

Royal Worcester Porcelain, Severn Street, Worcester

**An Archaeological Watching Brief
(Japanese Knotweed Removal)**

for Berkeley Homes (Oxford and Chiltern) Limited

by Danielle Milbank and Andrew Weale
Thames Valley Archaeological Services Ltd

Site Code RWP 04/65g

December 2007

Summary

Site name: Royal Worcester Porcelain, Severn Street, Worcester

Grid reference: SO 850 543

Site activity: Watching Brief

Date and duration of project: 6th August to 29th August 2007

Project manager: Steve Ford

Site supervisors: Danielle Milbank and Andrew Weale

Site code: RWP 04/65g

Summary of results: Brick-built features of late 19th- and 20th-century dates relating to recent phases of use of the site.

Location and reference of archive: The archive is presently held at Thames Valley Archaeological Services, Reading and will be deposited at Worcester City Museum in due course.

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Severn Street, Royal Worcester Porcelain, Worcester An Archaeological Watching Brief (Japanese Knotweed Removal)

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Report 04/65g

Introduction

This report documents the results of an archaeological watching brief carried out at Severn Street, Royal Worcester Porcelain, Worcester (SO 870 543) (Fig. 1). The work was commissioned by Mr Cliff Buddery of Berkeley Homes (Oxford and Chiltern) Ltd, Berkeley House, Abingdon Science Park, Barton Lane, Abingdon, Oxfordshire, OX14 4NB.

Planning permission (App no P05D0432) has been gained from Worcester City Council to redevelop the site of the Royal Worcester Porcelain works for a hotel complex and new residential apartments, with the refurbishment and reuse of existing historic buildings. This permission applies to both the northern and southern parts of the Porcelain Works complex, and the planning consent is subject to three archaeological conditions (54, 55 and 56). Conservation Area consent has also been gained (App no L05D0073) with a further condition (2) for a record of the factory buildings and manufacturing processes prior to demolition. A summary of the relevant consents is presented in a brief for the project (WCM2006). The conditions attached are in accordance with the Department of the Environment's Planning Policy Guidance, *Archaeology and Planning* (PPG16 1990), and the City Council's policies on archaeology.

For planning and development purposes the Severn Street site has been divided into three zones, Areas A-C (Fig. 1) and this watching brief concerns two locations within Area A. The watching brief was carried out on the machine excavation of a 37.5m by 19.5m pit in the centre of Area A for the safe disposal of Japanese Knotweed, and an area located to the eastern side of Area A where the Knotweed itself was to be excavated. This is the latest in a series of investigations on this part of the site (AA 2005b; AA 2005c; Cass 2007; Millbank and Muddin 2007). The southern section of the site has previously been reported upon (Wallis and Colls 2006).

The fieldwork was undertaken by Danielle Milbank and Andrew Weale between 6th and 29th August 2007 and the site code is RWP 04/65. The archive is presently held at Thames Valley Archaeological Services, Reading and will be deposited with Worcester City Museum in due course.

Location, topography and geology

The site is located in the Diglis area of Worcester, which is situated in the Severn Valley, to the north of the Severn's confluence with the River Teme. The site itself lies in the valley of a former tributary to the Severn, the Frog Brook, whose extant part now comprises part of the Birmingham to Worcester Canal. According to the British Geological Survey, the underlying geology consists of alluvium, with gravel terrace deposits of the River Severn occurring at the northern edge of the site (BGS 1993). A borehole investigation (STATS 2004) showed that on average, made ground overlay alluvial deposits to a depth of at least 2m below present ground level.

The site comprised an irregular parcel of land, the majority of which was occupied by large industrial buildings, many undergoing demolition, and the visitor's car park area. The site is reasonably flat at a height of approximately 15m above Ordnance Datum.

Archaeological background

The archaeological background and potential of the site has been investigated in a desk-based assessment, small scale evaluation and watching brief during geotechnical investigation (AA 2005a; 2005b; 2005c; Morriss and Sherlock 2005), and small scale evaluations and a watching brief carried (Wallis and Coles 2006; Cass 2007a and b; Milbank and Munding 2007). In summary, the site lies close to the confluence of the Frog Brook and River Severn (Fig. 1). Such a riparian location, especially if a terrace edge can be identified, is often one preferred for earlier prehistoric settlement and the Worcester City Historic Environment Record notes the presence of prehistoric metalwork finds recovered from the river nearby. There is also a possibility of the presence of Roman deposits on the site, perhaps associated with a river port. Roman deposits including burial are recorded both to the south of the site and immediately to the north at the Severn Street site (AA 2005b; 2005c). Prior to use as a factory, the site was used as allotments, a ropewalk, timber yard and saw mill and apparently as a dump for pottery manufacturing waste. An evaluation at the southern end of the site (Portland Walk) (Wallis and Colls 2006) failed to identify any deposits of archaeological interest (Fig. 2).

The northern zone, which comprises Areas B and C and the northernmost part of Area A, of the planning and development timetable includes the medieval town wall and ditch, a tower, the site of St Peters church and graveyard, and tenements. The church is recorded in Saxon times and it is likely that late Saxon remains are to be found in the same zone as the medieval deposits. The extent of the Roman town is less clear cut but earlier limited pre-determination evaluation located some Roman deposits at the northern end of the site in Area B. Roman occupation and burial is recorded just to the north west of the redevelopment site and further burial

deposits are recorded to the south west. In early post-medieval times, specifically at the time of the civil war, the site was traversed by the earthen defences erected to defend the city. The site area was occupied in later post-medieval times for pottery production and eventually became the Royal Porcelain Works. A recent evaluation comprising machine dug trenches was carried out on Area A (Cass 2007a and b), where walls and other brick-built features of late 19th and early 20th century date were encountered. These relate to both earlier and recent phases of use of the site for structures associated with porcelain production. Three dumps of pottery manufacturing waste were also sampled. A watching brief, was carried out on service trenching and ground reduction in areas B and C, and the northern part of Area A. A small part of a sandstone wall of possible medieval date, and 18th to 20th century brick structures relating to the Porcelain Works, the churchyard of St Peter the Great and housing on King Street and Severn Street were encountered (Milbank and Mundin 2007).

Objectives and methodology

The purpose of the watching brief was to excavate and record any archaeological deposits affected by the groundworks, including any deposits present relating to the Royal Worcester Porcelain factory or earlier pottery manufacturing facilities on the site. Excavation of the disposal pit, which was expected to be *c.* 3m deep and the removal of the Knotweed were to be carried out by 360°-type machine, under constant archaeological supervision, and all archaeological deposits were to be sampled and recorded.

Results

The borrow pit area measured 22m (SW-NE) by 40m (SE-NW) and was located in the southern part of the site, to the north east of the terraced houses on the southwestern boundary of the site (Fig. 2). The area was initially stripped of a layer of demolition rubble, mostly comprising crushed concrete with some brick (450). This was 0.20m thick overall and was the result of the very recent demolition of buildings, referred to as J, L, M, N, P1, S and T (AA 2004).

This overlay two sections of brick wall, 400 and 401 (Fig. 3; Pl. 1). Wall 400 was 6 courses high and was of 'English garden wall' construction (i.e. courses of headers alternating with stretcher courses) and measured 0.39m high and 0.23m wide, and was a 2.12m long section. It had been truncated at the eastern end. It had concrete foundations which projected 0.09m to 0.14m beyond the wall. Some bricks were missing from the western end of the wall but it was still possible to surmise that this was a doorway in the wall, measuring 1.01m wide. The eastern end of 401, though damaged, constituted the other side of the doorway. Wall 401 was of the

same 'English garden wall' construction onto concrete foundations, measured 0.23m wide and 5 courses high (0.31m). Both were aligned SW–NE. These walls correspond to a small out-building or lean-to building at the south-west of Area A, built against the garden walls of the houses on the north side of Mill Street. The function of this small building is unclear, though the building labelled 'New South Range' is immediately north-west and it probably housed some facilities associated with this part of the Porcelain Works.

The crushed concrete layer (450) overlay the wall and the deposit 451 (Fig. 4), which was a thick made ground layer. It comprised blackish brown silt with occasional clay patches, and c. 50% brick and concrete rubble, with various metal, plastic and ceramic items (of which a representative sample was retained). This was between 1.10m and 1.40m thick on average, and represents a large made ground levelling layer resulting from the later phases of factory construction.

This overlay deposit 452, which comprised firm, dark brown silt with occasional small rounded pebbles. This appeared to be the upper horizon of the alluvial layers, as encountered in previous trenches and boreholes, and was 0.85m to 1.05m thick in section. Cut into this layer were several features, 402 to 406, which apart from the circular feature 404 and linear 403, were foundation trenches for various parts of buildings R, T, S, P1, M and N (Fig. 3, Pl. 2). These were aligned SE–NW and all between 0.08m and 0.46m deep. Feature 404 was circular but was not thought to be of sufficient size to represent a kiln (Pl. 2), and is likely to be a structural element of the building. Truncation 403 was the base of the backfilled evaluation trench 19 (Cass 2007b), which was excavated to a depth of 2.0m, and which encountered similar stratigraphy.

The fills of the foundation cuts (455 to 460) all comprised very similar material, blackish brown silt with a large proportion (c. 75%) of crushed brick and concrete, late 19th-and early 20th-century metal and ceramic items. These deposits appear to be contemporary with one another, and as they are infilling the foundation cuts, while no *in-situ* concrete was present, are likely to be the result of backfilling after the complete demolition (to below ground level) of Porcelain Factory buildings. Layer 452 overlay 453, which comprised red brown slightly sandy clay silt with very occasional small rounded pebbles and is the alluvial layer forming the underlying geology across the majority of the site. This was consistent down to a depth of 3.10m (c.14.1m AOD) at the base of the borrow pit.

Knotweed removal

An area on the east side of the site adjacent to the canal wall was reduced by 360° tracked machine fitted with a toothless bucket, by 0.25m to 0.35m (Fig. 2). Here, a made ground layer 378 (which comprised very mixed

brown black, yellow and grey sandy clay with ash, charcoal, pottery fragments and kiln furniture) was consistent with late 19th- and 20th-century made ground deposits previously encountered in this area.

A trench was then excavated from the north to the south along the canal wall. This was 4m wide and 20m long, and 1.45m deep overall, and was excavated through deposit 378, with red brown sandy clay (upper geological layer) occasionally visible in some places in the base of the trench. At 20m along the trench from the north end, a wall was visible in section (Pl. 3). This was one brick length thick and was aligned approximately NW-SE, at an angle to the canal wall, and comprised 8 courses of machine-made frogged bricks (379) 0.94m high, laid onto two courses of 2 bricks wide, on a concrete foundation (380) which was 0.70m wide and 0.45m thick. It is part of a factory building which first appears in a basic square form on the 1902 Ordnance Survey map but by 1928 had been added to, forming a longer L-shaped complex. These are referred to as buildings H and I (AA 2004, 45), with the section of wall encountered here (379) comprising the southern wall of building I.

A 20m long stretch of the trench at the north was then widened to 5m, removing the remaining 1m width of made ground 378 and exposing the canal wall (377) (Pl. 4). This was constructed of red bricks laid to an English bond, and was 17 courses high laid on to stepped out brick foundations (also English bond) of which 8 courses were visible. The Birmingham and Worcester Canal was opened in 1815 but this wall may be a later rebuild of the original canal wall, and is shown in this position on the first Ordnance Survey map of 1884.

The trench was then continued to the south-west at a reduced width (0.85m), and set back from the canal wall by c.1m, and was 1.45m deep. The section here showed that the made ground deposit 378 was consistent, and was 1.45m thick at the north east, sloping up to 1.00m thick at the south-west end. Here, red brown sandy clay geology was visible in the lower 0.45m of the section.

No deposits dating to the mid 19th century or earlier were encountered in this phase of groundworks.

Finds

Samples of ceramic material, including pottery and kiln furniture, from the made ground deposits were taken, and have been retained pending confirmation of the specific requirements of Worcester Museum collection policy.

Pottery by Alan Vince and Kate Steane

The material from Area G came from modern dumping and was assigned to six different contexts (Appendix 1). That from context 451 includes only porcelain vessels and although its appearance suggests to the authors that it

is of 20th-century date it might be earlier. That from context 454 includes kiln furniture and is dated to the 20th century by the presence of the electrical insulator. That from context 456 is of similar character and presumed date. That from context 457 includes saggars and other kiln furniture and a piece of biscuit porcelain with a pencil drawing on the surface. Those from contexts 459 and 460 are of similar character, producing a mixture of kiln furniture and porcelain fragments but contain no distinctive types which could be readily dated.

All of the material is likely to have been made on site and probably dates to the 20th century. Six fragments were made in an off-white fabric containing large pellets of clay, of similar colour and texture to the groundmass. This is likely to have been a Coal Measures white-firing clay (CMW). Three of these are interpreted as spacers, used to separate vessels or saggars in the firing chamber. One is a fragment of a sagger, but is too incomplete to reconstruct and the remaining two pieces are saggars of similar type. These are distinct from the four types of sagger previously recorded by the authors from the Royal Worcester Porcelain Factory.

The remaining sherds are of porcelain (ENPO). They include fragments of kiln furniture, in the form of unglazed rings, fragments of pottery vessels, such as bowls, cups, dishes and plates, and fragments of other porcelain objects, including a spark plug and an insulator. These objects are mostly unmarked and undecorated but examples with painted marks, stamps, moulded decoration, slipping and in one case what appears to be a pencil drawing on the biscuit fired surface were present.

Conclusion

The results of this watching brief have produced a modest range of data relating the industrial use of this area of the site. No pre-modern archaeological deposits have been identified. The deposits encountered are of Victorian and modern dates, relating to late 19th- and 20th-century development of the factory site (post-dating Kerr and Binns) and no evidence was observed of any porcelain factory works earlier than the mid 19th century. The brick built structural remains encountered in excavating the borrow pit were part of a recently demolished outbuilding which is of uncertain date but likely to have been built in the 20th century. The truncations 402 and 404–6 are a result of demolition of the factory buildings previously referred to as L, M, N, P1, R, S and T. These factory buildings were built between c.1860 and the late 20th century, and it appears their foundations have been entirely removed during demolition. These truncations cannot be attributed securely to particular walls seen on plans of this area.

The pottery and other ceramic items recovered from these foundation truncations are 20th-century in date, and represent some of the pottery and kiln furniture used and produced at the factory around the time of

demolition. Of these, several are of a type not previously recorded as kiln furniture used at the factory, and are of some significance in terms of this industry, and examples of each type have been retained.

The recent demolition appears to have truncated only the upper part of the alluvial deposits. There was therefore some potential for archaeological deposits to have survived within or below alluvial layers, although in this case, no archaeological deposits or features were encountered.

The area of excavation for knotweed removal adjacent to the canal showed that late 19th- and 20th-century deposits are 1.45m thick on average in this area, though it decreases slightly to the southwest. This appears to be a built up area of ground with walls of early 20th-century date relating to recently demolished factory buildings, which appear to be broadly contemporary with the made ground layer 378. This layer may be comprised of separate levelling episodes broadly contemporary with the development of the site in the 1920s but due to the homogenous nature of 378, this cannot be determined.

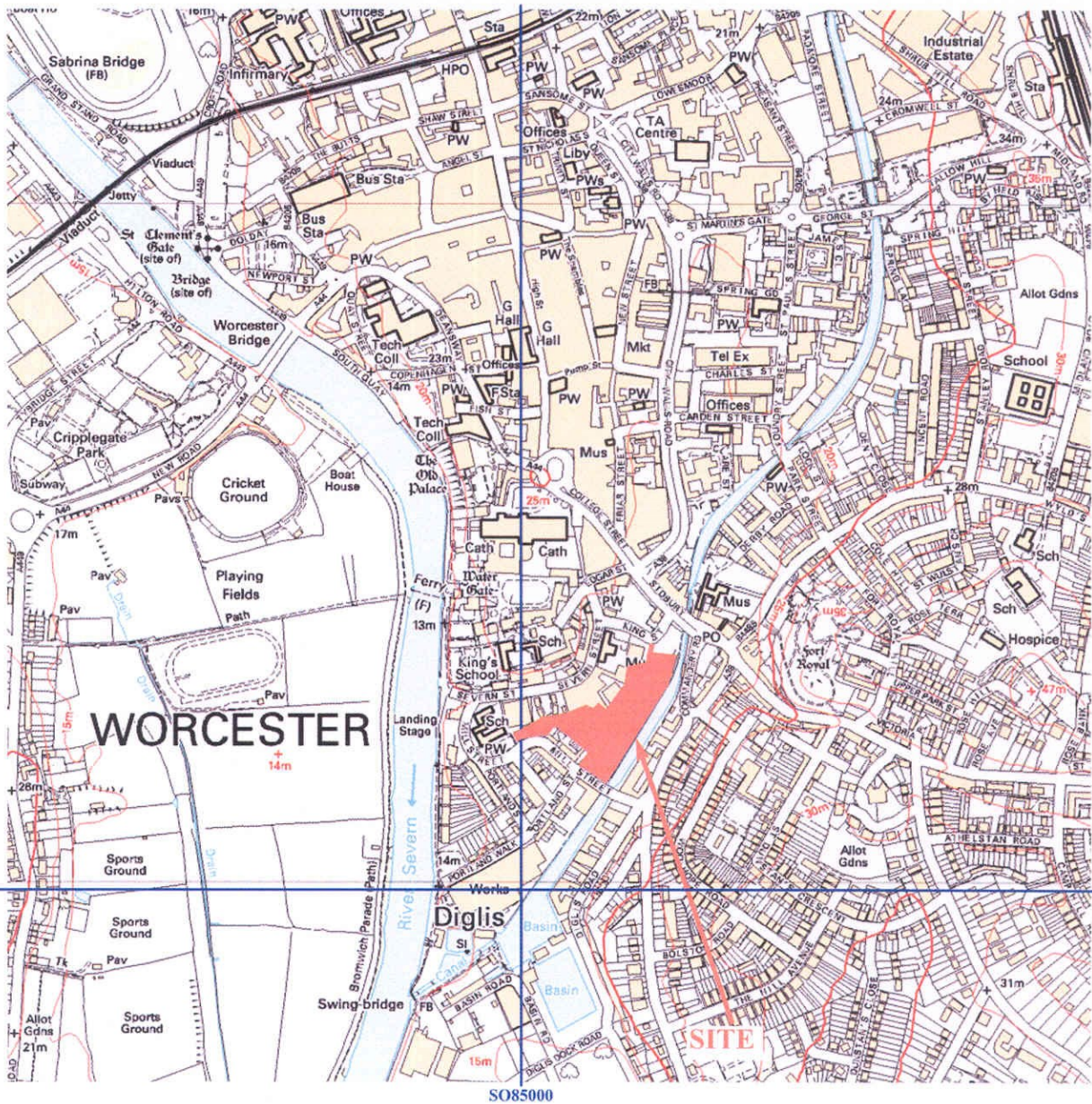
The underlying geological levels were reached in some places, in the form of red brown sandy clay. No finds or deposits were recovered from these layers, and no finds or deposits relating to any period earlier than the late 19th century were recovered during this phase of investigation.

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APPENDIX 1: Pottery

<i>Context</i>	<i>Type</i>	<i>No</i>	<i>Date</i>
451	ENPO	11	
451 Total		11	20th century?
454	CMW	1	
	ENPO	10	
454 Total		11	20th century
456	CMW	1	
	ENPO	10	
456 Total		11	20th century
457	CMW	3	
	ENPO	32	
	PMTIL	1	
457 Total		36	20th century?
459	CMW	1	
	ENPO	10	
459 Total		11	20th century?
460	ENPO	5	
460 Total		5	



RWP04/65g

**Japanese Knotweed Removal, Royal Worcester
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Figure 1. Location of site within Worcester.

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Japanese Knotweed Removal, Royal Worcester Porcelain, Worcester, 2007

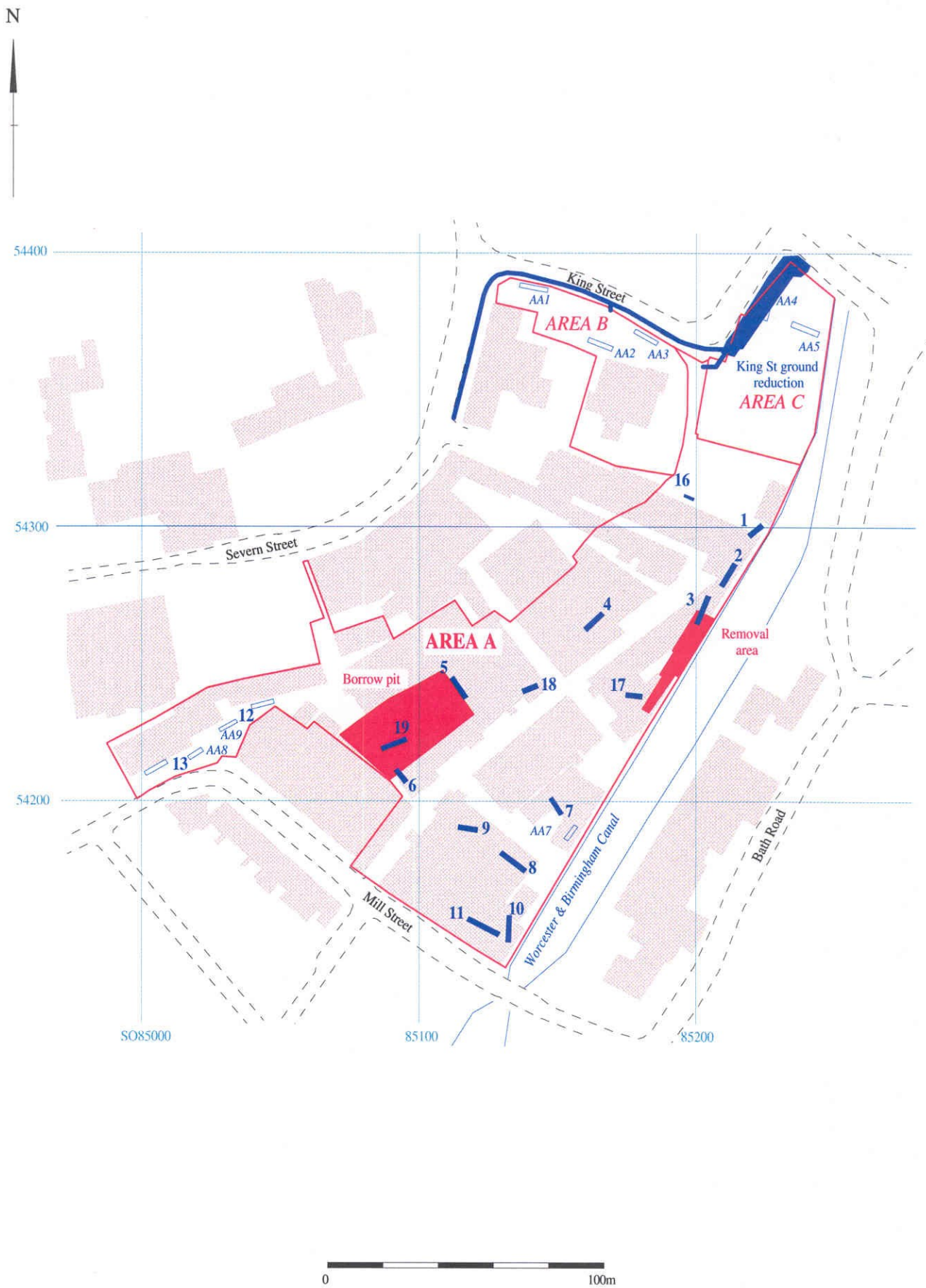


Figure 2: Overall plan of development area showing location of removal and borrow pit, also locations of previous fieldwork (blue).

Japanese Knotweed Removal, Royal Worcester Porcelain, Worcester, 2007



Figure 3. Detail of borrow pit excavation.

Japanese Knotweed Removal, Royal Worcester Porcelain, Worcester, 2007



Figure 4. Representative section of borrow pit excavation.



Plate 1. Wall 400 and 401, looking south; horizontal scale 1m, vertical scale 1m.



Plate 2. Borrow pit strip, looking south, scales 2m and 1m.



Plate 3. Removal area, wall 379 and foundation 380 of canalside workshop, looking south east, scales 0.5m.



Plate 4. Removal area, canal wall 377, looking south, scales 1m.