Archaeological Investigations at The Former Livestock Market site, Hereford

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Summary

A programme of archaeological works was undertaken at the former Hereford Livestock Market, Hereford (centred on NGR 350869, 240307). The investigation area lies to the immediate north of the historic centre of Hereford and comprises an area of *c*.5ha comprising the former Livestock market, elements of the surrounding streets, council offices, a car park and the Grade II Listed Old Market Inn.

The archaeological investigations were commissioned by CgMs Consulting on behalf of their client Stanhope PLC, who are in the process of developing the site into a new retail and entertainment complex for which planning applications have been approved. Investigations included an evaluation of land beneath a building demolished as part of the development, Garrick House and a watching brief carried out on intrusive groundworks in other parts of the site.

The development area lies partially within an area of Archaeological Importance and the Central Conservation Area of Hereford. A Scheduled Monument comprising a section of the city walls, rampart and ditch (DHE6203; SAM 00124) is situated close to the southern boundary of the site.

The development site lies to the north of the projected boundaries of the Saxon and Medieval towns and cartographic evidence demonstrates that until the middle of the 19th Century, the majority of the site was part of a common field known as Port Fields. The eastern part of the site, however lay within burgage plots fronting onto Widemarsh Street which was a major route into the city from the north from the Medieval period onwards.

Previous archaeological investigations undertaken within the north of the site have revealed evidence of late Neolithic/Bronze Age activity along with a number of undated post holes and pits and a post-medieval cultivation soil, which was also apparent in a geotechnical borehole in the northeast corner of the site.

Investigations did not recover further evidence of prehistoric activity. Evaluation in the south-eastern corner of the site revealed a cluster of pits, interpreted as gravel extraction pits, which were dug and backfilled with domestic refuse in the medieval period. This activity is though likely to have taken place to the rear of burgage plots fronting Widemarsh Street.

To the south of this a linear ditch/gully was recorded running parallel to the main city ditch, and may have represented the northern limit of this large feature. An assemblage of 17th century material and a very large quantity of cattle metacarpals and horncores was recovered from the ditch. The bias in the assemblage is indicative for the tanning industry and horn working, and suggests that these activities must have been happening in the immediate vicinity. To the northwest of this feature an almost identical assemblage was recovered from a later 19th century gully, suggesting that these industrial activities continued in the area for at least 300 years.

To the immediate north a roughly rectangular structure 2m in length by 1m in width is thought to have been a cess pit associated with domestic properties fronting Newmarket Street.

The whole site was covered with an average of 0.5m of overburden material comprised of a combination of industrial and domestic waste and imported soils that were used to raise the ground level ahead of the construction of the Livestock market in the mid 19th century.

Through the latter part of the 19th century and continuing through the 20th century the development and evolution of the livestock market meant that many of the underlying earlier deposits were truncated by a variety of underground services and building foundations.

Report

1 Background

1.1 Reasons for the project

Archaeological investigations were undertaken at Hereford Livestock Market, Hereford (centred on NGR 350869, 240307). The works were commissioned by CgMs Consulting, acting on behalf of Stanhope plc, who are developing the site to create a new retail and entertainment complex for which a planning application has been approved.

The proposed development site is considered to lie partially within an area of Archaeological Importance and within the Central Conservation Area of Hereford. The Scheduled City Walls, rampart and ditch (DHE6203; SAM 00124) lie on the southern boundary of the site.

The project conforms to a site specification prepared by CgMs (Patrick, 2011).

The project also conforms to the *Standard and guidance for archaeological field evaluation* (IfA 2009) *Standard and guidance for an archaeological watching brief* (IfA 2008) and *Standards for archaeological projects in Herefordshire: issue 1* (Herefordshire Archaeology 2004).

The event reference for this project, given by the HER is EHE 2173.

2 Aims

The aims of this evaluation are:

- to describe and assess the significance of the heritage asset with archaeological interest;
- to establish the nature, importance and extent of the archaeological site;
- to assess the impact of the application on the archaeological site.

3 Methods

3.1 Personnel

The watching brief stages of the project were undertaken by Graham Arnold (BA, MSc); who joined Worcestershire Archaeology in 2009 and has been practicing archaeology since 2002. The evaluation in the south-eastern corner of the site was undertaken by Jonathan Webster (BA); who joined Worcestershire Archaeology in 2009 and has been practicing archaeology since 2001. The project manager responsible for the quality of the project was Tom Rogers (BA, MSc). Illustrations were prepared by Carolyn Hunt MIFA. Laura Griffin and Dennis Williams contributed the finds analysis whilst the environmental analysis was undertaken by Elizabeth Pearson (MSc, AIFA); who joined Worcestershire Archaeology in 1993 and has been practicing archaeology since 1989.

3.2 Documentary research

Ahead of works an archaeological desk-based assessment of the site (CgMs 2010) was consulted.

3.3 Fieldwork strategy

The project conformed to a Specification prepared by CgMs (Patrick 2011).

Evaluation

Three trenches, amounting to just over 120m² in area, were excavated in March 2013 around the area of the former Garrick House and associated car parks. The locations of the trenches are depicted in Figure 2.

Fieldwork was undertaken between March and August 2013. Deposits considered not to be significant were removed using a 360º tracked excavator, employing a toothless bucket and under archaeological supervision. Subsequent excavation was undertaken by hand. Clean surfaces were

inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard Worcestershire Archaeology practice (WA 2012a). On completion of excavation, trenches were reinstated by replacing the excavated material.

Watching Brief

Fieldwork for Phase two monitoring took place intermittently between November 2012 and August 2013.

Groundworks were monitored in six areas depicted in Figure 3.

- Area 1. A high voltage cable trench running parallel to the northern edge of the site
- Area 2 A high voltage cable trench running on the western edge of the site.
- Area 3 A soakaway pit in the central north of the site.
- Area 4 An attenuation tank in the centre of the site
- Area 5 Foundations for Units 27-30
- Area 6 Foundations for Pavilion 2.

As with the evaluation phase of the investigation the archaeological monitoring of the footings followed standard Worcestershire Archaeology practice (*Ibid*). Any archaeologically significant deposits or potential features exposed during the intrusive works were investigated by hand with artefactual and environmental data being collected to help determine their nature. All deposits were recorded on standard Worcestershire Archaeology *pro forma* sheets and digital images captured.

3.4 Structural analysis

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

3.5 Artefact methodology, by Laura Griffin and Dennis Williams

3.5.1 Artefact recovery policy

The artefact recovery policy conformed to standard Service practice (WA 2012a; appendix 2).

3.5.2 Method of analysis

All hand-retrieved finds were examined. They were identified, quantified and dated to period. A *terminus post quem* date range was produced for each stratified context. These date ranges were used for determining the broad phases defined for the site. All information was recorded on *pro forma* sheets.

The pottery and ceramic building material was examined under x20 magnification and referenced as appropriate by fabric type and form according to the fabric reference series maintained by the Service (Hurst and Rees 1992 and www.worcestershireceramics.org).

3.5.1 Discard policy

The following categories/types of material will be discarded after a period of 6 months following the submission of this report, unless there is a specific request to retain them (and subject to the collection policy of the relevant depository):

- where unstratified
- post-medieval pottery, and;

- generally where material has been assessed as having no obvious grounds for retention.

See the environmental section for other discard where appropriate.

3.6 Environmental archaeology methodology, by Elizabeth Pearson

3.6.1 Sampling policy

Samples were taken according to standard Worcestershire Archaeology practice (2012a). Three samples (40 litre size) were taken from the site from two medieval pits and a post-medieval linear (Env Table 1).

3.6.2 Processing and analysis

A 10 litre sub-sample was processed from each context by flotation using a Siraf tank. The flots were collected on a 300μm sieve and the residue retained on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.

The residues were scanned by eye and the abundance of each category of environmental remains estimated. A magnet was also used to test for the presence of hammerscale. The flots were scanned using a low power MEIJI stereo light microscope and plant remains identified using modern reference collections maintained by Worcestershire Archaeology, and a seed identification manual (Cappers *et al* 2006). Nomenclature for the plant remains follows the *New Flora of the British Isles*, 3rd edition (Stace 2010).

Animal bone was identified with the aid of modern bone reference collections housed at the Historic Environment and Archaeology Service and identification guides (Schmid 1972 and Hillson 1992).

3.7 Statement of confidence in the methods and results

The methods adopted allowed a high degree of confidence that the aims of the project have been achieved and that a full understanding of the archaeology observed was gained.

3.8 Topography, geology and archaeological context

The topographic, geological and archaeological context of the site is discussed as in the desk-based assessment of the site (CgMs 2010) and is summarised below.

The site is situated on a flat plateau roughly c.55m above ordinance datum (AOD), it is bounded to the south by part of the city ring-road (New market Street and Blue School Street) and is limited to the west by Edgar Street. The north of the site was bounded by Blackfriars Street with part of a multi-storey car park and Widemarsh Street limiting the site to the east.

The underlying geology is mapped as Raglan Mudstone formation that dated to between 416 and 419 million years ago in the Silurian Period. This comprised interbedded siltstones and mudstones which were themselves overlain by Glaciofluvial sands and gravels that formed up to 2 million years ago in the Quaternary Period during the retreat of the ice sheet and the deposition of material through meltwater.

Limited geotechnical investigation within the site boundaries comprised a single borehole undertaken in the north-eastern corner of the site which was investigated in 1980. This borehole record showed made ground to a depth of 1.83m that overlay Glaciofluvial gravels to 7.93m and Raglan Mudstones to 10.67m (Patrick 2010).

An archaeological evaluation of the site (Archaeological Investigations 2007a and 2007b) recorded a Late Neolithic/Bronze Age pit close to the Blackfriars Street containing pottery, carbonised wood and burnt stones. Two undated stake-holes may have also dated to the Prehistoric period.

Two Roman coins are recorded as having been found in the vicinity of the site and an archaeological investigation at Wall Street (SMR 44356), immediately to the south of City Wall and the Site boundary highlighted the possible survival of a Roman Road which may have continued north into the Site.

The site lies outside the projected boundaries of the Saxon town which lay to the south. The majority of the Site lay outside the developed city in the Medieval period and within Port Fields, a large common field. The twelfth and thirteenth century medieval defences of the city follow the line of the dual carriageway to the south of the site.

Widemarsh Street was one of the principal approaches to Hereford in this period and its southern extent, within the walled City, was incorporated into the layout of the 11th century new Market Place.

Cartographic evidence demonstrates that apart from the eastern part, to the rear of Widemarsh Street, the site was agricultural land until the late 19th Century when the livestock market was constructed.

4 Structural analysis

The trenches and features recorded are shown in Fig 2. The results of the structural analysis are presented in Appendix 1.

4.1.1 Phase 1: Natural deposits

The natural substrate was noted as mixed red sand and gravels of fluvioglacial origin as recorded in the British Geological Survey, it was seen at a depth of 54.150m AOD or below within all three of the evaluation trenches along with the northern boundary of the HV cable, the soakaway pits, units 27-30 in the southeast corner of the site, the attenuation tanks and Pavillion 2.

4.1.2 Phase 2: medieval deposits

Three intercutting pits (10711, 10713, 10716) were recorded within Trench 2 (plate 6), their profiles were very steep, almost vertical dropping with steep concaved slopes towards the limit of excavation, although no feature was fully dug to its limit, all were augered and appeared to drop down onto a flat base. The fills comprised silt rich sands that contained animal bone, slag, ceramics and charcoal throughout and appeared to be the result of deliberate refuse deposition. Sub rounded pit [10711] and square pit [10716] were both truncated by the elongated pit [10713], and although it is thought that the pits had been excavated for mineral extraction, the reason for excavation of pit [10713] is less clear, truncating through the backfilled remains the way that it did would have meant that the excavator would have had to go further in depth before finding useful material.

4.1.3 Phase 3: post medieval deposits

4.1.3.1 AREA 1

The route of the High Voltage (HV) cable along Blackfriars Street at the northern end of the development area revealed a 0.60m thick layer of deliberately dumped made ground (102), that lay directly on the natural substrate and was primarily comprised of building rubble, ash, industrial waste and redeposited soils that is known to have been dumped across a wide area during the initial construction of the cattle market in the mid nineteenth century. This was later truncated by a series of modern services and other modern intrusive works.

4.1.3.2 AREA 2

As the route of the HV cable continued its route through the site along the southwest limit of the development between Edgar Street and Newmarket Street it was seen to cut through a 0.30m+ thick band of made ground that had been deliberately deposited to raise the ground level. This

deposit (402) comprised a dark bluish grey silt rich clay that contained a large quantity of industrial waste and frequent cobbles throughout. As with 102 to the north it is clear that this material was primarily a mix of factory, development and domestic waste that had been used to raise the ground level ahead of the construction of the livestock market. This in turn was sealed by up to 0.80m of modern overburden (401).

4.1.3.3 AREA 3

The attenuation tank and soak-away test pit were excavated in the centre of the development area up to maximum depth of 3.10m below current ground level (52.05m AOD), although the majority of the base lay at 53.150m AOD. The investigations revealed a friable soft silty clay c.0.55m in thickness that had large quantities of charcoal, clinker, tar, concrete and CBM throughout (502 and 7002). While it is clear that this material is 20th century in date it is thought that it represents the reworked remnants of the earlier 19th century made ground deposition. It was itself overlain by 0.45m of modern hardcore and concrete and all of the above had been truncated on numerous occasions by modern services, wall footings and other modern intrusions associated with various phases of the former livestock market.

4.1.3.4 AREA 6

Located in the southeast corner of the current development in the lee of Newmarket Street and Widemarsh Street this area was first investigated by archaeological evaluation and was then monitored further during the excavation of geotechnical pits and the intrusive works associated with the proposed Pavillion complex.

Evaluation trench 1 revealed an east/west aligned ditch [10615] that appeared to roughly follow the route of the city ditch and may have been a contemporary parallel feature or even the southern edge of this much larger and older feature. The fill 10614 comprised a firm, silt-rich sand that was organic rich in nature and contained a large quantity of animal bone, specifically metatarsals and horncores that provides a consistent assemblage for either a tannery or leather working facility. The datable material recovered showed that this feature had a TPQ date of the 17th century. A similar feature was noted during the intrusive works undertaken for the construction of the pavilion to the west of [10615], this feature [608] measured 0.70m in width and was orientated at roughly 45^0 to [10615] on a alignment of northwest/southeast. The terminus of this feature was noted during the watching brief investigations and it is clear from the same assemblage make up that the same process was occurring in association with this feature too. However the dating from the single bone rich fill 607 suggests that this feature was 19th century in date.

To the immediate north of linear [608], structure 610 comprised a roughly rectangular structure 2m in length by 1m in width. This structure is consistent in its construction and location with a cess pit and may have been associated with domestic properties fronting Newmarket Street. Identical structures of a similar date recorded at Penn Street, Bristol (Ridgeway and Watts, 2013) showed that these structures were often placed along the boundaries between domestic properties and were used by two and sometimes up to four separate households at the same time for the deposition of nightsoil. The backfilled remnants 609 however appear to have been modern demolition associated with the abandonment and demolition of the structure in the 19th century.

The above was sealed by 0.45m of deliberately deposited material (602) as recorded across the site and described above, and this in turn was truncated by two pits of 19th century date that were revealed to the immediate east of linear [608]. The reason for the initial excavation of these pits remains a mystery although it is possible that they were undertaken for mineral extraction of the underlying sands and gravels, however, it is clear that they were not open for any considerable period before they were refilled with domestic refuse.

4.1.4 Phase 4: modern deposits

All of the deposits observed in the attenuation tank related to the 20th Century development of the site as a livestock market, with made ground and various services such as a HV electric cable, modern drainage manholes and a brick and concrete wall footings cutting the natural deposits. The concrete footings and beams for Garrick House and concrete lined drainage were also observed in the south-eastern evaluation area. Modern made ground was also only observed in groundworks to the north of the site overlying the natural gravels. The Natural gravels were also truncated by a number of modern services and wall foundations within the high voltage cable trench and soakaway pits in the northern part of the site.

4.2 Artefact analysis, by Laura Griffin and Dennis Williams

The artefactual assemblage came from 18 stratified contexts and consisted of 133 finds weighing 2845g (see Table 1). The pottery was in good condition, displaying low levels of abrasion and had an above average mean sherd weight of 13.4g.

period	material class	material subtype	object specific type	Count	Weight(g)
undated	metal	iron		2	24
undated	shell	oyster		5	54
undated	slag			1	14
undated	slag	slag(Fe)		3	110
post-medieval	ceramic		brick	1	306
post-medieval	ceramic		clay pipe	5	10
post-medieval	ceramic		clay pipe	1	2
medieval	ceramic		pot	26	265
post-medieval	ceramic		pot	10	56
early post-medieval	ceramic		pot	1	16
post-medieval/modern	ceramic		pot	32	590
medieval	ceramic		ridge tile	4	318
late med/early post-med	ceramic		roof tile	1	24
post-medieval	ceramic		roof tile	1	8
post-medieval	ceramic		roof tile(flat)	4	180
modern	glass		vessel	1	300
post-medieval/modern	glass		vessel	4	8
modern	glass		window	1	4
modern	ceramic		wall tile	30	556

Table 1: Quantification of the assemblage

Pottery

The pottery comprised 69 sherds as summarised in Table 2. Material dated from the medieval period onwards, with the earliest sherds being late 12th century. Fabrics present within the medieval assemblage were standard for Hereford with a mix of locally produced wares alongside

those of Malvernian and Worcester production. Forms were domestic with cooking pot and jug forms the most common forms present. The most unusual sherd was from an elaborately decorated Malvernian chafing dish (fabric 69; context 10710) which could be dated to the 16th century.

Likewise, post-medieval and modern sherds were also from commonly identified domestic wares.

period	fabric code	Fabric common name	Count	Weight(g)
medieval	55	Worcester-type sandy unglazed ware	1	16
medieval	56	Malvernian unglazed ware	11	111
medieval	66	Herefordshire glazed fine micaceous ware	4	30
medieval	69	Oxidized glazed Malvernian ware	3	48
medieval	70	Southern white ware	1	6
early post-medieval	150	Deerfold/Lingen ware	1	16
post-medieval	78	Post-medieval red wares	1	4
post-medieval	81	Stonewares	2	18
post-medieval	81.5	White salt-glazed stoneware	1	2
post-medieval	91	Post-medieval buff wares	1	4
post-medieval	100	Miscellaneous post-medieval wares	5	28
post-medieval/modern	100	Miscellaneous post-medieval wares	8	242
post-medieval/modern	85	Modern china	24	348

Table 2: Quantification of the pottery

Other finds

Other finds of note from the site included medieval roof tile in the form of glazed Malvernian ridge tile which could be dated between the 13th and 16th centuries (contexts 607 and 10714). Other roof tile identified within the assemblage was identified as being of later date, most likely 18th century onwards.

All remaining finds were of post-medieval date onwards and quantified in tables 1 and 3.

context	material class	object specific type	fabric code	count	weight(g)	start date	end date	*Teminus Post Quem*
603	ceramic	pot	85	11	256	1800	1950	20th

603	glass	vessel		4	8	1800	1950	century
605	ceramic	pot	56	1	26	1200	1399	20th century
605	ceramic	pot	85	1	24	1800	1950	
607	ceramic	brick		1	306	1600	1899	
607	ceramic	roof tile(flat)		4	180	1600	1850	
607	ceramic	ridge tile		2	284	1200	1599	Late 19th century
607	ceramic	pot	78	1	4	1600	1699	
10005	ceramic	pot	66	1	6	1250	1550	Mid 16th century
10407	ceramic	pot	100	1	86	1800	1950	20th century
10407	ceramic	pot	85	1	18	1800	1950	
10408	ceramic	pot	100	1	4	1800	1950	
10408	ceramic	roof tile		1	8	1600	1900	20th century
10408	ceramic	pot	85	1	2	1800	1950	
10408	ceramic	pot	85	1	10	1800	1950	
10504	ceramic	pot	91	1	4	1700	1799	Late 18th century
10611	ceramic	pot	100	1	4	1780	1830	
10611	ceramic	clay pipe		1	2	1600	1900	
10611	ceramic	pot	100	1	84	1800	1950	
10611	ceramic	pot	100	1	12	1800	1950	20th century
10611	ceramic	pot	85	1	4	1800	1950	
10611	ceramic	pot	100	1	38	1800	1950	
10611	ceramic	pot	81.5	1	2	1720	1770	
10612	ceramic	pot	85	1	8	1800	1950	20th century
10613	ceramic	clay pipe		1	4	1600	1899	Late 19th century
10614	ceramic	pot	56	1	8	1200	1399	
10614	ceramic	pot	56	1	6	1200	1399	Mid 16th century
10614	ceramic	pot	69	1	4	1200	1450	
10614	ceramic	pot	66	1	22	1250	1550	
10616	ceramic	pot	56	1	22	1200	1399	
10616	ceramic	pot	66	1	1	1250	1550	Mid 16th century
10616	ceramic	pot	56	1	1	1200	1399	
10616	metal			2	24			
10706	ceramic	wall tile		30	556	1900	2000	Late 20th century
10706	slag			2	20			
10707	ceramic	pot	66	1	1	1250	1550	Mid 16th century
10707	ceramic	clay pipe		1	2			
10710	ceramic	pot	81	1	2	1700	1900	
10710	slag			1	90			
10710	ceramic	roof tile		1	24	1500	1850	
10710	ceramic	pot		1	12	1200	1500	
10710	ceramic	pot	56	1	10	1200	1399	
10710	ceramic	pot	85	2	10	1800	1950	
10710	ceramic	pot	100	2	14	1800	1950	20th century
10710	ceramic	clay pipe		1	1	1600	1900	
10710	ceramic	pot	56	2	8	1200	1399	
10710	slag			1	14			
10710	ceramic	pot	56	2	6	1200	1399	
10710	ceramic	pot	55	1	16	1075	1325	
10710	ceramic	pot		3	28	1200	1399	
10710	ceramic	pot	56	1	24	1200	1399	
10710	ceramic	pot	69	1	38	1500	1600	

10710	ceramic	pot	70	1	6	1450	1600	
10710	ceramic	pot		1	12	1175	1299	
10710	ceramic	pot		1	2	1500	1600	
10714	ceramic	pot	69	1	6	1200	1500	
10714	ceramic	ridge tile		1	24	1200	1499	Late 16th century
10714	ceramic	ridge tile		1	10	1200	1499	
10714	ceramic	pot	150	1	16	1600	1699	
10803	glass	vessel		1	300	1900	2000	
10803	ceramic	pot	85	2	12	1800	1950	
10803	glass	window		1	4	1900	2000	20th century
10803	ceramic	clay pipe		1	1	1600	1900	
10803	ceramic	pot	100	4	24	1780	1830	
10803	ceramic	pot	100	1	4	1800	1950	
10804	ceramic	pot	81	1	16	1700	1900	
10804	ceramic	pot	85	3	4	1800	1950	20th century
10804	ceramic	clay pipe		1	2	1600	1900	

Table 3: Summary of context dating based on artefacts

Summary artefactual evidence by period

The context finds summary, with *terminus post quem* (TPQ) date ranges, is shown in Table 3.

Despite there being a significant amount of pottery dating to the medieval period within the assemblage, the majority of this is residual with the earliest context TPQ being mid 16th century.

4.3 Environmental analysis, by Liz Pearson

The environmental evidence recovered is summarised in Env Table 1 below.

Context	Sample	Feature type	Phase	Sample volume (L)	Volume processed (L)	Residue assessed	Flot assessed
10710	102	Pit	2	40	30	Yes	Yes
10714	103	Pit	2	40	10	Yes	Yes
10614	101	Linear	3	40	10	Yes	Yes

Env Table 1: List of environmental samples

4.4 Hand-collected material

A total of 2.17 kg (141 fragments) of animal bone were hand-collected from the site. The bone was well preserved with, largely diagnostic fragments and teeth. No further analysis was carried out on this assemblage, but it demonstrates the potential for a significant quantity of animal bone to be recovered should further work be carried out on the site.

Occasional fragments of oyster shell were also recovered from two contexts.

context	material class	material subtype	count	weight(g)
603	bone	animal bone	1	18
607	bone	animal bone	14	886

607	shell	oyster	2	36
10408	bone	animal bone	2	6
10611	bone	animal bone	1	14
10612	bone	animal bone	2	4
10613	bone	animal bone	1	8
10614	bone	animal bone	15	340
10616	bone	animal bone	2	18
10707	bone	animal bone	2	4
10710	bone	animal bone	15	218
10710	shell	oyster	3	18
10710	bone	animal bone	29	92
10714	bone	animal bone	8	132
10714	bone	animal bone	44	376

Env Table 2: Summary of hand-collected animal bone

4.5 Macrofossil remains from bulk samples

Only small quantities of macrofossil remains were recovered which are summarised in Env Tables 3 and 4.

Context	Sample	large mammal	small mammal	fish	bird	mollusc	charcoal	charred plant	uncharred plant	Comment
10614	101	mod-abt	occ	occ			occ	occ	occ	occ pot, bead, Fe slag, ? burnt stone, ?mortar
10710	102	mod	occ	occ	occ	occ		occ	abt*	* root frags, occ pot, Fe slag, Fe obj, Cu alloy pin
10714	103	mod		occ	occ		occ			occ Fe slag, Fe obj

Env Table 3: Summary of environmental remains from bulk samples

occ = occasional, mod = moderate, abt = abundant

Latin name	Family	Common name	Habitat	10614	10710
Uncharred plant remains					
Sambucus nigra	Caprifoliaceae	elderberry	BC	+	
unidentified root fragments	unidentified				+++
Charred plant remains					

Triticum dicoccum/spelta grain	Poaceae	emmer/spelt wheat	F	+	
Triticum sp (free-threshing) grain	Poaceae	free-threshing wheat	F	+	
Cereal sp indet grain	Poaceae	cereal	F	+	
cf *Avena* sp grain	Poaceae	oat	AF	+	
Vicia cf *tetrasperma*	Fabaceae	smooth tare	AD		+
Vicia sativa ssp *nigra*	Fabaceae	common vetch	AB	+	
cf *Corylus avellana* shell fragment	Betulaceae	hazelnut	C		+
Galium cf *aparine*	Rubiaceae	cleavers/goosefoot	ABC		+

Env Table 4: Plant remains from bulk samples

Key:

Habitat	Quantity
A= cultivated ground	+ = 1 - 10
B= disturbed ground	++ = 11- 50
C= woodlands, hedgerows, scrub etc	+++ = 51 -100
D = grasslands, meadows and heathland	++++ = 101+
E = aquatic/wet habitats	
F = cultivar	

4.5.1 Phase 2: medieval

A small assemblage of charred hazelnut shell and weed seeds, the latter presumed to have been associated with cereal crop material, was recovered from pit fill 10710. These remains are likely to derive from hearth waste or cereal crop processing. Little interpretation can be drawn from this small assemblage. A moderate quantity of large mammal bone recovered from context 10710 and 10714 residue suggests that relatively significant assemblages could be recovered from the full samples and from the surrounding site should further work be carried out on the site. Small quantities of small mammal, bird and fish bone were also noted (Env Table 3).

4.5.2 Phase 3: post-medieval

A small assemblage of charred cereal crop remains, including free-threshing and emmer/spelt wheat (*Triticum* sp free-threshing and *Triticum dicoccum/spelta* grains respectively). The latter is likely to be residual in this context. The moderate to abundant quantity of large mammal bone is well preserved, and as above, shows good preservation and potential of this material. Occasional small mammal and fish bone was also noted.

5 Significance

Large mammal bone is generally well preserved and relatively abundant for the area of the site excavated and sampled, showing good potential to provide information on animal husbandry and meat consumption for the medieval and post-medieval periods should further work be carried out on this site. Other remains, such as charred plant remains are of limited significance.

6 Synthesis

Archaeological investigations across the former livestock market site revealed no further evidence of prehistoric activity, implying that features found in a previous evaluation in the northern part of the site were either limited to a particular area or that other features from this period were removed by subsequent activity.

6.1 Medieval

Three gravel extraction pits, later used for dumping refuse were revealed in the south-eastern part of the site, the closest area to the medieval suburb centred on Widemarsh Street and is therefore likely to represent backplot activity within burgage plots fronting onto this principal route into the city.

6.2 Post-medieval /Modern

Perhaps the most important post-medieval activity recorded during the investigations was the 17th century east/west aligned ditch [10615] that, within the limit of excavation, was filled with a large quantity of animal bone. The assemblage recovered was consistent with bone core working and leather working, specifically tanning (Albarella 2003, 71-86) with a bias in the assemblage for metacarpals and horncores, and given the known association of cattle trade in the area it should not be a surprise that these subsidiary trades should be found in the immediate vicinity. As discussed in Albarella, it is often difficult to differentiate the trades of tanners and horners in the archaeological record but that tanning appears to have been the main trade often with the use of horn being a secondary subsidiary activity. The ditch itself lay along the projected route of the city ditch itself and it is possible that this feature represented the southern extent of that large ditch. All that can be said is that a base or plateau was noted in the base of the excavated area and as such it is impossible to state if this feature was part of the much larger city circuit or if it was a smaller parallel ditch that ran to the immediate north of this larger feature. To the north west of this a similar later 19th century gully [608] was revealed containing a similar assemblage of animal bone that was almost entirely comprised of cattle metacarpals and suggests a probable continuation of the same trades occurring on the site.

The recovery of two pits in the same area as the above suggested that a continuation in gravel extraction continued intermittently until at least the first half of the 19th century before substantial dumps of material were used to raise the ground level ahead of the livestock market development. These pits did not appear to have been open for any length of time and they were quickly infilled with domestic waste. It is thought that like the pits mentioned earlier that these were related to specific properties and may have been associated in small cottage industry events.

The discovery of a 19th century stone cess pit 610 within the rear areas of the domestic properties is not unusual and similar, if not almost identical structures have been recorded at other similarly dated urban sites such as Penn Street, Bristol (Ridgeway and Watts 2013). At this site where the layout of the property boundaries were discernable it was possible to see that the large cess pits were placed across the property boundary and used in parallel by both properties at the same time, and located at the rear extremity of the property boundary as they were they allowed easy access for the nightsoil workers to remove the waste for use in industrial processes that included tanning. Pit 610 was noted as having been filled with modern demolition from the abandonment of the site.

One of the more major alterations to the site was the deliberate dumping of large quantities of material to raise the surface level by what appeared to be a rough average of 0.5m. This was undertaken with a combination of industrial and domestic waste as well as material that was most likely sourced from other developments in the general area. The sheer quantity of material used helps to demonstrate the collective nature of this enterprise to reclaim uneven agricultural ground. The construction of the livestock market in the middle of the 19th century, followed by a number of later alterations and phases all had an impact on the area with a number of different services and structures truncating many of the earlier deposits and features.

7 Publication summary

Worcestershire Archaeology has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, Worcestershire Archaeology intends to

use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

A programme of archaeological works was undertaken at the former Hereford Livestock Market, Hereford (centred on NGR 350869, 240307). The investigation area lies to the immediate north of the historic centre of Hereford and comprises an area of c.5ha comprising the former Livestock market, elements of the surrounding streets, council offices, a car park and the Grade II Listed Old Market Inn.

The archaeological investigations were commissioned by CgMs Consulting on behalf of their client Stanhope PLC, who are in the process of developing the site into a new retail and entertainment complex for which planning applications have been approved. Investigations included an evaluation of land beneath a building demolished as part of the development, Garrick House and a watching brief carried out on intrusive groundworks in other parts of the site.

The development area lies partially within an area of Archaeological Importance and the Central Conservation Area of Hereford. A Scheduled Monument comprising a section of the city walls, rampart and ditch (DHE6203; SAM 00124) is situated close to the southern boundary of the site.

The development site lies to the north of the projected boundaries of the Saxon and Medieval towns and cartographic evidence demonstrates that until the middle of the 19th Century, the majority of the site was part of a common field known as Port Fields. The eastern part of the site, however lay within burgage plots fronting onto Widemarsh Street which was a major route into the city from the north from the Medieval period onwards.

Previous archaeological investigations undertaken within the north of the site have revealed evidence of late Neolithic/Bronze Age activity along with a number of undated post holes and pits and a post-medieval cultivation soil, which was also apparent in a geotechnical borehole in the northeast corner of the site.

Investigations did not recover further evidence of prehistoric activity. Evaluation in the south-eastern corner of the site revealed a cluster of pits, interpreted as gravel extraction pits, which were dug and backfilled with domestic refuse in the Medieval period. This activity is though likely to have taken place to the rear of burgage plots fronting Widemarsh Street.

To the south of this a linear ditch/gully was recorded running parallel to the main city ditch, and may have represented the northern limit of this large feature. An assemblage of 17th century material and a very large quantity of cattle metacarpals and horncores was recovered from the ditch. The bias in the assemblage is indicative for the tanning industry and horn working, and suggests that these activities must have been happening in the immediate vicinity. To the northwest of this feature an almost identical assemblage was recovered from a later 19th century gully, suggesting that these industrial activities continued in the area for at least 300 years.

To the immediate north a roughly rectangular structure 2m in length by 1m in width is thought to have been a cess pit associated with domestic properties fronting Newmarket Street.

The whole site was covered with an average of 0.5m of overburden material comprised of a combination of industrial and domestic waste and imported soils that were used to raise the ground level ahead of the construction of the Livestock market in the mid 19th century.

Through the latter part of the 19th century and continuing through the 20th century the development and evolution of the livestock market meant that many of the underlying earlier deposits were truncated by a variety of underground services and building foundations.

8 Acknowledgements

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9 Bibliography

Albarella, U, 2003 *Tawyers, tanners, horn-trade and the mystery of the missing goat,* in Murphy, P, and Wiltshire, P, E, J, (eds) *The Environmental Archaeology of Industry*, Symposia of the Association for Environmental Archaeology, **20**, Oxbow Books, Oxford

Archaeological Investigations 2007a *The Cattle Market (Edgar Street Grid) Hereford. First Phase Archaeological Evaluation.*

Archaeological Investigations *2007b The Cattle Market (Edgar Street Grid) Hereford. Second Phase Archaeological Evaluation.*

Archaeological Investigations 2007c *Edgar Street Grid Archaeological Work 2007 (Summary Update May 2007)*

Association for Environmental Archaeology 1995 *Environmental archaeology and archaeological evaluations. Recommendations concerning the environmental component of archaeological evaluations in England*, Working Papers of the Association for Environmental Archaeology, **2**

Bryant, V, 2004 Medieval and early post-medieval pottery in H Dalwood and R Edwards, *Excavations at Deansway, Worcester, 1988-89: Romano-British small town to late medieval city*. CBA Res Rep, **139**, 281-339

Cappers, T R J, Bekker, R M, and Jans, J E A, 2006 *Digitale Zadenatlas van Nederland: Digital seed atlas of the Netherlands*, Groningen Archaeological Studies, **4**, Barkhuis Publishing and Groningen University Library: Groningen

English Heritage 2010 *Environmental archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation*, Centre for Archaeology Guidelines

Herefordshire Archaeology 2004 *Standards for archaeological projects in Herefordshire: issue 1*, Herefordshire Council Planning Services, document dated 27 August 2004

Hillson, S, 1992 *Mammal bone and teeth: an introductory guide to methods of identification*, The Institute of Archaeology, University College London

Hurst, J D, and Rees, H, 1992 Pottery fabrics; a multi-period series for the County of Hereford and Worcester, in Woodiwiss, S G (ed), *Iron Age and Roman salt production and the medieval town of Droitwich*, CBA Res Rep, **81**, 200-9

IfA 2009 *Standard and guidance for archaeological field evaluation*, Institute for Archaeologists

IfA 2008 *Standard and guidance for an archaeological watching brief*, Institute for Archaeologists

Patrick 2011a *Specification for Archaeological Investigation: Livestock Market Hereford,* CgMs Consulting unpublished report dated May 2011

Patrick 2011b *Specification for Archaeological monitoring of Geotechnical Site Investigation,* CgMs Consulting, unpublished report dated July 2011

Patrick 2010 *Archaeological desk based assessment: Hereford Livestock Market*, CgMs Consulting, unpublished report dated October 2010

Ridgeway, V, and Watts, M, (eds) 2013 *Friars and Quakers, Industry and Urbanisation: the Archaeology of the Broadmead Expansion Project, Cabot Circus Bristol 2005-08,* CAPCA consortium, Oxbow Books, Oxford

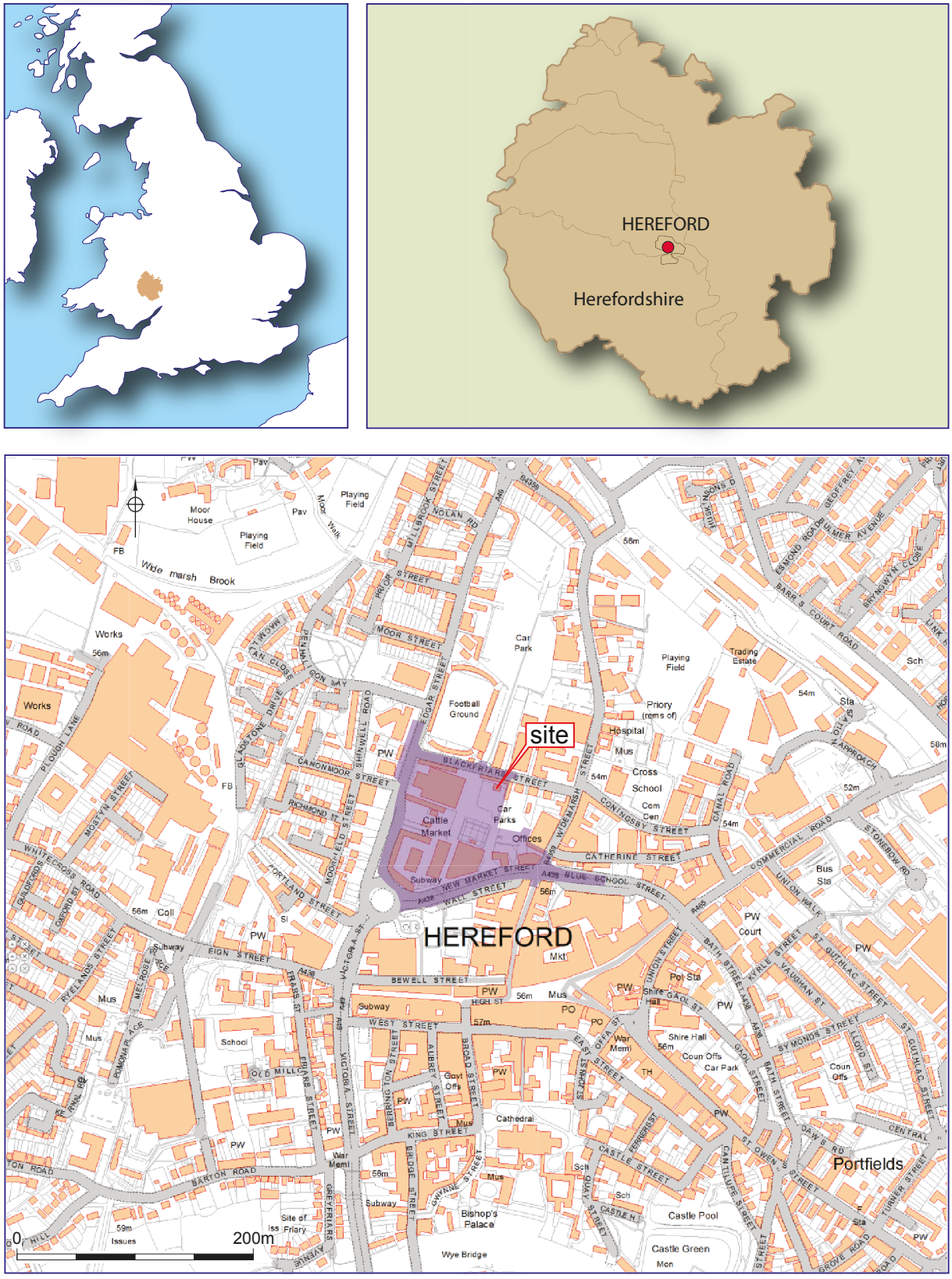
Schmid, E, 1972 *Atlas of animal bones for prehistorians, archaeologists and Quaternary geologists*, Amsterdam, London & New York: Elsevier

Stace, C, 2010 *New flora of the British Isles*, Cambridge University Press, (3rd edition)

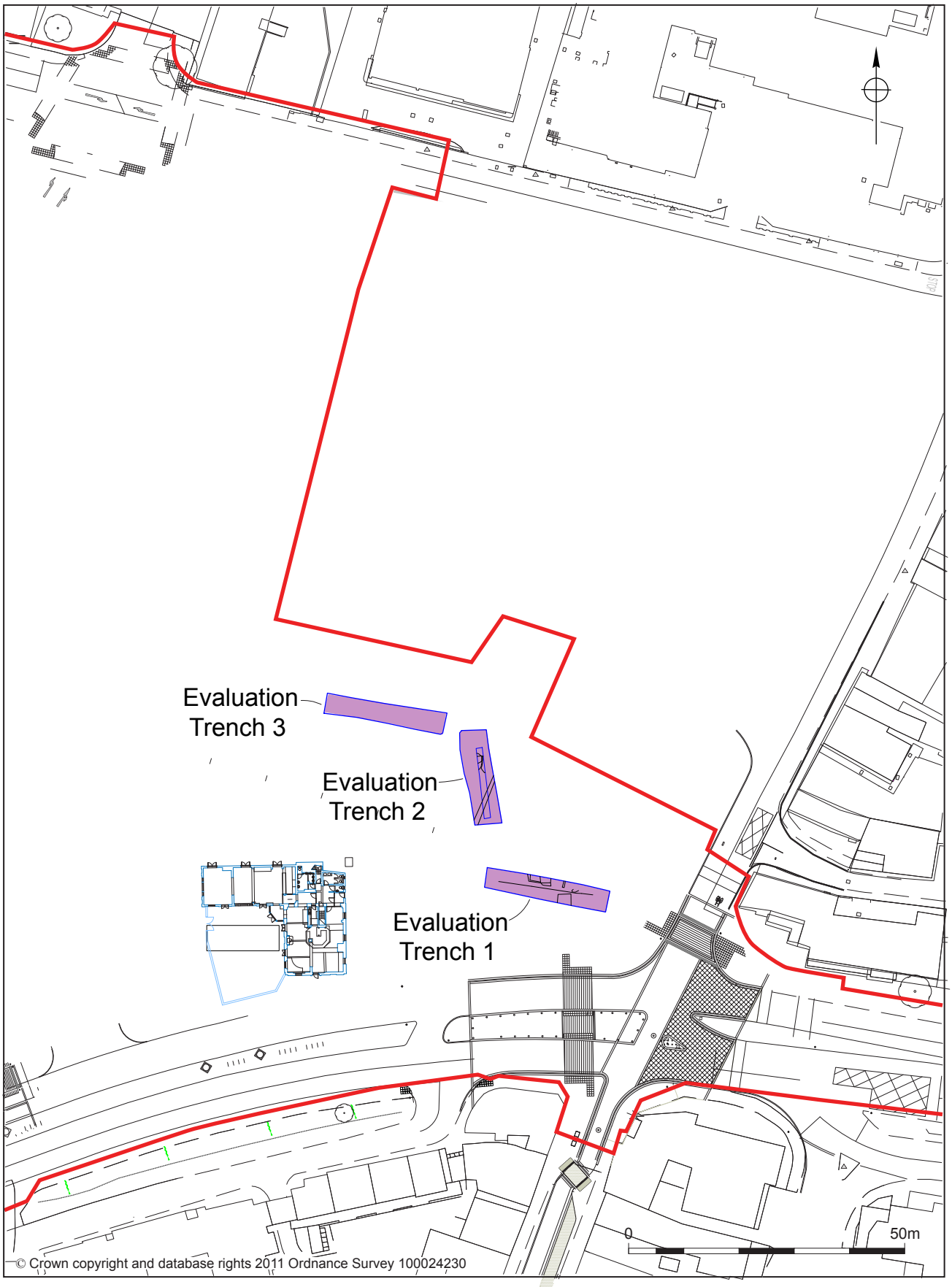
WA 2012 *Manual of service practice, recording manual*, Worcestershire County Council, report **1842**

Worcestershire Archive and Archaeology Service, 2012 *Worcestershire online ceramic database* [online]. Available from: http://www.worcestershireceramics.org [Accessed 3rd October 2013]

Figures

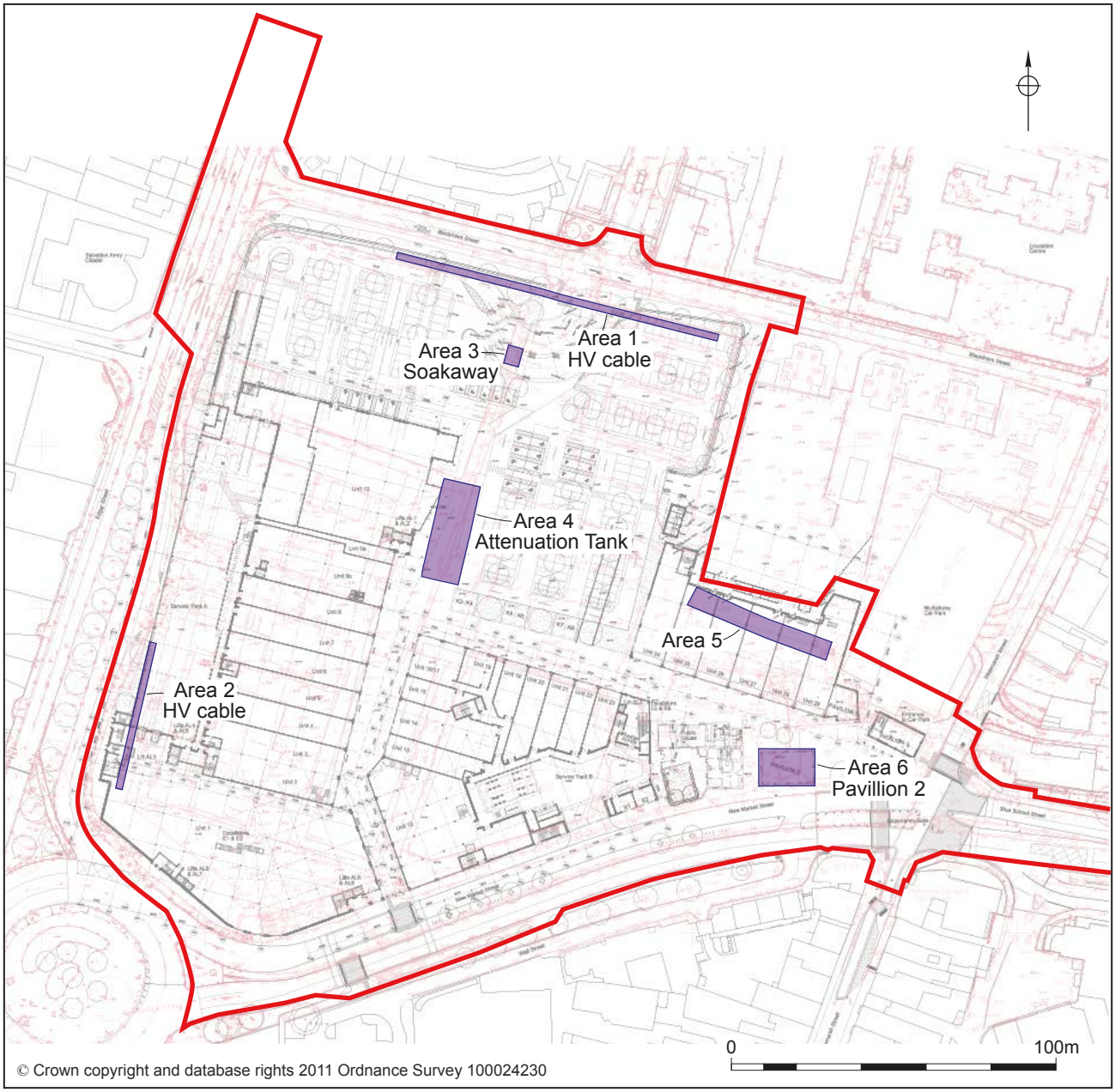


Location of the site *Figure 1*

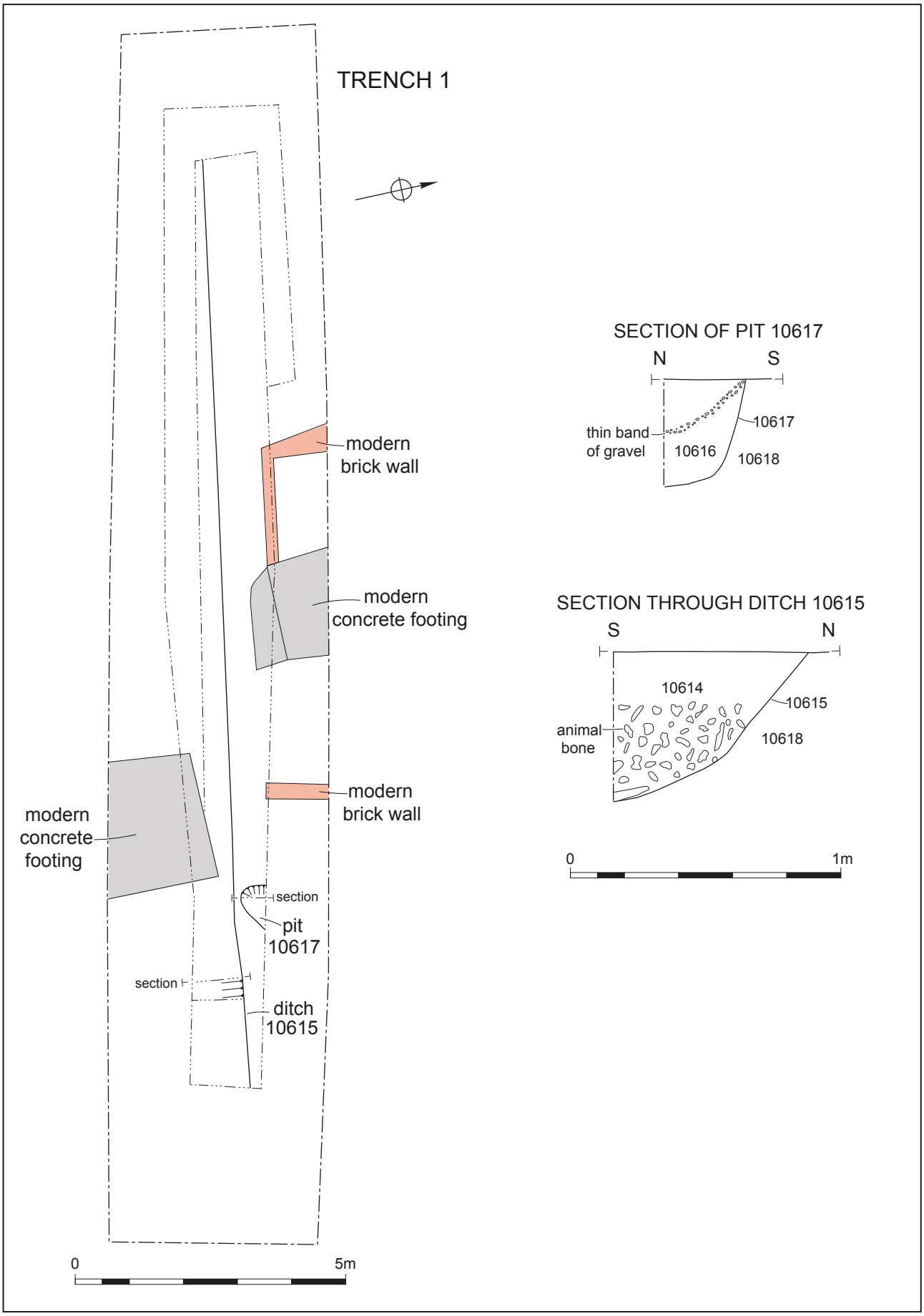


Location of evaluation trenches

Figure 2

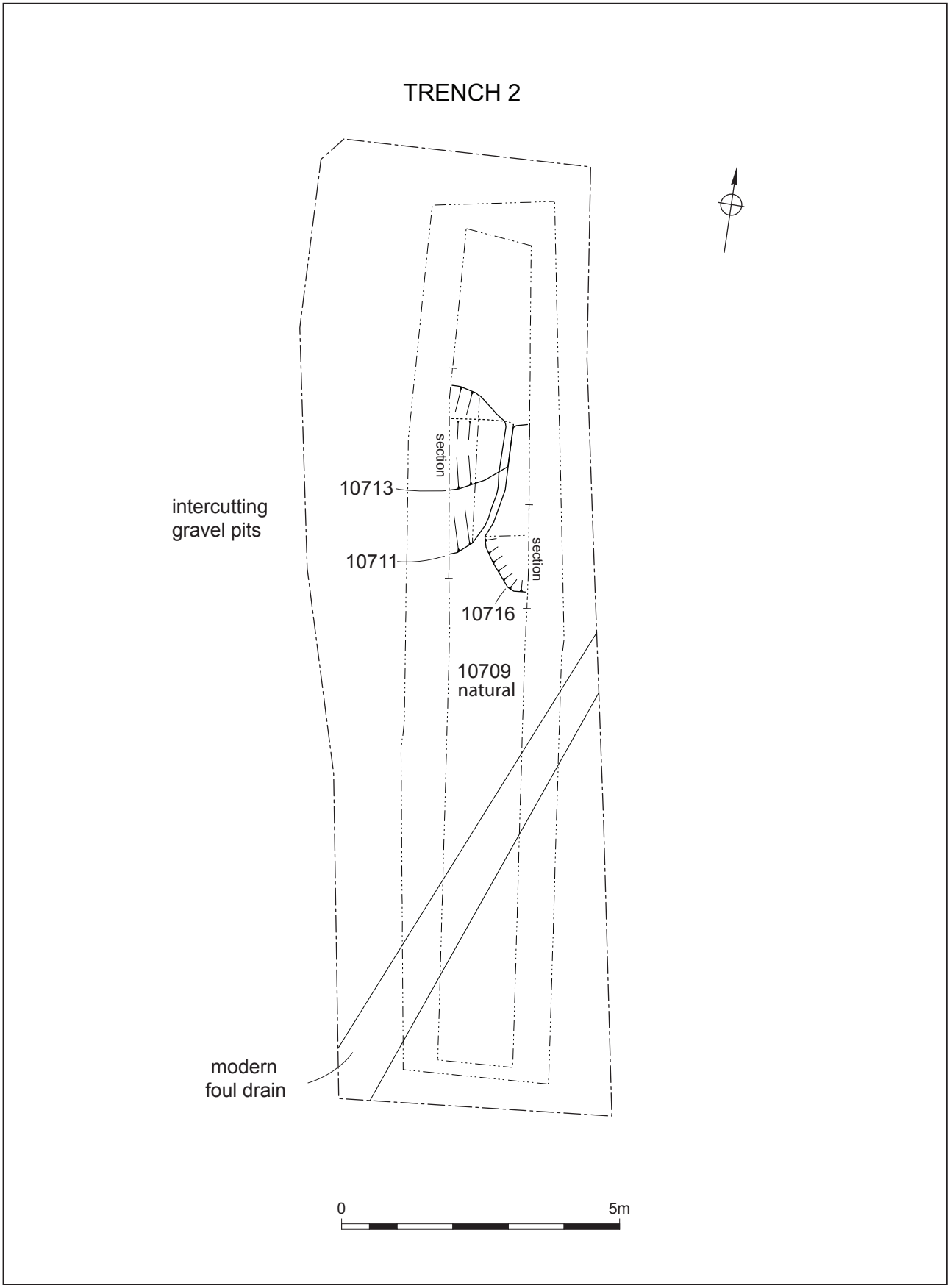


Watching Brief trenches and areas monitored *Figure 3*

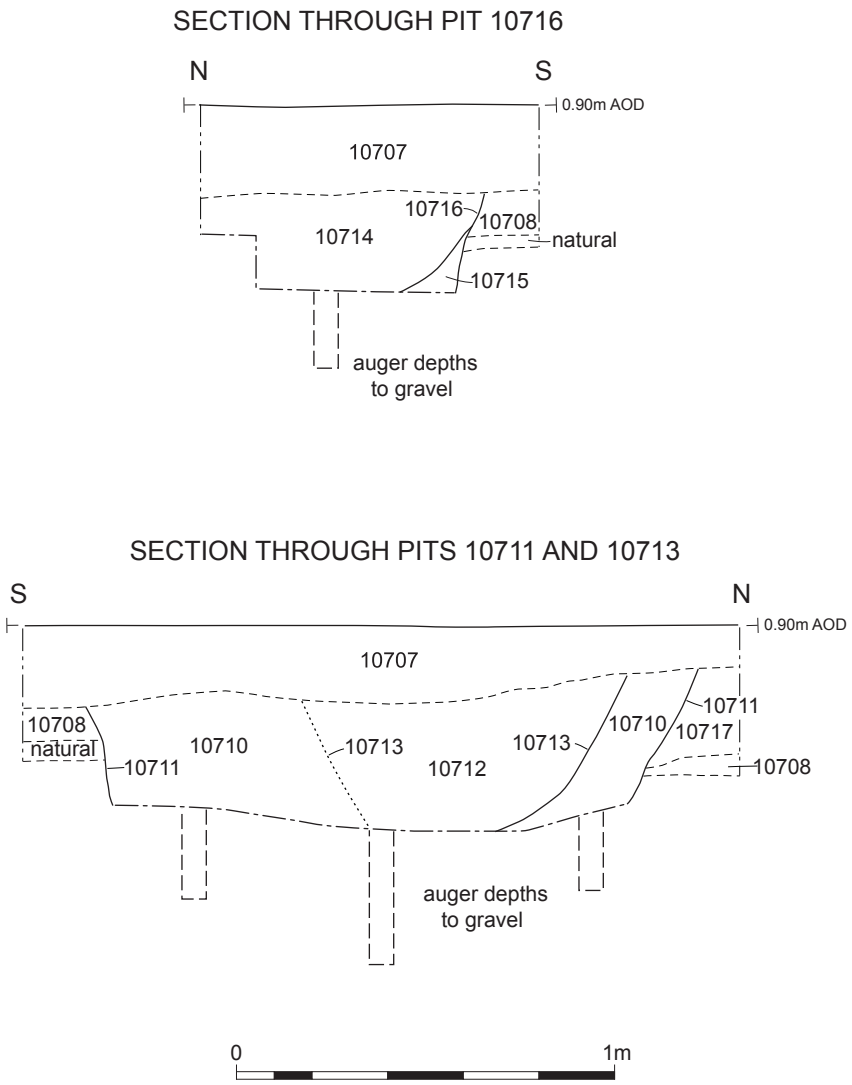


Evaluation Trench 1: plan and sections

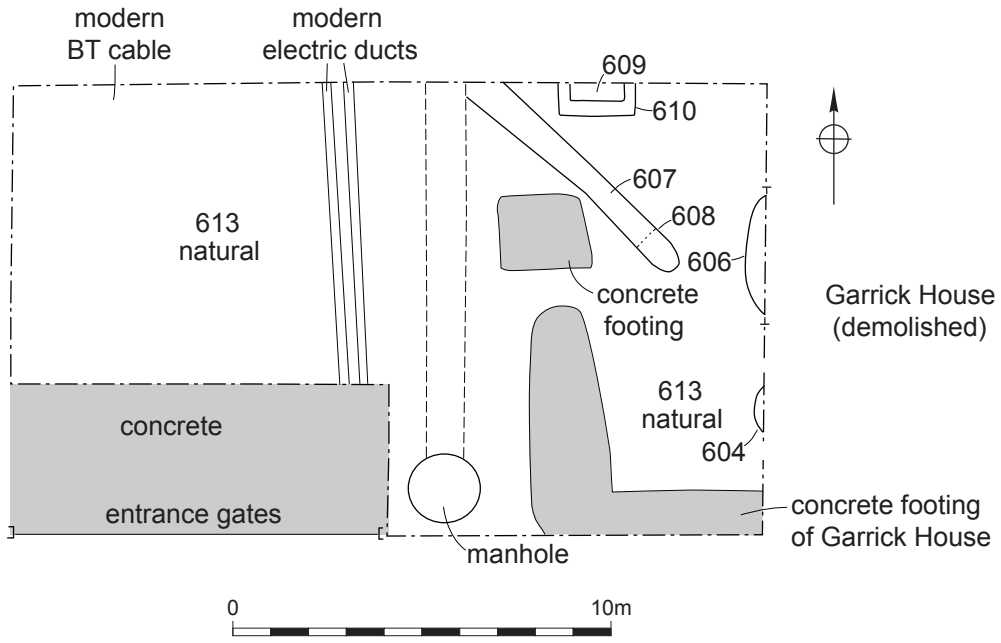
Figure 4

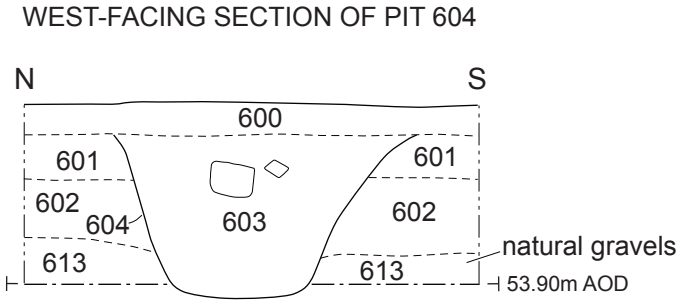


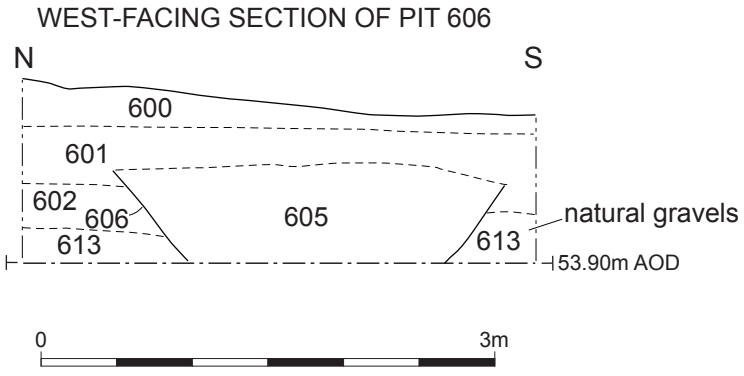
Evaluation Trench 2: plan *Figure 5*



Evaluation Trench 2: sections *Figure 6*







Plan and sections of Pavillion 2 *Figure 7*

Plates

Plate 1 HV cable west of entrance. View northwest.

Plate 2 HV cable at northern entrance showing modern services. View east.

Plate 3 Evaluation trench 1. View east.

Plate 4 East-facing section of linear 10615 in evaluation trench 1.

Plate 5 Plan view of Evaluation trench 2. View north.

Plate 6 Gravel pit [10711]. View west.

Plate 7 Plan view of evaluation trench 3. View east.

Plate 8 Attenuation tank excavation. View south.

Plate 9 Monitoring Units 27-30 footings (trench 5). View northeast.

Plate 10 Pavilion 2 west, showing modern disturbance. View southeast.

Plate 11 Pit [604] in Pavilion 2 west facing section.

Plate 12 Pit [606] in Pavilion 2 west facing section

Plate 13 Ditch [608] that has been truncated by modern footings and drainage, showing an abundance of animal bone filling the northwest end. View northwest.

Plate 7 Sandstone cesspit 610 found on Northeast side of Pavilion 2 excavation. View north.

Appendix 1 Trench descriptions

North and Southwest monitoring Nov – Dec 2012

Area 1 – HV Cable north boundary

Site area: Maximum dimensions: Length: 50.00m Width: 0.60m Depth: 1.20 – 1.40m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
100	Surface	Reinforced concrete	0.00 - 0.20m
101	Made ground	Orange sand and modern hardcore	0.21 - 0.30m
102	Post-medieval Made ground	Dark greyish brown silty clay with frequent brick, demolition and occasional porcelain	0.31 – 0.90m
[103]	VOID	VOID	VOID
104	Fill of [105]	Loosely compacted rubble backfill of modern investigation trench.	0.21-0.90m
[105]	Cut of modern investigation trench	Aligned roughly north/south with vertical sides and a flat base that was clearly excavated with a toothless ditching bucket and is the previous evaluation carried out by AI.	0.21-0.90m
106	Layer	Band of redeposited natural sand and gravels of firm compaction with occasional charcoal flecks throughout	0.31-0.90m
107	Natural substrate	Fine red brown sands and gravels and pea grit. Sub angular to sub rounded and poorly sorted	0.91m+
108	Fill of [109]	Mixed dark greyish brown silt rich clays with frequent CBM throughout and ceramic service at base	0.21-0.75m
[109]	Construction cut for service trench	North/south aligned service run with vertical sides dropping onto a flat base, 0.20m in width.	0.21-0.75m

Area 2 – HV Cable southwest boundary

Site area: Maximum dimensions: Length: 25.00m Width: 0.60m Depth: 0.80 – 1.10m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
400/700	Surface	Combination of tarmacadem, brick and paving slab directly overlying levelling red sand and grey type 1 hardcore	0.00 - 0.40m
401/701	Layer	Loose red brick rubble, mortar and demolition material	0.41-0.80m
402/702	Post-medieval Made ground	Moderately compact dark bluish grey post-medieval made ground containing CBM, frequent charcoal, clinker and ash flecks and blue and white porcelain throughout.	0.81-1.10m+

- Note: Multiple context numbers were given to these deposits as the trench was excavated in two unrelated phases.

Area 3 – Soak away Pit

Site area: Maximum dimensions: Length: 2.00m Width: 1.50m Depth: 3.10m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
500	Surface	Reinforced concrete exterior surface for Livestock market	0.00 - 0.25m
501	Layer	Light greyish red fine sand and light blue grey gravel hardcore that make a bedding layer for 500.	0.26 - 0.45m
502	Layer	Dark brownish grey soft silty clay with frequent brick, charcoal concrete and occasional tar inclusions	0.46 – 1.00m
503	Natural	Mid Reddish brown sand and gravels of firm compaction getting darker and pinker with	1.01m+

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
	substrate	depth.	

Area 4 (Attenuation Tank)

Site area: Maximum dimensions: Length: 31.50m Width: 10.00m Depth: 2.00m

Orientation: North - South

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
7000	Surface	Concrete hard standing for Livestock market	0.00 – 0.25m
7001	Layer	Large cobbles, broken brick, concrete and gravels. Levelling material for concrete hard standing 7000	0.25 – 0.50m
7002	Layer	Friable dark brownish grey soft silty clay with frequent brick, charcoal, and clinker. Also used as backfill for a number of modern service trenches	0.51 – 1.00m
7003	Natural Substrate	Mid Reddish brown sand and gravel of firm compaction, sloping north to south. Truncated by modern man-holes, drains and other service trenches in a number of places.	0.75 – 1.01m +
7004	Structure	North/south aligned brick wall foundation 0.75m in width and surviving for a depth of at least 11 coarses. The bricks were frogged, machine made and appeared to be of 20th century origin.	0.00 - 1.05m
[7005]	Construction cut for 7004	North/south aligned linear construction cut with vertical sides that drop onto a flat base	0.00-1.05m
7006	Services	Context number given to several 20th century services that crossed the trench.	0.26-0.97m

Area 5 (Units 27-30 watching brief)

Site area: Maximum dimensions: Length: 25.00m Width: 4.00m Depth: 1.50m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
2000	Surface	Tarmac surface	0.00 – 0.10m
2001	Layer	Bedding layer of loose hardcore type 1 gravels, angular CBM and tarmac fragments	0.11-0.30m
2002	Layer	Dark greyish brown silt rich clays of firm compaction with frequent CBM, concrete and demolition material throughout.	0.31-1.49m
2003	Concrete footing	Concrete pad for external yard surface	0.00- 0.25m
2004	Service routes	Context number given to several modern services that truncated the above deposits	0.10-0.98m
2005	Natural Substrate	Fine mid reddish brown sands and gravels and pea grit of firm compaction. Sub angular to sub rounded and poorly sorted	1.50m+
2006	Brick surface	Large external brick surface seen across entire area of excavation. Single coarse thick, same as surface seen in geotechnical pit 5 (10402).	0.10-0.30m

Area 6 (Pavilion 2 Footings)

Site area: Maximum dimensions: Length: 20.00m Width: 12.00m Depth: 2.00m bgl 54.30m West and 53.90m AOD East

Orientation: East -West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
600	Surfacing	Tarmacadum surface and underlying type 1 hardcore levelling, bedding material	0.00 - 0.30m
601	Modern made ground	Dark brownish grey soft silty sands with frequent charcoal, ash, clinker and mortar inclusions throughout	0.31m – 0.55m

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
602	Layer	Mid brownish red silty sands with occasional charcoal flecks and mortar noted throughout. Firm compaction.	0.56 – 1.00m
603	Fill of pit	Post medieval pit friable dark greyish brown silty sand, with frequent gravels and sandstone blocks and occasional white porcelain	0.56 – 1.20m + 53.90m AOD max
604	Cut of Pit	U-Shaped refuse pit dating to the 19th Century	0.56 – 1.20m+ 53.90m AOD max
605	Fill of pit	friable mid orange brown silty sand, with occasional dumps of brick and occasional white porcelain at base	0.56 – 1.20m+ 53.90m AOD max
606	Cut of pit	Wide pit with sloping side and a flat base. Post-medieval / 19th Century associated with original Cattle market c. 1850s and settlement in this location.	0.56 – 1.20m+
607	Fill of ditch	Continuation of ditch as found in trench 1, including abundant animal bone (sample taken), cbm and ceramics.	0.75 – 1.20m
608	Cut of ditch	1.2m wide and 5m long orientated southeast-northwest and not fully excavated	0.75 – 1.20m
609	Fill	Post medieval rubble including glass bottles, bricks, and metalwork.	53.90m AOD +
610	Structure	Sandstone lined cesspit for building measuring 1m x 2m	54.30m – 53.90m +
611	Fence post	Modern wooden fence post beneath demolition crush	0.30 – 1.00m
612	Cut of fence post	Straight sided, modern	0.30 – 1.00m
613	Natural	Red brown sands and gravels	1.00m + 54.20m AOD

Geotechnical Pit 1

Site area: Maximum dimensions: Length: 2.00m Width: 1.00m Depth: 1.20m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10001	Surface	Tarmac surface	0.00 – 0.05m
10002	Layer	Mid orange red gravels and sand mixed hardcore bedding for tarmac surface	0.06 – 0.12m
10003	Layer	Dark greyish blue silt rich sands with frequent charcoal and mortar flecks and occasional gravels throughout	0.13 – 0.33m
10004	Wall footing	Reinforced concrete and brick footing orientated northeast-southwest 0.40m in width	0.13 – 0.32m
10005	Layer	Mid greyish red firm silt rich sands and gravel mix with occasional CBM and charcoal throughout	0.33 – 1.12m
10006	Layer	Light brownish grey silt rich clays of moderate compaction with occasional charcoal flecks and gravels throughout.	1.13 – 1.20m+
[10007]	Construction cut for 10004	Vertical sides and flat based construction cut for wall footing 10004	0.13 – 0.32m

Geotechnical Pit 2

Site area: Maximum dimensions: Length: 2.00m Width: 1.00m Depth: 1.00m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10101	Surface	Tarmac surface	0.00 – 0.04m
10102	Surface	Concrete pad of former internal floor surface	0.05 – 0.14m
10103	Layer	Gravel hardcore bedding foundation for 10102	0.15 – 0.34m
10104	Layer	Mid blue-grey silt rich clay with very	0.35 – 0.77m

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
		frequent charcoal and mortar flecks throughout along with 20th century objects of metal and ceramic form	
10105	Layer	Mid reddish blue silt rich sands with frequent charcoal flecks throughout	0.78 – 1.00m+

Geotechnical Pit 3

Site area: Maximum dimensions: Length: 2.00m Width: 2.00m Depth: 1.00m

Orientation: North-South

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10201	Surface	Tarmac surface	0.00 – 0.08m
10202	Layer	Gravel hardcore bedding foundation for 10201	0.09 – 0.23m
10203	Layer	Mid greyish brown silt rich sand of firm compaction with charcoal and mortar flecks throughout	0.25 – 0.39m
10204	Wall footing	Concrete wall footing orientated north-south at least 1.50m in width	0.40 – 0.54m
10205	Layer	Light yellowish grey silt rich sands of firm compaction with frequent charcoal flecks throughout, overlies 10204	0.40 – 0.65m
10206	Layer	Loose brick, CBM and rubble mix of building demolition used as bedding for 10204	0.55 – 0.65m
10207	Layer	Dark bluish grey silt rich sand of firm compaction with frequent ash, charcoal and clinker waste throughout. Humeric in nature with CBM, oyster and ceramics noted	0.66 - 1.00m+

Geotechnical Pit 4

Site area: Maximum dimensions: Length: 2.00m Width: 1.00m Depth: 1.00m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10301	Surface	Tarmac surface	0.00 – 0.07m
10302	Layer	Gravel hardcore bedding foundation for 10301	0.08 – 0.37m
10303	Brick wall footing	Red brick wall footing orientated east/west with a light bluish grey mortar bonding. Wall measured at least 0.80m in width.	0.38 – 1.00m+
[10304]	Construction cut for 10303	Vertical sides and the base not seen.	0.38 – 1.00m+
10305	Layer	Mid greyish red silt rich clay with frequent charcoal and mortar flecks throughout.	0.38 – 0.95m
10306	VOID	VOID	VOID
10307	Fill of [10308]	Mid greyish red silt rich clay with frequent charcoal and mortar flecks throughout. Electrical cable seen at base of fill.	0.38 – 1.00m
[10308]	Service trench	East/west aligned construction cut with vertical sides dropping onto a flat base.	0.38 – 1.00m
10309	Layer	Dark blue-brown silt rich clay of firm compaction with moderate charcoal flecks throughout.	0.96 – 1.00m+

Geotechnical Pit 5 (Foundation block E2)

Site area: Maximum dimensions: Length: 4.00m Width: 3.00m Depth: 1.00m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10401	Surface	Tarmac surface	0.00 – 0.12m
10402	External yard surface	Red brick external yard surface at least 3m in length but seen to extend beyond the limit	0.13 – 0.19m

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
		of excavation.	
10403	Layer	Light orange grey silt rich sand of moderate compaction with occasional mortar and charcoal flecks throughout.	0.13 - 0.19m
10404	Cobbled surface	Stone cobbled surface made from hand sized rounded to sub-rounded cobbles directly underlying 10402 and 10403	0.20 – 0.31m
10405	Layer	Dark bluish grey silt rich sand with frequent charcoal, ash and clinker waste throughout.	0.32 – 0.83m
10406	Red brick wall	Red brick wall orientated north/south 0.16m in width	0.13 – 1.00m+
[10407]	Construction cut for 10406	North/south aligned construction cut for wall 10406 with vertical sides, base of construction cut was not seen.	0.13 – 1.00m+
10408	Layer	Mid bluish grey silt rich sands of moderate to firm compaction with occasional charcoal and mortar flecks throughout.	0.84 – 1.00m+

Geotechnical Pit 6 (Foundation block C2)

Site area: Maximum dimensions: Length: 4.00m Width: 3.00m Depth: 1.00m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10501	Surface	Tarmac surface	0.00 – 0.10m
10502	Layer	Light yellowish red hardcore crush of angular shape and loose compaction with frequent CBM throughout used as bedding for 10501.	0.11 – 0.29m
10503	Layer	Dark greyish blue silt rich sands of moderate to firm compaction with frequent charcoal, ash and clinker debris throughout.	0.30 – 0.42m

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10504	Layer	Light blue grey silt rich sand of moderate compaction with frequent charcoal, ash and clinker debris throughout.	0.43 – 0.87m
10505	Layer	Light greyish brown silt rich sands of moderate to loose compaction with occasional charcoal and mortar flecks throughout.	0.88 – 1.00m+
10506	Fill of [10507]	Mid blue-grey silt rich sands and clay mix of firm compaction with a ceramic foul drain placed at the base orientated north/south.	0.30 – 1.00m
[10507]	Construction cut for foul service	North/South aligned service run with vertical sides and a flat base.	0.30 – 1.00m

Evaluation phase Southeast corner of site

6 preliminary test pits were excavated to 1m depth to test for services and CBR testing prior to evaluation trenches being excavated. Trenches 100-105. One sherd of residual medieval ceramic was found within trench 100 from a garden soil similar to context (10804).

Trench 1

Site area: Maximum dimensions: Length: 15.00m Width: 1.00m Depth: 2.70m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10601	Surface	Reinforce concrete floor slab of Garrick House	0.00 – 0.40m
10602	Layer	Loose cobble sized aggregate backfill that appeared to be demolition of former building used as bedding for 10601	0.41 – 0.80m
10603	Modern footing	Concrete footing of Garrick House	0.81 – 2.00m
10604	Cut for modern	Cut for concrete footing	0.81 – 2.00m

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
	footing		
10605	Modern footing	Concrete footing of Garrick House	0.81 – 2.00m
10606	Cut for modern footing	Cut for concrete footing	0.81 – 2.00m
10607	Red brick wall footing	Red brick wall with a light greyish green mortar bonding. Wall measured 0.60m in width and orientated north/south	0.81 – 1.26m
[10608]	Construction cut for 10607	North/south aligned construction cut for structure 10607 with vertical sides that dropped onto a flat base.	0.81 – 1.26m
10609	Red brick wall footing	Red brick wall of identical construction to 10607 and thought to be part of the same structure. Measured 0.60m in width.	0.81 – 0.95m
[10610]	Construction cut for 10609	North/south aligned construction cut for structure 10609 with vertical sides that dropped onto a flat base.	0.81 – 0.95m
10611	Layer	Dark blue grey silty sands with frequent charcoal, ash, clinker and mortar inclusions throughout. Firm compaction	0.81 – 1.04m
10612	Layer	Light greyish red firm silty sands with occasional charcoal flecks and mortar noted throughout.	1.05 – 1.60m
10613	Layer	Mid blue grey silty sands of firm compaction with occasional gravels and charcoal flecks noted throughout.	1.60 – 1.79m
10614	Fill of [10615]	Firm mid brownish grey silty sand with occasional charcoal flecks, moderate gravels and frequent animal bone. Measured at least 0.93m wide and more than 15m in length.	1.80 – 2.34m
[10615]	Cut of ditch	East-west aligned ditch with a flat base and steep sides. Possible former boundary which has been utilized later to deposit waste from nearby butchery industry site / cattle market.	1.80 – 2.34m

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10616	Fill of [10617]	Firm mid blue grey silty sand with occasional charcoal flecks gravels, pot, bone and metal. Backfill of domestic rubbish origin	1.80 – 2.17m
10617	Cut of pit/posthole	East-west aligned teardrop shaped pit, at least 0.30m in width by 0.56m in length with steep sides and a concave base	1.80 – 2.17m
10618	Natural substrate	Fine red brown sands and gravels and pea grit. Sub angular to sub rounded and poorly sorted	1.80m +

Trench 2

Site area: Maximum dimensions: Length: 15.00m Width: 1.00m Depth: 1.70m

Orientation: North - South

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10701	Surface	Tarmacadum car park surface	0.00– 0.05m
10702	Modern levelling	Loose cobble sized crushed hardcore mix, angular with frequent CBM and occasional plastic running through.	0.06 – 0.48m
10703	Fill of [10704]	Light orange grey loose gravels to cobbles crush, angular. Modern backfill of large foul drain associated with car park to NE fill of [10704]	0.48 – 1.66m +
[10704]	Cut of foul service	Cut for modern foul drain. Vertical sides. Base not seen, orientated NE – SW. 1m wide	0.48 – 1.66m +
10705	Layer	Dark blue grey silty sand with frequent ash, clinker and charcoal flecks running throughout. CBM, china and willow pattern noted but not retained.	0.44 – 0.92m
10706	Layer	Dump of ceramic tile mix with loose ash and charcoal with associated CBM throughout	0.48 – 0.72m

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10707	Layer	Mid blueish grey silty sands on firm compaction with moderate charcoal flecks, mortar and ash throughout. General make up layer	0.92 – 1.35m
10708	Layer	Mid greyish orange firm silty sands with occasional charcoal and mortar flecks throughout. Natural interface.	1.35 – 1.66m
10709	Natural	Red brown sands and gravels	1.66m +
10710	Fill of [10711]	Homogenous backfill of large pit of firm yellowish brown sandy silt with frequent pebbles occasional animal bone, pot, cbm, metal and slag	1.12 – 1.78m
[10711]	Cut of pit	Large oval pit measuring 3.3m x 0.70m with steep sides and dug for gravel extraction and later used as a refuse pit. Augered at base.	1.12 – 2.25m
10712	Fill of [10713]	Firm mid yellowish brown silty sand backfill of refuse or gravel pit	1.30 – 2.00m+
[10713]	Cut of pit	Linear gravel pit with steep sides. Augered at base	1.30 – 2.71m
10714	Fill of [10716]	Soft mid greyish brown silty sand with frequent gravels and occasional pot and animal bone. Upper fill of pit [10716]	1.35 – 1.92m +
10715	Fill of [10716]	Lower fill of gravel pit. Soft mid greyish brown silty sand with frequent gravels moderate charcoal flecking and occasional pot and animal bone	1.56 – 1.92m +
[10716]	Cut of pit	Gravel pit with sharp vertical sides cutting earlier pits and backfilled with refuse including animal bone and pottery. Augered at base.	1.35 – 2.33m
10717	Layer	Garden soil deposit in north of trench cut by pit [10711] and covering natural interface 10708	1.12 – 1.58m

Trench 3

Site area: Maximum dimensions: Length: 15.00m Width: 1.00m Depth: 1.37m

Orientation: East - West

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10801	Surface	Tarmacadum surface of car park	0.00 – 0.07m
10802	Modern levelling	Demolition crush bedding layer of loose angular stone, CBM and tarmac fragments	0.07 – 0.41m
10803	Layer	Mid blueish grey firm silty sands with very frequent ash and charcoal flecks throughout, moderate sub-rounded and sub-angular gravels, poorly sorted with occasional CBM throughout. Fairly humeric garden soils.	0.41 – 0.79m
10804	Layer	Mid reddish grey silty sands of moderate compaction with frequent roots and charcoal flakes throughout, occasional rounded and sub-rounded gravels, poorly sorted. Fairly humeric garden soils.	0.79 – 1.27m
10805	Natural	Red brown sands and gravels rising to the west	1.27m +

Appendix 2 Technical information

The archive (site code: EHE 2173)

The archive for this phase of works consists of:

12	Context records AS1
13	Field progress reports AS2
6	Photographic records AS3
310	Digital photographs
1	Drawing number catalogues AS4
7	Scale drawings
X	Sample records AS17
1	Sample number catalogues AS18
X	Flot records AS21
21	Trench record sheets AS41
1	Box of finds
1	CD-Rom
1	Copy of this report (bound hard copy)

The project archive is intended to be placed at:

Hereford City Museum and Art Gallery
Broad Street
Hereford
HR4 9RU

Tel. Hereford (01432) 268121 extension 207/334

Summary of data for Herefordshire SMR

Report name and title	Archaeological Investigations at Hereford Livestock Market, Hereford, Herefordshire
Contractor's name and address	Worcestershire Archaeology
Site name	Hereford Livestock Market, Hereford, Herefordshire
Grid Reference (8 fig)	5086, 4030 **Planning Application Number**
SMR number/s of site	EHE 4173
Date of fieldwork	Nov 2012 – Aug 2013
Date of report	Nov 2013
	Number and type of finds
Pottery	**Period** **Number of sherds**
Other finds	**Period** **Quantity**
	Number and type of samples collected
Sieving for charred plant remains	Number of features sampled: Number of buckets:
C14/scientific dates	Number and type: Result:
Pollen	No of columns/spot samples: Name of pollen specialist
Bone	Number of buckets sieved for bone *Quantity recovered* *Period*
Insect	No of columns/spot samples Name of pollen specialist
Other	Type and specialist
Summary of the report	

Artefacts

period	material class	object specific type	count	weight(g)	start date	end date
early post-medieval	ceramic	pot	1	16	1600	1700
late med/early post-med	ceramic	roof tile	1	24	1500	1850
medieval	ceramic	pot	1	22	1200	1399
medieval	ceramic	pot	1	2	1500	1600
medieval	ceramic	pot	1	6	1200	1399
medieval	ceramic	pot	1	8	1200	1399
medieval	ceramic	pot	1	38	1500	1600
medieval	ceramic	pot	1	24	1200	1399
medieval	ceramic	pot	1	26	1200	1399
medieval	ceramic	pot	1	12	1200	1500
medieval	ceramic	pot	1	4	1200	1450
medieval	ceramic	pot	1	1	1250	1550
medieval	ceramic	pot	1	6	1200	1500
medieval	ceramic	pot	1	1	1200	1399
medieval	ceramic	pot	1	6	1450	1600
medieval	ceramic	pot	1	6	1250	1550
medieval	ceramic	pot	3	28	1200	1399
medieval	ceramic	pot	1	22	1250	1550
medieval	ceramic	pot	1	10	1200	1399
medieval	ceramic	pot	1	1	1250	1550
medieval	ceramic	pot	1	16	1075	1325
medieval	ceramic	pot	2	8	1200	1399
medieval	ceramic	pot	1	12	1175	1299
medieval	ceramic	pot	2	6	1200	1399
medieval	ceramic	ridge tile	2	284	1200	1600
medieval	ceramic	ridge tile	1	24	1200	1499
medieval	ceramic	ridge tile	1	10	1200	1499
modern	ceramic	wall tile	30	556	1900	2000
modern	glass	vessel	1	300	1900	2000
modern	glass	window	1	4	1900	2000
post-medieval	ceramic	brick	1	306	1600	1900
post-medieval	ceramic	clay pipe	1	1	1600	1900
post-medieval	ceramic	clay pipe	1	4	1600	1900
post-medieval	ceramic	clay pipe	1	1	1600	1900
post-medieval	ceramic	clay pipe	1	2	1600	1900
post-medieval	ceramic	clay pipe	1	2	1600	1900
post-medieval	ceramic	clay pipe	1	2		
post-medieval	ceramic	pot	1	2	1720	1770
post-medieval	ceramic	pot	4	24	1780	1830
post-medieval	ceramic	pot	1	2	1700	1900
post-medieval	ceramic	pot	1	4	1780	1830
post-medieval	ceramic	pot	1	4	1600	1700
post-medieval	ceramic	pot	1	4	1700	1800
post-medieval	ceramic	pot	1	16	1700	1900
post-medieval	ceramic	roof tile	1	8	1600	1900
post-medieval	ceramic	roof tile(flat)	4	180	1600	1850
post-medieval/modern	ceramic	pot	1	10	1800	1950
post-medieval/modern	ceramic	pot	1	24	1800	1950
post-medieval/modern	ceramic	pot	11	256	1800	1950
post-medieval/modern	ceramic	pot	1	86	1800	1950
post-medieval/modern	ceramic	pot	3	4	1800	1950

post-medieval/modern	ceramic	pot	1	18	1800	1950
post-medieval/modern	ceramic	pot	2	14	1800	1950
post-medieval/modern	ceramic	pot	1	8	1800	1950
post-medieval/modern	ceramic	pot	1	38	1800	1950
post-medieval/modern	ceramic	pot	1	4	1800	1950
post-medieval/modern	ceramic	pot	2	12	1800	1950
post-medieval/modern	ceramic	pot	1	4	1800	1950
post-medieval/modern	ceramic	pot	1	84	1800	1950
post-medieval/modern	ceramic	pot	1	12	1800	1950
post-medieval/modern	ceramic	pot	1	4	1800	1950
post-medieval/modern	ceramic	pot	1	2	1800	1950
post-medieval/modern	ceramic	pot	2	10	1800	1950
post-medieval/modern	glass	vessel	4	8	1800	1950
undated	metal		2	24		
undated	slag		1	90		
undated	slag		1	14		
undated	slag		2	20		

Notes

1) In some cases the date will be "Undated". In most cases, especially if there is not a specialist report, the information entered in the Date field will be a general period such as Neolithic, Roman, medieval etc (see below for a list of periods used in the Worcestershire HER). Very broad date ranges such as late Medieval to Post-medieval are acceptable for artefacts which can be hard to date for example roof tiles. If you have more specific dates, such as 13th to 14th century, please use these instead. Specific date ranges which cross general period boundaries can also be used, for example 15th to 17th century.

period	from	to
Palaeolithic	500000 BC	10001 BC
Mesolithic	10000 BC	4001 BC
Neolithic	4000 BC	2351 BC
Bronze Age	2350 BC	801 BC
Iron Age	800 BC	42 AD
Roman	43	409
Post-Roman	410	1065
Medieval	1066	1539
Post-medieval	1540	1900
Modern	1901	2050

period specific	from	to
Lower Paleolithic	500000 BC	150001
Middle Palaeolithic	150000	40001
Upper Palaeolithic	40000	10001
Early Mesolithic	10000	7001
Late Mesolithic	7000	4001
Early Neolithic	4000	3501
Middle Neolithic	3500	2701
Late Neolithic	2700	2351
Early Bronze Age	2350	1601

Middle Bronze Age	1600	1001
Late Bronze Age	1000	801
Early Iron Age	800	401
Middle Iron Age	400	101
Late Iron Age	100 BC	42 AD
Roman 1st century AD	43	100
2nd century	101	200
3rd century	201	300
4th century	301	400
Roman 5th century	401	410
Post roman	411	849
Pre conquest	850	1065
Late 11th century	1066	1100
12th century	1101	1200
13th century	1201	1300
14th century	1301	1400
15th century	1401	1500
16th century	1501	1600
17th century	1601	1700
18th century	1701	1800
19th century	1801	1900
20th century	1901	2000
21st century	2001	

Environmental Analysis Tables

Context	Sample	Feature type	Phase	Sample volume (L)	Volume processed (L)	Residue assessed	Flot assessed
10710	102	Pit	2	40	30	Yes	Yes
10714	103	Pit	2	40	10	Yes	Yes
10614	101	Linear	3	40	10	Yes	Yes

Env Table 1: List of environmental samples

context	material class	material subtype	count	weight(g)
603	bone	animal bone	1	18
607	bone	animal bone	14	886
607	shell	oyster	2	36

10408	bone	animal bone	2	6
10611	bone	animal bone	1	14
10612	bone	animal bone	2	4
10613	bone	animal bone	1	8
10614	bone	animal bone	15	340
10616	bone	animal bone	2	18
10707	bone	animal bone	2	4
10710	bone	animal bone	15	218
10710	shell	oyster	3	18
10710	bone	animal bone	29	92
10714	bone	animal bone	8	132
10714	bone	animal bone	44	376

Env Table 2: Summary of hand-collected animal bone

Context	Sample	large mammal	small mammal	fish	bird	mollusc	charcoal	charred plant	uncharred plant	Comment
10614	101	mod-abt	occ	occ			occ	occ	occ	occ pot, bead, Fe slag, ? burnt stone, ?mortar
10710	102	mod	occ	occ	occ	occ		occ	abt*	* root frags, occ pot, Fe slag, Fe obj, Cu alloy pin
10714	103	mod		occ	occ		occ			occ Fe slag, Fe obj

occ = occasional, mod = moderate, abt = abundant

Env Table 3: Summary of environmental remains from bulk samples

Latin name	Family	Common name	Habitat	10614	10710
Uncharred plant remains					
Sambucus nigra	Caprifoliaceae	elderberry	BC	+	
unidentified root fragments	unidentified				+++
Charred plant remains					

Triticum dicoccum/spelta grain	Poaceae	emmer/spelt wheat	F	+	
Triticum sp (free-threshing) grain	Poaceae	free-threshing wheat	F	+	
Cereal sp indet grain	Poaceae	cereal	F	+	
cf *Avena* sp grain	Poaceae	oat	AF	+	
Vicia cf *tetrasperma*	Fabaceae	smooth tare	AD		+
Vicia sativa ssp *nigra*	Fabaceae	common vetch	AB	+	
cf *Corylus avellana* shell fragment	Betulaceae	hazelnut	C		+
Galium cf *aparine*	Rubiaceae	cleavers/goosefoot	ABC		+

Key:

Habitat	Quantity
A= cultivated ground	+ = 1 - 10
B= disturbed ground	++ = 11- 50
C= woodlands, hedgerows, scrub etc	+++ = 51 -100
D = grasslands, meadows and heathland	++++ = 101+
E = aquatic/wet habitats	
F = cultivar	

Env Table 4: Plant remains from bulk samples