to the potworks. Although the nature and function of these areas was unclear, the space belonging to the potworks featured evidence of an entranceway leading from Bath Street. Ordnance Survey maps from 1900 and 1924 (Figs. 9 & 10) show an entranceway to the factory in the general vicinity of the remains in trench 5 and it is possible that pillars (512) and (513) and threshold (519) may relate to this feature. No extension of the southern element of trench 5 was required and once recorded, the cutting was backfilled.

6.5 Trench 6 (12.0m NW-SE x 5.0m NE-SW) (Fig. 21; Plate 26).

6.5.1 The object of this evaluation trench, located adjacent to Woodbank Street, was to investigate a pottery kiln, formerly located within the Newcastle Street Pottery. The kiln was built at some point between 1851 and 1878 (Figs. 6-8), and was depicted on OS maps until 1937 (Figs. 9-11). At best, the evaluation trench aimed to uncover approximately two thirds of the kiln; the remaining part of the structure lay outside the development area, beneath Woodbank Street.

6.5.2 The Planning Archaeologist's project brief stated that evaluation trench 6 should measure 12.0m NW-SE x 8.0m NE-SW, but due to site constraints, specifically the need to maintain a north west to south east access route through the centre of the site, the eventual trench size was reduced slightly.

6.5.3 No trace of the pottery kiln was found within trench 6. Instead, the removal of a 0.40m thick layer of topsoil (600) and an underlying deposit of demolition rubble (601), a maximum of 3.10m thick, revealed evidence of a brick floor (605) and the remains of two north east–south west aligned brick walls (603) and (604). Due to the depth and instability of the trench, it was not possible to enter the cutting and all structures were recorded from the trench edge.

6.5.4 The two brick walls were located towards the north-western end of the trench. Wall (603) projected from the trench sections in the extreme western corner of the cutting. It stood to a height of c.0.32m and was built of bullnose bricks, probably constituting one side of an entranceway. Some 1.10m to the south east were the remains of the second wall (604), a c.2.60m length of which extended from the north east-facing trench section. The wall stood to a height of 0.64m and had been truncated at its north-eastern end; the continuation of the wall into the south west-facing trench section was visible as a scar in brick surface (605).

6.5.5 Neither the walls nor the brick floor had any obvious connection with a circular pottery kiln. Instead, they were probably representative of a basement level associated with the post-1937 remodelling of the potworks, which evidently saw the demolition of the earlier kiln. The paucity of evidence encountered did not necessitate the extension of this evaluation trench.

7.0 Ceramic finds (by Dr. D. Barker and J. Goodwin)

7.1 A total of 580 fragments of ceramic material, comprising vessel sherds, kiln furniture (see appendix 1 for catalogue) and clay pipes were recovered from four contexts: **(106)**, the fill of pit [119]; **(313)**, the bedding layer for concrete (309); **(408)**, the fill of gully [449]; and **(470)**, the fill of well (461).

7.2 Description of the vessel sherds and production material by context

7.2.1 Context 106. This context contains 193 vessel, saggar and kiln furniture fragments. The most numerous ware type is blackware, with a total of 68 sherds (35.2% of the total sherd count) within the context group. The vessel forms include single-handled, straight-sided cups, single-handled ‘tulip-shaped’ cups, multi-handled cups with a slightly flaring profile and at least one larger vessel that may be a posset pot. One multi-handled cup and the possible posset pot have incised marks on their undersides, comprising respectively a single line and a cross.

7.2.2 Midlands Purple wares rank second in terms of quantity, with 50 sherds or 26% of the ceramics. These hard-fired wares appear as butter pots, typically tall and cylindrical in form, with partial internal glazes. One handle sherd is present, although there are

several examples of handle junctions. There are discernible cross-context joins with Midlands Purple ware sherds recovered from context (408) (see below 7.2.12).

7.2.3 Nine sherds of slipware (4.7% of the ceramics) are present in a variety of types. Two hollow ware sherds are of cups, one with feathered slip decoration. There are five sherds of press-moulded dishes, one of which has feathered slip decoration. Three conjoining dish sherds are from an embossed vessel with a scalloped edge and neat relief decoration with coloured slip in-fill (Plate 27). Two other conjoining sherds are from a thrown dish of pinkish-buff fabric and are unusual in having *sgraffito* decoration incised through a brown slip coat to reveal the body beneath; the decoration appears yellow with the glaze.

7.2.4 Seven coarse earthenware sherds (3.6% of the total) are of typical types, mostly dishes and jars, with dark red/brown slip coats and lead glazes, but are otherwise undiagnostic.

7.2.5 Fifty-four saggars constitute 28% of the ceramics. They are mostly in coarse grogged fabrics, and vary in form and size. There are small cylindrical single vessel saggars, larger cylindrical saggars capable of holding three or four vessels and jar-shaped saggars with slightly rounded sides. Two complete profiles of the smaller cylindrical type are 117mm and 220mm in height. All seem to have pierced or cut holes in their sides, and many have clay bobs fused to their interior bases; one example has both red- and buff-coloured ‘bobs’ or supports (Plate 28). One other clay bob was recovered from (106), along with two pieces of clay which have been squeezed to the required shape in order to support or separate wares during firing.

7.2.6 Of the material recovered from the group, only one biscuit-fired white earthenware sherd was clearly intrusive.

7.2.7 Context 313. A group of 64 pottery waste sherds was recovered from (313), predominantly comprising vessels, with some door and kiln furniture. Undecorated functional white earthenwares are the most populous group, with a total of 38 sherds recovered from the context. Most of these represent dinner and soup plates, although fewer numbers of mugs (with straight and tapering sides) and cups also feature, along

with single examples of a sauce boat and a door knob. Moulded geometric decoration is present on a handful of soup plate sherds. A small number of undecorated sherds are printed with the word 'EMBASSY', indicating the specific vessel or body style (Plate 29a).

7.2.8 White earthenwares with applied decoration are less well represented, with only three examples of under-glaze transfer-printed wares in the form of a mug featuring 'Florentine' pattern (Plate 29b) and two saucers, one with 'Deva' design (Plate 29c), the other with the badge of the Church of Scotland. Two plate sherds have under-glaze painted monochrome bands. Fourteen biscuit-fired white earthenware sherds bear no decoration, but may have originally been destined to feature some sort of applied design. The only vessel sherd not to feature a white earthenware body is a glazed ivory plate sherd.

7.2.9 Several sherds feature the printed marks of John Maddock & Sons, although some simply identify the manufacturer as 'Maddock'. The more diagnostic marks suggest a production date for at least some of the material of the 1930s and 1940s (Godden 1991, 406-7). The transfer-printed sherd which bears the 'Deva' pattern also features the name 'Stonier & Co. Ltd. Liverpool' (Plate 29c), a china and glass merchants established by John Stonier in the late 19th century. During the early 20th century, Maddock supplied Stonier & Co. with ceramics that they subsequently sold on to clients such as the White Star Line (National Museums Liverpool 2007). White Star merged with Cunard in 1934, which were supplied by Maddock directly (D. Turner pers. comm. 2008).

7.2.10 The kiln furniture includes examples of conical shelf props, a moulded spur and one extruded strip of biscuit-fired white clay.

7.2.11 Context 408. Totalling some 279 sherds of pottery, saggar and kiln furniture, this group is somewhat larger than that from (106), although the two groups share some compositional similarities. A greater number of ware types are, however, present within (408), in part a result of the larger size of the group, although other factors may be at play here.

7.2.12 Midlands Purple ware butter pots form the largest single group, with a total of 84 sherds (30%) representing definite examples and another 38 (13.6%) which may be either butter pots or coarse earthenwares. The butter pots are similar in all respects to those from (106) and there are cross-context joins with these. There are at least two vessels with vertically-applied strap handles.

7.2.13 Next in quantity are sherds of slipware, of which there are 57 (20.4%). These include seventeen hollow ware sherds, with cups, a porringer and other vessels with trailed or feathered decoration. One posset pot or similar vessel with jewelled decoration also features. One rim sherd has an 'S'-trailed pattern in cream on a black ground, a style of decoration noted elsewhere on slipwares from Burslem which is thought to date to the mid-17th century or earlier. There are 29 sherds of thrown dishes with trailed decoration in cream, with at least ten sherds belonging to a single dish with a crude trailed design of stylised flowers. One other thrown dish has trailed slip decoration with additional scored or incised lines in the manner of *sgraffito* decoration. There are eleven press-moulded slipware dish sherds, five with feathered or joggled slip decoration and six with embossed patterns moulded in relief.

7.2.14 A further two sherds (0.7%) are of a lead-glazed earthenware dish in an orange fabric (Plate 30). This is press-moulded with embossed decoration in relief, but with no hint of slip decoration, which it probably never possessed. It is unusual, but not unique. A dish of a similar type has been excavated in Woodbank Street, Burslem, from a context that contained a mixture of pre- and post-1680 ceramics (Greaves 1976, 3, 35 no. 121).

7.2.15 Thirty-six sherds of blackware form 12.9% of the total. The vessels represented include at least one cup, a jug and one large multi-handled cup with three loop handles and three three-scrolled decorative handles.

7.2.16 Ten sherds (3.6%) of yellow ware include undecorated hollow wares, round dishes with flanged rims and an oval dish, and one sherd with amorphous trailed slip decoration in brown.

7.2.17 Twenty-four sherds (8.6%) of coarse earthenware are present and include one sherd of an unglazed dish in an orange fabric, two cylindrical jar bases with internal

glazes, one rim and one body sherd of an unglazed jar, and other dishes with internal glazes.

7.2.18 Other ware types are present in small quantities. There are five sherds (1.8%) of mottled ware, two of which bottles fragments; one sherd (0.4%) of a moulded salt-glazed stoneware figure in an agate body; and one (0.4%) probable tin-glazed earthenware.

7.2.19 Twenty (7.2%) earthenware saggar fragments feature, all of which are comparable in both type and variety to those from (106). One (0.4%) further piece is from a salt-glazed saggar, whose dark brown colour suggest that it was used to fire brown salt-glazed stonewares.

7.2.20 Context 470. The fill of well (461) contained 28 sherds of pottery, representing 18 vessels. These include both domestic wares and ceramic wasters, as well as several vessels whose state is uncertain.

7.2.21 A number of vessels were clearly not produced in Stoke-on-Trent and, as such, certainly represent domestic material. These include a small handled bottle of brown salt-glazed stoneware, produced in one of the Nottinghamshire or Derbyshire potteries (Plate 31) and a cylindrical blacking bottle of similar type and probably produced in the same area. Otherwise, two sherds of a large, rectangular ironstone china dish also represent a likely domestic item. The dish features transfer-printed decoration in blue, comprising a floral pattern with exotic birds and bears a printed 'Patent Ironstone China' mark of the Mason factory, located in Lane Delph, Fenton (Plate 32), some distance from the development area. The very obvious blistering of the glaze on the interior marks this piece as, at best a poor second, but it was, nonetheless, a functional item. In addition, a 10-inch creamware plate with a lobed edge and a recessed foot-ring, exhibits heavy wear around the footring and features internal scratch marks evidential of use.

7.2.22 Several biscuit-fired white earthenwares are definite waste pieces. These include three conjoining sherds of a 10-inch plate with a moulded beaded edge and additional leafy fronds and two conjoining sherds of a jug or coffee pot.

7.2.23 The remaining ceramics are a mix of glazed creamwares, pearlwares, whitewares and bone chinaware, which may, or may not be wasters. Two of the pearlwares have the impressed mark of a Burslem manufacturer, Job and John Jackson of the Churchyard Works (Godden 1991, 349). The vessels are a saucer with bold under-glaze blue painted decoration comprising stylised flowers (Plate 33) and a rectangular pearlware baking dish with a moulded shell edge, coloured blue under glaze. The mark on the saucer is the clearer of the two and includes the text 'JACKSON WARRANTED STAFFORDSHIRE' in a circular frame surrounding a crown (Plate 34). Neither vessel shows any obvious signs of use through wear and the saucer is very poorly fired with a glaze that is thin and matt in texture. These factors, together with the proximity of the Churchyard Works, suggest that the pieces may very well be wasters. A 10-inch pearlware plate, again with a moulded shell edge coloured blue under glaze exhibits no obvious wear marks, but is otherwise well-made (Plate 35). Other pearlwares include a 'London-shape' bowl with a blue-printed stylised floral pattern on the exterior and interior rim, combined with an internal central design of exotic birds. One small moulded teabowl features a pattern of under-glaze blue painted asterisks and a 'London-shape' bowl has banded and wormed slip decoration (Plate 36).

7.2.24 Of the remaining two creamware sherds, one is an undecorated chamber pot with rolled rim, and the other a plain, undiagnostic body sherd. Three whiteware vessels are present: a 'London-shape' saucer with blue-printed floral decoration; a basin with a pink-printed flower and leaf pattern and a partially fluted lower exterior body; and a jug, mug or similar, represented by a moulded handle sherd with blue-printed decoration. One last vessel is a moulded bone china teapot with light blue-printed decoration in an oriental style.

7.3 Description of the clay pipes by context

7.3.1 Context (106). Four pieces of clay tobacco pipe were recovered from this context, two of which are stems and other two bowls. Both bowls are types typical of the period c.1660-1680, and one bears an impressed 'CR' mark on the bowl, indicating manufacture by one of the two Charles Riggs working in Newcastle-under-Lyme during this period (Barker 1985, 249).

7.3.2 Context 408. Six pieces of clay tobacco pipe were found, comprising three stems and three bowls with heels in a style typical of the period *c.*1660-1680. One heel is unmarked, but one bears an impressed 'CR' mark, again indicating manufacture in Newcastle-under-Lyme by one of the two Charles Riggs (Barker 1985, 249).

7.3.3 Context 470. Amongst the six clay tobacco pipe fragments within this group are two bowls with a significant amount of stem surviving. The bowls have short spurs and oak-leaf moulding to the mould seams, but are unmarked (Plate 37). One of these has a join to another stem fragment from the context and there are two further stem fragments that do not join.

7.4 Summary of the ceramic material

7.4.1 The wares present in (106) and (408) have the appearance of factory wasters, although not all exhibit obvious signs of faults acquired during manufacture or firing. The proportion of saggars in (106) (28%) and (408) (7.6%) suggests that most, if not all of this material derives from one or more workshops in the vicinity. The range of wares found is also similar to 17th-century material found on other sites in Burslem which have yielded sizeable groups of factory wasters. The full range of local types of this period is present in (408), the larger of the two groups, while a more limited range occurs in (106). It is probable that these differences are due more to the relative sizes of the two groups than to any significant differences in date.

7.4.2 The best dating evidence from (106) and (408) is provided by the clay tobacco pipes, which in both groups are typical of the period *c.*1660-1680 and include marked examples of pipes produced by Charles Riggs. Charles Riggs senior had died by 1675 and his son was dead by 1681 (Barker 1985, 249). In fact, this date range accords well with what might be judged to be the date of the ceramics. These appear to fall somewhere between the date of the assemblage from Queen Street, Burslem, which is dated to *c.*1650 (Barker *forthcoming*) and those from Hill Top and Burslem Market Place (Kelly 1968; Mountford 1975). In the latter, it is slipware that predominates, illustrating the scale of manufacture of decorated earthenwares by workshops in the late 17th century. In the Queen Street assemblage, slipwares are still in a minority, with blackware, yellow ware, butter pots and a very wide range of coarse earthenware types dominating. Significantly, the coarse earthenwares had not yet acquired the typical characteristics of late 17th- and

18th-century wares – namely black glazes, coloured by the use of dark red-brown slip coats over an orange fabric on a limited range of dish, jar and jug forms. There is still, in the Queen Street assemblage, a significant proportion of coarse wares that are, effectively, late medieval orange wares and which can be inter-changeable with butter pot or purple wares, depending upon the temperature to which wares were fired. The relative paucity of yellow wares in the groups suggests a date later than the mid-17th century, and the presence of only a few sherds of mottled ware in (408) argues in favour of a date which is not much later than *c.*1680.

7.4.3 The presence of a number of cross-joins between some of the butter pots from (106) and (408) raises questions about the nature of these deposits and their physical relationship. In terms of the composition and likely date of deposition, the similarities between the two are greater than any differences. The material from (408) differs only in the slightly wider range of types present, which can probably be explained by the larger size of the group from (408). Differences in the quantities of the various types of ware in the two groups can also be explained in the same way, and it is worth stressing that neither group is especially large. It is clear that both the pit and the gully were filled at more or less the same time with material derived from a common source, although whether this was waste transported directly from a single workshop or material which had already been dumped and then subsequently moved to this spot is impossible to say.

7.4.4 The contents of the well fill (470), whether domestic or factory waste, give the impression of being broadly contemporary. A narrow date range is provided by the presence of the Job and John Jackson impressed mark, for this firm was operating only between 1831 and 1835 (Godden 1991, 349). A similar date is likely for the other pearl- and whitewares in the group. The former display the shell edges with restrained scallops, and light blue printed patterns which are typical of this period, while the whitewares include an example of printed decoration in pink, a colour probably introduced in the late 1820s and certainly by 1833 (Halfpenny 1994, 69). The presence of creamwares in a context of the 1830s is not unusual. The plate gives the impression of having been well-used and may, therefore, have been produced some years earlier, while toilet wares continued to be made in undecorated creamware into the 1820s and perhaps later, and so the presence of a chamber pot in a group of this date would be perfectly normal.

7.4.5 The material from (313) clearly relates to the firm of John Maddock & Sons, resident at the Newcastle Street Pottery throughout its entire active life. The wares from (313) appear to have been produced no later than the mid-20th century and are indicative of the firm's concentration on the production of durable earthenwares for the hospitality and transportation industries from the mid-1920s onwards (D. Turner pers. comm. 2008).

8.0 Discussion

8.1 Of the six evaluation trenches excavated at Furlong Passage, four produced poor or inconclusive evidence and, as a result, were not extended to the maximum areas indicated in the Planning Archaeologist's project brief (Boothroyd 2008). Trench 1 revealed evidence of an ambiguous feature of probable mid-late 17th-century date and structural remains related to the 20th-century incarnation of the Newcastle Street Pottery. The 20th-century remodelling and eventual demolition of the Newcastle Street Pottery had served to remove all trace of the pottery kilns upon which trenches 3 and 6 were sited. Although trench 5 uncovered some undiagnostic remains that in all likelihood related to the *Rose, Thistle and Shamrock* public house, it also determined that the building had been considerably disturbed by late 20th-century activity. A further glimpse of this establishment was provided by walls (462) and (467), and floor (468) in trench 4, although these remains indicated only that the public house had a cellar. Trenches 2 and 4, however, generated significant structural evidence, which, in the case of the latter trench related to at least two phases of past activity on site.

8.2 Trench 2 uncovered the remains of a circular, coal-fired, up-draught pottery kiln, first indicated within the Newcastle Street Pottery in 1832 (Fig. 5) and, although absent from the 1851 Burslem drainage map (Fig. 6), is again shown on the 1878 OS map (Figs. 7 & 8), remaining until at least 1937 (Fig. 11). In kilns of this type, heat was generated in a series of coal-fired fireboxes, positioned around the base of the kiln. The Furlong Passage example would originally have featured at least nine fireboxes, although the typical number could vary between 8 and 13, depending on the size and type of the kiln (Hind 1937, 64-66). The heat from the fireboxes was transferred to the firing chamber via a system of radial under-floor flues, or med-feathers, that terminated in a central 'well hole'. The remains of med-feathers (204) were present in the Furlong Passage kiln, whilst the surviving firebox (231) retained the vertical slots that allowed heat to pass through the back of the structure into the under-floor flues. In addition, each firebox would also

have featured a 'bag', which rose vertically from the box into the interior of the firing chamber. No evidence of such a feature survived in the Furlong Passage example. Unlike the more efficient down-draught model, which utilised re-circulated heat, up-draughts simply allowed heat to rise up through the firing chamber and out through a main stack positioned above or on top of the crown.

8.3 It is difficult to accurately determine from the archaeological remains if the kiln was originally used for biscuit or glost firings, or indeed if this designation changed over time. Regardless of whether the kiln was used for the biscuit or glost firing of earthenware or china, up-draughts shared a basic structural design. Hind (1937, 61-3), however, claims that some indication of the function of a kiln can be ascertained from the internal diameter of its firing chamber. The Furlong Passage kiln would originally have had a firing chamber of approximately 6.0m or c.20 feet in diameter. This falls within Hind's size range for an up-draught, earthenware biscuit kiln (Hind 1937, 61), a function that is certainly possible given that earthenwares formed part of the factory's repertoire (Godden 1991, 406). Nonetheless, attributions made using Hind's figures should be treated with caution, as kiln sizes, regardless of function, could vary due to a number of factors, including the overall scale of the factory's output, the total number of kilns within the works and perhaps even date.

8.4 Iron plates (225) and (226) that had been fixed to the kiln's outer shell to either side of ash pit 1, may be evidential of repair or reinforcement of the brickwork in this area. Kilns underwent regular repair, particularly in those areas, such as the bags, exposed to the most intense heat. The superstructure of an up-draught kiln was also subject to thermal stress, due principally to the inefficiency of the firing process. In each firing the kiln shell would absorb 36.36% of the total heat generated by the fireboxes; the wares in comparison were subjected to only 11.34% (Hind 1937, 70). The damage that each firing inflicted upon the kiln structure was great enough to necessitate frequent repairs and periodic rebuilding, perhaps once every 20 years (Sandeman 1901, 197). The presence within the med-feather flues of bricks produced by J. Dougall & Sons, may well indicate repairs to the kiln during the late 19th or early 20th century. The med-feathers would certainly have been an element of the kiln liable to damage from exposure to heat.

8.5 The kiln was not surrounded by a hovel, but was enclosed within a rectangular space, which itself formed part of the main factory building. The lack of a hovel suggests that the kiln was, at least in its final form, close coupled, with the main stack built directly on top of the chamber's crown and rising up through the roof of the factory building. The area around the excavated kiln was generally quite narrow and would seem to contradict claims that, with the absence of a hovel, close-coupled kilns typically offered a more spacious working floor (Sandeman 1901, 185).

8.6 The half-sectioning of the kiln revealed that the inner dome (203) of the structure sat upon a foundation material of sand and brick (254) and (253), which was contained by the outer brick shell of the kiln. This is a common method of foundation design in which a 'cork' of pre-fired material was utilised to prevent the oven from drawing moisture from the surrounding earth during firing, thus minimising the risk of subsidence beneath the structure (Sandeman 1901, 193-5).

8.7 Evidence of past domestic occupation was revealed in trench 4, with terraced properties of at least early 19th-century date constructed above the remains of at least one earlier building. Stone foundation (485)/(4105) was substantial enough to suggest a principal building, perhaps a dwelling, rather than an outlying structure. This structure may relate to one of the properties shown within the general vicinity of trench 4 on several maps that purport to show Burslem in the early to mid-18th century. Of these dwellings, those of Ann Bould, Mary Harding and Philip Rathbone (Fig. 3) are, on the grounds of proximity, most likely to fall within the DA and potentially relate to the stone structures uncovered in trench 4.

8.8 Whether foundation (485)/(4105) originally formed the raft for a timber-framed superstructure or the base of an entirely stone-built property is unknown. The construction and occupation dates of the building are equally unclear. Although it is possible that the excavated remains may relate to one of the dwellings shown on the maps of 18th-century Burslem, any association is tentative and somewhat speculative. The only dating evidence recovered from the vicinity of the earlier building was the mid to late 17th-century ceramic assemblage from the fill (408) of gully [449]. These, however, do not represent domestic refuse from the occupation of the property, but instead are factory wasters, generated by one or more nearby potworks. Some vessels

from (408) cross join with examples from the fill (106) of feature [119] in trench 1. This relationship would suggest that, whilst neither may represent a primary deposit, both (106) and (408) stem from a single source, probably discarded some time around the year 1680. The relative lack of intrusive material and obvious sherd abrasion within the (106) and (408) ceramics would suggest, however, that re-deposition swiftly followed the initial disturbance, allowing little time for either contamination or sherd wear to occur. The wares from (408) may, however, still be of some use as a dating tool. If the gully that contained (408) was an eaves drip or other similar feature directly related to, and contemporaneous with, the adjacent property, then the presence of late 17th-century wares within its fill would at least suggest that the building was standing at this time. The finds from (408) provide an approximate date for the in-filling of the gully; an event that is of little use in determining the fate of the adjacent building. Indeed, the presence of sandstone spread (482), which appeared to overlie the gully and respect the position of building walls (485) and (4105), may well represent later landscaping around the property.

8.9 The terraced properties excavated in trench 4 formed the northern arm of a courtyard development first shown on a survey of Burslem produced in September 1812 (Fig. 4). The row shown on this plan, however, is not long enough to accommodate all of the excavated buildings, indicating that at least one of the properties at the western end of the development had not been erected by this date. As houses 1, 2, 3 and 4 all incorporated wall (412), they are likely to have been constructed at the same time and probably, therefore, feature on the 1812 plan. House 5, on the other hand, may have been built as a later, westward extension of the row, apparently completed by 1832 (Fig. 5). By 1851 a privy block had been built across the formerly open, western end of the courtyard (Fig. 6). The area was eventually cleared of housing between 1878 and 1900 (Figs. 7-9).

8.10 It was not clear from the archaeological evidence if the houses faced north onto Furlong Passage or into the courtyard to the south. Other broadly contemporaneous developments, such as that established in *c.*1800 at Penkhull Square in the town of Stoke-upon-Trent, were orientated around a central courtyard, accessed through an archway in the front range (Greenslade 1963b, 184). By the time that the Furlong Passage courtyard had fully developed, however, the historical map evidence indicates only one separate entranceway, located off Hanover Square, into the extremely confined yard area (Fig. 8).

In addition, the rear wall of house 4 was eventually contiguous with the northern end of the communal privy block (Fig. 8), indicating that this property at least was certainly accessed from the main thoroughfare rather than via the yard. If so, this would have provided the Furlong Passage houses with a distinct advantage in terms of light and ventilation over other similar accommodation.

8.11 The layout of houses 2 and 3 comprised a main ground floor living space, with a smaller room to the rear, and two bed chambers, presumably of corresponding sizes above. Both of the ground floor rooms in house 3 featured a fireplace and, although no definite chimney breast or hearth was found within the corresponding area of house 2, it is likely that this property also enjoyed the same level of heating provision. This would have facilitated some flexibility in the practical use of the ground floor rooms. The main room could have functioned as a living/cooking area, with a smaller wash room to the rear, or, alternatively, the tasks of cooking and washing could have been confined to the smaller room, removing them completely from the principal living space. In contrast, the early 19th-century courtyard properties of Penkhull Square and Cliff Bank Square, Stoke-upon-Trent, typically featured a main ground-floor living and cooking area with a smaller wash room, which also housed the stairs to the first floor, to the rear. Unlike houses 3 and probably 2 at Furlong Passage, only the main rooms of the Stoke houses boasted a fireplace (Greenslade 1963b, 114-5; Forrester 2005, 3).

8.12 In terms of floorspace, however, the main rooms in houses 2 and 3 were comparable to those at Penkhull and Cliff Bank. For example, the main rooms of properties excavated at Cliff Bank Square ranged between *c.*14.8m² and *c.*17.6m² (Forrester 2005, 3-4). The main rooms in houses 2 and 3 at Furlong Passage occupied some 14.4m² and 15.18m² respectively. Although in both houses 2 and 3, the rear, smaller room survived only in part, the dimensions of the two spaces can be construed from the historical map evidence. These sources indicate a room of approximately 7.8m² in house 2 and one of 10.8m² in house 3. In comparison, the rear rooms of the Cliff Bank Square houses were *c.*7.38m² in area.

8.13 The remaining properties excavated at Furlong Passage were either only partially revealed or were poorly preserved and revealed little information about their original configurations. Little could be gleaned from the remains of house 1, beyond the

observation that what was presumed to be the main ground-floor room of house 1, appeared to be somewhat larger than those in houses 2 and 3. The historical map evidence indicates that house 1 originally formed a larger property which incorporated house 2 (Fig. 6). This larger building had been divided by wall (406) into two properties by 1878 (Figs. 7 & 8). House 4 differed from 2 and 3 through the presence of a sub-ground pantry, seemingly positioned between the two ground-floor rooms, probably below the stairs.

8.12 Although the privy block to the rear of the cottages had been removed by later development, a well was found within the former courtyard. This probably represented the main, direct source of water for the occupants of the cottages, at least until the 1830s when the well was apparently filled.

8.13 Although the mid-late 19th-century census returns (The National Archive) contain useful information about the residents of Furlong Passage, attempts to relate individual entries to the excavated properties proved unsuccessful. Neither the 1841 or 1851 census features house numbers and, where present on later returns, they could not be definitely associated with the properties depicted on the historical map evidence. In addition, it was also unclear as to how the enumerators defined the limits of Furlong Passage. Nonetheless, the details provided by the census returns offer a valuable insight into the socio-economic composition of the area.

8.14 The 1841 census return for Furlong Passage recorded 49 individuals resident in ten dwellings. By 1851 the total number of residents had increased to 65, living in twelve properties. In 1861, 53 people were listed across nine dwellings and by 1871 the number of residents had dropped to 44, although the number of properties that they occupied had increased to twelve again. The 1881 census recorded a further drop in the population of Furlong Passage to 27, with a corresponding fall in the number of houses to six. Twenty-eight people were listed on Furlong Passage in 1891, with the number of properties remaining unchanged since the previous census.

8.15 In terms of place of birth, census returns for each year of the period 1851-1891, indicate that the majority of individuals listed on Furlong Passage originated within the county of Staffordshire (Table 1). Of these, more cited Burslem as their place of birth

than any other single location. The next most populous group apparent in the returns for 1851-1891 comprised Irish immigrants. In the 1851 census, 35.4% of the total residents of Furlong Passage were born in Ireland, a figure that had risen to 39.6% by 1861. In 1871, 22.7% of those listed on Furlong Passage were Irish born, falling to 18.5% and 14.3% by 1881 and 1891 respectively.

8.16 The presence of Irish immigrants on Furlong Passage is interesting. The total number of Irish living in Burslem had risen sharply during the 1840s, jumping from 109 in 1841 to 597 in 1851. In England as a whole, the Irish population rose from 272,506 to 473,468 during the decade (Findmypast). This increase is likely to have been as a direct result of the potato famine, which led to a peak period of emigration from Ireland from the mid 1840s until the early 1860s (Palmer 1983, 154). The number of Irish within Burslem continued to rise, albeit at a far less dramatic rate during the 1850s and 1860s, reaching a peak of 776 in 1871 (Findmypast). In large cities such as Liverpool and Manchester, Irish immigrants were typically associated with low-quality housing, often living, due to their desperate circumstances, in dirty, overcrowded accommodation (Burnett 1978, 9). If the plight of the Irish immigrants in Burslem was in any way comparable, it could suggest that the standard of at least some housing on Furlong Passage was low enough to attract those of reduced means.

Place of birth	1851	1861	1871	1881	1891	Totals
Belgium			1			1
Birmingham					1	1
Australia (?) 'British Subject'				1		1
Cheshire	2	6	4	3		15
Denbighshire	2					2
Devon	1					1
England		3				3
Erdington (?)					1	1
Ireland	23	21	10	5	4	63
Kent			1			1
Lancashire	3					3
Leicester		1			1	2
London					1	1
Manchester		1				1
Shropshire	3					3
Staffordshire - Burslem	14	17	16	14	13	74
Staffordshire - Other	16	4	8	4	5	37
Unclear	1		4		2	7
Totals	65	53	44	27	28	217

Table 1: Places of birth recorded for residents of Furlong Passage, 1851-1891.

8.17 Throughout the period 1841-1891 the maximum occupancy level for a single dwelling on Furlong Passage was eleven, although the majority of properties provided a home to six individuals or fewer, typically representing a single family unit. The 1851 and 1861 censuses indicate that those premises with the maximum occupancy level for the return, eleven and ten individuals respectively, were home to Irish families. Both of these particular households were occupied by a single nuclear family, supplemented by up to five lodgers or boarders. The practice of renting out rooms is often seen as evidential of straightened circumstances, particularly if it led to overcrowding. The 1843 *Commission of Inquiry into the State of Large Towns and Populous Districts*, noted that although most households of ‘the poorer classes’ in the Potteries were occupied by a single family, some of the more poverty-stricken residents took in lodgers to help pay their rent (Lewis 1972, 11).

8.18 Those enumerated on Furlong Passage for the period 1841-1891 were engaged in a variety of occupations and professions (Table 2). When commenting upon the occupations listed in historical census returns, however, it should be remembered that the employment of women and children is often under-recorded. Both groups were frequently engaged in part-time occupations that are not noted in the returns (Higgs 1989, 81). Of those occupations listed, unsurprisingly, the pottery industry was consistently the largest single employer, although the number of people engaged in the business fell steadily throughout the period. The majority of Irish immigrants listed on Furlong Passage in 1851 were employed as agricultural labourers or domestic servants and only two, both children, were engaged in the pottery industry. A minority were employed in more skilled trades, with one recorded as a weaver and two as joiners. The 1861 return indicates a similar situation, with labouring work continuing to provide a means of income for many Irish immigrants. The wife of one of these labourers, Hugh Mulligan, was recorded as a fruit dealer in 1861; a trade that appears to have become a family business until at least 1891, possibly operating from their Furlong Passage property.

Occupation	1841	1851	1861	1871	1881	1891
Agricultural labourer		5				
Beerhouse keeper					1	
Beerseller						1
Brick maker		1				
Bricklayer					1	
Bricklayer's labourer			5			1
Builder					1	
Butcher				1		
Collier				1		
Collier/Innkeeper				1		
Dress maker		2			2	
Errand boy		1				
Fruit dealer			3	2	2	
Glazier & painter		1				
Greengrocer			2			
Hawker	2			4		3
Housekeeper		1				1
House painter					1	
Iron forgeman				1		
Joiner		2				
Labourer	1	1	3		1	
Labourer in potworks		1				
Lead worker		1				
Music vocalist						1
Orange seller			1			
Peddler					1	
Plasterer			1			
Porter				1	1	1
Pottery worker	20	16	9	5	4	3
Refreshment house keeper			1			
Road/corporation labourer						1
Scholar		7	6	10	4	7
Servant		2		1		
Shoe maker				2		
Silk winder					1	
Small ware dealer					1	
Smith/forge labourer						1
Tin plate worker				1		
Weaver		1				
Unclear				1		1
No occupation given	26	23	22	13	6	7
Totals	49	65	53	44	27	28

Table 2: Occupations recorded for Furlong Passage, 1841-1891.

9.0 Conclusion

9.1 Although the majority of trenches produced largely negative or inconclusive results, archaeological investigations at Furlong Passage did succeed in recovering structural evidence of early domestic activity on site and recorded a well-preserved pottery kiln.

9.2 The up-draught pottery kiln conformed well to the design of construction methods observed on similar structures elsewhere in the Potteries. The foundation of the firing chamber, which utilised a ‘cork’ of pre-fired material, shares a design recognised in the majority of excavated north-Staffordshire pottery kilns. Indeed the use of a ‘cork’ appears to have been so common that it would seem to have represented the standard construction method for pottery kilns, at least during the 19th and early 20th centuries. A deduction of the original function of the kiln, however, once again proved elusive and continues to represent an area onto which archaeological examination in itself can seemingly shed little light.

9.3 The sandstone foundations recorded in trench 4 potentially offered the earliest evidence for a property uncovered in Burslem to date. Unfortunately, as only a fragment of this structure survived and as little sound dating evidence was recovered from it, the precise nature and date of this building could not be ascertained. Was, for example, the building originally timber framed or entirely stone built? Nonetheless, the discovery offers a tantalising glimpse of early vernacular buildings in the town.

9.4 The later properties revealed in trench 4 offered a level of accommodation at least broadly comparable with that provided by early 19th-century courtyard developments in Stoke-upon-Trent. In terms of the provision of heat, space and possibly light and ventilation, however, the Furlong Passage properties appear to have been slightly superior to the Stoke examples. The socio-economic status of Furlong Passage as a whole was probably modest which, in the absence of any domestic artefacts from the excavated properties, is suggested primarily by the presence of a significant number of Irish immigrants on the Passage by 1851. This was a group that, by necessity, were often drawn to poorer areas. Whether the area’s status changed over the second half of the 19th century is unclear, although the clearance of many properties along Furlong Passage by 1900 may at least indicate that much of the housing was regarded as sub-standard by this date.

10.0 Acknowledgements

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FIG. 1

Location of the development area.

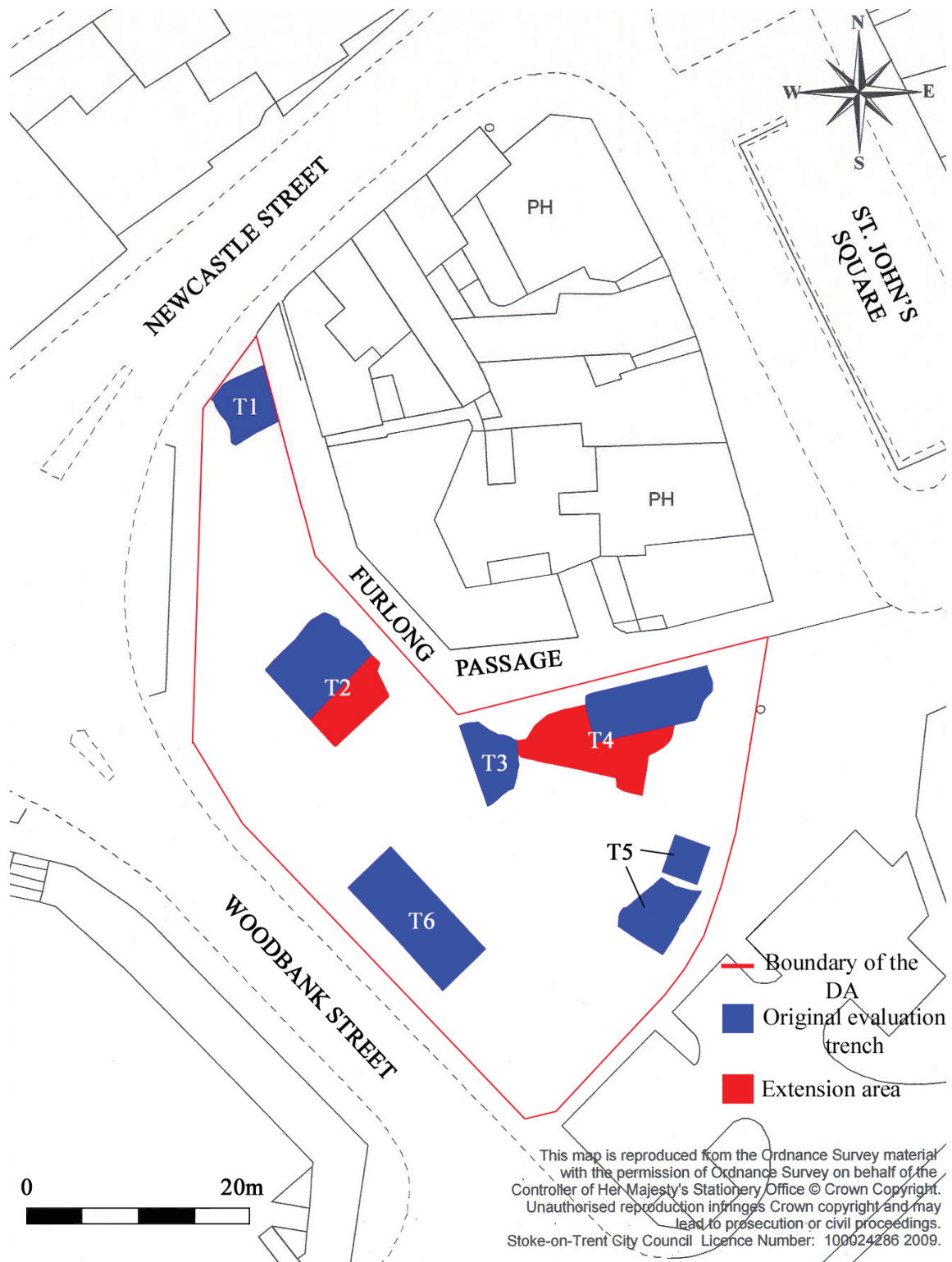


FIG. 2

The development area with trench locations indicated.



A plan of Burslem in 1750 with approximate location of the development area indicated.





FIG. 5

Hargreaves' map of 1832 with approximate location of the development area indicated.

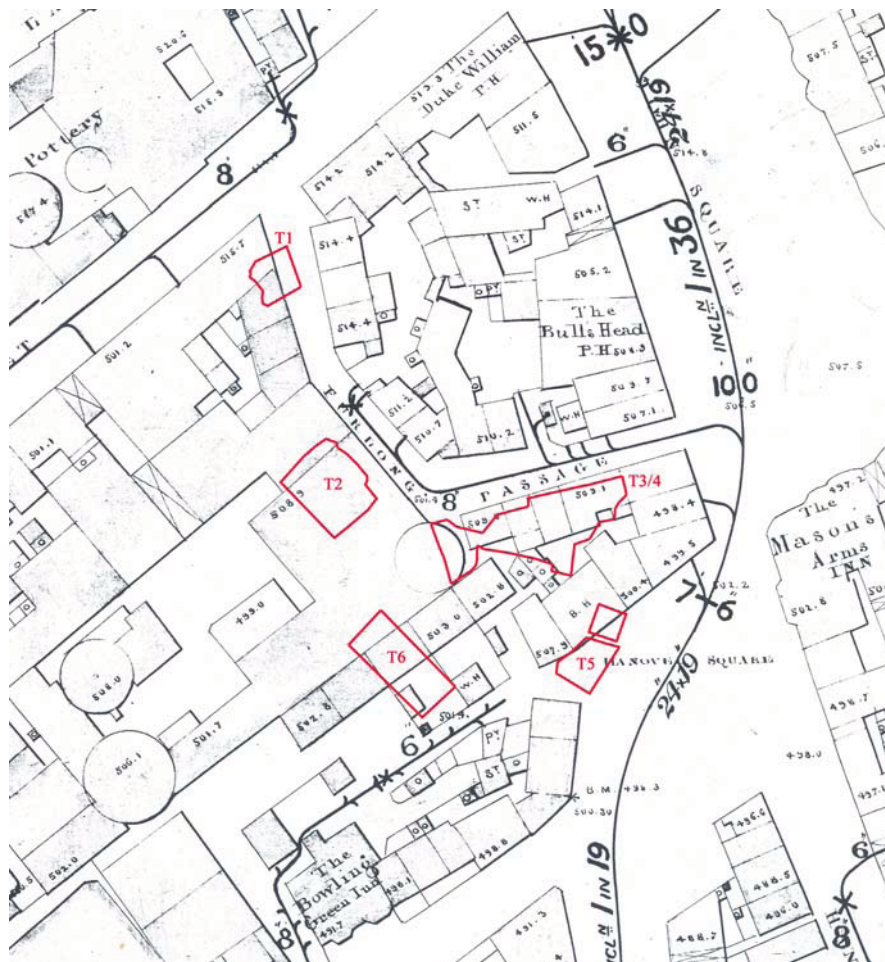


FIG. 6

1851 drainage map of Burslem with trench locations indicated.

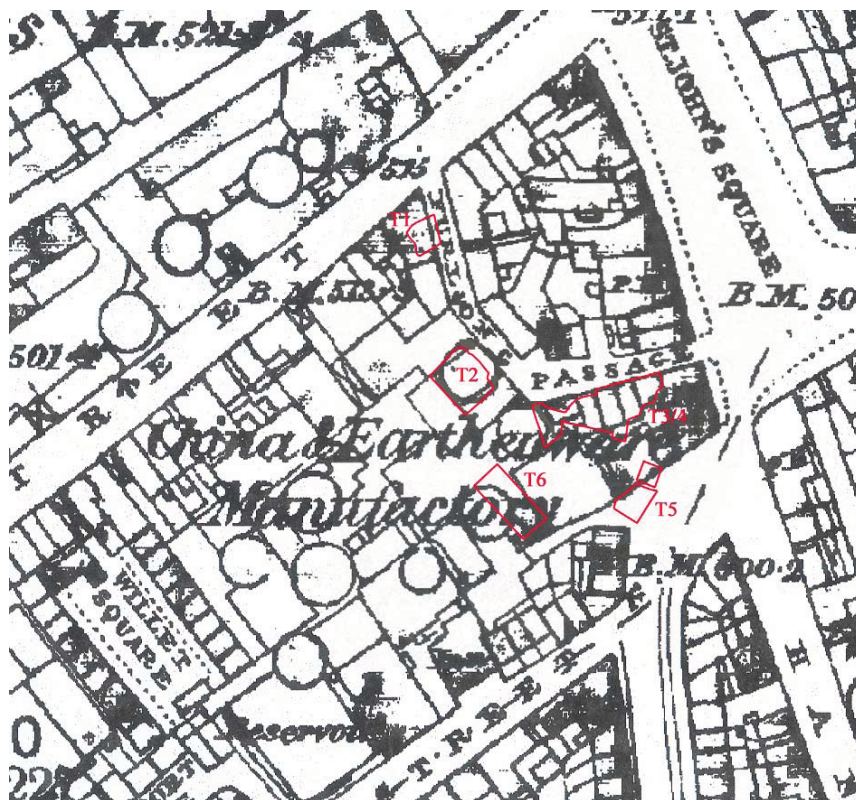


FIG. 7

1878 OS map with trench locations indicated.



FIG. 8

1878 OS map (1:500) with trench locations indicated.



FIG. 9

1900 OS map with trench locations indicated.

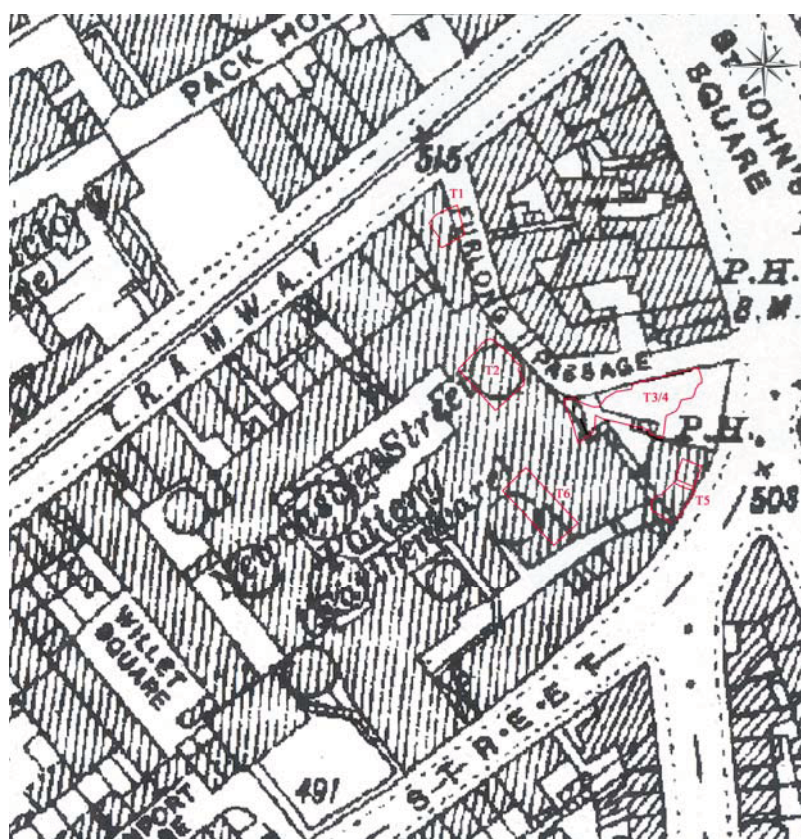


FIG. 10

1924 OS map with trench locations indicated.

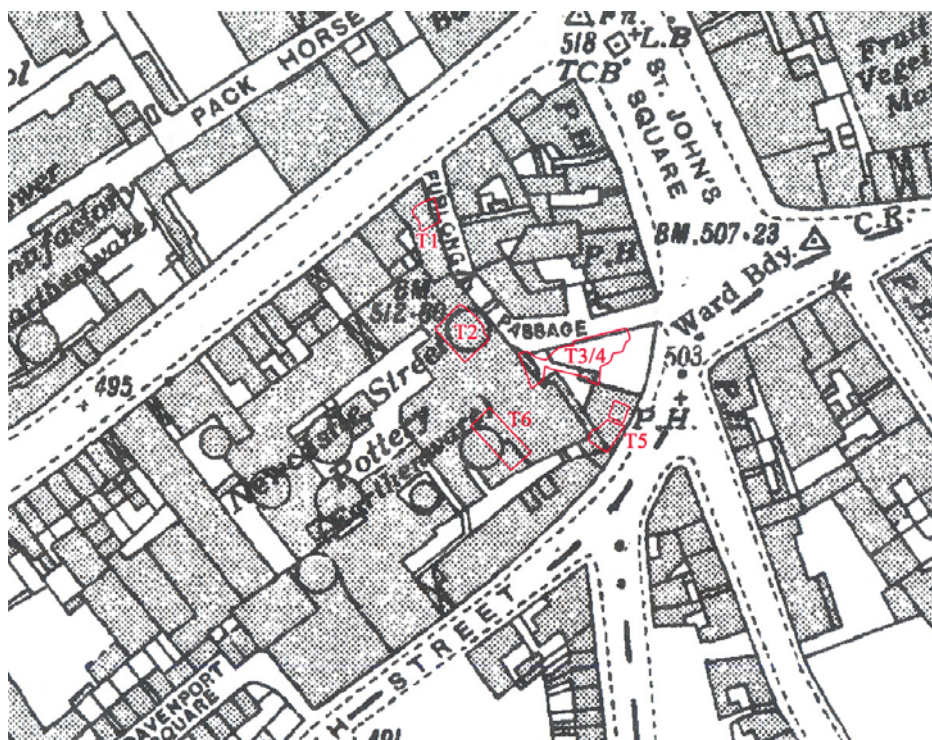


FIG. 11

1937 OS map with trench locations indicated.

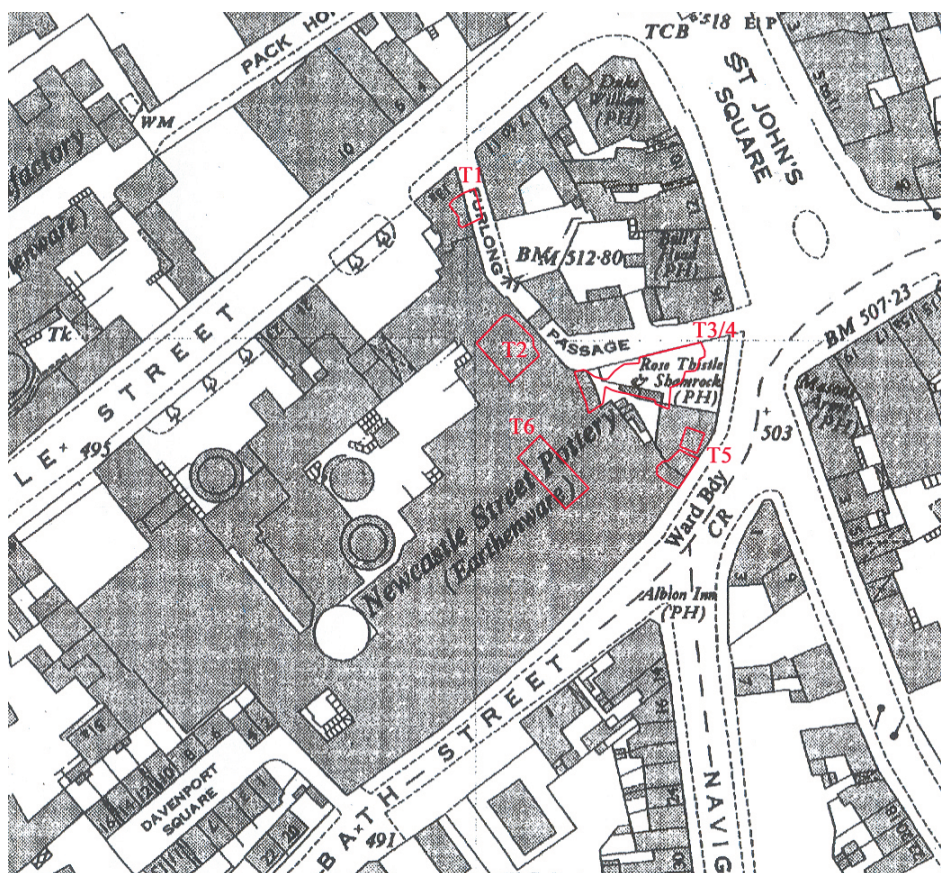


FIG. 12

1950 OS map with trench locations indicated.

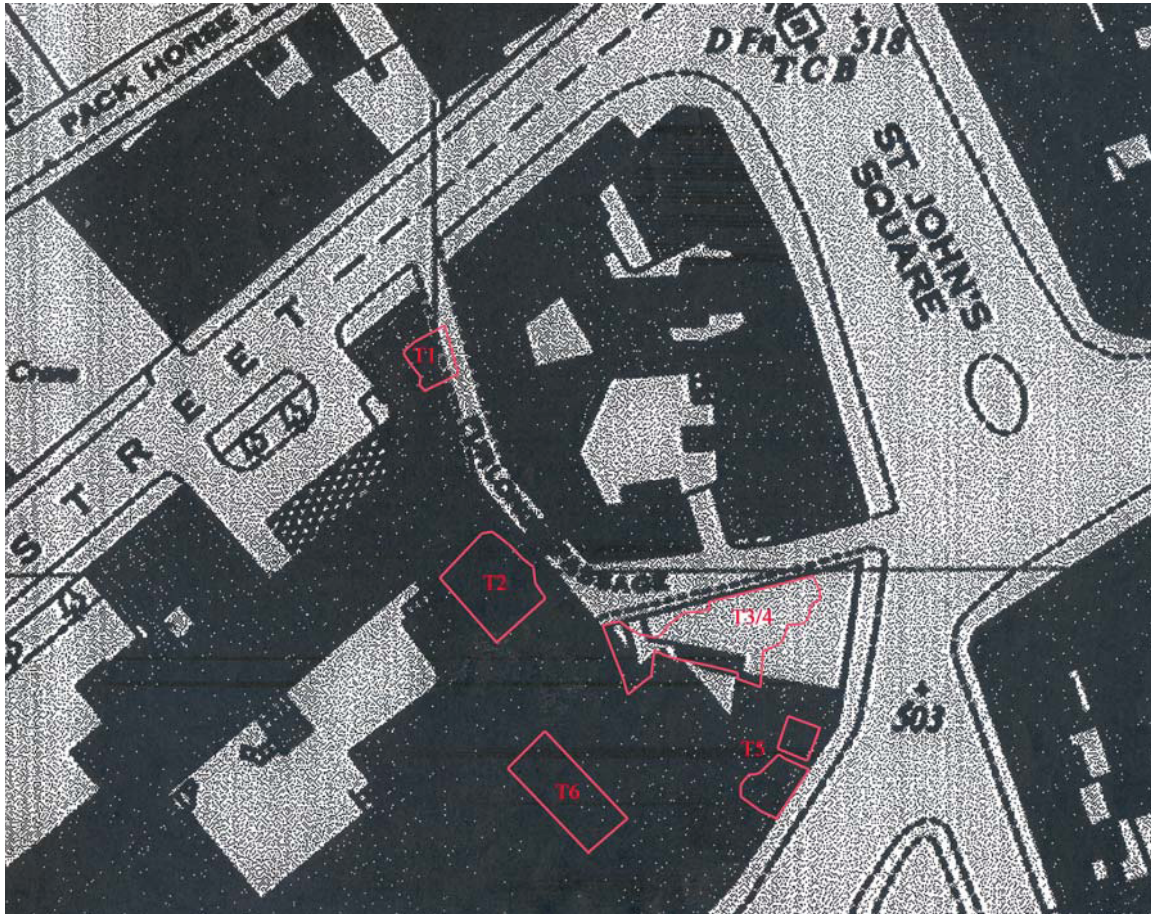


FIG. 13

1970 OS map with trench locations indicated.

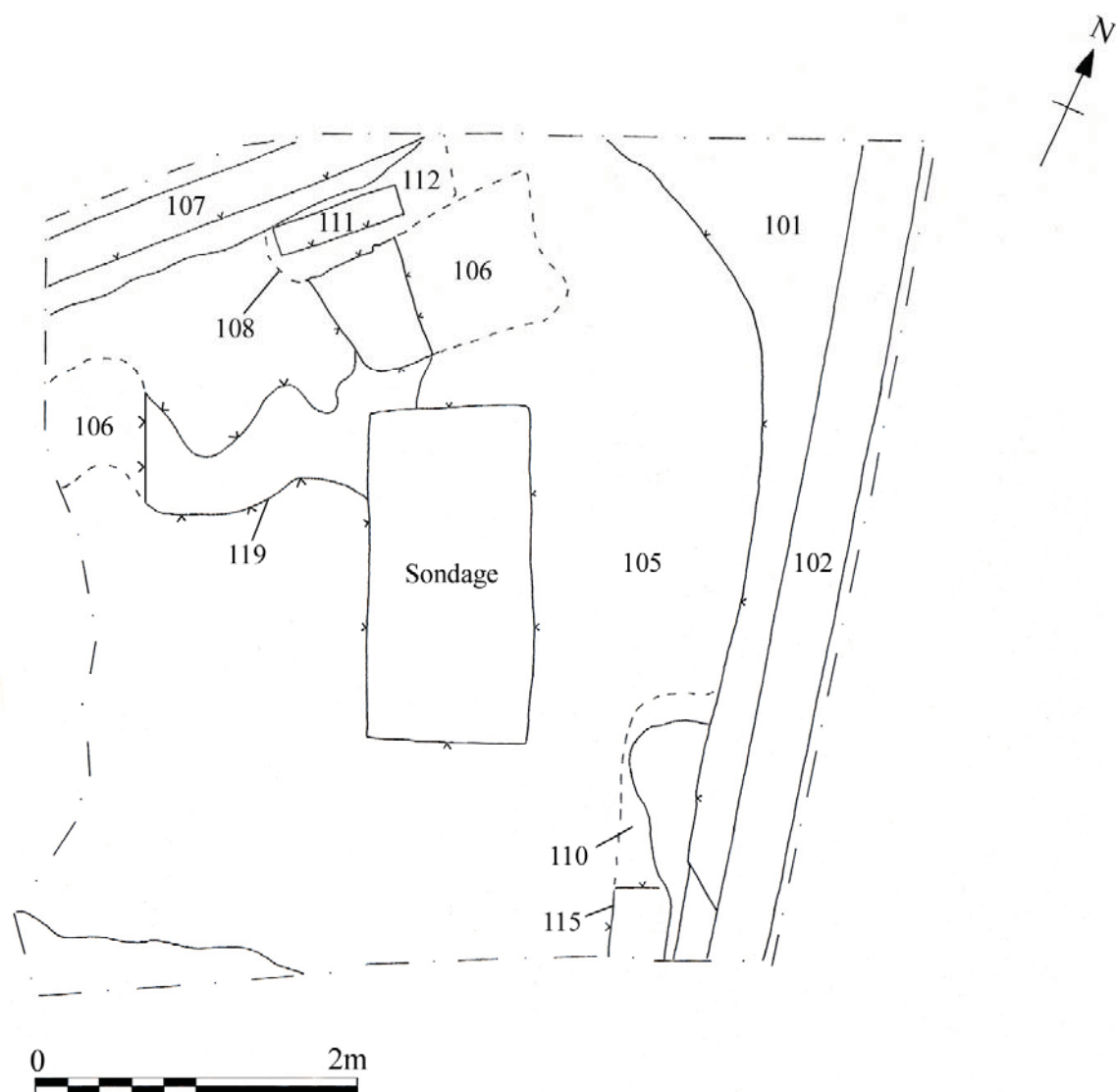


FIG. 14

Post-excavation plan of trench 1.

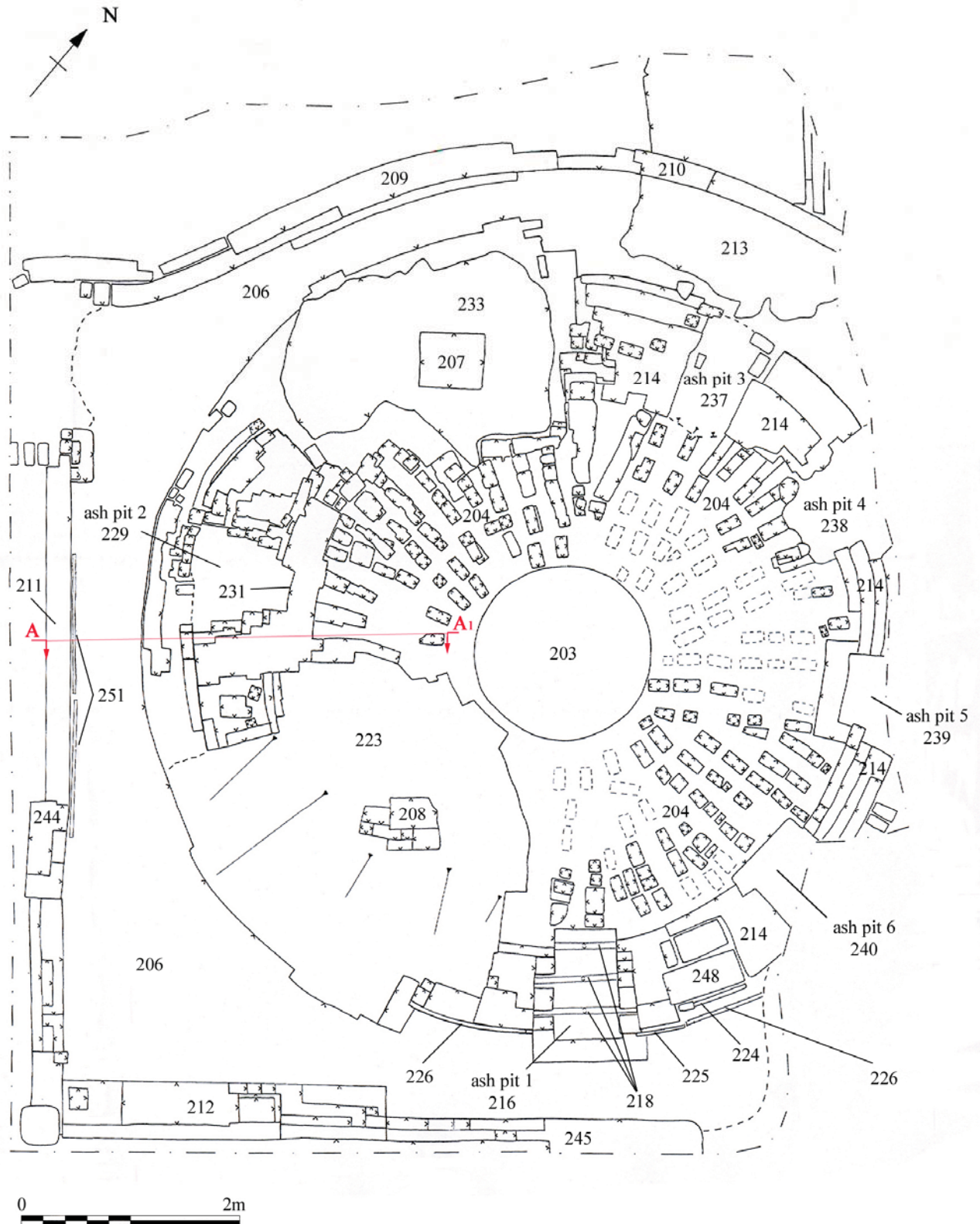


FIG. 15

Post-excavation plan of trench 2.

Section line for Fig. 16 is indicated in red.

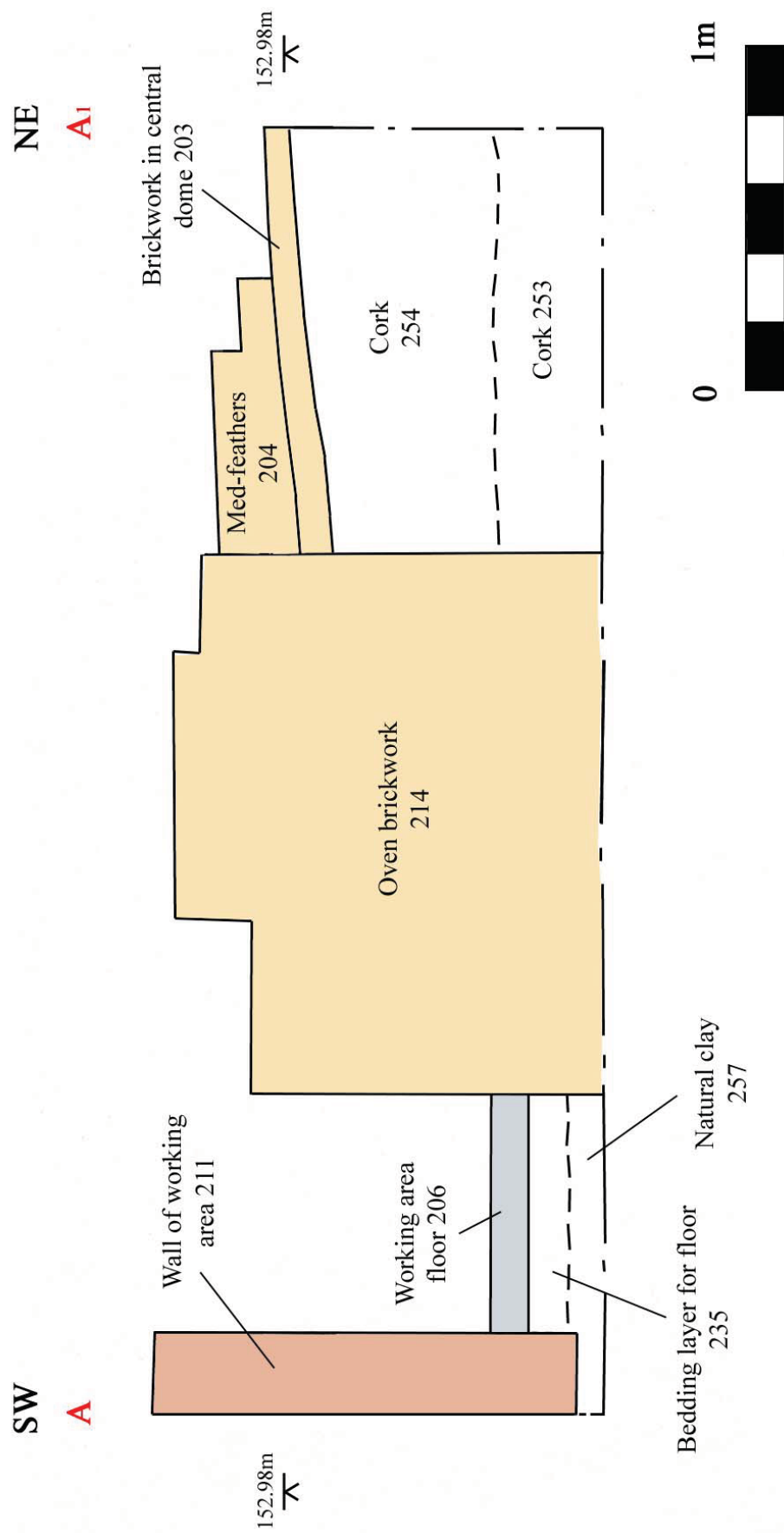


FIG. 16

South-east-facing section through kiln, trench 2.

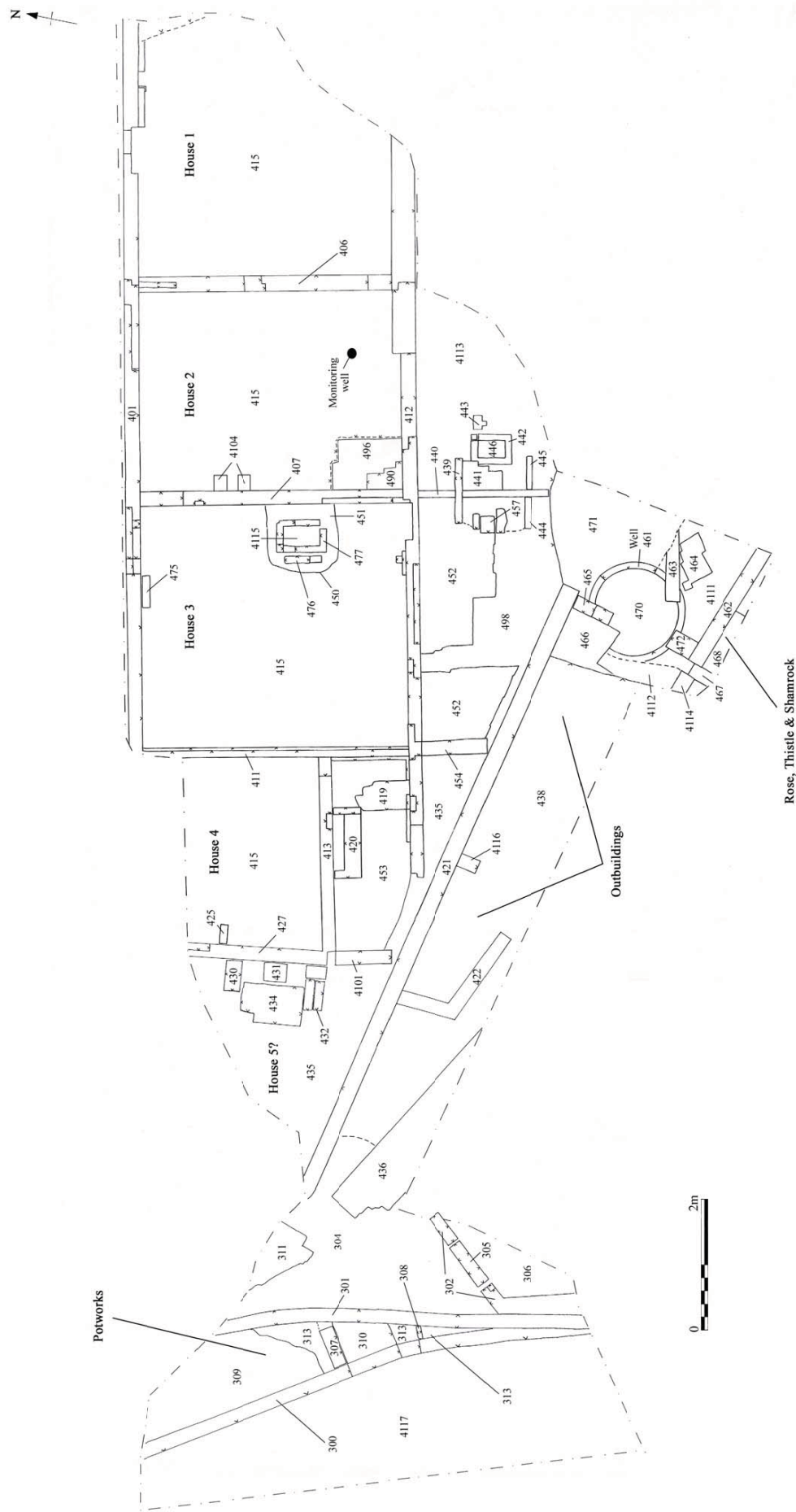


FIG 17

Plan of trenches 3 & 4 prior to removal of floor formation material within houses 1-3.

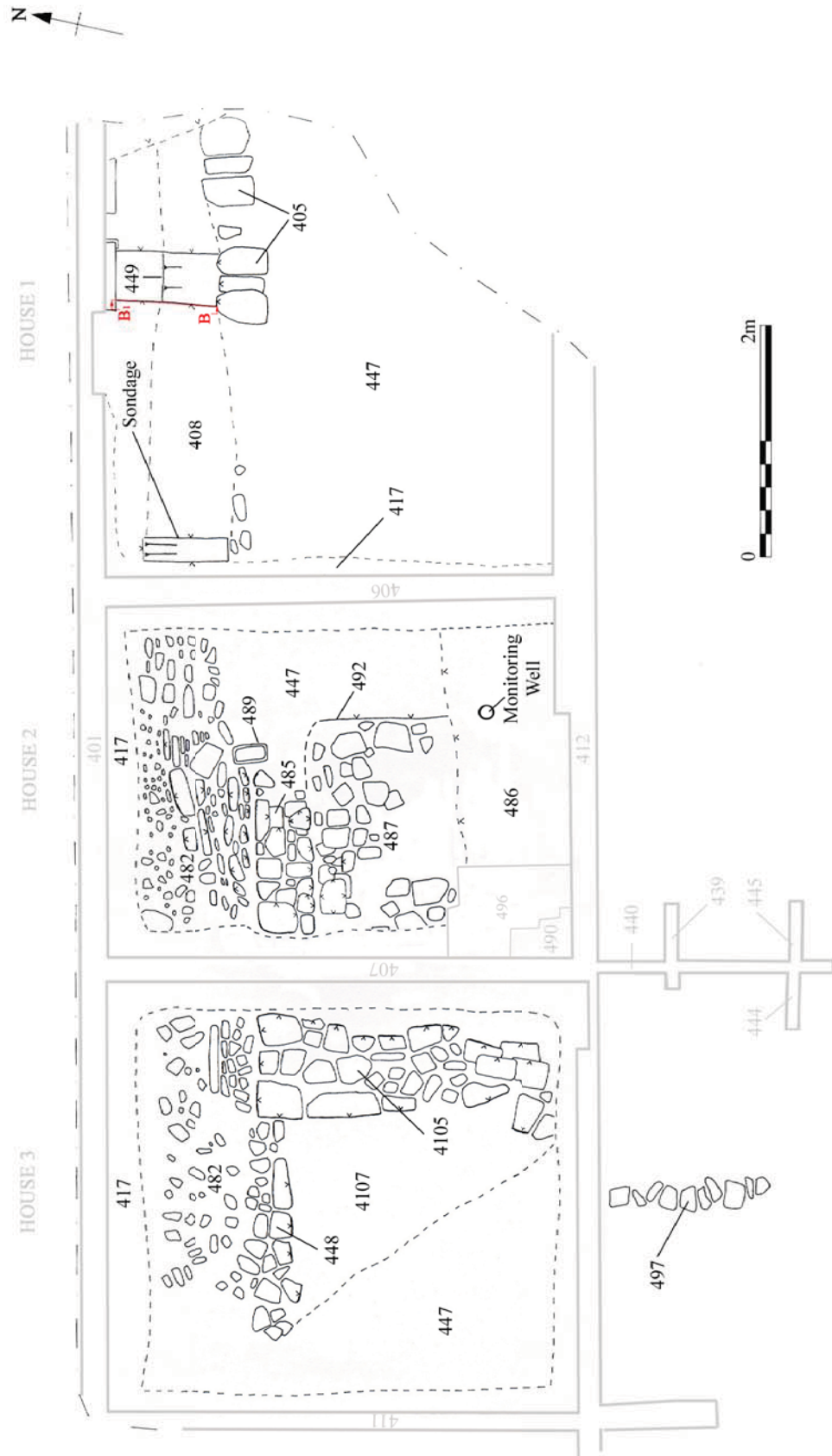


FIG. 18

Post-excavation plan of the sandstone foundations and adjacent features uncovered beneath houses 1–3. Section line for Fig. 19 is indicated in red.

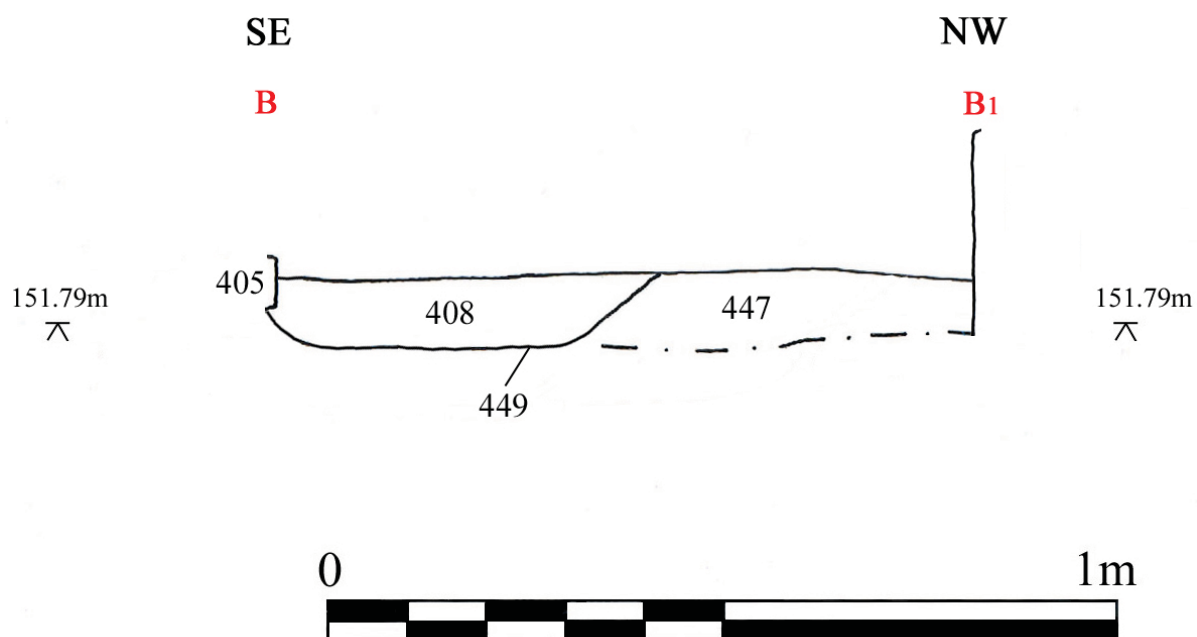


FIG. 19

North-east-facing section of gulley [449], trench 4.

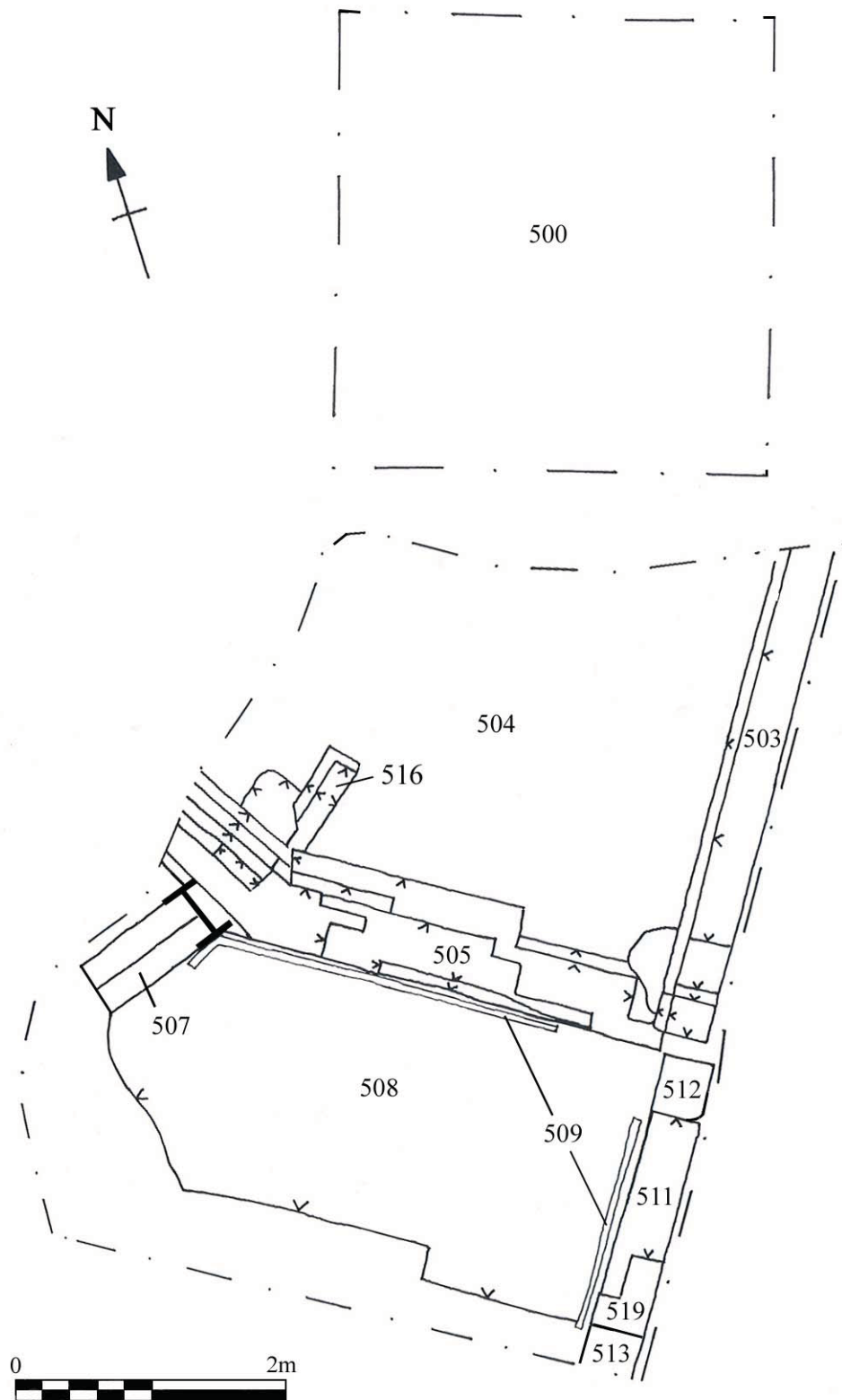


FIG. 20

Post-excavation plan of trench 5.

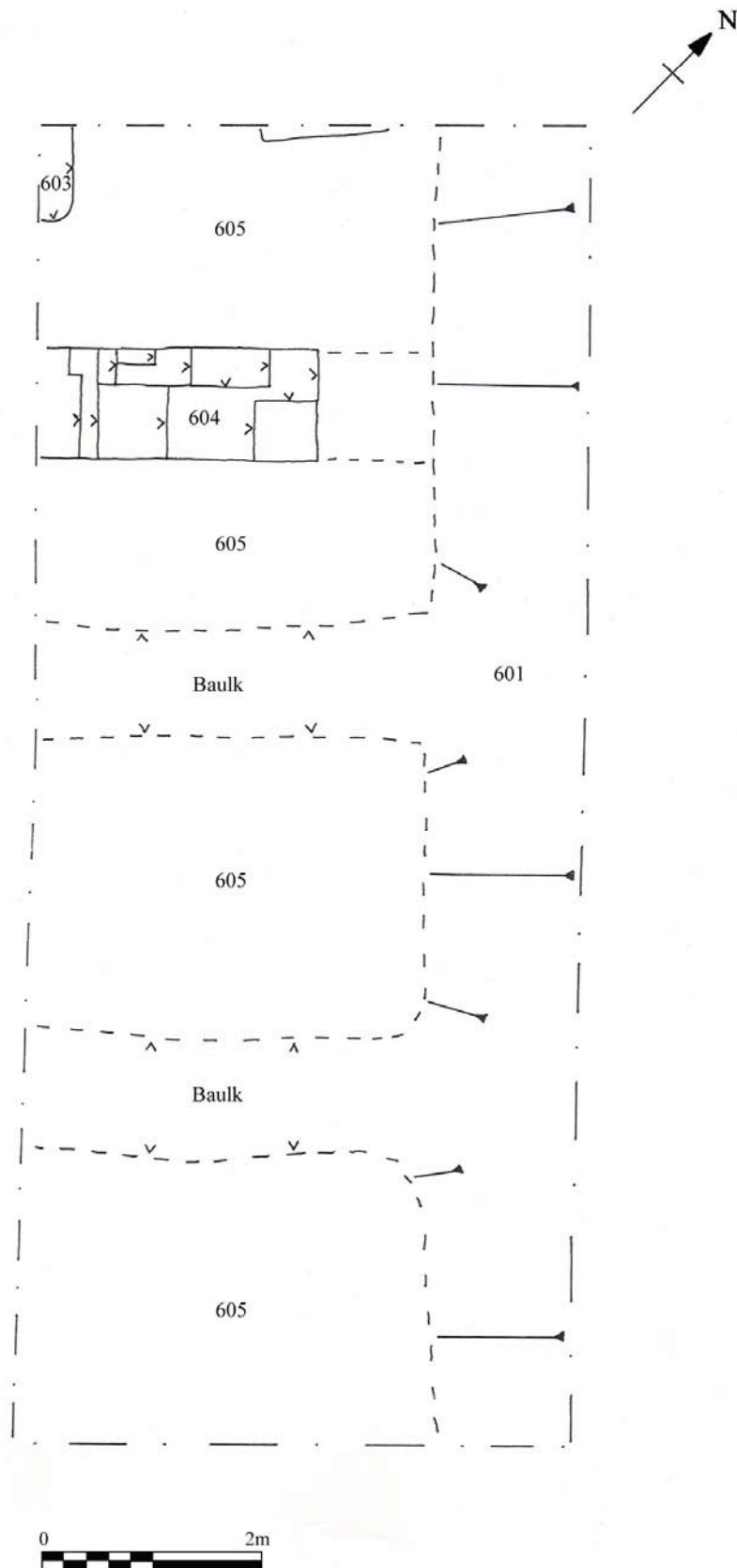


FIG. 21

Post-excavation plan of trench 6.



PLATE 1

Trench 1 after excavation of sondage, looking north west (scales: 1.0m).



PLATE 2

The western half of feature [119] prior to sectioning, looking west (scales: 0.25m, 1.0m).



PLATE 3

The western half of [119] after sectioning, looking west (scale: 1.0m).



PLATE 4

Pottery kiln in trench 2, looking south west (scales: 1.0m, 2.0m). The remains of the med-feathers can be seen above the domed centre of the kiln.



PLATE 5

South-east-facing section through the kiln, looking north (scales: 1.0m, 2.0m).



PLATE 6

The back wall (231) of the firebox in ashpit 2 (229), looking north east (scale: 0.25m).



PLATE 7

Med-feather flues emerging from the back of the firebox in ash pit 2 (229), looking south west (scales: 0.25m, 1.0m).



PLATE 8

Walls (4105) & (448) beneath main room in house 3, trench 4, looking south east (scales: 1.0m, 2.0m).



PLATE 9

Wall (485) and possible floor (487) beneath main room in house 2, trench 4, looking north west (scales: 1.0m, 2.0m).



PLATE 10

Gully [449] beneath main room in house 1 (see Plate 12 for detail), trench 4, looking north west (scales: 1.0m, 2.0m).



PLATE 11

Sandstone feature (497) beneath small room in house 3, trench 4 (scale: 0.50m).



PLATE 12

Gully [449] beneath house 1 in trench 4, looking west (scales: 0.50m, 1.0m).



PLATE 13

House 1 in trench 4, prior to removal of floor formation material (415), looking east (scales: 2.0m).



PLATE 14

Main room in house 2, prior to removal of (415), looking north west (scales: 2.0m).



PLATE 15

The remains of a possible brick floor (490) in the south-western corner of the main room, house 2, looking west. Deposit (495) and brick surface (496) sit below (490) (scale: 0.25m)



PLATE 16

Fireplace and ashpit (442) within the rear room of house 2, trench 4, looking west. A fragment of possible quarry-tiled floor surface (443) can be seen in front of the ashpit (scales: 0.50m, 1.0m).



PLATE 17

The remains of the fireplace (foreground) in the rear room of house 3, trench 4, looking west. The surviving patches of brick floor (452) can be seen beyond the fireplace (scales: 1.0m, 2.0m).

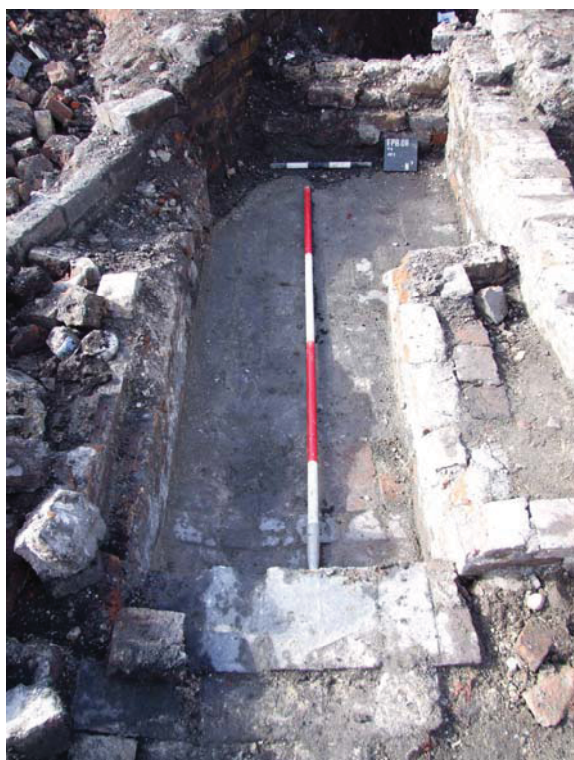


PLATE 18

Sunken pantry in house 4, looking west. Stillage base (420) can be seen on the right of the image (scales: 0.50m, 1.0m).



PLATE 19

Fireplace in house 5, trench 4, looking east (scales: 1.0m, 2.0m).



PLATE 20

Well (461) in trench 4, looking north east. The red and black tiled floor probably relating to the Rose, Thistle & Shamrock public house can be seen in the bottom right-hand corner of the image (scales:1.0m, 2.0m).



PLATE 21

Well (461). Wall (465) and floor (466), located in the bottom right-hand corner of the image, cut/overlie part of the well (scales: 0.25m, 1.0m).



PLATE 22

Well (461) after part of fill (470) was removed (scale: 2.0m).



PLATE 23

Wall (301), trench 3, looking north west. This appeared to relate to the Newcastle Street Pottery. Brick threshold (305) can be seen to the right of the wall (scales: 1.0m, 2.0m).



PLATE 24

The south-western half of trench 5, looking north west. Wall (505) can be seen in the centre of the image, with concrete floor (508) to the left and deposit (504) to the right (scales: 1.0m, 2.0m).



PLATE 25

Blue brick (519) & concrete (511) threshold, looking south east (scales: 1.0m, 2.0m).



PLATE 26

Trench 6, looking north west (scale: 2.0m).



PLATE 27

Embossed, slip-decorated, press-moulded dish from (106).



PLATE 28

Saggar with fused 'bobs' from (106).



PLATE 29

Printed marks of John Maddock & Sons from (313), featuring *a*) 'Embassy' body/form style *b*) 'Florentine' printed design *c*) 'Deva' printed design, distributed by Stonier & Co.



PLATE 30

Press-moulded, lead-glazed earthenware dish from (408). The vessel features embossed decoration in relief, but with no hint of slip.



PLATE 31

Brown salt-glazed stoneware handled bottle from (470).



PLATE 32

Printed 'Patent Ironstone China' mark of the Mason factory, Lane Delph, Fenton, recovered from (470).



PLATE 33

Pearlware saucer with under-glaze blue painted decoration from (470). The vessel was produced by Job and John Jackson of the Churchyard Works, Burslem (see Plate 34).



PLATE 34

Moulded mark of Job & John Jackson featured on the saucer depicted in Plate 33.



PLATE 35

A 10-inch pearlware plate with moulded shell edge from (470).



PLATE 36

‘London-shape’ pearlware bowl from (470), with banded and wormed slip decoration.



PLATE 37

Clay pipes from (470).

Appendix 1a: Ceramic vessel sherds and kiln furniture from contexts (106) & (408).

Ware type	Context	
	106	408
Slipware	9	57
Blackware	68	36
Yellow ware		10
LGE		2
Mottled ware		5
TGE		1
SGSW		1
CEW	7	24
MPW	50	84
MPW/CEW		38
Sagger (EW)	54	20
Sagger (SG)		1
Kiln furniture	4	
Other	1	
Totals	193	279

LGE – Lead-glazed earthenware; TGE – Tin-glazed earthenware; SGSW – Salt-glazed stoneware; CEW – Coarse earthenware; MPW – Midlands Purple ware; EW – Earthenware; SG – Salt glazed

Appendix 1b: Ceramic vessel sherds and kiln furniture from contexts (313) & (470).

Ware type	Context	
	313	470
BSGSW		2
Creamware		3
TP-Pearlware		1
TP-Whiteware	2	3
TP - BFWE	1	
TP-Ironstone		2
TP-Bone China		1
UGP-Pearlware		2
UGP - Whiteware	2	
SE-Pearlware		2
SD-Pearlware		1
Undecorated white earthenware	38	
BFWE	14	11
Ivory body	1	
Kiln furniture	6	
Totals	64	28

BSGSW – brown salt-glazed stoneware; TP – transfer-printed; UGP – under-glaze painted; SE – shell edged; SD – Slip decorated; BFWE – biscuit-fired white earthenware.