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Excavation of a 19th Century Potworks at Silver End Brierley Hill, West Midlands

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1 INTRODUCTION

A programme of archaeological work was undertaken prior to redevelopment of the site of the Lanwill Works, Brierley Hill (centred on NGR SO 909 864, Fig. 1), Dudley, on behalf of Morris Homes (West Midlands) by Birmingham Archaeology. The site consisted of a triangular block of land between Brettell Lane, the Oxford, Worcester and Wolverhampton Railway, and Crescent Avenue (Fig. 2). Following an assessment of the site in 2002 (Litherland and Nichol) further building recording and excavation was undertaken ahead of, and following, demolition of the standing building stock.

2 BACKGROUND TO THE PROJECT

The area affected by the development contained the upstanding remains of a bottle kiln (Plate 1), which had been listed locally, and several other industrial buildings of varied date and function. Brierley Hill is undoubtedly better known for its glass cones (the two best surviving examples being those at the Royal Brierley and the Redhouse Glassworks) rather than for its potworks. However, it was the high quality of the local underlying fire clays that initially attracted French glassmakers here as far back as the 17th century. The district went on to receive great acclaim for its glasswares, and continued to rely upon local potters to produce good quality glass-house pots for the production of their fine drinking glasses amongst other items. Thus, there were several potworks in the surrounding area, perhaps one of the finest examples being the Harris and Pearson works, to the west of the site, further along Brettell Lane. Glass-house pots, were dried rather than fired, and thus no kiln was necessary, however many other products, such as refactory bricks and gas retorts were produced by the same company, and the First Edition Ordnance Survey Map (dated 1884) depicts the arrangement of beehive-kilns within the factory complex. The significance of the kiln at Silver End is that it was neither a glass cone nor a beehive kiln, and appeared to be much more akin to the bottle kilns that gave The Potteries in Staffordshire its characteristic skyline. It was for these reasons that further work was recommended prior to demolition of the structure.

3 HISTORICAL BACKGROUND

Brierley Hill lies on the south-western edge of one of Britain's richest coalfields. The Black Country, as the area became known, stretched from Wednesfield, in the north, to Halesowen, in the south. This coalfield, with its thinner seams of fire clay, iron and limestone both stimulated and sustained the industrial development of the district over several generations. The high quality of the underlying fire clays attracted glassmakers from the 17th century onwards resulting in the area becoming a world leader in glassware production. Originally there were no natural waterways that could be used to link the valuable coal and mineral deposits to the surrounding industrial areas. However, the cutting of a new canal (authorised in 1776) linked Brierley Hill with the Staffordshire-Worcester canal at Stourton and opened up these important reserves (Black Country Handbook 1956-7, 20). This led to a population explosion in the early 1800s, when the populace grew from six thousand inhabitants in 1801, to fifteen thousand in 1834 (Staffordshire County Handbook, 102).

Detailed documentary and cartographic research revealed that the site had been occupied from at least the 1800s onwards, with early occupation being concentrated along the frontage of Brettell Lane. More intensive redevelopment of the site took place between Fowler's second survey of the area in 1840 and the First Edition Ordnance Survey of 1884. This redevelopment included the establishment of a pottery on the site, as well as the laying out of speculative housing and the construction of a Primitive Methodist Chapel in 1856 (SMR 5095).

3.1 The Historical Development of the Bottle Kiln

The rise in popularity of tea and coffee drinking, and the increase in imports of fine tablewares and porcelain from China into Europe fuelled a home grown desire to imitate and profit from this latest fashion. This provided the catalyst for a revolution in kiln design and development as ceramicists strove to reach the necessary temperature needed to create these wares (1300ºC). By *c*.1800 kiln design and construction had improved dramatically. With the development of better refractories, improved circulation of heat and the use of coal rather than coke, much higher temperatures could be achieved (Rhodes 1968, 40). The construction of a large central chimney meant that a stronger draught was created, producing higher temperatures and making maximum use of the heat that could be produced from the coal (*ibid*. 42). This new updraught kiln developed into the bottle-shaped structures that we are familiar with today, and which once both characterised and dominated The Potteries' skyline. In early bottle kilns it was necessary to have thick walls as they had to bear the load of both the upper chamber of the kiln as well as the chimney. The introduction of the hovel, which was constructed around the kiln, meant that the chimney was supported separately from the kiln so there was less structural stress. This design was consequently cheaper to construct (*ibid*. 43). Further developments in kiln technology eventually lead to the invention of the down draught kiln that had a separate chimney that stood apart from the main kiln structure (*ibid*. 49), this type of kiln could reach even higher temperatures during its firing.

4 PROJECT AIMS

The overall aim of the project was to fully preserve the bottle kiln *by record* prior to its demolition. As well as identifying any surviving below-ground remains of the second (and later) kiln identified in the cartographic sources.

5 EXCAVATION AND RECORDING METHODOLOGY

The removal of overburden was undertaken by 360º machine, using a toothless ditching bucket, under direct archaeological supervision. The site was then cleaned by hand and a base plan produced. Sampling by hand excavation comprised not less than 50% of discrete features. All finds were kept from discrete features, and a dumped spread of pottery was sampled (Rátkai below).

Recording was by means of pre-printed pro-forma for contexts and features, supplemented by plans (at 1:20, 1:50 and 1:100), sections (at 1:20 and 1:50), monochrome and colour print, and colour slide photography. Contexts were given individual numbers from a continuous sequence beginning at 1000, and negative and positive features, identifiable by the prefix 'F', had a sequence commencing at 100. It is intended to deposit the archive with Dudley Planning Office.

6 THE POTWORKS

The Potworks is first depicted in the mid-Victorian period on the First Edition Ordnance Survey Map of 1884, during which time it appears to have exploited a local clay pit immediately to the east. The First Edition Ordnance Survey 1:500 Series Map of 1889 (Fig. 3) shows more clearly the range of buildings associated with the potworks, although the functions of individual buildings are not annotated. The hovel, marked *Kiln,* was primary to the development of the potworks and formed the core of the complex. It appears to have originally been built into a larger rectangular structure, the western part of which was demolished when the Lanwill Works was built in the late 1930s.

The Potworks was laid out around an open yard area, the range of structures must have included a throwing house, drying house, offices, packing and storage areas for the finished goods, or multiples thereof. What is also apparent from the map is that the whole complex is surrounded by housing, reflecting the hierarchy within small-scale manufacturies of this period. Small, boxy terraces for the workers, and larger terraced and semi-detached houses for the supervisors, and clerks. However, it remains unclear as to whether this housing was associated with the potworks, or possibly the large brickworks to the south. This cheek by jowl mix of works and housing (some speculative) as well as the situation of a large Primitive Methodist Chapel in their midst is characteristic of both the Black Country, and The Potteries of Stoke. On closer inspection of the standing building stock on the site it has been possible to date more closely the establishment and development of the potworks over a period of time. The earliest buildings appear to date from the 1840s, with later additions as the pottery expanded.

6.1 The Hovel (Locally Listed, SMR 2736, Fig. 4, Structure A)

The lower section of the conical chimney of the hovel survived to a height of *c*.3m (Plate 2) and was set upon a 2m high square base that measured 10m by 10m. It was built from traditionally made red brick (of 9" x 4¼" x 2½") and was bonded with lime mortar. The base wall was 1½ bricks thick, and where the circular cone met the square base, the brickwork was carried upon cast-iron beams with a course of header bricks laid on edge above. Behind the

curved face was a further section of small dome in each corner of the structure that was vaulted out from the outer wall (Figs. 5 and 6). Much of the square base had been altered or destroyed by later inserted openings, it also shared a party wall with Structure B (see below and Plate 3). Excavation revealed the fragmentary remains of the brick floor of the hovel (F116) which was a mixture of red and firebricks, and was originally three courses deep. It is probable that the bricks were robbed out for re-use when the oven fell into disuse and was removed. The foundations of the northern wall of the hovel (F117) were constructed from large, flat firebricks.

6.2 The Oven

The base of the oven (F100, Plate 4) was defined by a ring-shaped foundation cut that measured approximately 6.8m in diameter, 2.4m wide and 0.5m deep. It had a flat base, a central pedestal that had a stepped profile, and a wedge of natural subsoil (denoting the entranceway) had been left *in-situ* (Fig. 7). It had been deliberately backfilled using pre-fired material containing quantities of charcoal, sand, broken and misfired pottery, and fragments of firebrick (1003/1004). In his T*reatise on Earthenware Manufacture* in 1901, Ernest Sandyman referred to this material as the 'cork' (Jon Goodwin pers. comm.). This was a mixture of materials that were pre-fired (and therefore moisture free) that would not expand or contract when repeatedly fired, and would therefore not undermine the stability of the oven superstructure. The layer of cork was laid to form the base and correct pitch of the flue system for the oven, with the brick superstructure being constructed on top of it (*ibid.*). Although there was no surviving evidence for any part of the oven superstructure it is possible to say, from scorch marks within the cork, that there were eight ash pits, denoted by the 'lobes' around the periphery of 1004 (Plate 3), and therefore eight fireboxes. The depth and intensity of scorching of the cork and underlying natural subsoil (1001) also suggests that the fire boxes and grates were relatively low down within the superstructure (David Barker pers. comm.). It may also be evidence for the oven being used intensively over a prolonged period of time, although this is less certain.

6.3 The Offices/Cottage (1840-1889, Fig. 4, Structure B)

A squat, mid to late 19th century, two-storey range fronted onto Silver Street and abutted the eastern side of the bottle kiln. It was extended in the early 20th century (see below) which was denoted by a vertical joint, and also underwent later alteration. The original build was of 9-9½" x 4¼" x 2¾-3" red bricks laid in Flemish stretcher bond, it had a slate saddleback roof with a brick stack to the south gable end. The building originally had a three-bay frontage, and there were doorways to the left and right of centre (Plate 5). The former had a segmental arch, the latter had a semicircular arch which was made of headers laid on edge in alternating red and yellow brick and there was a stone step, although the doorway had been blocked. An original segmental-arched ground-floor window survived to the left (south); it had a stone sill and, contained a frame of chamfered mullions and transoms. Other original fenestration, included a small centre window at ground level, and the upper storey windows appeared to originally have been relatively small and simple in design, fitting snugly under the eaves line of the roof. The other openings to the building all appeared to have been modified, and those of the frontage were either bricked or boarded up. The north-east and south-east corners of the building were both cut off to facilitate cart access and had corbelled-out heads. It also shared a party wall with the hovel to the west (Plate 6).

The ground plan comprised four rooms off a central corridor, and internally, the building was much altered. The left-hand (southern) door gave access to a room, which appeared not to communicate with anywhere else, it had latterly been used as a storage room for company archives (a selection of which was donated to, and is now held by, Dudley Record Office). The

right-hand (northern) doorway had been blocked, but formerly led into a room occupying the northern end of the building, this room was only floored around its perimeter, the centre being taken up by a much later opening within which a flight of steps descended to the cellar. The northern wall had a series of brick piers along it forming alcoves that presumably originally held shelving. Separating these two ground floor rooms, and lit to the east by the small central window, was an east-west aligned passage. On the ground floor there were two fireplaces that imply that the building may have been built as offices or an overseers cottage, possibly for the kiln-firer, or, indeed, both. It was certainly in a commanding position to oversee the comings and goings into and out of the pottery works and was adjacent to the kiln.

The cellar was complex and the original access was from outside the building to the north where there was a brick staircase (Fig. 8, Plate 7). The foot of the stair communicated with a passage that led to a rectangular chamber, in the northwest corner of which was a deep recess. In the southeast corner an opening gave access to an L-shaped passage which was linked to a barrel-vaulted chamber situated to the north (and outside) of the building. The cellar, which was entered from the west, was constructed of brick and was covered with a basket-arch brick vault (Plate 8). Low quarry-tile covered plinths lined the southeast and part of the west wall. These may have been used to store the newly thrown pots, or *green wares*, in cool damp conditions, prior to their being fired. In the floor, at the northern end of the cellar, was a drain, and in the vault, at the southern end, a ceiling lantern or light well.

6.4 The Chimney (Fig. 4, Structure C)

The base of a tapering chimney, approximately 6 feet (2m) square and roughly 5m high (Plate 9) stood to the southwest of the hovel. It was built from traditionally made 9½" x 4½" x 3" red brick, laid roughly in English Garden Wall bond and there was a single 16" (40cms) wide, low (blocked) opening with a segmental-arched head near its base. It has been suggested (David Barker pers. comm.) that it may have been part of a coal fired slip kiln, this may be further evidenced by what appears to be a bath-shaped tank adjacent to the stack that is depicted on the First Edition Ordnance Survey Map. This type of kiln was introduced by Ralph Shaw *c*.1730 replacing sun pans in the refining of raw *found* clay. The purpose of the process was to use heat to draw off excess water from newly mixed wet clay or *slurry*, and, as the name suggests, sun pans were most efficient during hot sunny weather. However, the introduction of the slip kiln meant that processed clay could be dried out in any weather.

6.5 Offices (c. 1850, Fig. 4, Structure E)

This tall narrow office building was constructed in 9" x 4¼" x 3" mass produced red brick laid in Flemish stretcher bond, and covered with a plain tile roof (Plate 10). The building was aligned north-south, with an entrance from the west. It was a two-storey structure with an eaves band continued around the gables to suggest open-base pediments. The east face was blind originally, but was pierced by small lavatory windows in the mid-20th century. There were segmental-arched windows in the southern and northern elevations made of two courses of headers laid on edge with the upper course picked out in blue engineering brick, they had stone sills. At ground level the building had been converted into lavatories during the later 20th-century and no original features survived. At first floor level there was an original fireplace in the east wall with a panelled and foliated iron surround.

The building was probably constructed around the same time as the Methodist Chapel and houses that surrounded the potworks (probably during the 1850s). Although the structure is of a slightly later date than Structures A and B, it was contemporary with the earlier phase of potworks. The fact that the main openings in this building were in the north and south gables

may suggest that it was designed and placed to have some sort of overseeing function within the works. Also, its location, immediately in front of Structure D and at the entrance to the main yard area, may imply that it superseded this earlier building in some sort of management function (Plate 11).

6.6 The Cartshed (c. 1865, Fig. 4, Structure F)

This structure was a mid-late 19th-century building constructed of 9" x 4¼" x 3" machine-made red bricks laid in Flemish stretcher bond with a corrugated sheet roof. It was rectangular in plan, aligned roughly east-west, and was one storey with an unlighted loft. The western gable had an inserted door to the right (south) with a timber lintel. Only a single opening with original features was observed in the west end of the north wall that consisted of a double segmental arch. The interior was divided into two bays by brick piers carrying a timber king-post roof truss with an iron rod in place of the king post, and supporting one pair of purlins. This truss can be compared with Dr Peters Type 5a and denotes a date of after *c.*1865 (Peters 1988, 29-30). Given its position on the eastern periphery of the complex, it was almost certainly used as shelter for the horse(s) and cart(s) that would have been used to transport raw clay from the clay pit, in the adjacent field up to the potworks.

6.7 Contemporary Buildings (Non-Extant)

As well as those structures that survived as standing buildings across the site (described above) there were others for which there is only cartographic evidence. The key period of redevelopment in the area took place between 1840 and 1884, and not only involved the building of the potworks, but also housing and a large Primitive Methodist Chapel in the immediate surrounding area. The Methodist Chapel (SMR 5095) survived until relatively recently (Plate 1), and an inscription on the chapel recorded its date of construction as 1856. The building was two-storey, red brick with engineering brick detail, and cast iron windows with later extensions to the rear. Information relating to the Methodist circuit in Brierley Hill focuses on the chapel on Bank Street, which was and still is the main focus of Methodism in the district. The Primitive Methodist movement was at its height between 1811 and 1843 and had strong links with Staffordshire and The Potteries, as both founder members came from around Stoke and Mow Cop, on the Staffordshire/Cheshire border where the first camp-style revivalist meeting took place. Within a Black Country context, chapels such as this were common in industrial communities.

6.8 The Later Oven

By the time that the Second Edition Ordnance Survey Map had been surveyed in 1903, a second oven had been constructed immediately to the south of the earlier one (Fig. 9), which had probably fallen into disuse. John Jeavons and Sons, Earthenware Manufacturers, were recorded as the occupants in 1904 (Kelly's Directory for Staffordshire, 68). However, the clay pit to the east of the site had been backfilled by this time. The closure of the quarry pit is also attested to by the 1919 Edition of the Ordnance Survey Map that also depicts a short row of semi-detached houses (SMR 5126) that comprehensively cut off access to the pit.

There was only scant evidence of the superstructure of the kiln; a section of the western elevation (F109, Fig. 10). It was built using mass produced bricks, and a fragment of floor surface (F108) survived to the west. This was constructed from traditionally made red and firebricks that may have been recycled from the earlier kiln. The oven (F102, Plate 12, fig. 10) had a diameter of 6.5m, and the construction trench was, once again, ring-shaped in plan, 1.6m wide, with a central raised pedestal of natural subsoil that was 3.3m in diameter. The

trench was 0.4m in depth and contained only fragmentary remains of the brick-built flue system. Bricks had been laid in a concentric fashion, with three stretchers, a header and two stretchers radiating out from the centre. The bricks were mass-produced, unbonded and survived up to three courses high in places. Following the abandonment of the kiln most of the bricks must have been robbed out and the cut had been backfilled with rubble, and other demolition material.

6.9 Offices

Early in the 20th century the office building (Building B, Fig. 4) was extended to the north by a single bay. The ground-floor window had a painted stone lintel with raised key bearing an embossed rosette. Contemporary with this was the insertion or replacement of a ground-floor window at the north end of the original building. Both these lights were replaced in the 1930s with wider fixed-light, small-pane factory type window with a pivoted opening section in the top.

7 POST-POTWORKS

7.1 The Inter-War Years

By 1921 it is possible that the site was no longer functioning as a pottery, as the entry in Kelly's Directory records Thomas Jeavons as an Earthernware Merchant (rather than Manufacturer) occupying the works on Silver Street, Silver End (Kelly's Directory for Staffordshire, 79).

By 1936 Kelly's Directory records Francis Lane, Mechanical Engineer on Silver Street. The Lanwill Works appears for the first time in the cartographic record on the Fourth Edition Ordnance Survey Map dating to 1938. At this time Structure G (Fig. 4) was a long sub-rectangular shed that was built to fit around existing structures and boundaries. Structure H (Fig. 4) was a taller, and slightly later shed with a weighbridge by Avery near the front entrance. Structure I was a smithy with remnants of a fast-and-loose belt system, and Structure J (Fig. 4) was a loading and storage shed. Removal of the floor within Structure J revealed that pottery wasters and kiln material (1002) had been dumped in this area to raise the ground level, this deposit was c. 0.5m thick and the pottery from it is discussed in detail below. All of these later buildings employed steel-frame construction of fairly small I-beams bolted together and light steel roofs. The brick walls were not structural and generally consisted of a mixture of reused and mass produced brick in stretcher bond, reinforced in places with brick pillars. Some walls incorporated earlier remnants of buildings, and the earliest hovel was reused as a machine shop, with concrete machine bases cut through the underlying deposits.

This group of structures is fairly typical of many of the smaller Black Country engineering works constructed in the late 1930s. This is evident both in terms of the choice of materials used, the incorporation of parts of earlier structures, and the continued use of certain traditional features such as segmental arched openings (in Structure G). These structures not only reflect a lack of overall investment in this type of industry at the time, but, also, more positively, certain adaptability to the work environment and an ethos more concerned with the product than with packaging or style.

7.2 Wartime

As early as 1936 the ARP (Air Raid Precautions) committee issued their 6th handbook containing guidelines for *Air Raid Precautions in Factories and Business Premises*. The Air Raid Precautions Act was passed in 1937 (and became law the following January), this compelled local authorities to provide protection from air raids and gas attack, and in 1939 the new Civil Defence Act put in place a statutory duty for companies to provide protection for their employees. Shelter construction was at its peak in Britain during the immediate pre-war period following the Munich crisis, with many more appearing in response to heavy bombing by the Luftwaffe during the Blitz in the autumn and winter of 1940-41. Across the country many factories and foundries had been given over to the production of munitions and other types of war material. The industrial nature of the Midlands meant that there was a concentration of these so-called *arms towns* and this made the region a major target for bombing raids.

The air-raid shelter at the Lanwill Works was constructed to the east of the main machine and workshop complex, in an area of open ground which was latterly occupied by a travelling crane (see below). It was large, and dog-legged in plan, and the entrance was at its eastern end, down concrete steps protected by a ½ brick thick blast wall. The walls of the main shelter were also constructed in brick, and were 1 brick thick. The roof was supported on 6" rolled steel I-beams which were laid every 0.75m (Fig. 11). Corrugated iron sheets had been used as shuttering, and reinforcement, for a poured economy-concrete roof. Unfortunately it remains unknown where the emergency escape hatch was located as there was no evidence for one on the surface, and the roof had to be removed for safety reasons prior to recording taking place.

Internal features surviving *in-situ* included two toilets at the western end of the shelter that had a ventilated double door entrance. At the opposite end of the shelter, nearer to the entrance, was an electrical cabinet and control panel that probably controlled supply to the whole works, all the electric cabling was carried by metal ducting. Immediately adjacent to the toilets was a brick structure of unknown function (Plate 13). Constructed from a mixture of re-used bricks it had a total of four small openings, and may have been part of an elaborate ventilation scheme.

7.3 The Post War Years

Following the war the company was known as Francis and John S. Lane Ltd, specialists in colliery and quarry plant, reflecting the development and mechanisation of the coal industry in the post war years (VCH 1967, 150). Cartographic research revealed that by the time that the 1959 Edition Ordnance Survey Map was surveyed, the works had expanded, with earlier buildings being replaced by industrial units. Structure K (Fig. 4) comprised a larger-sectioned, steel-framed shed extended to the south of Structure I. A large travelling crane traversed an open storage yard (Structure L, Fig. 4). A pair of very light steel-framed structures, one a garage (Structure M, Fig. 4), the other a shed (Structure N, Fig. 4) were also constructed, and a breeze-block store was built onto the southern wall of Structure A (Structure O, Fig. 4).

At some time in the post-war period a hole was cut through the roof in the centre of the air raid shelter (Structure P, Fig. 4), directly below the travelling crane (Structure L), and large I-beams were inserted around the opening to strengthen it. The shelter was also widened through the removal of a section of the wall, and there was a steel framed superstructure (Plate 14). Unfortunately it remains unknown what use the shelter was later put to.

8 THE POTTERY *BY STEPHANIE RÁTKAI* (PLATE 15)

Pottery discussed in this report came from two areas, the fill of Kiln F100 (1003 and 1004) and a large waster dump (1002). As would be expected, wasters and other kiln debris had accumulated in vast quantities, it was therefore not possible to retain all this material and these three deposits were sampled. Over 115 kilos of pottery was recovered from the site, nearly 71 kilos of which came from the waster dump, which represented less than one *per cent* of the debris. The sampling strategy employed was to remove as many rim and form sherds from a section of the dump that had survived particularly well, and then to scan the stripped surface for other forms not represented. The majority of the material had been crushed by the movement of heavy plant, however, the outer edge had remained relatively unscathed, although truncated by earlier activity. There was no discernible stratigraphy within the dump and although a few ashy lenses were visible, overall it was not possible to see alternate layers of rake-out material and pottery waste, seen, for example, at Polesworth (Melton and Scott 1999).

The pottery was sorted into rim, body, base and handle sherds whilst unwashed. A vessel form type series was set up and the rim sherds allocated to form. All the pottery was weighed and the form sherds counted and weighed.

The fabric of the coarsewares varied from orange to salmon pink to red in colour. The clay matrix contained very fine sand <0.01mm, sparse–moderate red and black ferruginous inclusions up to 3mm and sparse yellow-cream inclusions. There were occasional white or cream streaks within the matrix. The fabric was fairly consistent (apart from the final firing colour) throughout the range of forms.

The larger vessels were sometimes slipped beneath the glaze, some appeared to have an iron-rich wash beneath the glaze and sometimes a colourant had been added to the glaze. The smaller forms e.g. the hook and bead rim vessels belonged to the latter group. Most of the glazes were dark brown or black, although there were examples of mid-brown glazes (Plate 15).

Glaze on the interior of the bowls tended to end in a fairly straight or horizontal line but with occasional small runs showing that some of the vessels had been fired in an inverted position. However, a clay bob which adhered to the rim of one of the bowls (Fig. 16:24) indicated that some vessels had been fired rim to rim, that is, one upright and one inverted. Jugs, bottles, narrow-mouthed jars and small jars usually had external glaze dribbles indicating that they had not been fired in an inverted position. However, the glaze flow on some jars indicated that some had been fired upright and some inverted, so that the overall stacking arrangements in the kiln were not clear.

8.1 Vessel forms

Figs. 12 and 13: Sloping sided bowls.
Most of these vessels had diameters in the range of 39-43cm i.e. about 16 inches. There were, however, another set of vessels (Fig. 12:1-2) with smaller diameters, 30-31cm (*c*. 12 inches). The rims were everted, with some slight variation in the modelling but all had a marked internal lip or projection. All the bowls were glazed internally, the glaze ending at roughly the

same point as the internal lip. There was also one example of a more hooked rim form (Fig. 13:12).

There are some similarities with vessels described as milk pans from Polesworth, North. Warwickshire (Melton and Scott 1999 fig 10, 83-84, fig 11, 88), however, the Polesworth forms were from the later waste dumps and post-dated the 1720s. Similar vessels are also shown in a dairy setting in a painting by E.H. Corbould (Sambrook and Brears 1997, 165). However, the function of this vessel type must have been very varied, and, although they were used in dairying, they were also suited to bread and pastry making, the making of blood puddings (in Spain similarly shaped vessels are described as being used to collect pigs' blood), as well as for soaking vegetables in brine before pickling (to retain their crispness), wet-salting and dry-salting (Sambrook and Brears 1997 and Davies 1989 Plate 21) and, in an age before plastics, may have been used as washing bowls etc.

Figs. 14 and 15:13-21 Deep bowls.
These vessels had out-sloping walls, sometimes with a slight curvature in their profile (Fig. 14:13-15). Generally these were large diameter vessels (43-51cm) with an internal glaze, although Fig 14: 13 was somewhat smaller with a rim diameter of 33cm. All the vessels, however, were very much deeper than the sloping-sided bowls. Horizontal handles were present on two vessels (Fig. 15:20-21) and handle scars were present on two more (Fig. 15:18-19). It is possible that this was always a handled form but that the evidence for the handles has not survived on the remaining illustrated vessels.

The vessels are too deep to function as mixing bowls but too wide-mouthed to be classed as jars. Clearly, these large vessels, which were glazed on the interior, could have been used for both wet and dry goods. They were possibly also suitable for dry and wet salting of certain foodstuffs. A similar shaped vessel, which appears to be ceramic, is shown as being used as a washing-up bowl by a kitchen maid (Davies 1989, 72).

Fig. 16:22-25 Small bowls with slightly out-sloping walls.
These vessels have diameters in the range of 22-36cm. The bowls have stubby horizontal rims and were glazed on the interior. The form is reminiscent of deep pie dishes, but the bowls were probably multi-functional.

Fig. 16:26-34 Bead and hook rim bowls and dishes.
Some vessels have out-sloping walls whilst others are more upright. The bead rim bowls were glazed internally and externally, and tended to be thin walled with diameters in the 23-29cm range (although Fig. 16:32 and 34 were slightly smaller). The vessels appear to have been comparatively shallow, although Fig 16:31-32 and 34 may have been from slightly deeper vessels. Similar bead and hook-rim vessels were found at Polesworth (Melton and Scott Fig. 13, 105) where they occurred in the post-1720 waster groups.

The beaded and hook rim forms could have taken a cover secured under the rim by twine. Covers are known to have been made of paper, either waxed or covered in flour and water paste (Davies 1989), cloth, and in some cases bladders (Hartley 1985, Sambrook and Brears 1997) The size and shape of one particular vessel, Fig 16:30, would have made it suitable for cooking sweet or savoury puddings, which were enormously popular in England in the 18th and 19th centuries.

Fig. 16:35-37 Bead rim jars.
This form has a small diameter of 12.5-16cm with internal glaze, the glazing and glaze splashes suggest that these vessels were fired in an inverted position. The rim form would also have been suitable for taking a tied cover. This form was also paralleled at Poleswoth

(Melton and Scott 1999) and ovoid jars with tied covers are shown in a mid 18th century illustration (Sambrook and Brears 1997, 12).

Fig. 17:38 Hook rim jar.
Diameter 20cm. Internal and partial external glaze.

Fig. 17:39 Lid seated jar.
Diameter12.5cm. Internal and partial external glaze.

Fig. 17:40-44 Small jars.
Two forms were identified, both glazed internally and partially externally, the first had a baggy profile with a simple everted rim (Fig. 17:40), and the second had a rounded profile with curving bead rim (Fig. 17:41-42). The forms of the jar rims also look as if they were designed for taking a tied cover. They may have been designed to hold butter, fat or grease or used for potting meat. Two small jar bases have also been illustrated since they were clearly from different forms from the above and may have been ointment pots (Fig. 17:43-44).

Fig. 17:45 Small vessel of unknown function.
The vessel was rounded and hollow and glazed internally and externally. The pot seems too small and too unstable to have had a culinary or kitchen use and may have had a horticultural purpose. At least three of these vessels were found in the waster dump sample.

Fig. 17:46-48 Handled vessels.
Vessels 46-47 were glazed internally and externally. Vessel 48 more closely resembled a slip-coated ware since an unglazed band of red slip could be clearly seen. It is possible that the latter vessel may have been a porringer.

Fig. 17:49 Jug.
Only one jug form was represented, a medium sized vessel with an everted rim. This type of fairly wide-necked jug seems to be a common late post-medieval form and is paralleled at Polesworth (*op cit.* Fig14, 126).

Fig. 17:50-51 Bottle/flagon.
This form consists of a narrow-necked vessel with a rounded, roughly ovoid profile. The rim is very slightly undercut, and two sizes were recovered, one with a rim diameter of *c*. 2cm, the other *c.* 4cm.

Fig. 17:52 Bung-hole jar or cistern.
This must have been a large vessel when complete. It was glazed internally and had red slip splashes on the exterior. Jars such as this are primarily associated with brewing. However, in wet salting, the pickling liquor was often run off and reused and a large bung-hole vessel such as this may therefore have been associated with preserving. It was the only example of the form from the sample collected.

Fig. 18:53-54 Glazed strap handles.

Fig. 18:55-58 Miscellaneous base sherds.

Fig. 18:59-65 Garden Furniture.
Flowerpots were fairly uniform with diameters ranging from 1.5-6 inches (*c*. 4cm–15cm) The smaller diameter pots were by far the most numerous. There were, however, one or two examples of very large plain pots with base diameters of *c.* 7 inches (17.5cm) and 9 inches (22.5cm) and with an estimated height of about 14 inches (35cm) and 18 inches (45cm)

respectively. A smaller number of dishes or trays in which to stand the flowerpots were also recovered (Fig. 18:63-65).

Fig. 18:66 Kiln Furniture.
There were very few examples of the coarse light bodied saggars often seen in the Black Country. However, there were numerous examples of shallow, fine bodied, red-purple shallow cut-away vessels or supports (Fig. 18:66). The exact way in which these were used is not at present known, but the absence of glaze on them (apart from faint traces at the apex of the cuts) is of particular interest.

There were also numerous examples of clay bobs (unfired lumps of clay used to separate the vessels being fired or to separate the saggars). These bobs were often fairly amorphous but a good few were roughly sausage shaped. They were large, being up to 15cm in length and up to 8cm in diameter. Their size suggests that they may have been used to separate saggars, particularly as most of them were unglazed. But the absence of saggars within the material recovered suggests otherwise. There was also evidence to indicate that bobs were used to separate some of the bowls during firing (see Fig. 16:24). A wide-mouthed bowl, recovered from the waster dump, which consisted of the complete lower half of the vessel, contained a number of bobs arranged around the interior wall-base junction, that this had not been their original position during firing was evidenced by the lack of glaze on the bobs. Overall, however, the juxtaposition of the bobs and bowl within the waster heap suggests that the bobs were probably used for separating the wide mouthed bowls as well during firing.

8.2 Discussion of the pottery

The vessel forms were dominated by wide-mouthed bowls, which outnumbered every other type many times over. The deep bowls and bead rim bowls and dishes were also relatively common. Large storage jars (with the exception of the bung-hole jar Fig. 17:52) were not present. Smaller jars, jugs and bottles were not well represented by rim sherds but there were numerous base and lower body sherds that could have come from these forms. At Polesworth in the later phase, pancheon rims outnumbered jar rims by 72:38, in the earlier 33:19. At Floodgate Street, Birmingham (Rátkai 2003) pottery wasters attested to pottery production in the later 18th-early 19th centuries. Here the wasters consisted of garden furniture and large black-glazed jars for the most part. The preponderance of bowls at Silver End may indicate that they were a production mainstay, alternatively they may reflect the greater likelihood of this form misfiring. However, the large number of sausage shaped bobs scattered throughout the waster dump may be a further indication that a large number of bowls really were being produced.

Many of the vessel forms can be paralleled at Polesworth and, to a lesser extent, at sites excavated in the Potteries. Perhaps the most striking aspect of the Silver End glazed wares is their extreme conservatism. At the Verwood Potteries in Dorset, Young (1979) remarks that the 19th century forms are those developed from the previous two centuries. At Silver End most vessel forms can also be paralleled in 18th century assemblages and without cartographic or independent artefactual dating evidence, it would be difficult to ascribe a date to the vessels with any accuracy.

9 DISCUSSION

The earliest documentary evidence for earthenware manufacturing in this area comes from Pigot and Co.'s Directory of 1829. Two manufacturers of stone and black wares are listed for

Brettell Lane; Samuel Edge, and Francis Smith and Sons, however it has not been possible to link either to the site at Silver End. What is clear from the directory, however, is that the potworks at Silver End did not exist in isolation, and that earthenware production appears to have been a burgeoning industry in the district during this period. In White's Directory of 1851 (188) there are four earthenware manufacturers listed on Brettell Lane, undoubtedly pointing to a period of expansion within the industry at this time.

The earliest cartographic evidence suggests an area of mixed employment, with open agricultural ground and coal mining in close proximity. The potworks would come under the general description of a 'country pottery'. These were generally small family run businesses, strongly conservative in tradition, producing a limited range of products. In the 18th and 19th centuries it seems to have been quite common for such potteries to produce both domestic utilitarian wares and horticultural wares, this was the case at Polesworth, Warwickshire, Floodgate Street, Birmingham and again here at Silver End.

There was a ready market for the domestic utilitarian wares in most classes of society. But markets for this range of wares would have been predominantly very local. The proximity of the Silver End potworks to both the canal and, later, the railway may have been turned to its advantage and opened up a much wider market, foremost amongst which could have been Birmingham. However, competition came from other utilitarian wares such as brown salt-glazed stoneware and from other materials, for example, white-enamelled, steel sheet for baking dishes etc that developed in the mid-Victorian period. Competition from enamelled and sheet metal wares in the later 19th century caused a decline in the Verwood Potteries in Dorset and it was only diversification away from traditional products which enabled the Verwood Potteries to have something of a resurgence in the 1890s and 1900s (Young 1979).

The advent of mass production, changes in preserving methods and improved transportation also sounded the death knell for the country potters and few survived into the 20th century. At the beginning of the 20th century there were somewhere in the region of 100 companies still manufacturing earthenware products across England, this had fallen to around one tenth of this figure by the end of WWII. Many of these survivors served rural communities where their products were still used in dairies for example. However, with the introduction of centralised dairies in the post-war period even this market was lost and diversification into horticultural products was common. This decline was even more marked, and happened much earlier, on sites that occupied the urban fringe, as fewer people in towns and cities were involved in home baking and brewing, and there was a greater range of more durable products available to them. It is therefore surely no coincidence that the final firing of the kiln at Silver End contained only flowerpots and drip trays, suggesting that the market for traditional domestic vessels no longer existed in this area.

Perhaps one of the more interesting or intriguing aspects of the pottery produced at Silver End was the use to which it was put. Clearly, we are dealing with very utilitarian vessels but because they are so basic there is very little record of who bought the pottery and how it was used. Where records do survive they are biased in favour of large country houses. In addition a broad functional category such as 'bowl' potentially hides a multitude of uses. However, the extreme conservatism evident in the vessel forms suggests that the vessels fulfilled very basic domestic needs that had altered little from the early 18th century until the end of the 19th century.

What is clear, then, is that the potworks was a part of a hitherto sidelined industry in Brierley Hill, an industry that was relatively extensive in its own right, but which has perhaps been marginalised by our focus on the glass industry in the town. It grew up in much the same way as early potworks in the Potteries, expanding organically, and rather haphazardly given the

constraints of space. Its decline may also be viewed as part of the almost universal demise of small potworks across the country. The result of the rise of ceramic giants such as Spode and Mason, who began building factories, using more mechanised techniques, and which ultimately made all bottle kilns obsolete.

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12 FIGURES AND PLATES

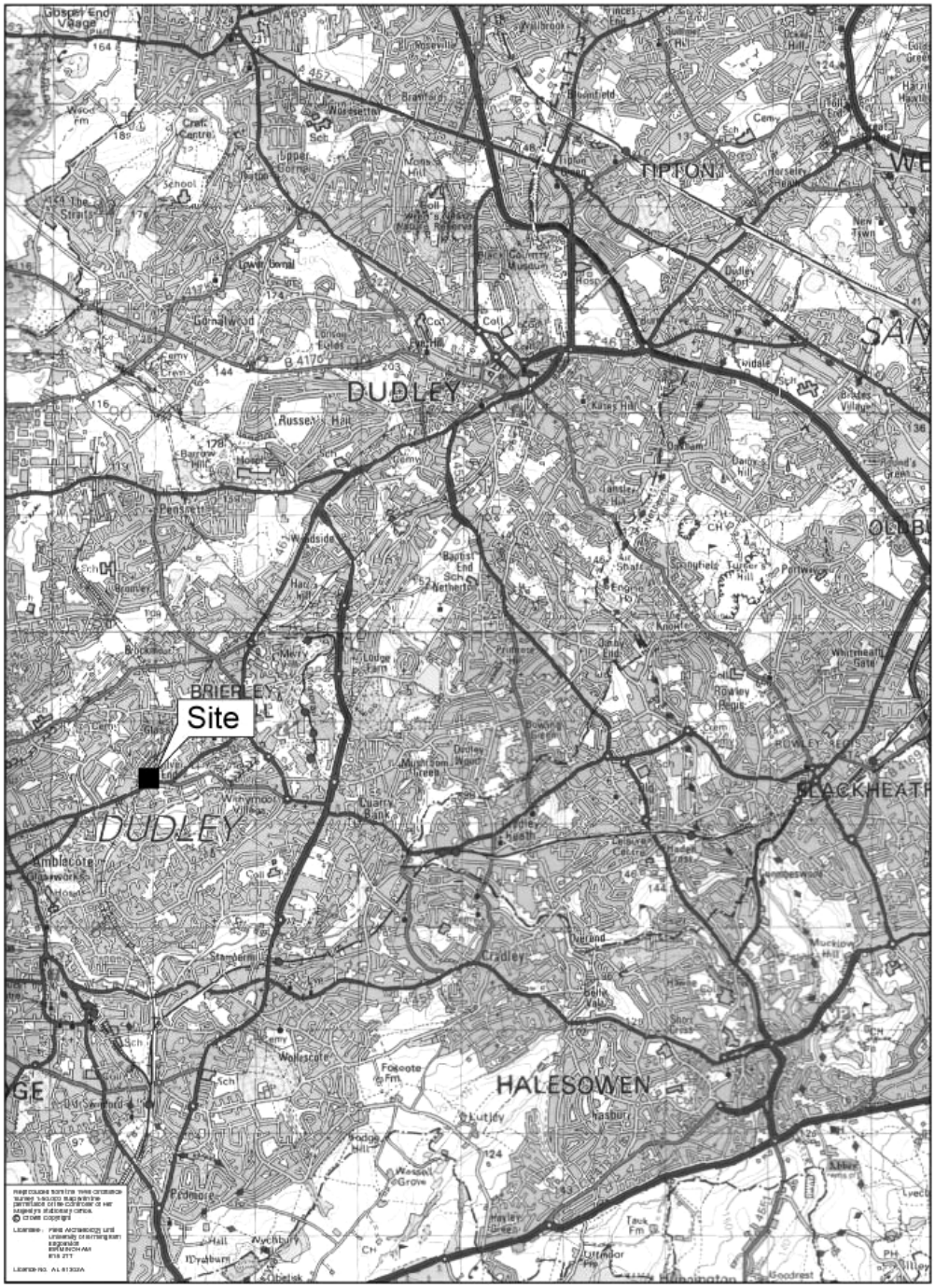

Fig. 1 Site Location Plan

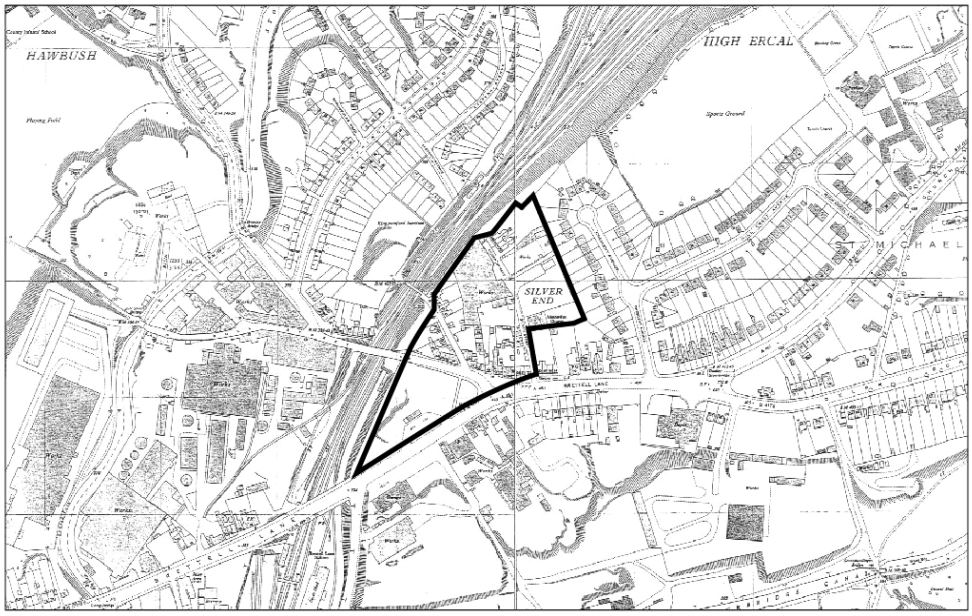

Fig. 2 Plan Outlining the Development Area

Fig. 3 First Edition Ordnance Survey Map 1:500 Series (1889) Overlaid by the Areas of Excavation

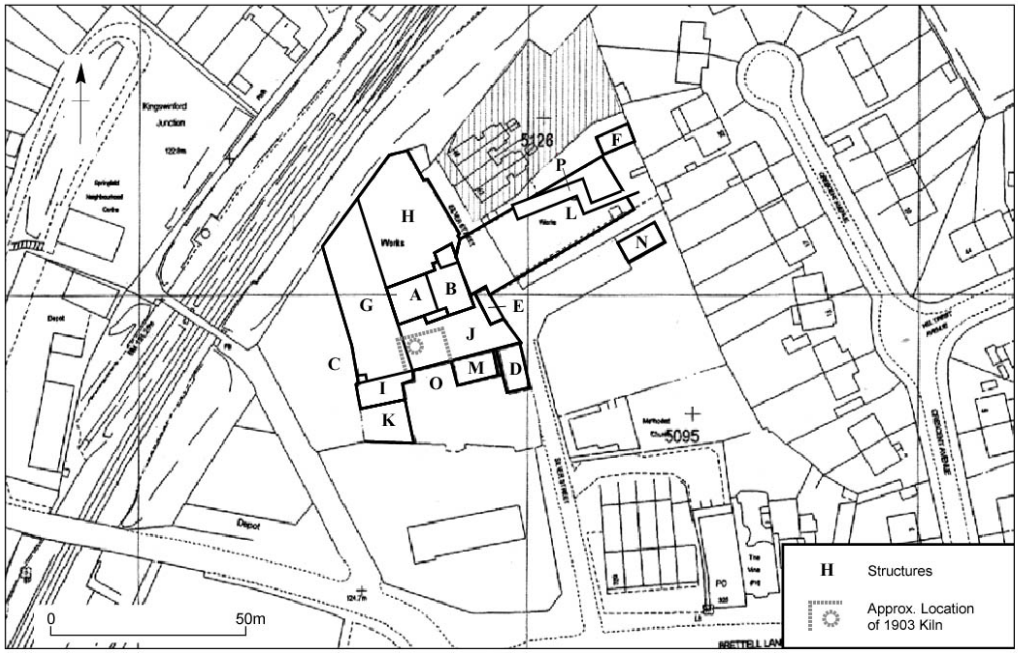

Fig. 4 Structures within the Target Area

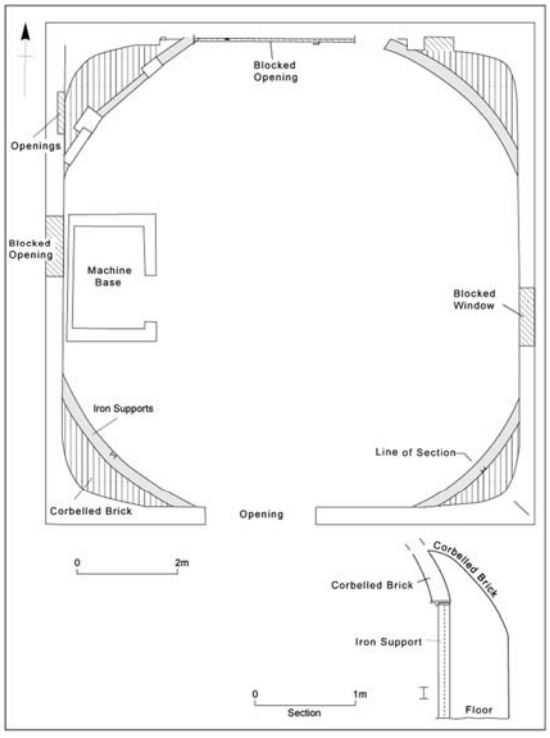

Fig. 5 Ground Plan of the Hovel with Detail of the Iron Supports

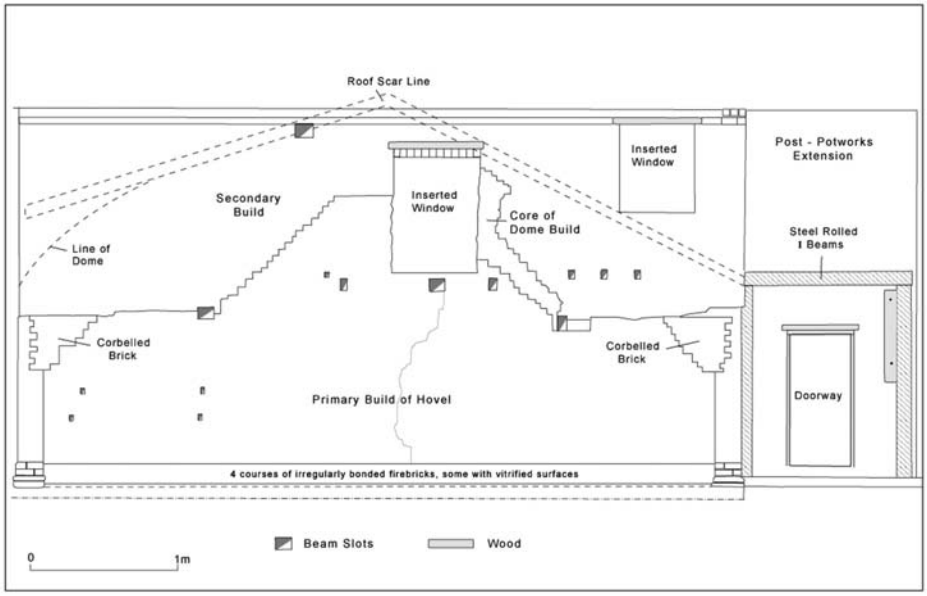

Fig. 6 Eastern Internal Elevation of the Hovel

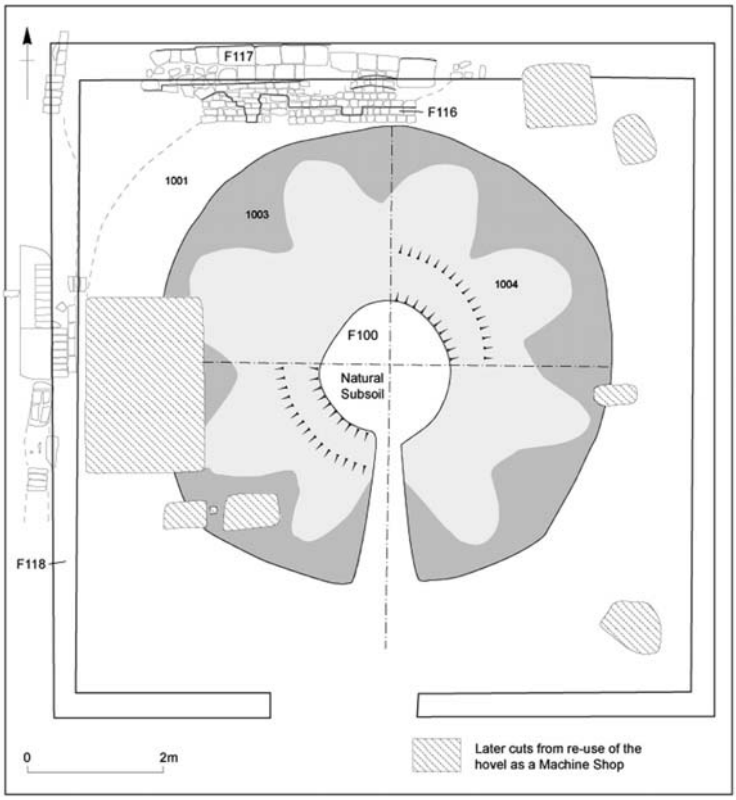

Fig. 7 Composite Plan of the Foundations of the Oven

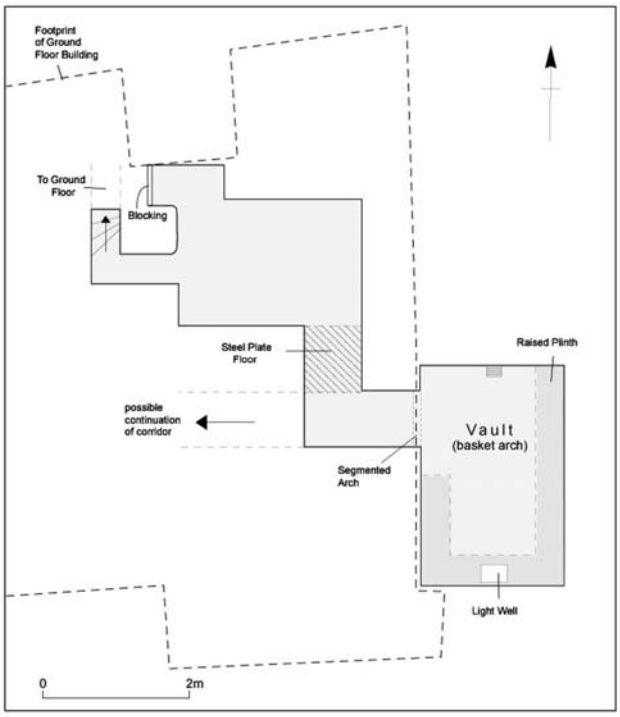

Fig. 8 Ground Plan for the Cellars below Structure B

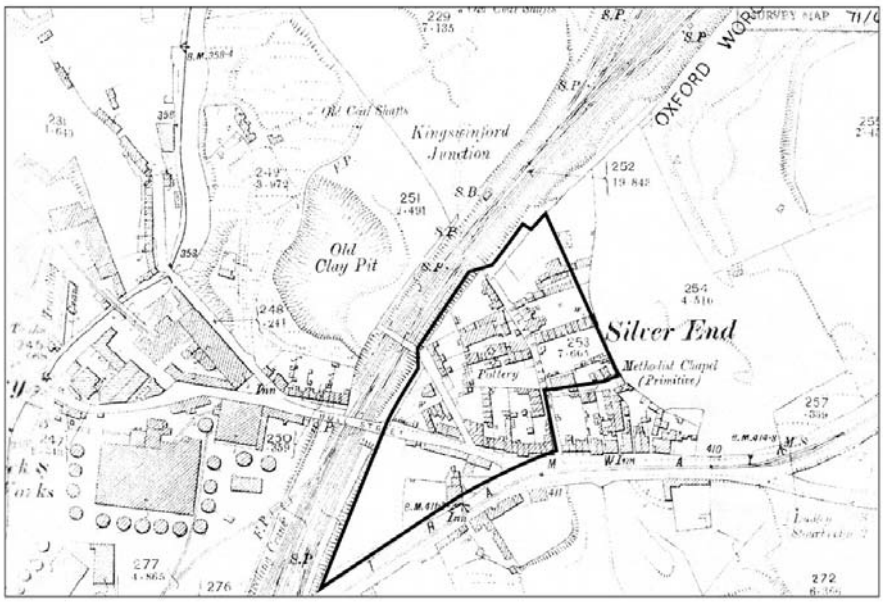

Fig. 9 1903 Ordnance Survey Map

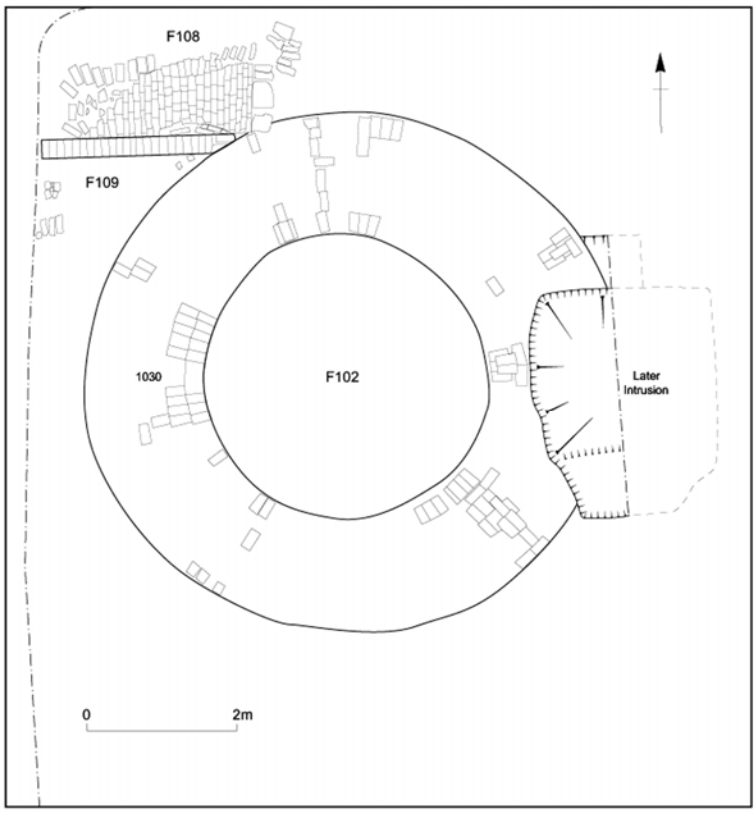

Fig. 10 The kiln and oven

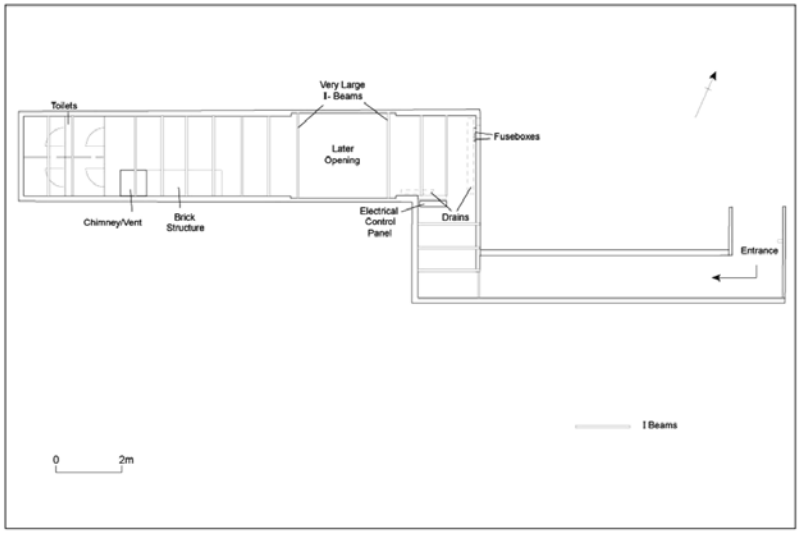

Fig. 11 The air-raid shelter at the Lanwill Works

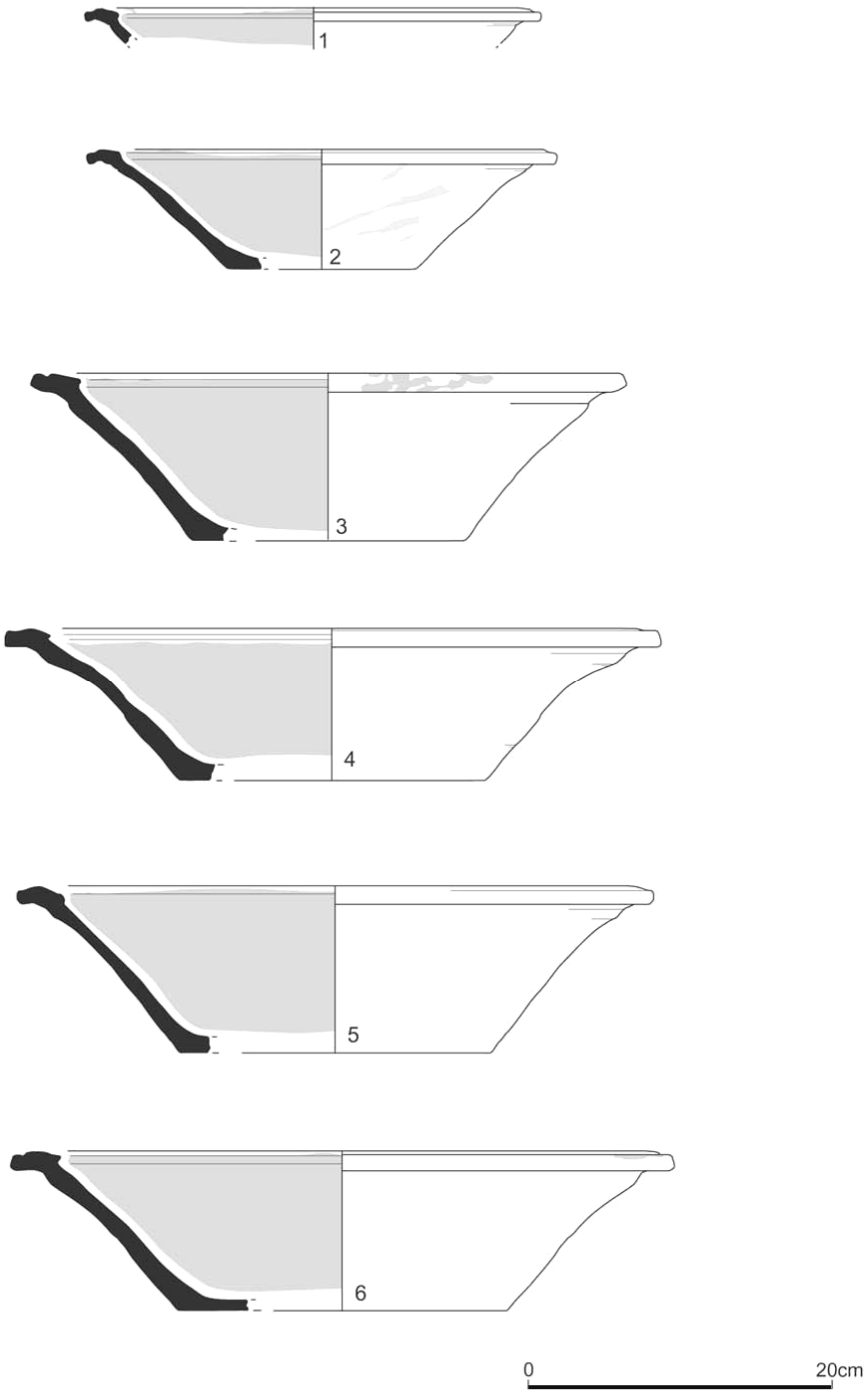

Fig. 12 Sloping sided bowls

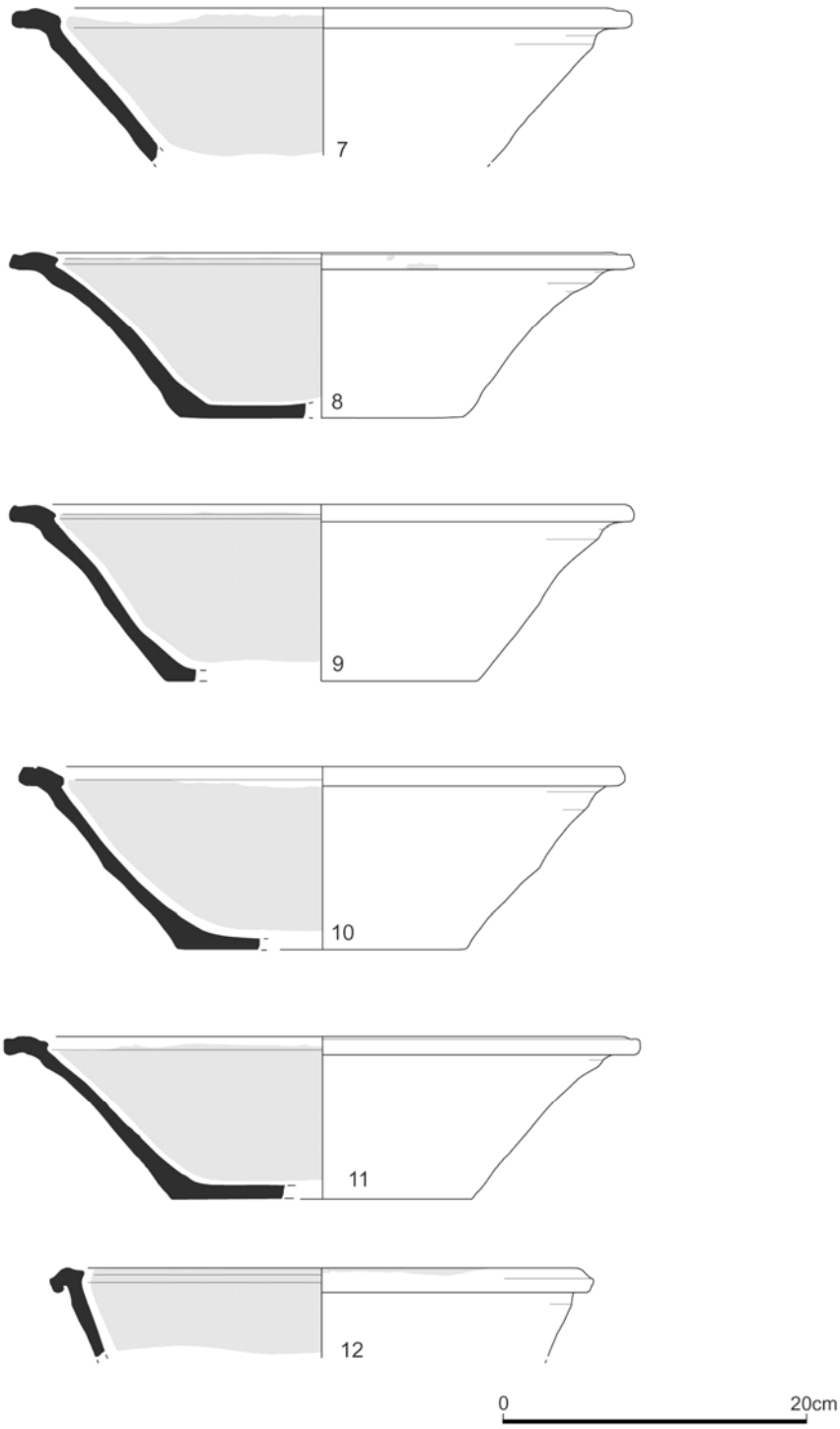

Fig. 13 Sloping sided bowls

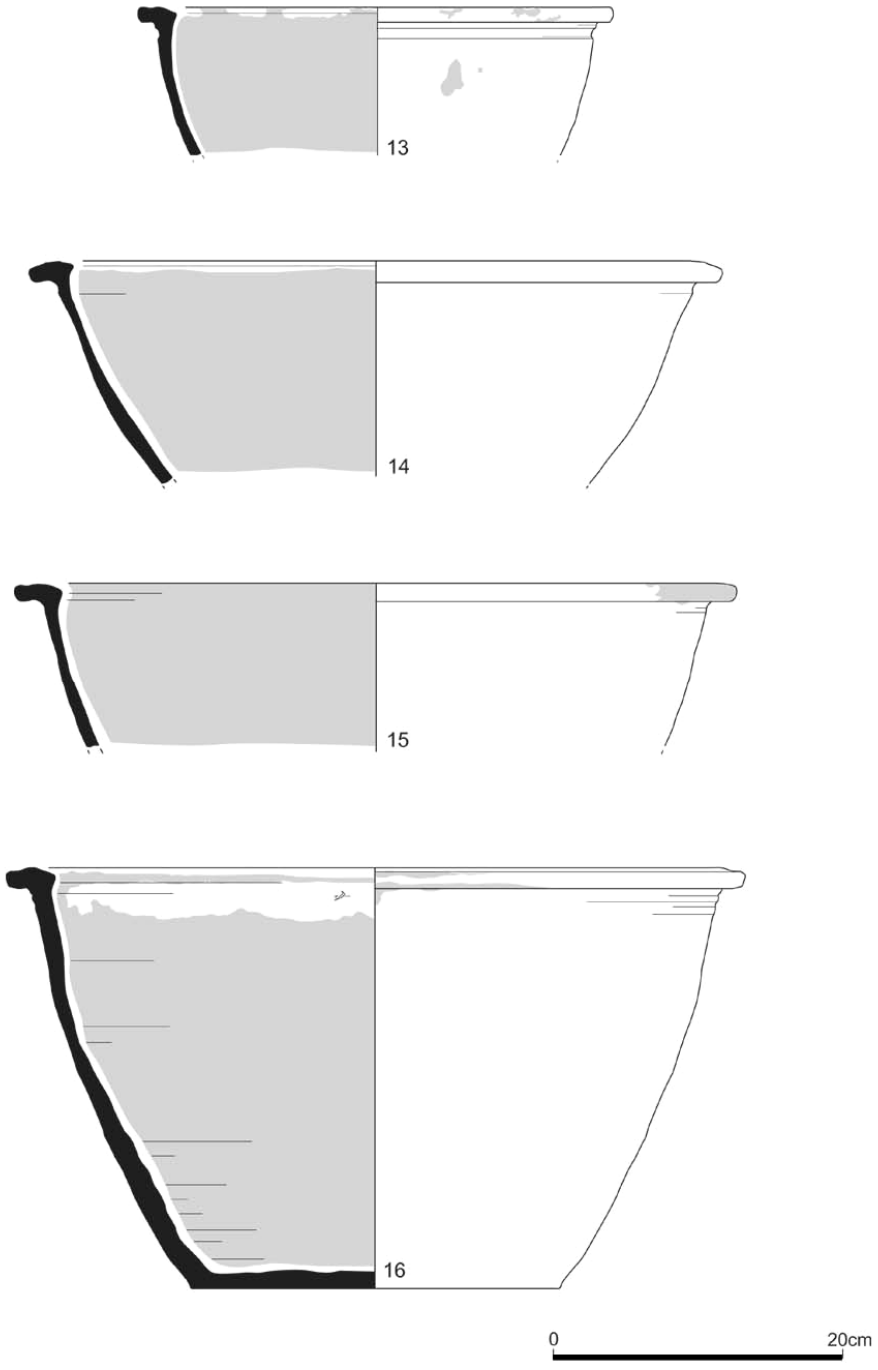

Fig. 14 Deep bowls

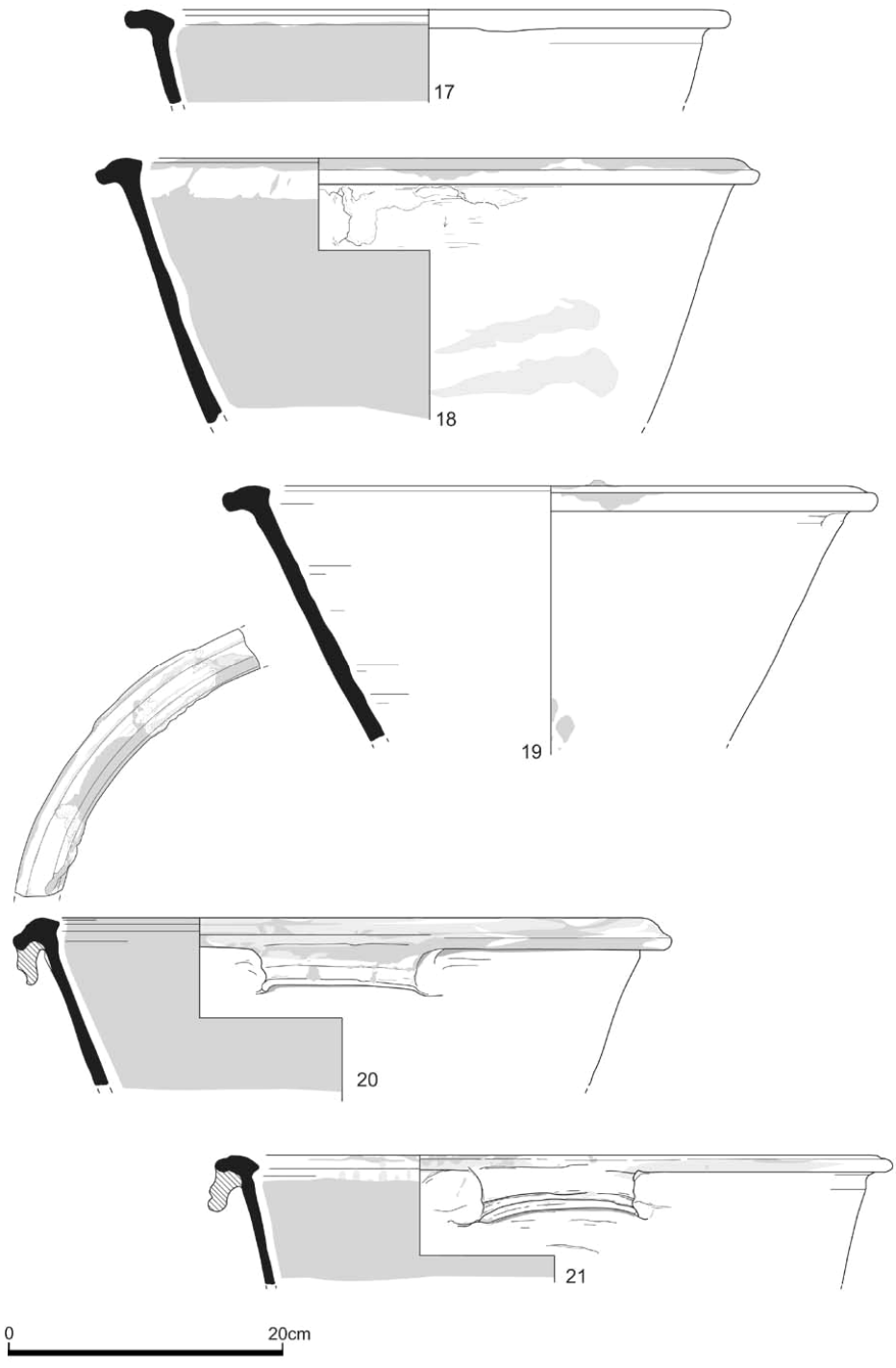

Fig. 15 Deep bowls

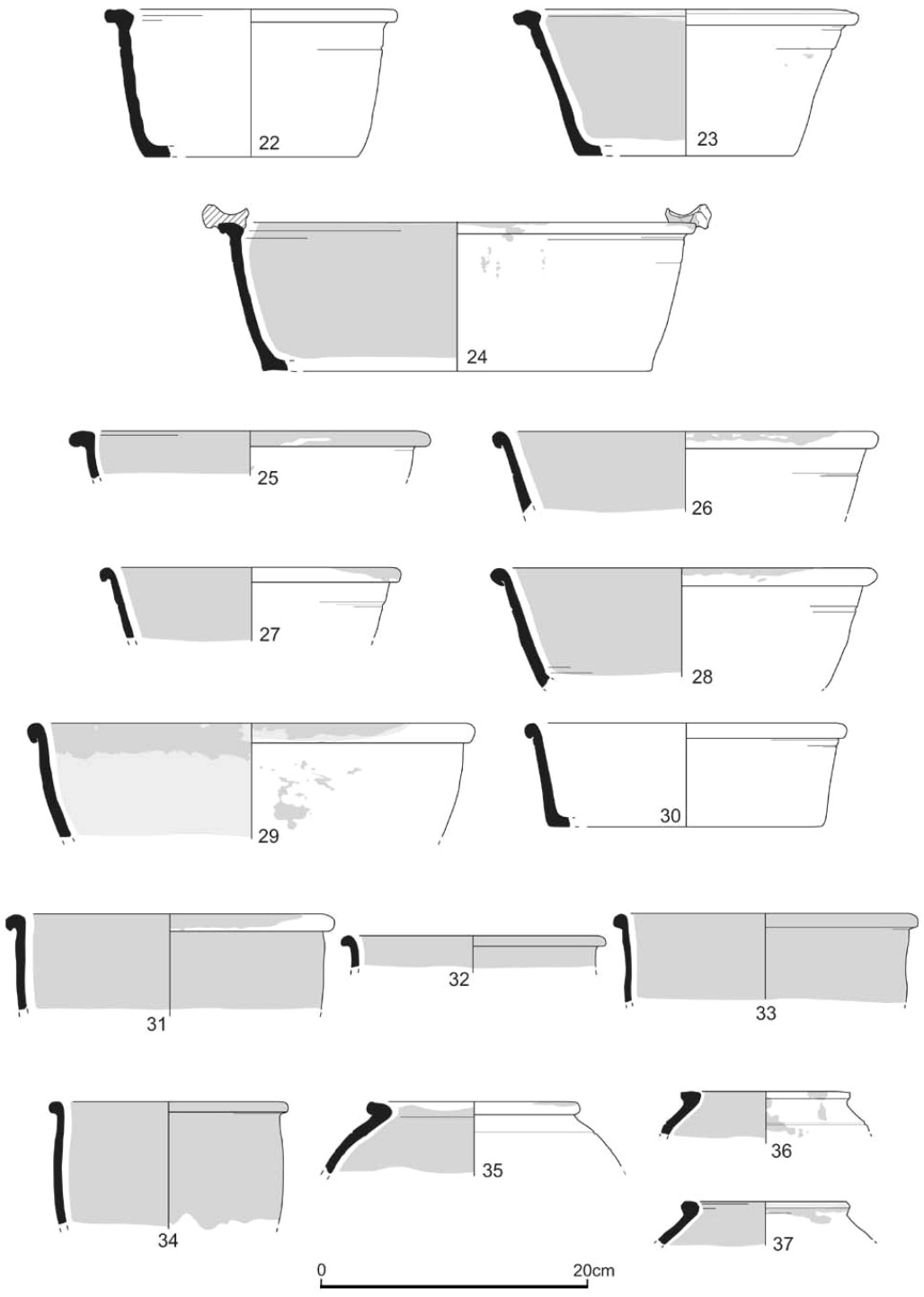

Fig. 16 Bead rim jars

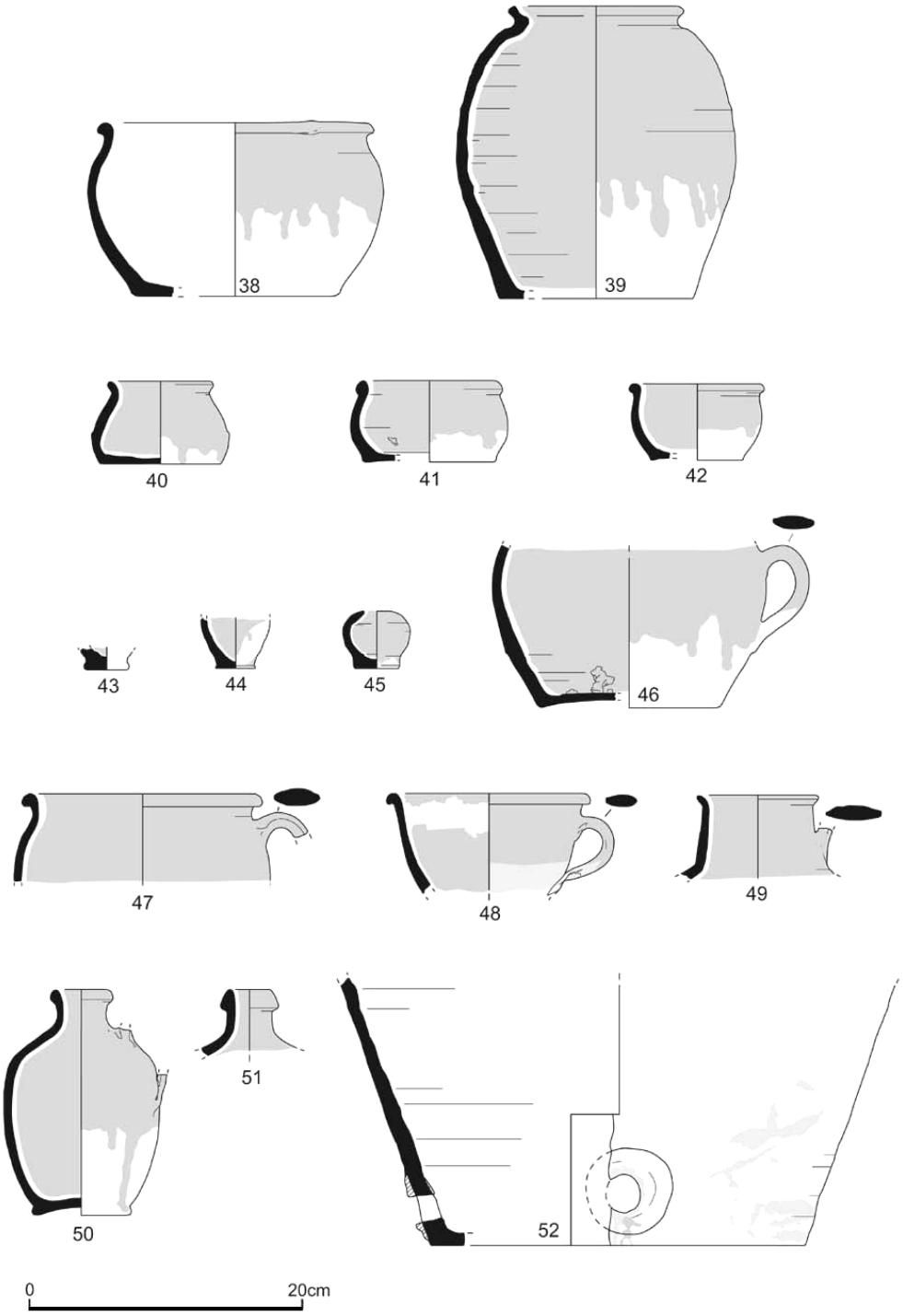

Fig. 17 Vessels and Jars

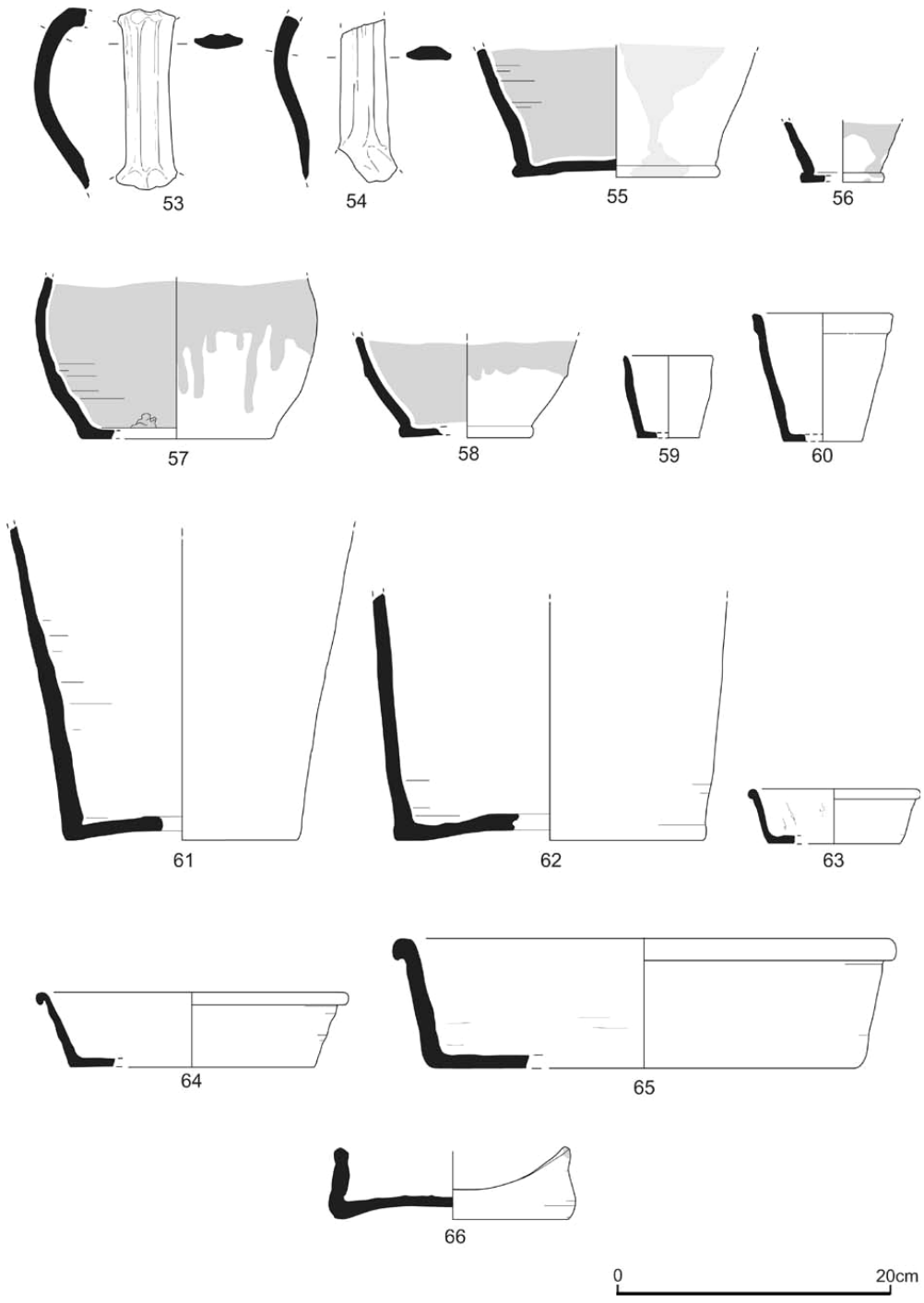

Fig. 18 Glazed strap handles, miscellaneous base sherds, garden furniture and kiln furniture

Plate 1 The dome of the hovel from the south (by kind permission of Ron Moss, Industrial Archaeology Group, Black Country Society)

Plate 2 Southern elevation of the hovel prior to demolition

Plate 3 Pre-Excavation shot of the base of the oven F100, and party wall of the hovel and Structure B

Plate 4 Post excavation shot of the base of the oven F100, showing the depth of the cork

Plate 5 Eastern elevation of Structure B

Plate 6 Structure B from the southwest, with Structure E to the right

Plate 7 Cellar steps

Plate 8 Internal shot of the cellar

Plate 9 Chimney (Structure C) associated with a slip kiln

Plate 10 Southern elevation of Structure E

Plate 11 Eastern frontage of the complex onto Silver Street

Plate 12 Post excavation shot of the base of oven F102

Plate 13 Possible brick ventilation structure in the air raid shelter (Structure P)

Plate 14 Later opening in the air raid shelter roof showing superstructure

Plate 15 Sample of pottery from the potworks