

Broadmarsh Bus Station and Car Park, Nottingham: An Archaeological Evaluation



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SUMMARY

Trial trench excavations by Trent and Peak Archaeology in May 2018 on the Site of the former Broadmarsh Bus Station and Car Park found deposits and features dating to the Mesolithic, Medieval and Post-Medieval periods. Three trenches were excavated.

Mesolithic deposits, consisting, of waterlogged channel/floodplain layers, were encountered and sampled by hand auger. The deepest deposits recorded, at 3.44m below ground level (BGL), were radiocarbon dated to 7453-7187 cal BC and indicated mainly stagnant or low energy depositional conditions, although there may have been changes, including channel migration across the floodplain. At the top of the sequence (2.8m BGL), radiocarbon dated to c. 5876-5732 cal BC, conditions had returned to more stagnant conditions. No cultural material was recovered from these deposits, but this does not preclude the existence of such material within the Site.

The medieval features are likely to represent boundary features associated with the Greyfriars, namely two well-preserved sections of wall that may represent the precinct walls of the Greyfriars, as well as deposits potentially associated with activity within the precinct walls. Presence of at least some medieval tiles from a high-status building may indicate a church or other structures associated with religious orders within the vicinity of the Site. However, given that only small sections of both of the walls have been revealed, their function, their relationship to each other and the sort of activity to which they relate are currently uncertain. Animal remains suggested possible light leather production within the Site, although the relatively small size of the assemblage and the lack of features associated with tanning within the trenches make this uncertain.

The post-medieval evidence indicates use of this area at this time, perhaps reusing some of the boundaries of the medieval Greyfriars, but the medieval walls had been partly dismantled by this time. Activity seems to have included some leather production/leather goods manufacture, as implied by leather offcuts and the animal remains. The plant remains and insect remains recovered from late medieval/early post-medieval deposits (1034) also suggest a mixture of grassland/pasture, cultivated ground/arable fields and damp to wet environments, suggesting that this was a peripheral area of the post-medieval town, as is also implied by historic mapping. However, given the small area and extent of features of this date that were excavated, little else can be said about the context and scale of activity at the time.

The recommendations for further work at the Site are as follows:

- 1) During the watching brief phase it is understood that floor slab formation level will be restricted so that there is no impact on the Greyfriars precinct wall. In Trench 1, the upper parts of the wall were located at approximately 23.06 AOD (around 1m below ground surface) but in Trench 3 it was found at approximately 22.78 AOD. The variable depths of made ground across the Site (see Davies 2017) and the potential variation in preservation of the wall mean that there is uncertainty over the depths at which it may be present across the Site. The principle of preservation *in situ* is sound, and needs to be archaeologically monitored and controlled during the construction phase. Archaeological monitoring and recording (watching brief) during the construction phase also needs to ensure that pile locations adhere to the agreed footprints (mainly re-using existing pile locations) and that any new impact to sub-surface deposits (e.g. proposed drainage runs) is fully monitored and recorded by a competent field archaeologist.
- 2) The environmental sampling during the evaluation phase has indicated that this area has high potential to contain further waterlogged deposits,

containing well-preserved, waterlogged plant remains. Although pollen preservation was poor, this was only one sample and, given the right conditions, it is possible that better preserved pollen exists within deposits located within the Site boundaries. In addition, this work has retrieved what appears to be the first set of insect faunas from any period recovered from Nottingham City Centre and, as such, is of national importance. Any further opportunities to undertake additional environmental sampling during the watching brief phases should be sought. This should include a second core sequence and bulk samples from the more deeply buried deposits.

- 3) Further work on the environmental remains recovered from sample <2> from medieval fill (2007), as set out in 8.5.47, should be undertaken. This additional work could be undertaken as part of the watching brief report.
- 4) The remains already uncovered, combined with any additional insights obtained during the watching brief phase already warrant publication in a Journal such as the Journal of Wetland Archaeology. Provision should be made for this in the watching brief specification.

1 INTRODUCTION

- 1.1.1 Trent & Peak Archaeology (hereafter referred to as TPA) were commissioned by Nottingham City Council to undertake a trial trench evaluation on the former site of the Broadmarsh Bus Station and Car Park, Nottingham. This work was required in advance of the redevelopment of the site into a new facility, including a ground floor bus station, multi-storey car park, retail units and potentially residential apartments on the upper floors.
- 1.1.2 The site location is SK 57398 39440 (Figure 1). The entirety of the redevelopment footprint is approximately 6942m² in size.
- 1.1.3 The evaluation took place in May 2018 and involved the excavation, monitoring and recording of three trial trenches.

2 PROJECT BACKGROUND

- 2.1.1 The trial trenching was required due to a requirement for an archaeological evaluation at the site. This was initially due to consist of eight trial trenches, but was reduced to three due to restrictions on excavation (see Methodology). Scott Lomax, Acting City Archaeologist at the time (now City Archaeologist) stated prior to the work that:

“The development site is within the Nottingham City and Canal Archaeological Constraint Area. The Archaeological Constraint Area recognises the potential for surviving archaeological remains of medieval and post- medieval date.

It is believed that there is a high potential for archaeological remains of medieval and post-medieval date, including well – stratified organic deposits (which may include prehistoric remains).

The site lies within the historic core of the city of Nottingham. The archaeological potential for the site is outlined in a Desk Based Assessment submitted with the planning application (Davies 2017). Particular attention is drawn to the excavations undertaken in 1937 within the site boundary, where the boundary wall of the Greyfriars Friary was encountered and also two evaluation excavations on the site of the Nottingham City Hub to the immediate east of the bus station site (Brown 2006; Higgins 2017). The Desk based Assessment identifies areas with alluvial deposits contained well persevered organic remains of archaeological interest.

A scheme of archaeological field evaluation is necessary to assess the character, extent and condition of archaeological remains and will establish whether further archaeological work is required as a planning condition in advance of and/ during groundworks.

A Written Scheme of Investigation is required to provide a detailed scheme of the archaeological works in sufficient detail to be quantifiable, implemented and monitored. The Written Scheme of Investigation should follow this brief and must be approved by the City Archaeologist prior to fieldwork commencing.”

- 2.1.2 Following this, a Written Scheme of Investigation (WSI) was prepared (Hooley 2018), in order to meet part of the brief requesting a WSI (Lomax 2017).

3 SITE TOPOGRAPHY AND GEOLOGY

- 3.1.1 The Site is located on the south side of the historic core of Nottingham city centre (Figure 1), occupies an area of approximately 1.1 hectares and is roughly rectangular. The site is flat with a ground surface of c.24.6m AoD, with external areas to the east and west sloping from north to south, with an overall fall of approximately 5.00m
- 3.1.2 The overlying soils are freely draining, floodplain soils (www.landis.org.uk/soilscapes).
- 3.1.3 The underlying geology is Nottingham Castle Formation Sandstone overlain by alluvium. Earlier borehole surveys undertaken on slightly lower ground to the immediate west and south of the Site identified a depositional sequence comprising underlying sandstone bedrock (16-17m AoD), overlain by sands and gravels (17-19m AoD), alluvial silts (19-21 AoD) and later garden soils, made ground and early modern cellared structures make up the superficial deposits across the site.

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

- 4.1.1 An Archaeological Desk-Based Assessment was prepared by TPA in November (2017 (Davies 2017), which is summarised here, with some additions.

Prehistoric period

- 4.1.2 The Nottingham area was undoubtedly visited, exploited and ultimately inhabited at various times during prehistory. In particular, the corridor of the River Trent seems to have been a particularly attractive corridor for concentrated activity, as reflected by a number of 'stray' finds (Lomax 2013, 41). By later prehistory there is also some evidence for occupation further north, in the higher areas of land now occupied by the historic core of Nottingham, for example Iron Age pottery recovered from pits in the Lace Market at Halifax Place. Historic England and the Nottingham City HER do not record any prehistoric heritage assets within the Site or Study Area, and the nature of any potential activity on the site during this period of time therefore remains unknown.

Romano-British Period

- 4.1.3 Excavations to date have failed to locate any substantial evidence for a Romano-British period presence within the historic core of Nottingham, and the nature of settlement in the area at this time remains unknown. Historic England and the Nottingham City HER do not record any Romano-British heritage assets within the Site or Study Area, and the nature of any potential activity on the site during this period of time therefore remains unknown.

Early Medieval Period

- 4.1.4 Although no Early Anglo-Saxon (410-649 AD) finds have been made in Nottingham, by the Middle Anglo-Saxon period (650-850AD) there was permanent settlement and occupation in Nottingham. Excavations suggest that this may have initially been concentrated at the east of the historic core (c.350m north-west of the Site) around a north to south aligned watercourse known as The Beck, extending westwards (Lomax 2013, 47).

- 4.1.5 By the Late Anglo-Saxon period (perhaps as early as the Ninth century) the defences of Nottingham's pre-conquest borough are laid-out, and are now well documented and partially investigated ; something of the internal layout and use of space within the borough around this time is also known.

Although the earliest dated heritage assets within the Study Area date to the Early Medieval period, all of these are located to the north of the Site. Nothing is presently known about the nature of occupation (if any) within the Site at this time. Whether concentrated human activity was viable may depend on the suitability of ground conditions and the course of the River Leen at this time.

Medieval Period

- 4.1.6 By the Medieval period much more is known about settlement and land use within Nottingham, including the southern fringes of the historic core around the River Leen. By the twelfth century we see the laying-out of a much larger 'French' borough extending northwards to Parliament street and westwards to the Castle, itself founded as early as 1068 AD and rebuilt in stone by 1171.
- 4.1.7 By the thirteenth century at least part of the boundary of the Site may have lay within the land of Greyfriars Friary. The friary was the religious house of the Franciscan friars of Nottingham and may have been founded at sometime between 1224 and 1230 (Lomax 2013, 106). The main Friary buildings appear to have been located somewhat north of the present DBA Site. The Friary had rights to bury and a number of burials thought to be associated with the Friary have been found c.50-150m north of the Site beneath what is now the main Broadmarsh Centre. Speed's 1610 Map of Nottingham shows a rectangular enclosure labelled "Graye Friers", with buildings running along its western and northern sides (Figure 2). The south-eastern corner of this enclosure which appears to be contained within the site. However, on a slightly earlier map of Nottingham, taken from Bankes' 1609 Crown Survey of Sherwood Forest, the Site is situated within an open area, bounded by roads on three sides and the River Leen on the south side. The reason for the disparity is uncertain., although one explanation may be that the rectangular area shown on Speed's map was then newly built and the label "Graye Friers" just referred to the former general area of the Franciscan friary, which had been dissolved in 1539.
- 4.1.8 The Nottingham City HER records the discovery of two sections of a wall on the Site, which were interpreted as the southern Boundary wall for the medieval Greyfriars Friary, by George Campion and The Thoroton Society Excavation Section in 1937. The south boundary wall of the Greyfriars site has been found in four places along the north bank of the River Leen during construction work at Greyfriars Hall, Gordon House, Widdowson's West Wing, Widdowson's East Wing. The footing of the wall was recorded as being approximately 15ft (4.5m) below ground level. The 1930s excavations are not well located and the precise location of this feature on the Site is not certain.
- 4.1.9 Although at least part of the present Site seems to have lain within the enclosed land of the Greyfriars, this land may have been devoid of permanent structures and habitation. Instead, both historical and archaeological evidence suggest that at this time those areas outside the town defences, on the lower lying portion of floodplain north of the River Leen, may have been reserved for informal industry instead, including particularly noxious activities such as tanning (Hunt 2014, 4).
- 4.1.10 During the construction of the Great Central Railway Evaluation towards the end of the Nineteenth century, immediately east of the Site, excavations revealed a black soil containing horns and other cattle remains (Lomax 2013, 148). Horn

cores are a notable waste product of the tanning process. Later, trial trench evaluations immediately west of the Site undertaken in 2006 in advance of proposed redevelopment of the Broadmarsh Centre also uncovered a large amount of cattle tarsal and metatarsal within Thirteenth to Fifteenth century deposits.

- 4.1.11 A documentary reference from 1435 refers to gardens between the southwest corner of the Greyfriars wall and the River Leen, as well as common ground to the southeast of the wall (Stevenson 1883: 356-357).
- 4.1.12 Recently (2017) archaeological trench evaluation c. 100m to the east of the site at Cliff Road (Narrow Marsh) - the proposed Nottingham College Skills Hub site - has identified alluvial silts at a height of 22.55 to 22.8 m AOD in undisturbed areas (327-336). This horizon had archaeological features cut into it, comprising probable late medieval/early medieval clay-lined pits and horn core waste associated with tanning (Higgins 2017).

Post Medieval Period

- 4.1.13 During the post-medieval period, the marginal and industrial character of the immediate environs of the Site was sustained, but buildings and routeways increasingly encroached. This led to issues of cleanliness; for example, the Borough Records note that there were frequent problems throughout the Seventeenth century with latrines from the cliff top (e.g. High Pavement to the east) emptying into the Leen.
- 4.1.14 Following Speed's 1610 map, the next map to show the site was Thoroton's Map of Nottinghamshire, where the Greyfriars was no longer named, but much of the Site still being open, with a line of trees running along the River Leen and houses to the west of the Site. Documentary evidence from 1613 also indicates that at least part of the wall was standing at that point (Lomax, pers comm.). An earlier reference from 1531 refers to a meadow between the Greyfriars wall and the River Leen (Stevenson 1885: 369). Badder and Peat's 1744 Map shows the area as mostly rough ground, with a north-south aligned field boundary at the western extent of the Site and for the first time, occasional structures and plot boundaries of uncertain function in the southeast corner of the Site.

19th Century

- 4.1.15 Wild and Smith's Map of 1820 show a number of structures within the south-eastern part of the Site, possibly including some of those first depicted on the 1744 Badder and Peat Map. The structures may have comprised both domestic houses and warehouse structures, and their slightly odd layout may pay reference to earlier constraints. The remainder of the site is still open, but appears to have been laid out - at least in part - as gardens.
- 4.1.16 A decade later, Staveley and Wood's map of 1830 shows the Site to have been largely transformed. The entirety of the site was now developed with a number of north to south and east to west streets and associated domestic buildings. The area at the southeast of the site retained its slightly unusual layout derived from earlier structures. This general layout seems to have been retained throughout the 19th century, as shown by other maps from this period.

Modern Period

- 4.1.17 The construction of the Broadmarsh Centre in the twentieth century removed much of the earlier legibility of the medieval and post-medieval landscape and no-doubt destroyed many earlier remains.

5 AIMS AND OBJECTIVES

Aims

- 5.1.1 The overall aims of the works are to identify any buried archaeological remains of interest, and characterise their preservation and significance. These aims dovetail with the following elements of the East Midlands Heritage Research Agenda and Strategy (Table 1). In addition to this, there was also thought to be the potential for industrial activities, primarily noxious industries, to have been occurring within the boundaries of Greyfriars. The 2006 evaluations suggested that tanning may have been undertaken under the jurisdiction of the Greyfriars and within the Greyfriars Friary grounds, but the potential relationship is presently unknown (Lomax 2013: 148).

Table 1: Relevant questions from the East Midlands Research Agenda and Strategy (Knight et al. 2012)

Early Medieval (AD 410-1066)
<i>6.5 Inland Towns, 'central places' and burhs</i>
4. How did Nottingham develop during the Anglo-Saxon and Viking periods?
High Medieval (AD 1066-1485)
<i>7.1 Urbanism</i>
1. How did the major towns develop after the Norman Conquest, both within the urban core and in suburban and extra-mural areas?
2. Can we define more closely the industrial and trading activities associated with towns and the nature and extent of urban influence upon the countryside?
Post-Medieval (AD 1485-1750)
<i>8.1 Urbanism: Morphology, functions and buildings</i>
4. What can studies of environmental data, artefacts and structural remains tell us about variations in diet, living conditions and status?

Objectives

- 5.1.2 The trial trench evaluation will seek to meet the overall aims through the following objectives:
1. To identify any buried archaeological remains of interest, and characterise their preservation and significance to inform the need for any further excavation.

2. To assess the significance of buried archaeological remains within the development area, to see if this could offer an opportunity to address the research priorities highlighted above from the East Midlands Updated Research Agenda and Strategy, numbers 3.5.4, 7.1.1, 7.1.2 and 8.1.4 (Knight, Vyner and Allen, 2012).

3. To recover and retain artefacts and samples of geoarchaeological/palaeoenvironmental interest if present as these may contribute to an understanding of the nature of the landscape and the uses to which it was put.

6 METHODOLOGY

Excavation

- 6.1.1 Bar some exceptions (outlined below), the excavations were conducted in accordance with the Written Scheme of Investigation (WSI) (Hooley 2018), as approved by the Nottingham City Archaeologist, and with standards defined by Chartered Institute for Archaeologists (CIfA) guidelines for archaeological excavation (CIfA 2014).
- 6.1.2 The original WSI stated that eight trenches that were to be excavated across the site, to cover a total of 11% sample of the total area within the Site boundaries, and set out proposed locations of those trenches. However, within the western third of the Site, double concrete pads existed, meaning that the three trenches that were to be located there could not be excavated. Within the northern part of the Site, the piling from the old car park was too densely packed in order to put in trenches, whilst a building in the northeast corner that was originally understood to be have been demolished, was still present. Accordingly, the two trenches that were due to have been located here could not be excavated. Following discussions with the Nottingham City Archaeologist, it was agreed that three trenches would be excavated (Figure 2).
- 6.1.3 The trenches were excavated using a 360° tracked excavator fitted with a toothless ditching bucket under constant archaeological supervision.
- 6.1.4 The trenches and archaeological features were located using a Leica CS15/GS15 RTK Differential GNSS prior to excavation.
- 6.1.5 Trenches were excavated to a depth in which archaeological deposits were present, or in their absence, to a maximum (unsecured) depth of 1m (see below), to comply with H&S restrictions (or to a perceived safe depth if the sides were stable). Further slots were excavated below 1m, in areas adjoining Wall [1002] in Trench 1.
- 6.1.6 Features were hand-cleaned and planned. Following scanning by a metal detector features were sample excavated sufficient to determine their plan and form, and to recover any datable artefacts.
- 6.1.7 Feature fills were removed by contextual change. Substantial features were hand excavated to a maximum depth of 1 m.

Recording and Sampling

- 6.1.8 Plans of all contexts including features were drawn on drafting film in pencil at a scale of 1:10 or 1:20, and show at least: context numbers, all colour and textural changes, principal slopes represented as hachures, levels expressed as O.D.

values, or were levelled to permanent features if a benchmark was absent, sufficient details to locate the subject in relation to OS 1:2500 mapping.

- 6.1.9 Sections show the same information, but levelling information was given in the form of a datum line with OD/arbitrary value; the locations of all sections were shown on plan.
- 6.1.10 Digital images and B&W photos of each context were taken (as per Brown, 2007) together with general views illustrating the principal features of the excavations.
- 6.1.11 Written records were maintained as laid down in TPA recording manual.
- 6.1.12 All finds were recorded either three-dimensionally or by context/spit.
- 6.1.13 Where appropriate features were identified, soil samples were retrieved in order to undertake palaeo-environmental sampling. The sampling of features followed procedures set out within the English Heritage Centre of Archaeology Guidelines, Environmental Archaeology 2011.
- 6.1.14 Depending on the type of deposits identified, soil samples were retained for the purposes of retrieving industrial residues or for the provision of scientific dating (e.g. C14 dating).

7 RESULTS

Watching brief on removal of concrete slab

- 7.1.1 At the western side of the site, a large concrete slab was present. A watching brief was undertaken while it was being removed. There were no visible signs of archaeology within this area, which had been truncated due to being the location of the substation for the Broadmarsh Car Park. At a depth of 1.8m below the depth of the first slab, a second concrete slab was encountered. Following this, work in this area ceased.

Trench 1

- 7.1.2 This trench ran on a north-north-west to south-south-east alignment for approximately 60m (Figure 3, Plate 1). It was approximately 1m wide along much of its length, but at its southern end was widened to around 1.6m in order to further investigate wall [1002]. The features in the trench were all covered by modern layers (1000), but in addition to the area around wall [1002], which became apparent during machine excavation, a slot was also put in at the northernmost end to investigate deposits below these layers.

Mesolithic

- 7.1.3 Due to the depth of deposits and restrictions regarding the excavation, the natural bedrock was not reached. The deepest deposit identified was (1008), a brown organic silt layer, the surface of this deposit was identified at 2.8m below the surface of the evaluation trench. The deposit was still present at a depth of 3.44m below the surface of the trench, as shown by a core sample which was taken from the trench base. This is likely a layer laid down by natural processes on what would have been a low lying portion of floodplain to the north of the River Leen. Two radiocarbon dates were obtained from this sample, one from 3.4m below the trench surface providing a date of 8272 BP \pm 28 and the other, from 2.85-2.87m below the trench surface, with a date of 6921 BP \pm 28, demonstrating that it formed during the Mesolithic period. However, no cultural material was recovered from the core, meaning that it does not demonstrate human activity within the site at this time.

Medieval

Wall [1002]

- 7.1.4 At the base of Trench 1 was a substantial northwest-southeast aligned sandstone wall [1002] (Plates 2-4). It was observed for a length of 5m, was at least 3m wide and survived to a height of at least 1.3m, although the foundations of the wall were not seen, due to the high water table. Its exact relationship to the Mesolithic silt layer (1008) that was present next to it was not observed, but given their close proximity and the fact that the wall foundations were not seen, it is highly likely that the wall was situated within a wall cut that truncated (1008). At least six courses of the wall were visible, with a layer of large, degraded sandstone on the top. The wall appears to have been constructed of two faces of well-made, faced stone, with a core of roughly hewn stone in between, although on the north-east facing side, the faced stone was only visible at the base of a slot, due to robber trench [1012] (see below). On the southwest facing side of the wall, which was the best preserved, many of the stones showed tool marks. The second surviving course on this side had a chamfered edge, which protruded for around 0.1m.

Given the proportions of this wall, historical evidence and previous excavations, this feature may represent the precinct wall of Grey Friars.

Layers to the northeast of Wall [1002]

- 7.1.5 Within what may have been the interior of the friary precinct, a slot cut against the wall [1002], revealed layer (1037), a black, organic sandy silt, of which only a small portion was visible, due to the water table. It was unclear how this deposit related to the wall. Above this was layer (1027)=(1024), which consisted of reddish-brown sandy silt alluvial material, which was observed to extend for at least 4.5m to the north and was at least 0.45m deep. At its southern end, where recorded as (1027), it was overlain by mid-grey sandy silt alluvial layer (1026), which was probably the same as contexts (1023)=(1033), which partly overlay (1024). The relationship between these deposits and [1002] is unclear, due to their truncation by robber trench [1012].
- 7.1.6 Layer (1023)=(1033) was immediately beneath (1001), a brownish-orange sandy silt with occasional pebbles and charcoal flecks, that stretched from near wall [1002], up to at least the northwest end of Trench 1 (Plate 5). Like layers (1027)=(1024), (1023)=(1033) and (1026), this appears to have built up within the friary precinct and been contained by wall [1002]. However, later truncation meant that the relationship between (1001) and [1002] could not be observed. Layer (1013)=(1036) directly overlay (1001) within this north-western end of the trench (Plate 6). It consisted of blackish-grey sandy silt, containing frequent charcoal flecks and occasional rounded pebbles, which ran for at least 16m across the trench and was around 0.14m deep. It contained a single sherd of Nottingham Reduced Green Glaze ware type (late 13th to 15th century). Overlaying (1036) was mid-brown silty sand (1035), which contained frequent charcoal flecks and small, round pebbles. It contained a number of sherds of Nottingham Reduced Green Glazed ware type and Nottingham Splashed Ware – Sandy (mid-12th to early/mid-13th century), which may indicate that this context built up over a long period of time.

Post-medieval

Robber trench [1012]

- 7.1.7 The interior side of wall [1002] was damaged by [1012], with most of the faced stone on this side missing, and this cut probably represented a robber's trench (Plates 7, 8). It ran parallel to all [1002] and a 3m length was observed. It was 1.13m wide and in excess of 1.3m deep, with a very steep, asymmetric profile, although the base was not reached. The earliest fill observed was (1029), consisting of a light grey sand and degraded sandstone. Above this was (1028), a dark, grey-brown silty clay, which also overlay the surviving faced stonework on the interior side of wall [1002]. The next fill was (1025), a light brown sand containing frequent sandstone blocks/fragments, which indicates that the upper parts of the wall were collapsing as the cut was being backfilled. Following the deposition of (1025), the northeast side of [1012] was filled by mid-grey silty clay (1011), which also contained occasional medium-large sandstone fragments. This was succeeded by (1020), which partly overlay (1025) and (1011) on its south-western side, and was a reddish-orange sandy silt, containing occasional charcoal flecks and rounded pebbles. Above (1020) was (1038), a brownish-orange sandy silt, with very occasional charcoal flecks and small rounded pebbles. On top of this sat (1032), a brown sand layer that may have represented ground build up/levelling material.

Ditch [1031]

- 7.1.8 Layer (1032) was truncated by ditch [1031], which ran along a similar alignment to medieval wall [1002], which it partly truncated. It was over 2m long by 1.8m wide and was up to 0.59m deep (Plate 9). It had an asymmetric u-shaped profile, with concave sides on an approximately 45° angle. It was filled by (1030), mid-grey-brown silty sand with several pieces of broken sandstone along its northwest slope and occasional charcoal flecks. Unlike [1012], this feature is unlikely to be a robbers trench and may have been intended to act as a boundary, replacing the purpose of the now largely defunct precinct wall.

Contexts on the southwest side of Wall [1002]

- 7.1.9 Abutting wall [1002] approximately 0.5m below the wall chamfer was (1034), a greenish-grey clay silt, representing build up against the wall. Only a small portion of it was visible within the slot excavated next to the wall. Above this, and abutting against [1002] was a substantial deposit of waterlogged, black, sandy silt with frequent charcoal flecks (1007), fragments of CBM and round pebbles (Plate 10). It was in excess of 0.92m thick, but contained below the depth of the slot. It contained a substantial amount of finds, including animal bone, CBM, glass, oyster shell, leather offcuts from shoe production and pottery. The pottery consisted of Frechen/Koln stoneware (16th century), Blackware (17th century) and Midland Purple type ware (17th-18th century), may suggest a date in the 17th century for this deposit, with the Frechen/Koln stoneware being residual, although the use of Midland Purple Ware did extend into the 18th century. Above (1007), some 0.4m from wall [1002], was a further build-up deposit, (1006), a mid-grey clay silt with occasional rounded stones/pebbles. A number of pottery sherds and CBM fragments were contained within this deposit, the former consisting of Blackware (17th century), Frechen/Koln type stoneware (16th century), Midlands Purple type ware (17th-18th century), Redware type (late 17th-18th century), as well as two residual sherds of medieval pottery (Nottingham Light Bodied Green Glaze Ware). The presence of Redware type sherds may suggest a later 17th or 18th century date.
- 7.1.10 On top of the southwest (outer edge) of wall [1002] was context (1003), which consisted of collapsed sandstone fragments from the wall itself (Plates 11, 12). Amongst the fragments were fragments of animal bone, CBM and pottery, the latter consisting of Midlands Purple type ware and Early Brown Glazed Coarseware, suggesting a late 17th to 18th century date. Above this was a layer of clay bonding (1005), which derived from the centre of the wall, and had collapsed along with the stone collapse. A small number of animal bone and CBM fragments were recovered from this context. Subsequently to this, (1004) had been deposited, covering (1005), (1003) and (1006) consisting of a dark grey, sandy silt containing frequent charcoal flecks with moderate rounded pebbles. It was potentially used for leveling off the slope down to the River Leen. It contained CBM, glass and pottery, the latter suggesting a 17th century date (with a residual sherd of Nottingham Splashed ware – Sandy). The CBM included a small ridge tile fragment with a very dark green glaze, of medieval date or later, but possibly residual.

Victorian

- 7.1.11 Cutting through post-medieval robber trench [1012] and ditch [1031] was [1021], a cut for a Victorian drain pipe, some 1.04m wide but not excavated to its base. The single fill of this feature was (1022), a black sandy silt, with small CBM fragments, but no other finds.

Modern

- 7.1.12 Possible pit [1017] was 2.42m wide and 0.4m at its deepest point and seems to be have been created to be used as a clinker ash dump, as indicated by its fill (1017). It truncated post-medieval deposit (1004). Feature [1017] was subsequently cut by feature [1014], which had a vertical side and flat base, up to 0.22m deep, but of which the full extent was not revealed. It may have been a foundation cut, which was later used for dumping of brick rubble (1015).
- 7.1.13 Overlaying the whole of a trench was Modern deposit (1000), consisting of a mid-dark brown-grey part, covered by mixed-sandy silt and demolition backfill. It was immediately above medieval wall [1002] and medieval layers (1001), (1026) and (1035), post-medieval deposits (1030) of cut [1031], (1032) of cut [1012], Victorian pipe trench [1021] and fills (1017) and (1015) of modern features [1014] and [1016] respectively. It is possible that prior to the deposition of (1000), there was some truncation of earlier features, given that it immediately covers features from a range of periods. Cutting through both layers of (1000), as well as post-medieval contexts (1003), (1004), (1030) of [1031] was [1018], the cut for a modern drain pipe, associated with the former bus station.

Trench 2

- 7.1.14 This trench was located within the north-eastern part of the site and had an east-east-south to west-west-north alignment (Figure 4, Plate 13). It was approximately 30m long, but approximately 20m to the east, it had a slight dogleg and ran on a slightly different alignment for the remaining 10m. The western two thirds of the site were flooded and it was not possible to continue excavation within that area. All of the features found were thus concentrated with the easternmost third of the trench.

Medieval

- 7.1.15 The earliest layer reached within the trench was (2008), a light-grey slightly clayey silt, with very occasional charcoal flecks and small, rounded stones. It did not contain any dating evidence. This layer was cut by [2006], a north-south aligned linear, at least 2.04m long, up to 0.95m wide and 0.51m deep (Plate 14). It has steep sides and a concave base, giving it a u-shaped profile and contained a single fill, (2007), a mid-dark grey sandy silt with frequent flecks of shell and charcoal. A number of animal bone fragments and pottery sherds were recovered from this context, the latter consisting of Local Oxidised Sandy ware, Nottingham Light Bodied Green Glazed ware and Nottingham Splashed ware – Sandy, suggesting a 13th century date.

Post-medieval

- 7.1.16 Directly overlying (2008) and (2007) [2006] was layer (2005), comprising of a dark grey, sandy clay silt containing moderate numbers of rounded pebbles and CBM fragments. A large amount of medieval pottery (with a date range spanning the mid-12th to 15th century) was retrieved from this context, but two sherds of post-medieval pottery (Blackware (17th century) and Brown-Glazed Coarseware type (18th century)), as well as glaze-spashed tile and a glazed ridge-tile were also found in this deposit. None of the medieval pottery sherds were particularly abraded, although they were fairly small fragments and, given the presence of post-medieval pottery, it is likely that the medieval material was residual.
- 7.1.17 Ditch [2003] cut through possible medieval layers (2008) and (2005). A full profile was not obtained, but it appeared slightly sinuous in plan, with a general east-

west alignment and was at least 6.8m long by 1.1m wide and 0.86m deep. It appears to have been deliberately backfilled by (2015) and (2014), a light-brown sand and grey sand clay silt with occasional round pebbles and charcoal flecks respectively (Plate 15). A few fragments of animal bone and a residual sherd of Nottingham Early Green Glazed ware type (13th century) were recovered from (2014). Upon being filled in by (2014), ditch [2003] was then capped/firmed up by (2004), a brownish-orange silty clay, which held frequent brick fragments and charcoal flecks and was at least 6.8m long by 0.58m wide and 0.21m deep.

Modern

- 7.1.18 Cutting into (2004) was [2001], a north-south aligned linear feature that was 0.3m wide and at least 0.28m deep, although it was not excavated to its base. It was symmetrical, with both sides being step and slightly concave. It contained a black, slightly sandy silt (2002), which had occasional charcoal flecks and round pebbles. No dating evidence was present, but given its nature and position in the stratigraphic sequence, it is thought to be modern or Victorian in date and possibly represents part of an old service ditch or drain.
- 7.1.19 Above [2001] and running across the excavated area of Trench 2 were a succession of Modern layers/ground build up, consisting of (2013), followed by (2012) and then (2000). Another layer which was recorded on the eastern end of the trench as (2011) actually appears to represent a mixing of (2012) and (2013), which were disturbed at this point. Layer (2013) was a black, sandy silt with moderate amounts of charcoal flecks and rounded pebbles, whereas (2012) was a reddish-brown silty clay with moderate inclusion of round stones. Layer (2000) consisted of black silt, brick and concrete rubble and was related to the construction of Broadmarsh car park. Modern layers (2000), (2011), (2012) and (2013), as well as Post-Medieval contexts (2004) and (2014) were all truncated by [2009], a ditch measuring 1.12m wide by 1.12m deep, with vertical to very deep sides and a flat base. It is related to the construction of Broadmarsh car park and contained (2010), a dark brown, silty clay containing modern CBM fragments. Immediately on top of (2010) and (2000) was a modern, concrete layer.

Trench 3

This trench was situated within the south-eastern area of the site. It was t-shaped, with one branch running roughly west-west-south to east-east-north and the other branch extending from the centre of this on a north-north-west to south-south-east alignment (Figure 5). However, one southernmost branch of the trench was backfilled shortly after it began to be machine excavated, due to health and safety concerns. All archaeological features observed were located within the north-north-west to south-south-east aligned part of the trench. Due to the depth of deposits and waterlogging, it was not possible to reach the natural bedrock.

Medieval

- 7.1.20 The deepest deposit reached was (3012), a mid-yellow-brown sandy clay alluvial layer, containing occasional degraded sandstone fragments and manganese flecks. Immediately above this was (3011), which also consisted of alluvium, although in this case was a light-brown, sandy clay containing occasional rounded pebbles, degraded sandstone and charcoal flecks. One sherd of Nottingham Early Green Glazed ware type pottery was retrieved, suggesting an early to mid-13th century date for this context. This deposit was then cut by [3001], which appears to have been a construction cut for a substantial wall [3000] found within the trench (Plates 16-18). This wall was at least 2.5m long as

it ran across the trench, up to 0.83m wide and in excess of 1m deep. Like wall [1002] in Trench 1, it consisted of two walls of faced sandstone, with a rubble core in the centre, but unlike that wall, there was no sign of a chamfer. The faced stones on this wall also appeared rougher than that of Wall [1002], with larger gaps between stones. Only two courses of stone were present, on top of which was a thick layer of degraded sandstone. It is possible that this represents a section of the friary precinct's boundary wall, although it is on a very different alignment than the section in Trench 1 and it is unclear how it related to it. However, it may have been broadly on the same alignment as wall sections found during the 1930s (see above).

- 7.1.21 On the northern side of wall [3000] were large stones [3002] which abut against it and sit within construction cut [3001]. Given the waterlogged nature of the ground in this area, it is possible that these were used to support the wall. Above these stones and also within the construction cut were two backfill deposits, (3010) followed by (3009), both blue-grey clay sands, with the former holding occasional charcoal flecks and degraded sandstone fragments, whilst the latter containing occasional fragments of degraded sandstone.

Post-Medieval

- 7.1.22 Overlying (3009) and (3011) on the northwest side of the wall was a mid-brown clay sand and degraded sandstone layer (3008), which may have resulted from partial demolition of wall [3000]. It was only 0.05m thick and was covered by (3007) a mid-light grey brown clay sand containing moderate amounts of angular stones, degraded sandstone and charcoal flecks.

- 7.1.23 On the south-eastern side of the wall, on what is likely to have been the exterior face, a series of features and deposits of probable post-medieval date were found. The only dating evidence was a tile fragment from (3013), but these deposits represent a build up of material that is similar to that seen on the exterior side of wall [1002]. The earliest of these contexts was (3017), a mid-greyish green clay sand, within which were occasional fragments of degraded sandstone and charcoal flecks. This was in turn cut by [3016], a possible ditch with one, very steep slope visible. It was at least 0.72m wide and 0.52m deep and appeared to run along a similar alignment to wall [3000]. In this, it showed some similarity with ditch [1030] in Trench 1, although the profile was very different. It is possible that ditch [3016], like ditch [1030], was intended to act as a boundary feature, with the earlier wall now being largely degraded. It was filled by (3015), a mid-green grey clay sand containing very occasional degraded sandstone flecks, which was overlain by (3014), a dark, green-grey sandy clay with occasional charcoal flecks.

Modern

- 7.1.24 Overlying post-medieval deposit (3013) was (3003), a dark grey sandy clay layer of probable modern date, whilst layer (3005) on the northwest side of the wall covered post-medieval layer (3007). It was a mid-grey sandy clay containing moderate amounts of charcoal and shell fragments. Between these layers, directly over wall [3000], was (3004), which appears to be a mixture of (3003) and (3005), likely through modern disturbance. At the northern end of the trench was (3006), consisting of modern material relating to a drain in the area.

8 THE FINDS

8.1 The Pottery by Dr Chris Cumberpatch

Introduction

- 8.1.1 The pottery assemblage consisted of a total of fifty-seven sherds, weighing 1695 grams and representing a maximum of forty-eight vessels. The data are presented in Appendix 2.

Results

- 8.1.2 The pottery was classified and recorded with reference to the draft type series for Nottingham (Nailor and Young 2001) and to the relevant sections in the Lincoln medieval pottery corpus (Young and Vince 2005). Despite the existence of these two documents, our knowledge of the medieval pottery used in Nottingham in the medieval period remains sparse and cannot be compared to that of better researched towns and cities such as Doncaster, Lincoln, Hull or York. Beyond matching individual sherds and vessels to types identified and described by Young and Nailor and listed in Appendix 2, little more can be said in detail about, for example, changing patterns of pottery procurement or the relationship of urban potteries to rural potteries in chronological or other terms, while the possibility of proposing ceramic horizons, as has been done in Lincoln, remains a distant one.
- 8.1.3 Based on the information available at the time of writing, the medieval pottery assemblage was diverse in terms of the ware types present and spanned the period between the mid 12th and mid 14th centuries with one sherd which may be as late as the 15th century. Identifiable vessel types were limited to jugs although the majority of sherds were body sherds which could not be identified to specific vessel types.
- 8.1.4 Post-medieval pottery was limited to later types, notably imported Frechen-Koln stoneware (contexts 1006 and 1007), Midlands Purple type ware and 17th century Blackware. A group of Redware type sherds from context 1006 were of later post-medieval or early modern date. They are unlikely to post-date the early/mid 18th century and may be of late 17th century date. Earlier post-medieval wares such as Cistercian ware were notable by their absence. A small quantity of early modern pottery (Brown Glazed Coarseware and probably some of the later Midlands Purple wares) were of 18th century date and are the latest sherds in the assemblage. The Blackwares and Midlands Purple wares were probably of regional origin and may be Ticknall products (Spavold and Brown 2005) although other, as yet unidentified, sources cannot be ruled out.

Discussion

- 8.1.5 Contexts 1035, 1036, 2007, 2014, 3011 and 3018 produced pottery of exclusively medieval date while medieval pottery was present as a residual element in the assemblages from contexts 1004, 1006 and 2005. Contexts 1003, 1007 and 3006 contained late post-medieval and early modern pottery with no earlier material although in all cases except context 1007 the assemblages were very small in size. The absence of later pottery, most unusual in an urban situation, suggests that the site saw little activity in later 18th, 19th and early 20th centuries, at least of the sort that involved the deposition of pottery. Alternatively, extensive truncation may have removed later deposits.

Curation and archiving

- 8.1.6 Given the uncertainty surrounding the identification and dating of medieval pottery in Nottingham, it is essential that this (and other medieval assemblages) are retained for further research in the future. Once the project has been completed the assemblage should be deposited in the appropriate local museum or finds depository where it will be available for further work in the future.

8.2 The Ceramic Building Material by Dr Phil Mills

Introduction

- 8.2.1 There were 58 fragments of ceramic building material (CBM) presented for study. This comprised 57 fragments, 6092g, that were stratified. The material was recorded by context, grouped by fabric and form type, with number of fragments, No, weight in grams, WT, and no of corners, CNR, being recorded (Appendices 3 and 4).

Dating

- 8.2.2 All of the forms noted continue into the present day, although the presence of a glazed ridge tile and glaze splashed tiles within (1004) and (2005) suggest a medieval origin for at least some of this material.

Taphonomy

- 8.2.3 Table 2 shows the break down by context type of how much CBM was recovered. The majority of material was from layers, consistent with the pattern from a high-status building. It is of note that few corners were noted and those that were from the collapse context, suggesting that much of the material in the group was reused tile.

Table 2: Breakdown of CBM recovered by context type

Context Type	No%	Wt%	CNR%
Wall Collapse	19.30%	27.43%	100.00%
Construction Layer	3.51%	5.20%	
Ditch	1.75%	1.35%	
Layer	68.42%	62.75%	
Wall	7.02%	3.27%	
Number	57	6092	3

Supply

- 8.2.4 Table 3 shows the break down by fabric of the CBM assemblage. The fabrics are described in Appendix 3.

Table 3: Breakdown of fabrics in the group

Fabric Code	No%	Wt%	CNR%	MSW
TZ09	7.0%	4.8%	0.0%	73.25
TZ13	10.5%	6.3%	0.0%	63.50
TZ14	1.8%	0.5%	0.0%	28.00
TZ21	57.9%	72.2%	100.0%	133.24
TZ31	22.8%	16.3%	0.0%	76.38
N/AVG	57	6092	3	106.88

Function

- 8.2.5 Table 4 shows the functional break down of the stratified assemblage. The majority of the material recorded was plain tile, although it is most likely derived from nib tiles, the type of roof tile used in medieval Nottingham. There is a small quantity of ridge tile.

Table 4: Functional breakdown of the assemblage

Function	No%	Wt%	Cnr%
Nib Tile	8.8%	15.7%	33.3%
Ridge Tile	1.8%	0.6%	
Tile	89.5%	83.7%	66.7%
N	57	6092	3

Discussion

- 8.2.6 This is a small group of tile, which includes glazed ridge tile and tile with glaze patches suggest that at least some of the material it is derived from, amongst others, a high status, possibly ecclesiastical structure of perhaps 13th to 14th century date. The wide range of fabrics in such a small group also heavily suggests that the material derives from more than one structure.

8.3 Leather by Dr Kris Poole

- 8.3.1 A number of small pieces of leather were recovered from Context (1007), with a total of eight fragments, although those recorded as (ADL) may all represent fragments from the same item. The pieces were all sent to York Archaeological Trust for conservation in order to stabilise them (see Conservation Report, including photographs, in Appendix 5).

- 8.3.2 They appeared to have derived from large mammals, i.e. cattle or horse, given their thickness. Small find (ADJ) appeared to represent an offcut from the manufacture of leather goods, which given its size and shape, seems to represent shoe production. Small find (ADK) also consisted of a small piece of possible leather offcut and the sole of a shoe, which had stitching holes in it, running around the perimeter. Small finds (ADL) consisted of the sole of a shoe, with evidence of stitching around the edge, along with two possible pieces of shoe upper and two smaller fragments that may have become detached from one of the other pieces.
- 8.3.3 The finds indicate that the manufacture of leather goods were being conducted within the vicinity of the Site during the post-medieval period, although the scale of such activities is unclear.

8.4 The Animal Remains by Dr Kris Poole

Introduction

- 8.4.1 A total of 114 fragments of hand-collected animal bone were recorded from BRN1, from Medieval contexts (2007) and (2014) and Post-Medieval contexts (1003), (1004), (1007) and (2005) (). In addition, 101 small bone fragments were recovered from environmental samples 9 and 10, recovered from medieval contexts (1035) and (1036) respectively (Table 6).

Taphonomy

- 8.4.2 Regardless of phase, the vast majority of the bone was in good condition, with only a few fragments judged to be in fair or poor condition. However, there were notable differences in the colour of bones between phases. Those from medieval contexts were uniformly dark brown in colour, resulting from the waterlogged sediments within which these bones were buried. Four of these bones also showed slight traces of vivianite, a blue substance that forms in particular soil conditions and is white to grayish but tends to change to blue when exposed to the air. Within archaeological contexts elsewhere, vivianite has been found as layers at the edges and infills of pits used for industrial activities, including flax retting metalworking and tanning (McGowan and Prangnell 2006). By contrast, although bones from post-medieval contexts were mostly mid-brown in colour, but with more variation, including some cream/yellow bones in certain contexts. These may indicate a greater amount of secondary deposition, or mixing, of contexts for bones that date to this period.
- 8.4.3 Gnawing by dogs was evident on bones from both periods, with around 16% of bones (10 of 61) from medieval contexts having been gnawed, compared to approximately 10% (5 of 52) from post-medieval contexts. This indicates that in both periods, bones were accessible to dogs before being buried. Butchery marks were observed on around 10% of bones (6 of 61) from medieval contexts and 19% (10 of 52) from post-medieval contexts. The nature of this butchery will be considered further below. None of the hand-collected bone showed traces of burning, although a large number of the bone fragments from environmental samples had been burnt.

Species Represented

- 8.4.4 In both periods, the hand-collected bone assemblages were dominated by the remains of domestic mammals, particularly those of cattle and sheep/goat (Table

5). No goat bones were positively identified in the assemblage, whereas twelve bones from medieval and nine from post-medieval contexts were positively identified as those of sheep. It is therefore assumed that most, if not all remains of sheep/goat in the assemblage derive from sheep, although the presence of goat cannot be ruled out. By contrast to cattle and sheep/goat, pigs were poorly represented. Horse was only present in (2007), consisting of a complete third metatarsal. Wild species were represented by three fallow deer bones (a radius, metatarsal and humerus), all from (2007). No bird or fish bones were recovered from the site, although this may partly due to the main recovery technique, hand collection, which tends to under-represent the bones of smaller animals. Even so, only one bird bone, a foot phalanx from a goose-sized bird, was recovered from environmental samples. The rest of the bone from samples comprised one medium mammal long-bone fragment and a large number of small, unidentifiable fragments.

Ageing and Sexing

Medieval

8.4.5 There was a lack of mandibles and teeth from contexts dating to this period, meaning that rather than dental ageing, which represents the more accurate ageing technique, all ageing data derived from bone fusion. For cattle, four of seven bones for which fusion could be observed, had unfused epiphyses. These consist of an unfused pelvis (fuses at 7-10 months), an unfused proximal radius (fuses at 12-15 months), an unfused distal metatarsal (fuses at 24-30 months) and an unfused proximal humerus (fused at 42-48 months). Those fused elements were two fused distal metatarsals, a distal femur (fuses at 42-48 months) and a tibia fused at both ends (by 42-48 months). By contrast to cattle, no unfused sheep elements were recovered, with a fused first phalanx (fuses at 7-10 months), nine distal metatarsals/metacarpals (fused at 20-24 months), two distal tibiae (fused at 15-20 months) a radius fused at both ends (by 42 months). No ageing data was available for pigs. The horse third metatarsal from this period was fused at both ends, therefore representing an individual aged over 24 months at death. All three fallow deer bones had also fused. No sexing information was available for any of these species.

Table 5: Number of Identified Specimens within hand-collected samples by context and period

Species	Medieval		Post-medieval					TOTAL
	2007	2014	1003	1004	1006	1007	2005	
Cattle	28	1	1		5	9		44
Sheep/goat	24	2		4	5	11		46
Pig	1				1	2		4
Horse	1							1
Fallow deer	3							3
Large mammal	4	1	1		1	7		14
Medium mammal						3		3
Unidentifiable					1		1	2
TOTAL	61	4	2	4	13	32	1	117

Table 6: Number of Identified Specimens within environmental samples by context and period

Species	Context		TOTAL
	1035	1036	
Medium mammal		1	1
Bird	1		1
Unidentifiable	67	22	99
TOTAL	68	23	91

Post-Medieval

- 8.4.6 For cattle, an unfused distal femur, distal humerus and distal metacarpal came from animals aged less than 48 months, 20 months and 30 months respectively. All other elements for which fusion could be observed had fused (a distal femur (fused at 42-48 months), a distal metatarsal (fuses at 24-30 months), a proximal radius (fuses at 12-15 months) and a proximal ulna (fuses at 42-48 months)). For sheep, two of nine elements were unfused (a distal metatarsal and proximal tibia, from animals less than 24 months and 42 months respectively), but the fused bones consisted of a pelvis (over 5 months of age), distal humerus (over 3 months of age) three distal metapodials (over 20 months of age), a proximal scapula (over 5 months of age) and a complete, fused tibia (over 42 months of age). Two sheep mandibles also provided ageing data, with one from a 6-12 month old animal and another from a 3-4 year old individual. No ageing data was available for pig and no sexing information could be observed for any species.

Body-parts

Medieval

- 8.4.7 Cattle were represented by a range of elements from across the body, including head (skull fragments), upper limbs (humeri, femora), lower limbs (radius) and foot/ankle bones (astragalus, metacarpals, metatarsals) (Table 7). There was no over- or under-representation of particular parts of the body, although this may be partly a result of the small sample size. The presence of a range of body-parts would seem to argue for onsite butchery, although there was a notable absence of large mammal-sized vertebrae or ribs, which may have been from cattle. By contrast, sheep are also represented by a range of body-parts, but there is a notable dominance of foot bones (metacarpals and metatarsals), as well as a near-complete lack of head bones (except for one maxilla), medium-sized mammal ribs or vertebrae that may come from sheep (Table 8). The only pig bone from medieval contexts was a fragment of frontal (skull) bone.

Post-Medieval

- 8.4.8 Cattle in this period were also represented by a range of elements, with a slightly greater proportion also of large mammal-sized rib and vertebrae fragments. Sheep elements also show a mixture of body parts, with a tendency towards foot bones, although the sample size is small. Pig was represented entirely by head bones (two mandibles and a maxilla)

Table 7: Body-part representation for cattle, by context and phase

		Medieval			Post-Medieval			
Element		2007	2014	TOTAL	1003	1006	1007	TOTAL
Head	Horn core					1		1
	Skull fragment	4		4				
	Maxilla							
	Mandible					1		1
Upper limb	Scapula							
	Humerus	2		2	1	1		2
	Pelvis	2		2			1	1
	Femur	3		3			2	2
Lower limb	Radius	1		1		1		1
	Ulna					1		1
	Tibia	1		1			1	1
Foot	Astragalus	1		1				
	Metacarpal	1		1			1	1
	Metatarsal	3	1	4			2	2
	Phalanx						2	2

Table 8: Body-part representation for sheep/goat, by context and phase

		Medieval			Post-Medieval			
Element		2007	2014	TOTAL	1004	1006	1007	TOTAL
Head	Horn core						1	1
	Maxilla	1						
	Mandible						2	2
Upper limb	Scapula	1		1			1	1
	Humerus	1		1		1		1
	Pelvis	1		1			1	1
	Femur	1	1	2				
Lower limb	Radius	1		1				
	Ulna	1		1				
	Tibia	2		2		1	2	3
Foot	Metacarpal	4	1	5	3	2	1	6
	Metatarsal	10		10	1	1	3	5
	Phalanx	1		1				

Butchery

Medieval

- 8.4.9 Butchery was present on cattle and sheep bones but was more common on the former (5 of 29 bones – 17.2%) than sheep/goat (1 of 26 bones – 3.8%). All of the cattle butchery consisted of chop marks and were likely made during the division of the carcass, including removal of the skull, which was achieved by chopped through the occipital condyles at the back of the skull). The butchered sheep bone was a metacarpal, which had a small cut mark on its proximal end, likely from cutting through tendons to remove the feet.

Post-Medieval

- 8.4.10 As with bones from medieval contexts, those of cattle (4 of 15 – 26.7%) were more commonly butchered than those of sheep (3 of 20 – 15%). Two of the instances of cattle butchery were chop marks, resulting from division of the carcass. However, two cattle femora had been sawn through just above the distal end. The use of saws for butchery is typically a later development and when found in earlier contexts is usually the result of processing bone for bone working. Large mammal femora have long, straight shafts, which are ideal for bone working and this is the most likely explanation of the marks observed. Of the sheep bones butchered, one was a horn core that had been removed from the skull by chopping through the parietal and frontal bones of the skull, possibly for horn working; a humerus had a horizontal cut mark all around its midshaft, likely from cutting of ligaments to divide the carcass; and a pelvis with a small cut mark near the acetabulum, possibly from removing meat from the bone. A pig mandible from (1007) had a cut mark on the medial side of the diastema, probably caused during skinning. In addition to these bones, a medium-sized mammal had been chopped through along the midline, whilst a large mammal-sized vertebra had been chopped horizontally through the body.

Metrics

- 8.4.11 A small amount of metrical data were taken obtained, predominantly from sheep metatarsals (Table 9). Unfortunately, comparative data are sparse, particularly within the East Midlands, so it is difficult to know how the size of sheep within the BRN1 assemblage compared to elsewhere.

Table 9: Summary of metrical data for sheep metatarsals

Measurement	Number	Minimum	Maximum	Mean
GL	7	17.6	20.2	125.7
SD	9	10.3	12.5	11.3
Bd	7	22.4	24.5	23.2

Pathology

- 8.4.12 One two bones showed signs of pathology, which were both large mammal-sized rib fragments, with evidence of healed fractures. One was from medieval context (2007), with the other from post-medieval context (1007).

Discussion

- 8.4.13 The dominance of domestic species, and especially of cattle and sheep, within the Broadmarsh animal bone assemblage, is typical of animal bone assemblages for both the medieval and post-medieval periods (Albarella 2005: 133; Gordon 2015). This is also the case specifically for other urban centres within the East Midlands, although there is variation in species frequencies (Dobney et al. 1996), with cattle the most frequent species within medieval and post-medieval levels at Lincoln, but sheep/goat tending to be more frequent at sites in Leicester (Albarella and Pirnie 2008).
- 8.4.14 At least part of this assemblage is likely to consist of consumption waste, given the presence of some of the major meat bearing bones, although this is likely to have been more so the case for cattle than for sheep, given the difference in body part patterns between these species. The presence of fallow deer bones within medieval context (2007) is interesting, given that during the 13th century, fallow deer were still a relatively new introduction to Britain and would have been restricted to elite parks (Sykes 2007: 68). Venison was a highly prized meat and as a rule, was not to be bought or sold, although this does not mean that it was never sold (Birrell 1992: 114). The finding of these bones in an area not known for its high-status connotations, in an area prone to flooding, and possibly within the grounds of a Franciscan friary, is strange. Deer bones, including those of fallow deer remains have been found within medieval towns, arriving by both legitimate and illicit means (Sykes 2008). Portions of venison may have been brought into towns by park keepers or hunters who were legitimately involved in hunting, although such individuals were usually gifted the upper forelimbs. The presence of bones from the upper and lower limb and from the hind foot may indicate the presence, at one point, of an entire carcass. There was an organised trade in deer poaching and trafficking of deer carcasses into towns (Sykes 2008: 157), which may explain the presence of the fallow deer bones, although it is impossible to be certain.
- 8.4.15 In addition to food consumption waste, the assemblage, in particular the overabundance of sheep metatarsals, also suggests the presence of industry nearby during the medieval period. In medieval and post-medieval towns, when skins were often delivered to tanneries, either horn cores, or the feet, or both, were left attached to the skin (Serjeantson 1989: 136). In the case of sheep and goat skins, these would represent the light leather trade, a much less tightly controlled and regulated activity than the heavy leather trade, utilising cattle hides (Albarella 2003: 72). In the light leather trade, various stages of the processing of skins (fellmongers and whittawyers) and the creation of a finished product. The presence of a high number of sheep metatarsals, but a near complete absence of head bones (with no horn cores) could potentially indicate a situation whereby horns had already been removed by butchers, before skins were passed on for processing. Alternatively, the horns may have been removed by the fellmongers or whittawyers (who may have been the same people) and passed on for horn core working (Albarella 2003: 73).
- 8.4.16 Clear evidence of leather production was recently found at Cliff Road, comprising of late medieval/post-medieval clay-line pits containing cattle horn cores and bark (Higgins 2017). A large number of cattle tarsals and metatarsals from 13th to 15th century deposits were also found during trial trench evaluations in 2006 on a location immediately west of the Site (Brown 2006). The finds from the BRN1 excavations would represent the first evidence of the light leather trade within this area. However, in the absence of further corroborative evidence, such as structures associated with tanning and presence of plant remains such as part, used in the tanning process, the practice of light leather working at the site

cannot be ascertained. This is especially the case due to the relatively small sample and the limited nature of the excavations. It is also unclear whether such activities may have continued into the 16th/17th centuries, due to small sample size, but at least some boneworking was being conducted at the time.

Conclusions and Recommendations

- 8.4.17 No further work is required on this bone assemblage. The relatively small size of this bone assemblage limits the interpretations that can be made from it, but some useful information has been obtained. Although animal bone assemblages of medieval and post-medieval date have been recovered from Nottingham, these were completed a number of years ago, are of uncertain quality, and are currently unpublished. As such, this assemblage is a valuable addition to the available evidence for life, economy and diet within Nottingham during these time periods. Further excavations on the Site would most likely lead to the recovery of further assemblages of well-preserved bones of medieval and post-medieval date. These would enable the bones from the evaluation trenches to be put further into context and to test some of the interpretations made here. This would provide a deeper understanding of activity within this area during the medieval and post-medieval period and, in particular, of the industrial and craftworking processes taking place here, in an area outside the medieval core that, at present, is poorly understood.

8.5 The Environmental Remains, Overview by Kristina Krawiec, with other contributions

Introduction

- 8.5.1 The trial trench evaluation at Broadmarsh bus station identified possible waterlogged deposits that were thought to relate to the medieval occupation of the former floodplain of the river Leen. These deposits were recorded and recovered for palaeoenvironmental assessment including waterlogged plant macrofossil, insect and palynological assessment. Two age determinations were also recovered from the base of the sequence.
- 8.5.2 In addition, a waterlogged deposit from within a ditch in Trench 2 was also investigated and bulk samples were assessed for plant macrofossil and insect remains. A total of two bulk samples were recovered for charred macrofossil assessment from two layers in Trench 1, (1035) <9> and (1036) <10>.

Methodology

Lithology

- 8.5.3 The deposits were recorded using both pro-forma archaeological context sheets and the Troels-Smith (1955) system of sediment classification (Appendix 1). The scheme breaks down a sediment sample into four main components and allows the inclusion of extra components that are also present, but that are not dominant. Key physical properties of the sediment layers are also identified according to darkness (Da), stratification (St), elasticity (El), dryness of the sediment (Dr) and the sharpness of the upper sediment boundary (UB).
- 8.5.4 A single core, <1> (1008) was recovered using the Russian head attachment for the hand auger from 2.44mbgl-3.44mbgl. The sediment was stored in plastic tubing and was subsampled for pollen and radiocarbon dating at Trent and Peak

offices. A bulk sample was recovered from the upper part of the sequence (1034) and a second bulk sample was recovered from the ditch fill in Trench 2 (2007).

Pollen

8.5.5 A total of five samples were submitted for pollen assessment from a sedimentary sequence extracted using a Russian auger from the base of Trench 1, along the former floodplain of the River Leen. The samples were from waterlogged deposits at a depth of between 2.87m and 3.40mbgl. The five samples, summarised in Table 10 below, comprised organic-rich sediments with an abundance of fine silts and clays.

Table 10: Summary of samples submitted for palynological consideration. Samples found to have poor pollen preservation are highlighted with *

Context	depth (m)
BRN	2.87*
	3.10*
	3.20*
	3.30*
	3.40*

8.5.6 Pollen preparation followed standard techniques including potassium hydroxide (KOH) digestion, hydrofluoric acid (HF) treatment and acetylation (Moore *et al.*, 1991). A count of at least 100 total land pollen grains (TLP) excluding aquatics and spores was to be attempted for each sample. However, all samples were found to yield little/no pollen and as a consequence, full analysis counts were not possible for all depths.

Plant remains

8.5.7 A total of twelve samples were collected for the recovery of environmental remains. Two samples were identified by Kristina Krawiec (Trent & Peak Archaeology) to have good potential for the recovery of waterlogged plant remains and were submitted for assessment.

8.5.8 A small sub-sample (500 ml) was collected from each bulk environmental sample and processed by flotation over a 0.3 mm geological sieve. The heavy residue (the material which does not float) was also retained over a 0.3 mm geological sieve and assessed. An additional 500 ml sub-sample was reserved from both samples, should further sediment be required. Both the flot and heavy residue were fully sorted in water under of EMZ binocular microscope at magnifications between x10 – x15 and plant remains sorted from the sub-sample were stored in ethanol. Two elder/ elderberry (*Sambucus nigra* L.) seeds were extracted from each sample, should AMS radiocarbon determination be required for either of these deposits. Samples were assessed in order to determine the following:

- If plant remains were present
- If plant remains were of interpretable value
- If plant remains provide evidence of surrounding environment
- If plant remains provide evidence of food plants

8.5.9 The results of the archaeobotanical assessment are presented in Appendix 7 (Table 11). Quantifications were carried out through rapid scanning of the sorted

material and scored on a semi-quantified basis (see key at base of Table 11). Comparative material was not directly consulted during this assessment, therefore, the results of the assessment should be seen as notional and all identifications should be viewed as provisional. The two samples will be discussed separately below. Nomenclature for plant remains follows Stace (2010).

Insect Remains

8.5.10 A total of twelve samples were collected for the recovery of environmental remains. Two samples were identified by Kristina Krawiec (Trent & Peak Archaeology) to have good potential for the recovery of waterlogged plant remains and were submitted for assessment.

8.5.11 A total of twelve samples were collected for the recovery of environmental remains during the course of the evaluation of which two were identified as having potential for the recovery of insect remains. The sampled material came from two features on site:

- *ES <02>* from the layer (1034) Trench 1.
- *ES <11>* from the fill (2007) from the linear feature (2006) in Trench 2.

8.5.12 The samples were processed using the standard method of paraffin flotation as outlined in Kenward *et al.* (1980). The system for 'scanning' faunas, as outlined by Kenward *et al.* (1985) was followed in this assessment (Appendix 7, Table 12). When discussing the faunas recovered, the following considerations should be taken into account:

- Identifications of any insects present are provisional. In addition, many of the taxa present can only be identified down to species level during a full analysis, producing information that is more detailed.
- The various proportions of insects suggested are very notional and subjective. As a result, the faunas described here should be regarded as incomplete and possibly biased.

Radiocarbon dating

8.5.13 A total of two samples were submitted for radiocarbon age determination from the Russian core recovered from south of the medieval wall. The humin fraction of bulk sediment from 3.40mbgl and 2.85mbgl were submitted to SUERC laboratories (Table 14).

Charcoal and charred plant macrofossils

8.5.14 A total of two samples were assessed (1035) <9> a possible medieval layer and (1036) <10> a charcoal rich layer located beneath [1035]. Deposit [1036] is thought to represent medieval ground stabilisation/dumping. The following report establishes the range of taxa present, the quality of preservation and assesses the significance and potential of the wood charcoal assemblage to provide information about fuel selection and use and the local vegetation environment.

8.5.15 Samples were processed by flotation by Trent and Peak Archaeology, using a 250µm mesh for the retention of the flots. The flots were scanned at ASE under a stereozoom microscope at 7-45x magnifications and their contents recorded (Appendix 7, Table 13). Charcoal fragments were fractured by hand along three planes (transverse, radial and tangential) according to standardised procedures (Gale & Cutler, 2000; Hather, 2000, Leney and Casteel 1975). Specimens were viewed under a stereozoom microscope for initial grouping, and an incident light microscope at magnifications up to 500x to facilitate identification of the woody taxa present. Taxonomic identifications were assigned by comparing suites of anatomical characteristics visible with those documented in reference atlases (Schoch *et al*, 2004; Hather, 2000; Schweingruber, 1990). Identifications were given to species where possible, however genera, family or group names have been given where anatomical differences between taxa are not sufficient enough to permit satisfactory identification. Quantification and taxonomic identifications of charcoal are recorded in Appendix 7, Table 13 and nomenclature follows Stace (1997). Although the assessment focused on the wood charcoal, provisional identifications have been provided for charred plant macrofossils noted in the flots. Identification was based on observations of gross morphology and surface structure and relevant reference material was consulted where necessary (Cappers *et al*, 2006; Jacomet, 2006). Nomenclature follows Stace (1997).

Results

Lithology

- 8.5.16 During the excavation of the stone wall in Trench 1 a waterlogged sequence was encountered, (1008). Due to water ingress it was not possible to excavate to any great depth and therefore a hand auger was utilised to establish the depth of the deposits at the site. In addition, a continuous core, <1> was recovered from 2.85m-3.44m bgl (21.27m OD – 20.72m OD). The core was recorded and the log and Troels-Smith (1955) classification table can be found in Appendix 1.
- 8.5.17 The deepest deposit encountered was a well humified organic silt with occasional small twigs. This was overlain by a sandy mixed grey-black organic silt which presented an erosive contact with the more organic deposit below (Appendix 6)). This deposit trended into a dark brown smooth organic silt which was overlain by the waterlogged poorly humified silt deposit (1034).
- 8.5.18 The base of the wall was not reached in the evaluation trench so it is not clear at what level the wall was constructed over these organic deposits. The lowest unit was highly organic but with little visible plant material or other macrofossils suggesting a high degree of humification. The deposit overlying this was more coarse-grained and with an erosive contact suggesting a possible higher energy depositional environment such as in-channel sedimentation or a flooding episode. The upper part of the sequence sees a return to more stagnant conditions with frequent woody fragments. This sequence is overlain by a more disturbed waterlogged silt (1034) which was less well humified than the deposits recorded in the recovered core. This deposit contained visible plant and insect remains, including woody fragments, and a bulk sample was recovered for assessment <2>.
- 8.5.19 The recovered core <1> was recorded at TPA facilities and subsampled for palynological assessment and radiocarbon dating. The results of which are presented below.

Radiocarbon dating

8.5.20 The two age determinations returned from the Russian auger sequence <1> demonstrate that sediment accumulation was occurring at the samples site from at least the early Mesolithic (Table 4). The age determination recovered from London Road, to the east, of 5022 cal BC at 20.44m OD would suggest that these dates are reliable and that they represent the same suite of deposits associated with the River Leen (Keyworth 2018). The discrepancy in height between the two sites suggests a complexity to the deposits possibly due to channel migration and down-cutting.

Table 14: Radiocarbon dating results

Lab code	Context No Sample no	Depth mbgl/ m OD	Bulk sediment	D13c	Radiocarbon Age	Calibrated date 95.4%
SUERC 81638	1008 <1>	2.85-2.87mbgl 21.27m OD	Bulk sediment humin	-25.8	6921+/- 28BP	5876 to 5732 cal BC
SUERC 81637	1008 <1>	3.40-3.44m 20.72m OD	Bulk sediment humin	-25.6	8272+/- 28BP	7453 to 7396 cal BC and 7377 to 7187 cal BC

Pollen by Dr Tom Hill

8.5.21 The pollen preservation within the recovered core <1> (1008) was found to be poor in all five samples submitted (Table 10). When present, pollen grains either showed evidence of oxidation damage (surface corrosion), or evidence of mechanical damage (crumpling). As a consequence, not only were pollen grains in low abundance, but when present, most grains were unidentifiable. Taxa with the more 'characteristic' morphological features were only encountered in the upper two samples (2.87m and 3.10m), with isolated grains of Lactuceae and spores of Pteropsida monolete indet. (ferns), as well as Trilete spores, but unidentifiable. These taxa are often encountered in sequences where post-depositional weathering has resulted in the preferential preservation of more 'resistant' pollen grains. It is highly likely that such preservation indicates taphonomic processes (most likely post-depositional oxidation) have resulted in the destruction of much of the palynological record that may have been originally preserved in this sequence (Havinga, 1967; Tweddle and Bunting, 2010; Tweddle and Edwards, 2010). As a consequence, it is concluded that the deposits at this location are not suitable for palynological analyses.

8.5.22 During the assessment, a few additional observations were made. There was an abundance of charcoal in the uppermost sample (2.87m), with chunks encountered that were large enough to be removed by hand during processing. Microcharcoal was therefore unsurprisingly common in this sample, and often present in some of the underlying samples (but decreasing in abundance with depth). In addition, occasional diatoms were observed in the two uppermost samples (2.87m and 3.10m) during palynological pre-treatment (prior to hydrofluoric acid processing). Diatoms including *Pinnularia* sp and *Amphora* sp. were present which in itself informs us that the uppermost part of the sequence represents a freshwater environment.

Waterlogged Plant Macrofossil Remains by Dr Wendy Smith

Trench 1, Context 1034, Sample <02> - silty peat, humified with wood, root and organic debris

- 8.5.23 This sample was clearly waterlogged and highly organic and was recovered from the deepest excavated deposit. Large fragments of wood were noted during processing of the waterlogged plant remains (WPR) sub-sample and the sample for insect remains (Appendix 7, Table 11). Both the sample flots and heavy residue produced leaves of bracken (*Pteridium aquilinum* (L.) Kuhn). A single hazelnut (*Corylus avellana* L.) was noted during the processing for the insect remains, but hazelnut was not noted in waterlogged plant remains from this sample; however, this may simply reflect the significantly smaller volume of sediment examined. The waterlogged plant remains were well preserved, relatively diverse and fairly numerous. It is not recommended that more sediment be processed.
- 8.5.24 A possible cereal or large wild grass culm node (fragment of grass stalk/ cereal straw) was noted as well as a single fruit of beet/ kale (*Beta vulgaris* L.). The wild form of beet is native to Britain but is exclusively a coastal plant. Given the location of this find is outside wild beet's natural distribution and the possible medieval phase of occupation of Broadmarsh, it seems reasonable to presume that the beet/ kale fruit recovered represents a cultivated crop (arable or garden crop). As a crop, beet/ kale is first recorded in England from the Roman period (e.g. Tomlinson 1996), and Greig records frequent finds of beet in the medieval period (13–16C).
- 8.5.25 With the exception of these (possible) crop plants, the remainder of plant remains recovered in sample <02> are weed/ wild taxa. Several of the taxa recovered are typical of damp to wet conditions; such as, celery-leaved bitter-sweet (*Solanum dulcamara* L.), blink (*Montia fontana* L.), buttercup (*Ranunculus sceleratus* L.), common/ bifid hemp-nettle (*Galeopsis* cf. *tetrahit* L./ *bifida* Boenn.), great burnet (*Sanguisorba officinalis* L.), meadowsweet (*Filipendula ulmaria* (L.) Maxim.), nodding bur-marigold (*Bidens cernua* L.), sedge (*Carex* spp.), sweet grasses (*Glyceria* spp.) and water plantain (*Alisma* spp.). There also are a number of taxa indicative of grassland/ meadow/ pasture; such as, clover (*Trifolium* sp.), creeping/ meadow/ bulbous buttercups (*Ranunculus acris* L./ *repens* L./ *bulbosus* L.), great burnet (*Sanguisorba officinalis* L.), mouse-ear (*Cerastium* spp.), oxeye daisy (*Leucanthemum vulgare* Lam.) and sheep's sorrel (*Rumex acetosella* L.). Thistles (*Carduus* spp./ *Cirsium* spp.) also frequently occur in grassland/ pasture. Elder/ elderberry (*Sambucus nigra* L.) and nettle (*Urtica dioica* L.) are both typical of waste ground and nitrogen enriched soils, and may suggest livestock were in the vicinity or nitrogen-rich waste matter (night soil or stabling material) was dumped into this feature. Finally, a suite of plants directly associated with cultivated ground and/or arable fields were noted in this sample. This includes black nightshade (*Solanum nigrum* L.), common/ bifid hemp-nettle (*Galeopsis* cf. *tetrahit* L./ *bifida* Boenn.), corn marigold (*Glebionis segetum* (L.) Forr.), cornflower (*Centaurea cyanus* L.), nettle (*Urtica dioica* L.), redshank/ pale persicaria (*Persicaria* cf. *maculosa* Gray/ *lapathifolia* (L.) Delarbre), smooth sowthistle (*Sonchus oleraceus* L.), stinking chamomile (*Anthemis cotula* L.).
- 8.5.26 Grassland/ pasture, cultivated ground/ arable fields and damp to wet ground are environments which are not necessarily mutually exclusive; it is feasible that this deposit represents material washed into this feature which includes remains from all three environments. For example, a ditch may run between cultivated fields and grassland pasture, as well as host plants typical of damp to wet ground. However, it also is feasible that the wetland plants represent the immediate vicinity of Trench 1, context (1034) and the cultivated/ arable and pasture/

grassland plants are settlement debris (including stabling debris, thatch, floor litter, etc....) which was disposed of by dumping this debris into this feature. The assessment of the insect remains should help to resolve the nature of this deposits, since insect remains can be precise indicators for how foul conditions might be or the presence of fields/ livestock in the vicinity (e.g. Smith 2012) and this deposit clearly has produced a rich Coleoptera fauna (see Appendix 7, Table 12).

Trench 2, Context 2007, Sample <11> - ditch backfill/ possible medieval drainage ditch

- 8.5.27 This sample was not as rich as sample <02>, both in terms of the number of plant remains recovered and the range of taxa noted (Appendix 7, Table 11). Bittersweet (*Solanum dulcamara* L.), common nettle (*Urtica dioica* L.) deadly nightshade (*Solanum nigrum* L.) and elder/ elderberry (*Sambucus nigra* L.) dominate this sample. Certainly common nettle and elder/ elderberry seeds are well-recognised for being particularly robust plant remains, which are more likely to survive deposition in sediments subjected to seasonal drying or lowering water tables when other, more fragile/ thin-walled plant remains might not (e.g. Kenward and Hall 2000). Hall and Kenward (2004) also suggest that when waterlogged deposits consist of a limited range of environmental indicators, this can be taken to imply poor preservation (loss of anaerobic preservation conditions) of the deposit at some point in the past and/ or currently.
- 8.5.28 The limited recovery of other, non-robust taxa in this sample does mean that this deposit is of limited interpretable value and, therefore, it is not recommended that further analysis is undertaken.

Insect remains by Dr David Smith

- 8.5.29 The insect taxa recovered from samples <2> and <11> are listed in appendix 7, Table 12. The taxonomy follows that of Lucht (1987) for the Coleoptera (beetles) and K.G.V. Smith (1989) for the Diptera (flies). The numbers of individuals present for each taxa is estimated using the following scale: + = 1-2 individuals, ++ = 2-5 individuals, +++ = 5-10 individuals, ++++ = 10-20 individuals, +++++ = 20+ individuals.
- 8.5.30 The majority of the insect fauna recovered were Coleoptera (beetles) along with a single true fly (Diptera) puparia.

Trench 1, Context 1034, Sample <02>

- 8.5.31 This sample produced a very large fauna of extremely well-preserved insect remains. The fauna mainly consisted of beetles associated with slow-flowing water or highly vegetated watersides. The aquatic water beetles were primarily 'moss beetles' (*Ochthebius*, *Hydraena*, *Limnebius*, and *Helophorus* species), which all occurred in considerable numbers. These taxa are typically associated with slow-flowing, shallow, often stagnant and vegetated waters (Foster et al. 2014). Although occurring in relatively smaller numbers, several of the 'diving water beetles'; such as *Hygrotus*, *Notaris*, *Agabus* and *Hydroporus*, also are associated with similar water bodies (Foster et al. 2012). The hydrophilid aquatic *Cercyon* and the ?*Cyphon* species recovered, also are associated with such aquatic environments (Hansen 1986).
- 8.5.32 The *Plateumaris* and *Donacia* 'reed beetles' and the *Notaris* weevils are both associated with stands of tall waterside plants, which could be specifically

identified if these beetles were fully analysed. Finally, the small weevil (*Tanysphyrus lemnae*) was present and is associated with duckweed (*Lemna* spp.).

- 8.5.33 There is some evidence to suggest that grassland was present at the site and that grazing occurred in the area adjacent to the deposit sampled. Large numbers of *Aphodius*, *Onthophagus* and *Geotrupes* 'dung beetles' were recovered, which all indicate the presence of grazing animals (Jessop 1986). The presence of animal dung is further supported by the recovery of the puparia of the *Sepsis* fly, which is normally associated with cowpats or human excrement (K.V.G. Smith 1989). There also is a range of taxa recovered that are very common in grass and meadowlands. For example, the elaterid 'click beetles', the *Phyllotreta* and *Chaetocnema* 'leaf' beetles and the *Apion*, *Sitona* and *Ceutorhynchus* weevils. In addition, rough and disturbed areas of land is indicated by *Cidnorhinus quadrimaculatus*, which only is associated with stinging nettles (*Urtica dioica* L.) (Koch1992).

Trench 2, Context 2007, Sample <11> - ditch backfill/ possible medieval drainage ditch

- 8.5.34 Unfortunately, this sample produced a very small and eroded fauna of insects, of little interpretive value.

Charred plant macrofossil and charcoal by Dr Lucy Allott

Sample <10> [1036] medieval ground stabilization/dumping layer

- 8.5.35 The flot from sample <10> [1036] was rich in wood charcoal including several larger fragments. This was mirrored in the charcoal assemblage from the sample residue. The majority were large fragments, often >2cm in size and appear to derive from pieces of mature wood including oak and alder (*Alnus* sp.). Hazel (*Corylus avellana*) roundwood was also recorded although roundwood fragments were not common in the assemblage as a whole. Charred plant macrofossils were uncommon with only one poorly preserved cereal grain noted.

Sample <9> [1035] medieval layer

- 8.5.36 Sample <9> from [1035] produced a small flot dominated by flecks of charcoal, measuring <2mm in size. Larger charcoal fragments were infrequent in the flot although the sample residue provided a moderate quantity including oak (*Quercus* sp.) and cherry/blackthorn (*Prunus* sp.). Several additional fragments could not be identified as they displayed no clear anatomical structures. In some instances, they were glassy/vitrified, while in others the anatomical features were amorphous suggesting the fragments may have undergone some compression.
- 8.5.37 The flot also contained infrequent charred plant macrofossils comprising fewer than 10 cereal grains including wheat, and wheat/barley. They were poorly preserved with limited scope for identification.

Discussion

- 8.5.38 The deposits identified at the site demonstrate that waterlogged sediments dating from the Mesolithic and possible Medieval period are present. The deepest deposits were recorded with a hand auger to a depth of 3.40m bgl (20.72m OD) and were represented by a series of organic silts that are likely to relate to either floodplain or in-channel sedimentation of the River Leen. The age determinations recovered for this sequence suggests that the onset of accumulation at the sample site occurred during the Mesolithic, c. 7453-7187 cal BC. The lithology of

the deposits suggests mainly stagnant or low energy depositional conditions persisted at the site. A possible change in depositional conditions is represented by an erosive contact between the basal organic silt and overlying sandy organic silt. This may suggest either channel migration across the floodplain leading to the erosion of the underlying deposits, or a period of overbank flooding.

- 8.5.39 There is a return to more stagnant conditions towards the top of the profile which also dates to the Mesolithic, 5876 to 5732 cal BC (SUERC 81638, 6921+/-28BP). Despite the highly organic nature of the sediment the preservation of microfossils was poor. The pollen assemblage demonstrated a high degree of oxidation suggesting post-depositional desiccation of the sediment sequence. It is unclear if this is due to natural fluctuations in the water table or as part of the drainage carried out at the site to facilitate the medieval and later development of the land.
- 8.5.40 The deepest hand-excavated deposit (1034), which overlay the recovered core sequence <1> (1008), was a poorly humified organic silt with visible plant and insect remains throughout. The subsequent macrofossil assessments demonstrated excellent preservation of both plant and insect remains. The insect and plant macrofossil assemblages represent a stagnant or slow-flowing water at the site with tall reeds, duckweed and sedges among the plants growing around the site. These assemblages also suggest nitrogen rich grassland/meadow in the vicinity of the site with grazing occurring as suggested by the presence of dung beetles. There is also the suggestion of possible cultivated species including beet/kale and cereal.
- 8.5.41 This deposit (1034) is likely to be late medieval or post-medieval in date, as the overlying deposit (1007) contained a pottery assemblage dating to the 16th-17th centuries. There were no dateable finds recovered from (1034) but the plant assemblage has several components that could be submitted for radiocarbon age determination.
- 8.5.42 The charred macrofossil assemblage recovered from the medieval stabilisation/dumping layer (1036) suggest provides evidence for the discard of waste material at the site including fuel. Assessment data indicates that much of the fuel derived from large mature oak and alder wood with occasional pieces of roundwood including hazel. The smaller assemblage from the overlying layer (1035) in which oak (from mature wood) and cherry/blackthorn (of unknown size) were recorded supports this.
- 8.5.43 These assemblages indicate access to mature woodland for fuel and perhaps timber resources as well as to alder that may have occurred on the wetter ground of the floodplain or in close proximity to the river. Charcoal assemblages from these layers are not directly associated with specific domestic or industrial fuel using activities and they almost certainly contain amalgams of waste derived from several unknown sources. As such, they provide no potential to investigate the selection and use of fuel resources for specific activities. Such deposits can, however, be useful for characterising woodland vegetation more broadly and in some instances examining evidence for woodland management. Woodland regeneration in the post-Roman period, woodland management and the movement and provisioning of resources between rural and urban areas have been recognised as topics for further investigation for the region (Knight *et al.* 2012, 82 & 94, Monckton 2006, 36).
- 8.5.44 Although now a decade out of date, according to the Environmental Archaeology Bibliography (University of York 2008) the waterlogged samples reported on here potentially represent the first set of insect faunas from any period examined from Nottingham city centre. The Environmental Archaeology Bibliography also only

lists one archaeobotanical publication available for medieval plant remains in Nottingham from the 1967 Town Wall (Park Row) Excavation (Alvey 1972). The East Midlands Environmental Database (<http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/wiki/Enviro> – last updated April 2018) also only shows one archaeobotanical project published for medieval Nottingham. Although it is likely that further comperanda within the city of Nottingham are available in grey literature or currently under study, the limited archaeobotanical and archaeoentomological data for medieval and post-medieval Nottingham means the deposit from Trench 1, (1034) is potentially of national significance and forms an important dataset for comparison with other large urban centres in England.

Recommendations and Conclusions

- 8.5.45 The evaluation has demonstrated the presence of possible Mesolithic channel/floodplain deposits upon which the later Medieval Friary wall was constructed. The palynological assessment demonstrated extremely poor preservation which is perhaps due to fluctuations in the water table at the site over time. It may also be due to the wholesale drainage of the area for later development. It was not possible to access these deeper deposits in open section and therefore no comment can be made upon the macrofossil (plant and insect) potential of the deposits.
- 8.5.46 The macrofossil assessments recovered from the deepest hand excavated part of the site demonstrate further this variable preservation of environmental proxies across the site. The insect and plant assemblages recovered from the ditch in Trench 2 indicated poor preservation and a limited range of species and therefore no further work is recommended for sample <11> due to this poor preservation. However, the sample recovered from the waterlogged deposit south of the Friary wall, <2>, demonstrated excellent preservation of insect and plant remains and full analysis of this sample is recommended. This sample contained a large and rich insect fauna which has the potential to reconstruct the nature of the deposit, as well as provide useful environmental evidence for the nature of the surrounding landscape and land use in the area. The plant macrofossil assemblage recovered from the same sample also warrants further study and would provide material suitable for radiocarbon dating.
- 8.5.47 Despite the abundance of charcoal with the sample recovered from the ground stabilization layers (1036) and (1037) they are unlikely to contribute significantly to wider research questions regarding the origin of the material, therefore no further work is recommended for the charred assemblages. In summary the recommended further work comprises:
- Full analysis of the insect assemblage from sample <2>
 - Full analysis of the plant assemblage from sample <2>
 - Radiocarbon dating for <2>

9 DISCUSSION

- 9.1.1 Despite truncation of some features by construction of 19th Century and Modern date (primarily the onsite housing and the Broadmarsh Bus Station and Car Park), the excavations have revealed deposits dating to the Mesolithic, Medieval and Post-Medieval (as well 19th Century and Modern remains). The waterlogged nature of many of the deposits has also led to good preservation of animal remains and plant remains within some contexts.

Mesolithic deposits

- 9.1.2 Channel/floodplain deposits of Mesolithic date were encountered and sampled during this work. No cultural material was recovered from the core, meaning that it does not demonstrate human activity within the site at this time. Although evidence for such activity has been found at Holme Pierrepont, some 3.5km to the southeast. It is highly likely that further such deposits exist within the confines of the Site and there is potential for these to contain cultural material.

Medieval contexts

Walls [1002] and [3000]

- 9.1.3 For the Medieval period, the most significant features uncovered were two substantial sections of wall, comprising of well-faced stone. It is possible, though not certain, that these sections represent parts of the wall surrounding the precinct of Greyfriars. The main friary buildings, including the church, seem to have been located to the north of the Site, although its boundary wall was stated by Deering (1751) to extend as far south as the River Leen. The rectangular enclosed space depicted by Speed (AD 1610) is also within the general area occupied by the Site, but much of it is beyond the northern Site boundary. It is not certain that this represents an enclosure formerly associated with the friary and it was actually built later, in the general area of, or on top of "Grey Friars".
- 9.1.4 The wall in Trench 3 could conceivably be on the same general alignment as four further sections of wall interpreted as the Greyfriars southern boundary wall, further to the west, two of which were within the Site and the others beyond the western Site boundary. However, the 1930s excavations that uncovered these walls are not well located and the dimensions and make-up of the walls are not described, meaning it is unclear whether they are all part of the same structure. In contrast to the wall in Trench 3, that in Trench 1 is on a very different angle; if the two walls did adjoin at some point, it would be at an odd angle, close to 45°. However, the difference in appearance of both walls may instead indicate that they were separate structures, although the possibility that the wall in Trench 3 only survived in its lower levels, as opposed to the greater survival of the wall in Trench 1.
- 9.1.5 If wall [1002] was a separate structure, it is unclear what it might represent. The scale of it and the smooth facing would suggest a structure of some importance. It could have been the wall of an enclosed space, or potentially represented a wall of a building. No parallel wall, that may have been the other side of a building, was revealed in Trench 1, although it is conceivable that such a wall may exist elsewhere within Trench 1, within the areas to the north of the wall, which were not excavated below Modern layers.

Evidence for environment and activity

- 9.1.6 A small, but informative collection of animal remains were recovered from the Site, all from Trench 2. As noted above, as well as consumption waste, the assemblage provides further evidence for industry within the area to the south of the medieval town core. Unlike other findings from locations outside of the site boundaries, which suggest use of cattle carcasses for horn working and the heavy leather trade, the small collection from (2007) hint at the exploitation of sheep skins. These could have been used for clothing, or perhaps for parchment, which was widely used for documents and books during the medieval period (Bloxam 2008). If Walls [1002] and/or [3000], the bones from (2007) would have been dumped within the Greyfriars precinct. This may support the suggestion from 2006 evaluations to the east of the Site, which tanning may have been conducted under the jurisdiction of Greyfriars and with the friary grounds (Lomax 2013: 106). However, on the basis of current evidence, this cannot be determined. Unfortunately, the preservation of plant remains within context (2007) was poor, although documentary evidence of 1435, cited above, suggests that there would have been gardens and common ground (presumably for grazing livestock) on the outside of the friary walls.

Post-medieval

- 9.1.7 There was no evidence for post-medieval structures within the trenches, although ditches, layers and deposits associated with the decay of walls [1002] and [3000] seem to date to this period.
- 9.1.8 The medieval walls would have been visible above ground, or at least their position was known of during the post-medieval period. This is indicated by robber trench [1012], cutting into the northeast face of wall [1002] in Trench 1 and possible evidence for partial demolition of Wall [3000] in Trench 3. However, the lines marked by the medieval walls may still have been important; ditches running on a similar alignment to the walls, namely [1030] and [3016] may have been used to take the place of the now defunct wall and act as boundary markers. Other deposits, such as (1006) and (1007), consist of a number of pottery sherds, CBM and bones and likely represent waste from nearby properties. It is possible that they were deliberately dumped, as way of levelling up, or firming up, the ground surface.

Evidence for environment and activity

- 9.1.9 Immediately below (1007), on the southwest face of wall [1002], was (1034), a waterlogged, organic deposit, or post-medieval or medieval date. A well-preserved, fairly diverse collection of waterlogged plant remains were recovered from this context. They indicate that a mixture of grassland/pasture, cultivated ground/arable fields and damp to wet environments may have been present within the vicinity. This is supported by the insect remains, suggesting the presence of grassland, used for animal grazing, as well as the presence of slow-flowing water and well-vegetated watersides. The damp conditions would be expected, given the presence of the River Leen nearby and the area of flood plain upon which the Site would have been located. There may also have been pools of water within the area, possibly caused by periods of flooding, within the area.
- 9.1.10 However, some cultivation is indicated by the presence of beet/kale. It is possible that the gardens outside of the friary precinct that were referred to in documentation from 1435 continued in use during this period. The animal remains from post-medieval features show species proportions that we might

expect from a post-medieval town and likely in part represent food consumption waste. A slight predominance of sheep foot bones may also indicate some processing of sheep skins. That some manufacturing of leather products was occurring nearby is indicated by the leather off-cuts recovered from (1007). However, these relate to the manufacture of finished products and seem to have been made of cattle or horse hide, rather than sheep skin.

10 CONCLUSIONS AND RECOMMENDATIONS

- 10.1.1 The most significant findings of this work were deposits and features of Mesolithic, Medieval and Post-Medieval date, including walls, ditches and layers.
- 10.1.2 The medieval features are likely to represent boundary features associated with the Greyfriars and activity within the precinct walls. Presence of at least some medieval tiles from a high-status building may indicate a church or other structures associated with religious orders within the vicinity of the Site. However, given that only small sections of both of the walls have been revealed, their function, their relationship to each other and the sort of activity to which they relate are currently uncertain.
- 10.1.3 The possible evidence for leather production/manufacturing indicated by the animal remains fits in with other evidence found within the Broadmarsh area, although it would be the first time that light leather working, as opposed to heavy leather working, has been suggested. Nonetheless, given the relatively small size of the assemblage and the uncertainty whether features associated with tanning may lie within the unexcavated parts of the Site, this is uncertain.
- 10.1.4 The post-medieval evidence indicates use of this area at this time, perhaps reusing some of the boundaries of the medieval Greyfriars. Such activity seems to have included some leather production/leather goods manufacture, as implied by leather offcuts and the animal remains. The plant remains also suggest a mixture of grassland/pasture, cultivated ground/arable fields and damp to wet environments, suggesting that this was a peripheral area of the post-medieval town, as is also implied by historic mapping. However, given the small area and extent of features of this date that were excavated, little else can be said about the context and scale of activity at the time.
- 10.1.5 The absence of well-dated waterlogged deposits from Nottingham highlights the significance of the deposits recorded at the site and the potential of such sequences to understand the landscape use and development over time. These deposits also have the potential to preserve wooden archaeological remains and any alteration of the hydrology of the site is likely to have an adverse affect on the burial environment.

Recommendations

- 10.1.6 The recommendations for further work are as follows:
- 1) During the watching brief phase it is understood that floor slab formation level will be restricted so that there is no impact on the Greyfriars precinct wall. In Trench 1, the upper parts of the wall were located at approximately 23.06 AOD (around 1m below ground surface) but in Trench 3 it was found at approximately 22.78 AOD. The variable depths of made ground across the Site (see Davies 2017) and the potential variation in preservation of the wall mean that there is uncertainty over the depths at which it may be present across the Site. The principle of preservation *in situ* is sound, and needs to be archaeologically monitored and controlled during the construction phase. Archaeological monitoring and recording (watching brief) during the construction phase also needs to ensure that pile locations adhere to the agreed footprints (mainly re-using existing pile locations) and that

any new impact to sub-surface deposits (e.g. proposed drainage runs) is fully monitored and recorded by a competent field archaeologist.

- 2) The environmental sampling during the evaluation phase has indicated that this area has high potential to contain further waterlogged deposits, containing well-preserved, waterlogged plant remains. Although pollen preservation was poor, this was only one sample and, given the right conditions, it is possible that better preserved pollen exists within deposits located within the Site boundaries. In addition, this work has retrieved what appears to be the first set of insect faunas from any period recovered from Nottingham City Centre and, as such, is of national importance. Any further opportunities to undertake additional environmental sampling during the watching brief phases should be sought. This should include a second core sequence and bulk samples from the more deeply buried deposits.
- 3) Further work on the environmental remains recovered from sample <2> from medieval fill (2007), as set out in 8.5.47, should be undertaken. This additional work could be undertaken as part of the watching brief report.
- 4) The remains already uncovered, combined with any additional insights obtained during the watching brief phase already warrant publication in a Journal such as the Journal of Wetland Archaeology. Provision should be made for this in the watching brief specification.

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6) PLATES

Plate 1: View looking north-north-west, along Trench 1 after machine excavation. The top of Wall [1002] can be seen at the bottom of the picture



Plate 2: North-west facing view, towards north-north-east facing section of Trench 1, during hand excavation. The degraded upper surface of Wall [1002] can be seen.



Plate 3: Elevation of Wall [1002], after excavation, looking northeast. The slot excavated against the base of the wall can be seen, as can the location of the auger sample, which sampled (1008).



Plate 4: Southwest-facing elevation of Wall [1002], after excavation, looking northeast. The slot excavated against the base of the wall can be seen, as can the location of the auger sample, which sampled (1008).



Plate 5: Southwest-facing view of part of the north-north-east facing section of Trench 1, showing (1023) (the darker deposit at the base), overlain by (1001)



Plate 6: View looking north, showing view of west-west-south facing section of northern end of Trench 1. Darker layer (1036) can be seen near the base, overlain by (1035) and modern deposits.



Plate 7: South-east-facing section of Robber Trench [1012], with the remains of the northeast-facing side of Wall [1002] on the left-hand side of the picture



Plate 8: Northeast and northwest-facing sections through Robber Trench 1012.



Plate 9: Working shot of Trench 1, looking southwest. Wall [1002] can be seen running across the trench, with Ditch [1031] visible at the right-hand side, cutting [1002]. It sits above (1020) and the cut of Victorian pipe trench [1021] can be seen at the far right side.



Plate 10: Southeast-facing section, showing (1007), with (1006) at left-hand side of the section, with (1003) and (1004) above



Plate 11: East-east-north-facing section of southern end of Trench 1, with Wall [1002] running across it. Deposits (1003) and (1004) are visible to the left of this wall, partly truncated by modern pipe cut [1018].



Plate 12: Plan shot of wall collapse deposit (1003), looking northeast.



Plate 13: Plan shot looking west, along Trench 2. The flooded area can be seen in the background, with Ditch [2006] visible, running across the trench.



Plate 14: South-facing section through Ditch [2006].



Plate 15: East-facing section through Ditch [2003].



Plate 16: Oblique close-up view of wall cut [3001], with stones [3002] in the centre and Wall [3000] at the left-hand side.



Plate 17: South-facing elevation of Wall [3000].



Plate 18: East-facing section of Trench 3.



APPENDIX 1: CONTEXT REGISTER

Context	Area	Category	Description
1000	Tr 01	Layer	Disturbed modern layer
1001	Tr 01	Layer	Alluvial
1002	TR 01	Structure	Priory wall
1003	Tr 01	Deposit	Collapse from 1002
1004	Tr 01	Layer	Grey. Post-medieval
1005	Tr 01	Layer	Brown layer above collapse (1003)
1006	Tr 01	Layer	Grey layer below collapse (1003)
1007	Tr 01	Layer	Dark grey waterlogged layer below (1006)
1008	Tr 01	Layer	Brown organic silt
1009	Tr 01	Layer	Modern black silty ash
1010	Tr 01	Layer	Grey bank to north
1011	Tr 01	Fill	Grey sand fill of [1012]
1012	Tr 01	Cut	Cut of feature in slot north of wall 1002
1013	Tr 01	Layer	Black charcoal layer to north
1014	Tr 01	Cut	Cut of modern brick demolition dump
1015	Tr 01	Fill	Fill of [1014]. Modern brick demolition dump
1016	Tr 01	Cut	Cut of modern clinker dump
1017	Tr 01	Fill	Fill of [1016]. Modern clinker dump
1018	Tr 01	Cut	Cut for modern pipe above 1002
1019	Tr 01	Fill	Modern pipe and fill of [1018]
1020	Tr 01	Fill	Red brown, mixed with grey, fill of [1011]
1021	Tr 01	Cut	Cut for modern pipe north of wall 1002
1022	Tr 01	Fill	Modern pipe and fill of [1021]
1023	Tr 01	Layer	Grey, alluvial?
1024	Tr 01	Layer	Mixed grey and reddish-brown layer
1025	Tr 01	Fill	Sand stone rubble - collapse/robber in [1011]
1026	Tr 01	Layer	Grey silt sand, cut by [1011]
1027	Tr 01	Layer	Grey brown silt clay below (1026)
1028	Tr 01	Fill	Waterlogged grey silt sand
1029	Tr 01	Fill	Light grey sand stone
1030	Tr 01	Fill	Grey brown fill of [1031]
1031	Tr 01	Cut	Cut of ditch? north of wall 1002
1032	Tr 01	Layer	Layer with stones truncated by [1031]
1033	Tr 01	Layer	Brownish-red alluvial sand
1034	Tr 01	Layer	Green sandy silt
1035	Tr 01	Layer	Grey layer. Contained green glaze pottery

1036	Tr 01	Layer	Thin charcoal layer
1037	Tr 01	Layer	Black organic sandy silt
1038	Tr 01	Fill	Fill of [1012]
2000	Tr 02	Layer	Modern concrete
2001	Tr 02	Cut	Cut of modern linear north - south
2002	Tr 02	Fill	Backfill of [2001]
2003	Tr 02	Cut	Cut of post-medieval linear east by west. South side of Tr 02
2004	Tr 02	Fill	Top fill of [2003]
2005	Tr 02	Layer	Grey alluvial?
2006	Tr 02	Cut	Cut of north by south linear below (2005)
2007	Tr 02	Fill	Fill of linear [2006]
2008	Tr 02	Layer	Light grey alluvial
2009	Tr 02	Cut	Modern north by south linear
2010	Tr 02	Fill	Mixed demolition/re-deposited fill of [2009]
2011	Tr 02	Layer	Disturbed and mixed layer
2012	Tr 02	Layer	Brown silt clay
2013	Tr 02	Layer	Black sandy silt
2014	Tr 02	Fill	Grey, secondary fill of [2003]
2015	TR 02	Fill	Primary fill of [2003]
3000	Tr 03	Structure	Medieval wall
3001	Tr 03	Cut	Foundation cut for wall 3000
3002	Tr 03	Fill	Dark brown fill of [3001] with large, placed stones
3003	Tr 03	Layer	Post-medieval layer
3004	Tr 03	Deposit	Degraded sandstone
3005	Tr 03	Layer	Modern layer
3006	Tr 03	Deposit	Modern deposit
3007	Tr 03	Layer	Post-medieval layering
3008	Tr 03	Layer	Possible wall collapse
3009	Tr 03	Fill	Fill of [3001]
3010	Tr 03	Fill	Fill of [3001]
3011	Tr 03	Layer	Grey, alluvial
3012	Tr 03	Layer	Grey, alluvial
3013	Tr 03	Layer	Post-medieval build up
3014	Tr 03	Fill	Fill of cut [3016]
3015	Tr 03	Fill	Fill of cut [3016]
3016	Tr 03	Cut	Cut of possible post-medieval structure
3017	Tr 03	Layer	Post-medieval build up
3018	Tr 03	N/A	Unstratified
3019	Tr 03	Layer	Light grey sandy silt

APPENDIX 2: POTTERY CATALOGUE

Context	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	FN
1003	Early Brown Glazed Coarseware	1	47	1	BS	Hollow ware	Patchy clear glaze ext	C18 th	Fine red fabric w/ moderate quartz & red grit up to 0.5mm, occ larger	ABH
1003	Midlands Purple type ware	1	19	1	Handle	Jug/handled jar	Ridges on top of handle	C17 th – C18 th	Narrow strap handle; hard, dense red fabric w/ moderate quartz & red grit up to 1mm	ABG
1004	Blackware	1	9	1	BS	Hollow ware	Mottled brown glaze int & ext	C17 th	Hard, dense dark grey fabric	ADA
1004	Blackware	1	35	1	Footed base	Cup/tyg	Brown glaze int & ext	C17 th	Hard, fine red fabric	ACZ
1004	Blackware type	1	28	1	Base	Hollow ware	Blistered purple glaze int; spots of overfired glaze on underside	C17 th	Overfired; hard fine reduced fabric w/	ACY
1004	Nottingham Splashed ware – Sandy	1	2	1	BS	Hollow ware	Patchy clear splashed glaze ext	MC12 ^t _h – E/MC13 th	Dull orange throughout; abundant quartz & rare black grit up to 0.5mm, occ larger	ACW
1006	Blackware	1	10	1	BS	Hollow ware	Black glaze int & ext	C17 th	Hard fine dense red fabric	ABT
1006	Blackware type	1	11	1	BS	Hollow ware	Mottled brown glaze ext	C17 th	Dark red fabric w/ lighter streaks; common quartz & red grit up to 0.5mm	ABU
1006	Frechen/Koln type stoneware	1	49	1	BS	Hollow ware	Dark mottled brown glaze ext only	C16 th	Globular body	ABQ
1006	Midlands Purple type ware	1	75	1	Rim	Jar	Glaze fuming int; double ridge ext, internal flange	C17 th – C18 th	Moderate red grit & quartz up to 0.5mm occ up to 1mm	ACQ
1006	Nottingham Light Bodied Green Glazed ware	1	40	1	Strap handle	Jug	Dull green glaze on top of handle	E/MC13 th – E/MC14 th	Wide shallow central groove; pale grey w/ orange margin where unglazed; hard, dense fabric w/ abundant quartz up to 0.5mm	ABR
1006	Nottingham Light Bodied Green Glazed ware	1	5	1	BS	Hollow ware	Dark green glaze ext	E/MC13 th – E/MC14 th	Pale grey w/ orange int margin; abundant quartz up to 0.5mm w/ rare black & white grit	ABS
1006	Redware type	1	47	1	BS	Dish/bowl	Clear glaze int only	LC17 th – C18 th	Hard, dense dull orange fabric w/ fine buff & dark red streaks; common fine quartz & red grit	ACR

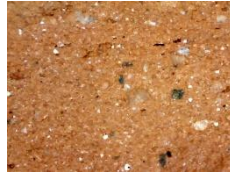
1006	Redware type	1	26	1	BS	Dish/bowl	Clear glaze int only	LC17 th – C18 th	Hard, dense dull orange fabric w/ fine buff & dark red streaks; common fine quartz & red grit	ACI
1006	Redware type	1	6	1	BS	Dish/bowl	Clear glaze int only	LC17 th – C18 th	Hard, dense dull orange fabric w/ fine buff & dark red streaks; common fine quartz & red grit	ABV
1006	Redware type	1	8	1	BS	Dish/bowl	Clear glaze int only, red slip ext	LC17 th – C18 th	Hard orange fabric w/ moderate, well-sorted quartz & red grit up to 0.5mm, occ up to 1mm	ABV
1007	Blackware	1	7	1	Rim	Hollow ware	Black glaze int & ext	C17 th	Fine dark red fabric	ACU
1007	Blackware	1	28	1	BS & handle	Bottle/costrel	Black glaze ext only	C17 th	Fine dark red fabric	ACU
1007	Blackware	1	20	1	BS	Hollow ware	Black glaze int & ext; rilled ext	C17 th	Fine dark red fabric	ACU
1007	Frechen /Koln type stoneware	1	14	1	Handle	Mug/jug	Mottled dark brown glaze	C16 th	Glaze covers join w/ body	ACT
1007	Frechen /Koln type stoneware	1	11	1	BS	Hollow ware	Dark mottled brown glaze ext only	C16 th		ACT
1007	Midlands Purple type ware	1	229	1	BS	Jar	Patchy glaze int w/ glaze fuming int & ext	C17 th – C18 th	Hard, dense dull orange body w/ grey patches; moderate rounded quartz & red grit	ACV
1035	Nottingham Reduced Green Glazed ware type	8	302	1	BS & handle stump	Jug?	Patchy but extensive green splash glaze ext; app & imp strips ext	LC13 th – C15 th	Hard dark grey fabric w/ very thin orange margins; cf Burley Hill 01; Note presence of splash glaze	ACK
1035	Nottingham Splashed ware – Sandy	1	20	1	Rim	Jug	Sparse spots of clear splashed glaze ext & on rim	MC12 ^t _h – E/MC13 th	Inturned rim w/ prominent ext angle, pinched spout; cf Young et al 2005:Fig 112;830	ACN
1035	Nottingham Splashed ware – Sandy	1	12	1	Neck/handle	Jug	Spots & streaks of clear/green splash glaze ext	MC12 ^t _h – E/MC13 th	Hard, dull orange sandy fabric; thin-walled jug	ACL
1035	Nottingham Splashed ware – Sandy	1	5	1	BS	Hollow ware	Patchy green splashed glaze ext	MC12 ^t _h – E/MC13 th	Hard grey to dull orange sandy fabric w/abundant sub-rounded quartz	ACL
1035	Nottingham Splashed ware – Sandy	2	33	1	BS	Hollow ware	Sparse spots of clear decayed splashed glaze ext	MC12 ^t _h – E/MC13 th	Dull grey to dull orange body w/ abundant rounded quartz up to 0.5mm, occ larger	ACM
2005	Blackware	1	32	1	BS	Hollow ware	Partial brown glaze int & ext	C17 th	Fine dark red fabric	AAG
2005	Brown Glazed Coarseware type	1	9	1	BS	Hollow ware	Black glaze int & partially ext	C18 th	Buff fabric w/ lighter streaks & sparse red & white rock frags up to 0.5mm	AAN

2005	Local Oxidised Sandy ware	1	4	1	BS	Hollow ware	U/Dec	EC13 th – LC14 th	Pale orange sandy fabric w/ abundant fine quartz & occ red grit, sometimes up to 1mm+	AAL
2005	Nottingham Light Bodied Green Glazed ware type	1	8	1	BS	Hollow ware	Dark green glaze ext	E/MC1 3 th – E/MC1 4 th	Hard, dense fabric, pale grey throughout w/ abundant quartz up to 0.5mm	AAJ
2005	Nottingham Light Bodied Green Glazed ware type	1	3	1	BS	Hollow ware	Friable decayed dark green glaze ext	E/MC1 3 th – E/MC1 4 th	Hard, fine buff to pale grey fabric w/ abundant fine quartz & occ black grit up to 0.5mm, occ larger	ABZ
2005	Nottingham Light Bodied Green Glazed ware type (fine)	1	6	1	BS	Hollow ware	Overfired, blistered dark green glaze ext	E/MC1 3 th – E/MC1 4 th	Buff to pale grey fabric w/ far fewer inclusions than other examples of Nottingham Light Bodied Green Glazed ware	AAM
2005	Nottingham Reduced Green Glazed ware type	1	4	1	BS	Hollow ware	Patchy dark green splash glaze ext w/ combed wavy lines	LC13 th – C15 th	Dark grey core w/ thin dark orange margins w/ moderate quartz & sparse black grit; note splash glaze	AAH
2005	Nottingham Splashed ware – Sandy	1	5	1	BS	Hollow ware	Patchy dark green splashed glaze ext	MC12 ^t _h – E/MC1 3 th	Grey core w/ dull orange margins; abundant rounded quartz up to 0.5mm, occ up to 1mm	ACA
2005	Nottingham Splashed ware – Sandy	1	8	1	BS	Hollow ware	U/Dec	MC12 ^t _h – E/MC1 3 th	Pale orange fabric; slightly less densely tempered than other examples; sooted ext	ACB
2005	Nottingham Splashed ware – Sandy type	1	5	1	BS	Hollow ware	Patchy dark green splashed glaze ext	MC12 ^t _h – E/MC1 3 th	Grey core w/ bright orange margins; less densely tempered than other examples; quartz & Fe up to 0.5mm	AAI
2005	Nottingham Splashed ware – Sandy type	1	28	1	Base	Hollow ware	U/Dec	MC12 ^t _h – E/MC1 3 th	Grey to dull orange quartz-tempered fabric; heavily sooted ext	AAK
2005	Shell Tempered ware	2	22	1	BS	Hollow ware	U/Dec	Medieval	Sparse fine shell w/ surface vesicles	ACC
2007	Local Oxidised Sandy ware	1	7	1	BS	Hollow ware	Green glaze w/ dark iron staining ext	C13 th ?	pale orange sandy fabric w/ common fine quartz up to 0.5mm; hand-made?	AAY
2007	Nottingham Light Bodied Green	1	9	1	BS	Hollow ware	Partial dark green glaze ext	E/MC1 3 th – E/MC1 4 th	Hard buff to pale grey fabric w/ abundant quartz up to 0.5mm w/ occ red grit	AAX

	Glazed ware type									
2007	Nottingham Splashed ware – Sandy	1	14	1	Rim	Jug	Spots & splashes of clear/green splashed glaze ext	MC12 ^t _h – E/MC13 th	Everted angular rim; cf Young et al 2005:Fig 111; 808	AAW
2007	Nottingham Splashed ware – Sandy	1	6	1	BS	Hollow ware	Patchy dark green splashed glaze ext	MC12 ^t _h – E/MC13 th	Pale grey to dull orange sandy fabric w/ abundant rounded quartz up to 0.5mm, occ larger, rare Fe	AAZ
2014	Nottingham Early Green Glazed ware type	1	47	1	Splayed base	Baluster jug	Sparse spots of splashed glaze ext & under base	E – E/MC13 th	Surfaces chipped & abraded	ADD
3006	Blackware	1	247	1	Footed base	Jar	Brown glaze int & on inside of base	C17 th	Hard fine dark red fabric	AAR
3011	Nottingham Early Green Glazed ware type	1	118	1	Splayed base	Baluster jug	Friable green glaze on underside of base	E – E/MC13 th		ACS
3018	Nottingham Light Bodied Green Glazed ware type	1	9	1	BS	Hollow ware	Dark green glaze ext	E/MC13 th – E/MC14 th	Hard pale grey to buff fabric w/ abundant round quartz & occ red grit up to 0.5mm	ACE
3018	Nottingham Light Bodied Green Glazed ware type	1	6	1	BS	Hollow ware	Dark green glaze ext	E/MC13 th – E/MC14 th	Hard, dense, pale to mid-grey fabric w/ abundant quartz up to 0,5mm, occ up to 1mm	ACE
	Total	57	1695	48						

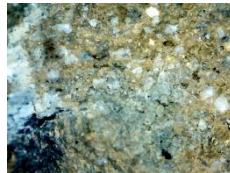
APPENDIX 3: CERAMIC BUILDING MATERIAL – FABRIC DESCRIPTIONS

TZ09



This is a red fabric with some fine sand, and was noted in plain tile and 1 nib tile.

TZ13



This is a poorly levigated sandy fabric with is brown in colour. This is noted in plain tile and a glazed ridge tile fabric

TZ14



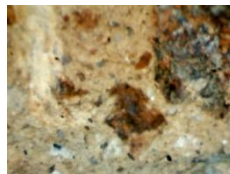
This is a sandy fabric with red surfaces and a grey core. This is noted in 1 example of a plain tile only

TZ21



This is a red fabric with some sand and lime inclusions This is the most common fabric and is noted in plain tile and nib tile.

TZ31



This is a reddish tallow fabric with coarse red clay pellet inclusions. This is noted in plain tile only

APPENDIX 4: CERAMIC BUILDING MATERIAL CATALOGUE

Context	Fabric	Form	No	Wt	Mortaring	Comments
1003	tz09	Tile	3	148		
1003	TZ21	Tile	1	51		
1004	tz09	Nib Tile	1	145		
1004	TZ13	Ridge Tile	1	36		v dark green glaze
1004	TZ13	Tile	1	82		
1004	TZ14	Tile	1	28		
1004	TZ21	Nib Tile	1	244		
1004	TZ21	Tile	1	58		splash of thin brown glaze
1004	TZ21	Tile	3	123		
1004	TZ21	Tile	3	474		
1004	TZ31	Tile	1	74		
1004	TZ31	Tile	1	75		
1005	TZ21	Tile	4	346		
1006	TZ21	Nib Tile	1	329		
1006	TZ21	Tile	1	17		
1006	TZ21	Tile	4	655		
1006	TZ21	Tile	5	670		
1007	TZ21	Tile	2	343		
1007	TZ21	Tile	2	404	2	
1007	TZ21	Tile	4	329		
1007	TZ31	Nib Tile	1	158		
1007	TZ31	Tile	1	27		
2003	TZ31	Nib Tile	1	82		abraded
2005	TZ13	Tile	1	66		
2005	TZ13	Tile	1	159		traces of green glaze
2005	TZ13	Tile	2	38		
2005	TZ21	Tile	1	354		grey surfaces
2005	TZ31	Tile	1	10		
2005	TZ31	Tile	4	144		
2012	TZ31	Tile	1	106		
3013	TZ31	Tile	2	317		dark green glaze
us	TZ13	Tile	1	80		

APPENDIX 5: LEATHER CONSERVATION REPORT

Date: 11th September 2018

York Archaeological Trust Conservation Report Number 2018/49

INTRODUCTION

This report describes the conservation of a collection of three leather small finds excavated by Trent and Peak Archaeology on the site of Broadmarsh Bus Station. The work carried out has been the stabilisation of the objects by bringing them to the appropriate dry storage. Once treated, the artefacts have been packed appropriately for return to the client and for archive storage.

DESCRIPTION

The following three pieces of leather were submitted for conservation (please see the below list). The leather arrived at the YAT Conservation laboratory wet packed inside sealed finds bags. All three of the finds were found to be in overall fair condition although fragile in places, in particular towards the edges.

List of Objects Submitted for Conservation:

SFADJ
SFADK
SFADL

METHODOLOGY

Digital images were taken before and after treatment. The wet leather was washed under gentle running water and soil and silt removed with a soft brush. The leather was pre-treated by immersion in a solution of 25% glycerol v/v in water for 5 days after which it was frozen followed by freeze-drying (using the 7.5 Litre Birchover Freeze Drier, run number 65 from 01/09/2018 to 07/09/2018).

Once dry it was attempted to mechanically further remove encrusted sand and silt from the surface with a brush however this was stopped due to fibre loss and fragile brittle areas in particular towards the edges.





Further individual treatment notes and before and after photographs can be found in the Treatment Record Table below.

RECOMMENDATIONS

All finds have been packaged inside finds bags with Jiffy® foam inserts for supports. Smaller more fragmented pieces have been placed inside acid free tissue envelopes.

The objects are now stable but should be stored in an environment of 50-55% Relative Humidity and a stable temperature. Light levels should not exceed 50 lux. Please handle the objects with care due to the fragile nature of exposed surfaces. If possible handle the smaller more fragile fragments inside the acid free tissue envelopes.

Treatment Record Table:

Photograph Before Conservation	Photograph After Conservation	Identification, Condition and Treatment
		<p>SFADJ – Broadmarsh Bus Station BRNI (1007) Leather <i>Condition:</i> Fragment of waterlogged leather in overall fair condition. Arrived at the laboratory wet packaged in a finds bag. A thin layer of damp clay like sand and silt covers the surface of the fragments which is fragile in places, in particular towards the edges. <i>Treatment:</i> Soil was removed from the surface of the fragment using a soft brush under gentle running water. The leather was pre-treated by immersion in a solution of 25% glycerol v/v in water after which it was frozen followed by freeze-drying. Once dry any remaining encrusted sand and silt was gently removed from the surface with wooden tools and a brush.</p>
		<p>SFADK – Broadmarsh Bus Station BRNI (1007) Leather <i>Condition:</i> Two leather fragments in overall fair condition. Arrived at the laboratory wet packaged in a finds bag. A thin layer of damp clay like sand and silt covers the surface of the fragments. Numerous cracks are visible on the surface of the larger fragment. <i>Treatment:</i> Soil was removed from the surface of the fragment using a soft brush under gentle running water. The leather was pre-treated by immersion in a solution of 25% glycerol v/v in water after which it was frozen followed by freeze-drying. Once dry any remaining encrusted sand and silt was gently removed from the surface with wooden tools and a brush.</p>



SFADL – Broadmarsh Bus Station BRNI (1007) Leather

Condition: Leather fragments in overall fair condition. Arrived at the laboratory wet packaged in a finds bag. A thin layer of damp clay like sand and silt cover the surface of the fragment which is fragile in places, in particular towards the edges. Small cracks are visible on the surface of the leather.

Treatment: Soil was removed from the surface of the fragment using a soft brush under gentle running water. The leather was pre-treated by immersion in a solution of 25% glycerol v/v in water after which it was frozen followed by freeze-drying. Once dry any remaining encrusted sand and silt was gently removed from the surface with wooden tools and a brush.

APPENDIX 6: BOREHOLE/TEST PIT LOGS

Darkness		Degree of Stratification		Degree of Elasticity		Degree of Dryness	
nig.4	black	strf.4	well stratified	elas.4	very elastic	sicc.4	very dry
nig.3		strf.3		elas.3		sicc.3	
nig.2		strf.2		elas.2		sicc.2	
nig.1		strf.1		elas.1		sicc.1	
nig.0	white	strf.0	no stratification	elas.0	no elasticity	sicc.0	water

Sharpness of Upper Boundary	
lim.4	< 0.5mm
lim.3	< 1.0 > 0.5mm
lim.2	< 2.0 > 1.0mm
lim.1	< 10.0 > 2.0mm
lim.0	> 10.0mm

	<i>Sh</i>	<i>Substantia humosa</i>	Humous substance, homogeneous microscopic structure
<i>I Turfa</i>	<i>Tb</i>	<i>T. bryophytica</i>	Mosses +/- humous substance
	<i>Tl</i>	<i>T. lignosa</i>	Stumps, roots, intertwined rootlets, of ligneous plants
	<i>Th</i>	<i>T. herbacea</i>	Roots, intertwined rootlets, rhizomes of herbaceous plants
<i>II Detritus</i>	<i>DI</i>	<i>D. lignosus</i>	Fragments of ligneous plants >2mm
	<i>Dh</i>	<i>D. herbosus</i>	Fragments of herbaceous plants >2mm
	<i>Dg</i>	<i>D. granosus</i>	Fragments of ligneous and herbaceous plants <2mm >0.1mm
<i>III Limus</i>	<i>Lf</i>	<i>L. ferrugineus</i>	Rust, non-hardened. Particles <0.1mm
<i>IV Argilla</i>	<i>As</i>	<i>A. steatodes</i>	Particles of clay
	<i>Ag</i>	<i>A. granosa</i>	Particles of silt
	<i>Ga</i>	<i>G. arenosa</i>	Mineral particles 0.6 to 0.2mm

V Grana	Gs	<i>G. saburralia</i>	Mineral particles 2.0 to 0.6mm
	Gg(min)	<i>G. glareosa minora</i>	Mineral particles 6.0 to 2.0mm
	Gg(maj)	<i>G. glareosa majora</i>	Mineral particles 20.0 to 6.0mm
	Ptm	<i>Particulaetestaemollosorum</i>	Fragments of calcareous shells

Physical and sedimentary properties of deposits according to Troels-Smith (1955)

Core Log

<1> (depths below ground level)

2.80-2.88m DA EL ST SICC UB

4 0 0 3 0

Ag3 Sh1 As+ Tl

Dark brown smooth organic silt, occasional twigs

2.88-3.04m DA EL ST SICC UB

4 0 0 3 2

Ga1 Ag2 Sh1 Tl

Sandy mixed grey black organic silt

3.04-3.44m DA EL ST SICC UB

4 0 0 3 3

Ag2 Sh2 Tl

Well humified organic silt, occasional twigs

APPENDIX 7: ENVIRONMENTAL REMAINS ASSESSMENT TABLES

Table 11: Assessment results for waterlogged plant remains

Trench No		TR 1		TR 2		
Context No		1034		2007		
Sample No		<02>		<11>		
Sample Description		Silty Peat		Ditch backfill		
Sample Phase		Possibly MED		Possibly MED		
Sample Volume		500 ml		500 ml		
Sample Fraction		Flot	HR	Flot	HR	
Latin Binomial	Ecological Code					English Common Name
Cultivated plants						
Cereal/ POACEAE - culm node	Cu	1	1	-	-	indet. cereal/ wild grass
<i>Beta vulgaris</i> L. - fruit	Cu	1	-	-	-	beet/ chard
Weed/ wild plants						
<i>Pteridium aquilinum</i> (L.) Kuhn - leaves	Wo/ H/ M	+	++++	-	-	bracken
<i>Ranunculus acris</i> L./ <i>repens</i> L./ <i>bulbosus</i> L.	G/ Typ D	+	++++	1	-	meadow/ creeping/ bulbous buttercup
<i>Ranunculus sceleratus</i> L.	D/ Wp	+	-	-	-	celery-leaved buttercup
<i>Trifolium</i> sp. - flower calyx	Typ G	-	1	-	-	clover
<i>Filipendula ulmaria</i> (L.) Maxim.	D/ Wp	++	1	-	-	meadowsweet
<i>Sanguisorba officinalis</i> L.	D/ G	-	+	-	-	great burnet
<i>Urtica dioica</i> L.	Wo/ F/ Cg/ N	+	1	+++++	+++	common nettle
<i>Linum catharticum</i> L.	Dr/ M	+	-	-	-	fairly flax
<i>Geranium</i> spp. - large-seeded, reticulate	-	+	+++	-	-	crane's-bill
BRASSICACEAE - unidentified	-	1	1	-	-	Cabbage Family
<i>Persicaria</i> cf. <i>maculosa</i> Gray/ <i>lapathifolia</i> (L.) Delarbre	Wa/ Cg/ O	-	1	-	-	redshank/ pale persicaria type
<i>Polygonum aviculare</i> L.	O	1	+	-	-	knotgrass
cf. <i>Polygonum</i> sp.	-	1	-	-	-	possible knotgrass
<i>Rumex acetosella</i> L.	O/ G/ H	-	1	-	-	sheep's sorrel
<i>Rumex</i> spp. - achene	-	+	++	+	+	dock
<i>Rumex</i> spp. - achene with perianth	-	-	+	-	-	dock
<i>Stellaria media</i> (L.) Vill.	O	-	+	1	-	common chickweed
<i>Cerastium</i> sp.	Typ G	1	+	-	-	mouse-ear
<i>Chenopodium</i> spp.	-	1	+	-	-	goosefoot
<i>Atriplex</i> spp.	-	+	+++	-	-	orache
<i>Montia fontana</i> L.	D	-	+	-	-	blink
<i>Solanum nigrum</i> L.	Cg/ W	-	+	+	++	black nightshade
<i>Solanum dulcamara</i> L.	D/ F/ Wp/ R	-	1	-	++	bittersweet

Trench No		TR 1		TR 2		
Context No		1034		2007		
Sample No		<02>		<11>		
Sample Description		Silty Peat		Ditch backfill		
Sample Phase		Possibly MED		Possibly MED		
Sample Volume		500 ml		500 ml		
Sample Fraction		Flot	HR	Flot	HR	
<i>Galeopsis cf. tetrahit L./ bifida Boenn.</i>	Cg/ R/ D/ Wc	-	1	-	-	common/ bifid hemp-nettle
<i>Lycopus europaeus L.</i>	F/ Wp	-	1	-	-	gypsywort
cf. <i>Mentha sp.</i>	-	-	-	1	-	possible mint
LAMIACEAE - unidentified	-	-	-	-	1	Mint Family
<i>Carduus spp./ Cirsium spp.</i>	Typ G	-	++	-	-	thistle
<i>Centaurea cyanus L.</i>	Cg	1	-	-	-	cornflower
<i>Centaurea sp.</i>	-	1	+	-	-	knapweed
<i>Picris hieracioides L.</i>	O/ R/ Typ Dr/ Typ Ca	+	++	-	-	hawkweed oxtongue
<i>Sonchus oleraceus L.</i>	Cg/ W	+	1	-	-	smooth sowthistle
<i>Taraxacum sp.</i>	-	1	+	-	-	dandelion
<i>Anthemis cotula L.</i>	Cg/ W/ R/ Typ Ca	1	-	-	-	stinking chamomile
<i>Glebionis segetum (L.) Forr.</i>	Cg/ W	-	1	-	-	corn marigold
<i>Leucanthemum vulgare Lam.</i>	G	-	1	-	-	oxeye daisy
cf. <i>Matricaria sp.</i>	-	-	1	-	-	mayweed
<i>Bidens cernua L.</i>	D/ Wp	1	-	-	-	nodding bur- marigold
ASTERACEAE - small-sized achene	-	1	-	-	-	Daisy Family
<i>Sambucus nigra L.</i>	Wo/ W/ R/ typ N	-	+	-	++	elder/ elderberry
<i>Alisma spp.</i>	Wp	+	-	-	-	water-plantain
<i>Carex sp.</i> - 2-sided nut	D	-	1	-	-	sedge
<i>Carex spp.</i> - 3-sided nut	D	-	-	-	+	sedge
<i>Glyceria spp.</i> - medium-sized achene	D/ Wp	++	+++	-	-	sweet-grass
<i>Glyceria sp.</i> - large-sized achene	D/ Wp	1	-	-	-	sweet-grass
POACEAE - small-sized caryopsis	-	++	-	-	-	wild grass
Unidentified - possible awn/ thorn	-	1	-	-	-	-
Other remains						
Coleoptera		++	+++++	++	-	beetle remains
Egg shell		-	+	-	-	-
Diptera - puparia		-	-	+	-	fly
Moss		-	++	-	-	-

Key for Semi-quantified plant remains: + < 5, ++ 5 - 10, +++ 10 - 25, ++++ 25 - 50, +++++ > 50. Key for Ecological Codes: Ca = calcareous conditions, Cg = cultivated ground, Cu = cultivar, D = Damp ground, Dr = dry conditions, F = fen, G = Grassland, H = Heath, M = Moor, N = nitrogen rich conditions, O = open/ unshaded conditions, R = Rough ground, W = Waste ground, Wc = woodland clearing, Wo = Woodland, Wp = wet places (ditches, ponds, streamsides, etc...) and Typ = typical of those conditions.

Table 12: Insects recovered from Broadmarsh Bus Station, Nottingham (BRN1) (Nomenclature follows Lucht 1987)

Sample number	ES 02	ES 11
7) Context number	1034	2007
8) Weight Kg	7	10
Volume l	9	9
COLEOPTERA		
Carabidae		
<i>Nebria</i> spp.	+	-
<i>Notiophilus biguttatus</i> (F.)	+	-
<i>Dyschirius</i> spp.	+	-
<i>Trechus</i> spp.	++	-
<i>Bembidion</i> spp.	+++	-
<i>Pterostichus</i> spp.	++	-
<i>Harpalus</i> spp.	++	-
Halididae		
<i>Haliplus</i> spp.	+	-
Dytiscidae		
<i>Notaris</i> spp.	+	-
<i>Hygrotus</i> spp.	+	-
<i>Hydroporus</i> spp.	++	-
<i>Agabus</i> spp	++	-

a. Hydraenidae		
<i>Hydraena</i> spp.	+++++	-
<i>Ochthebius</i> spp.	+++++	+
<i>Limnebius</i> spp.	++++	-
<i>Helophorus</i> spp.	+++++	-
Hydrophilidae		
<i>Cercyon</i> spp.	+++++	+
<i>Megasternum boletophagum</i> (Marsh.)	+++++	-
<i>Hydrobius fuscipes</i> (L.)	+	-
<i>Laccobius</i> spp.	++	-
Histeridae		
<i>Hister.</i> spp.	+	-
Staphylinidae		
<i>Omalius</i> spp.	+	-
<i>Oxytelus</i> spp.	++++	++
<i>Stenus</i> spp.	++	-
<i>Xantholinus</i> spp.	+++	-
<i>Tachinus</i> spp.	++	-
<i>Tachyporus</i> spp.	+	-
Aleocharinidae Genus & spp. Indet.	++++	-
Elateridae		
Elateridae Gen. & spp. indent.	++	-

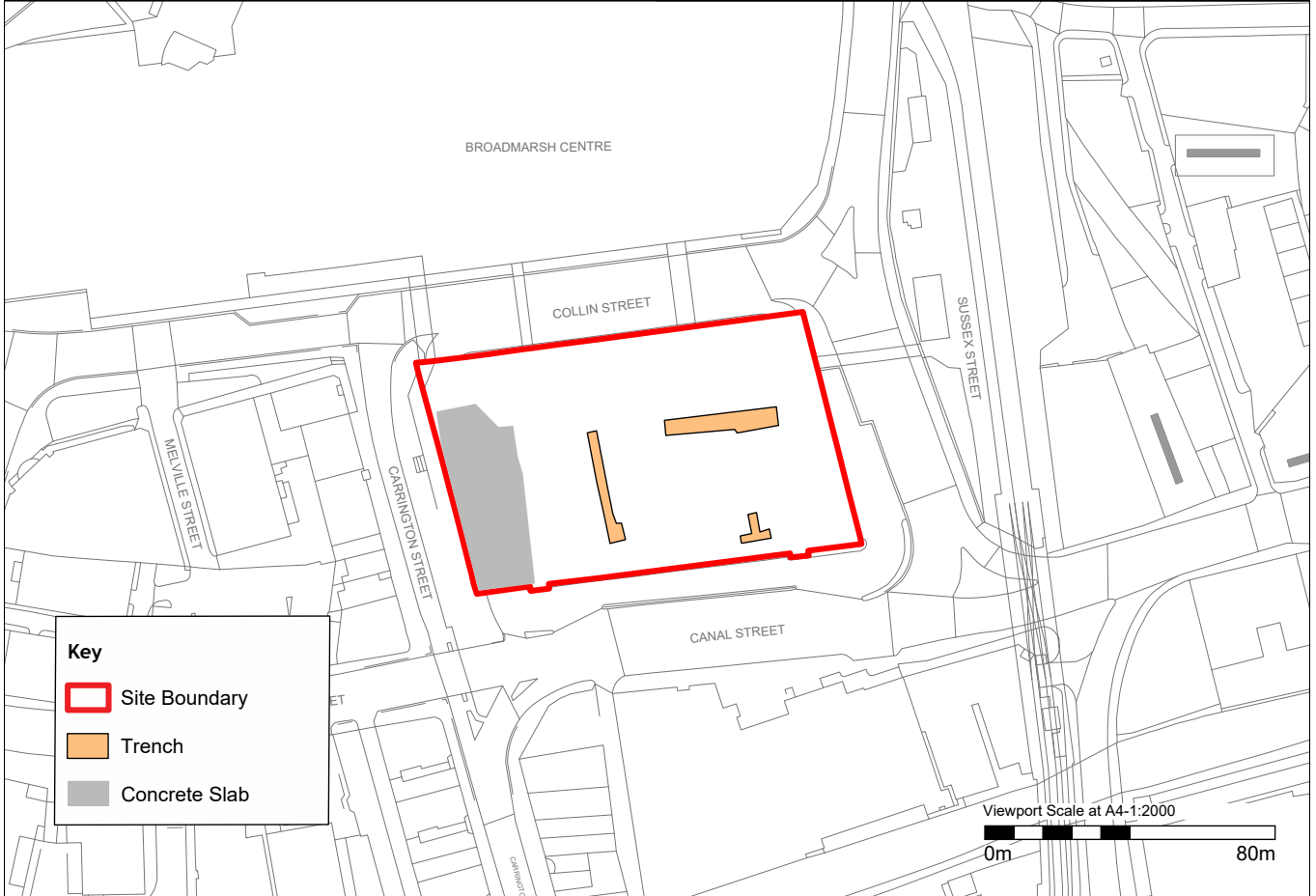
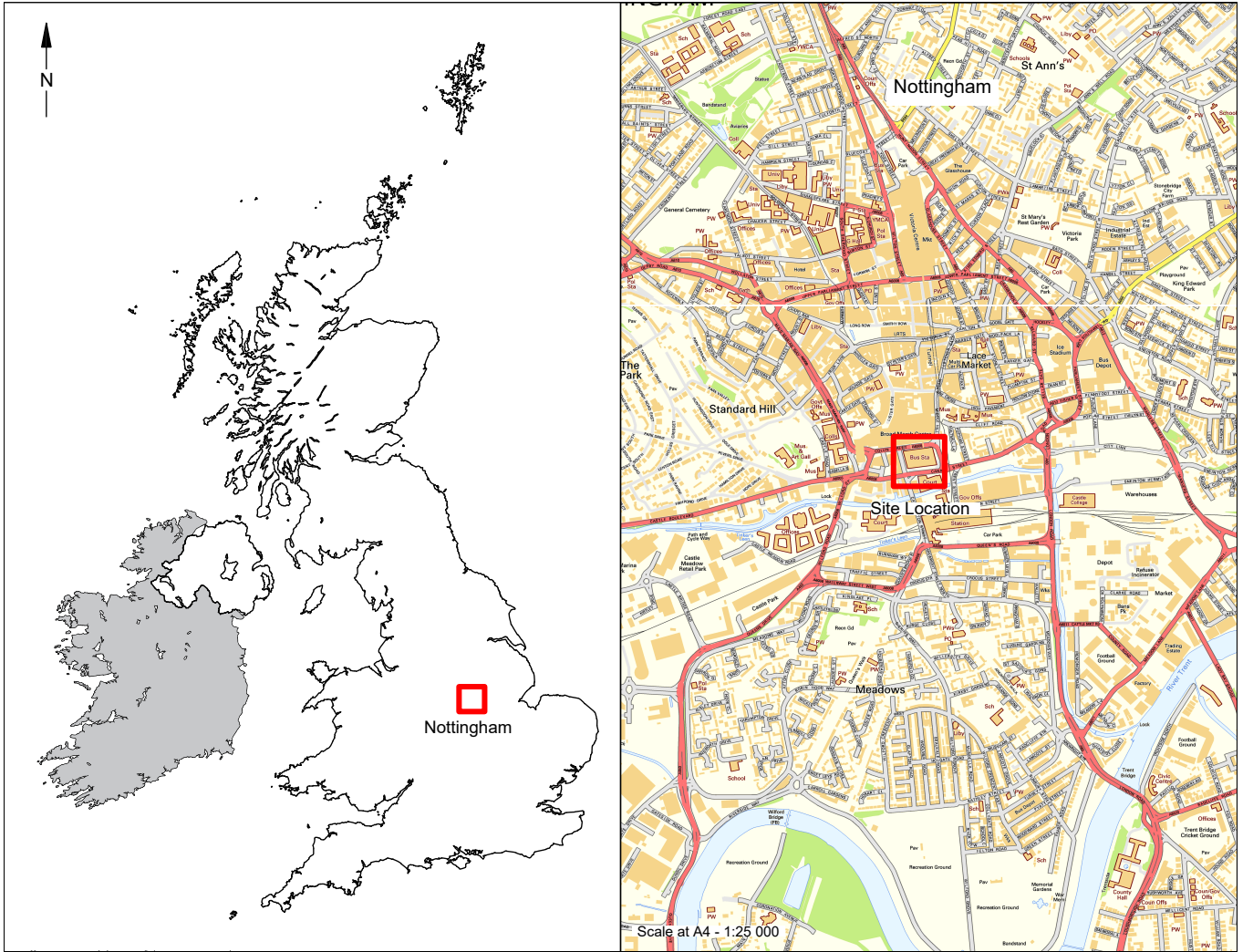
Helodidae		
Helodidae Gen. & spp. Indet.	+++	-
Lathridiidae		
<i>Corticaria/ corticarina</i> spp.	+++	-
Colydiidae		
<i>Aglenus brunneus</i> (Gyll.)	+	-
Endomychidae		
<i>Mycetaea hirta</i> (Marsh.)	+	-
Scarabaeidae		
<i>Onthophagus</i> spp.	+	-
<i>Geotrupes</i> spp.	+	-
<i>Oxyomus silvestris</i> (Scop.)	+	-
<i>Aphodius</i> spp.	+++++	-
Chrysomelidae		
<i>Donacia/ Plateumaris</i> spp.	+++++	-
<i>Chrysomela</i> spp.	+	-
<i>Prasocuris phellandrii</i> (L.)	+	-
<i>Phyllotreta</i> spp.	+++	-
<i>Chaetocnema</i> spp.	+++	-
Scolytidae		
Scolytidae Gen. & spp. indet.	++	-

Curculionidae		
<i>Apion</i> spp.	++++	-
<i>Otiorhynchus</i> spp.	+	-
<i>Barynotus</i> spp.	+	-
<i>Sitona</i> spp.	++++	+
<i>Bagous</i> spp.	+	-
<i>Tanysphyrus lemnae</i> (Payk.)	+	-
<i>Notaris</i> spp.	+++++	-
<i>Ceutorhynchus</i> spp.	++++	-
<i>Cidnorhinus quadrimaculatus</i> (L.)	+++	-
Sepsidae		
<i>Sepsis</i> spp.	+	-

Key: + = 1-2 individuals, ++ = 2-5 individuals, +++ = 5-10 individuals, ++++ = 10-20 individuals, +++++ = 20+ of individuals.

Table 13: Flot quantification (* = 1-10, ** = 11-50, *** = 51-250, **** = >250) and preservation (+ = poor, ++ = moderate, +++ = good). Key: rw = roundwood

Sample Number	Context	Context type	Weight (g)	Flot volume (ml)	Volume Scanned	Uncharred (%)	Sediment (%)	Charcoal >4mm	Charcoal 2-4mm	Charcoal <2mm	Charcoal from Residue	Charcoal identifications	Crop Seeds Charred	Identifications	Preservation
9	1035	Layer	2	5	5	10	5	*	*	****	** *	<i>Quercus</i> sp. (4), <i>Prunus</i> sp. (1), Indet vitrified (3), Indet no clear wood anatomy (2 - not vitrified)	*	<i>Triticum cf aestivum</i> , <i>Triticum/Hordeum</i> sp., Indet cerealia	+/ + +
10	1036	Stabilising /dumping Layer	12	45	45	<5	<5	**	**	****	** **	<i>Quercus</i> sp. (7) all from large original pieces, <i>Alnus</i> sp. (2) from large pieces, <i>Corylus avellana</i> (1) rw	*	Cerealia indet.	+



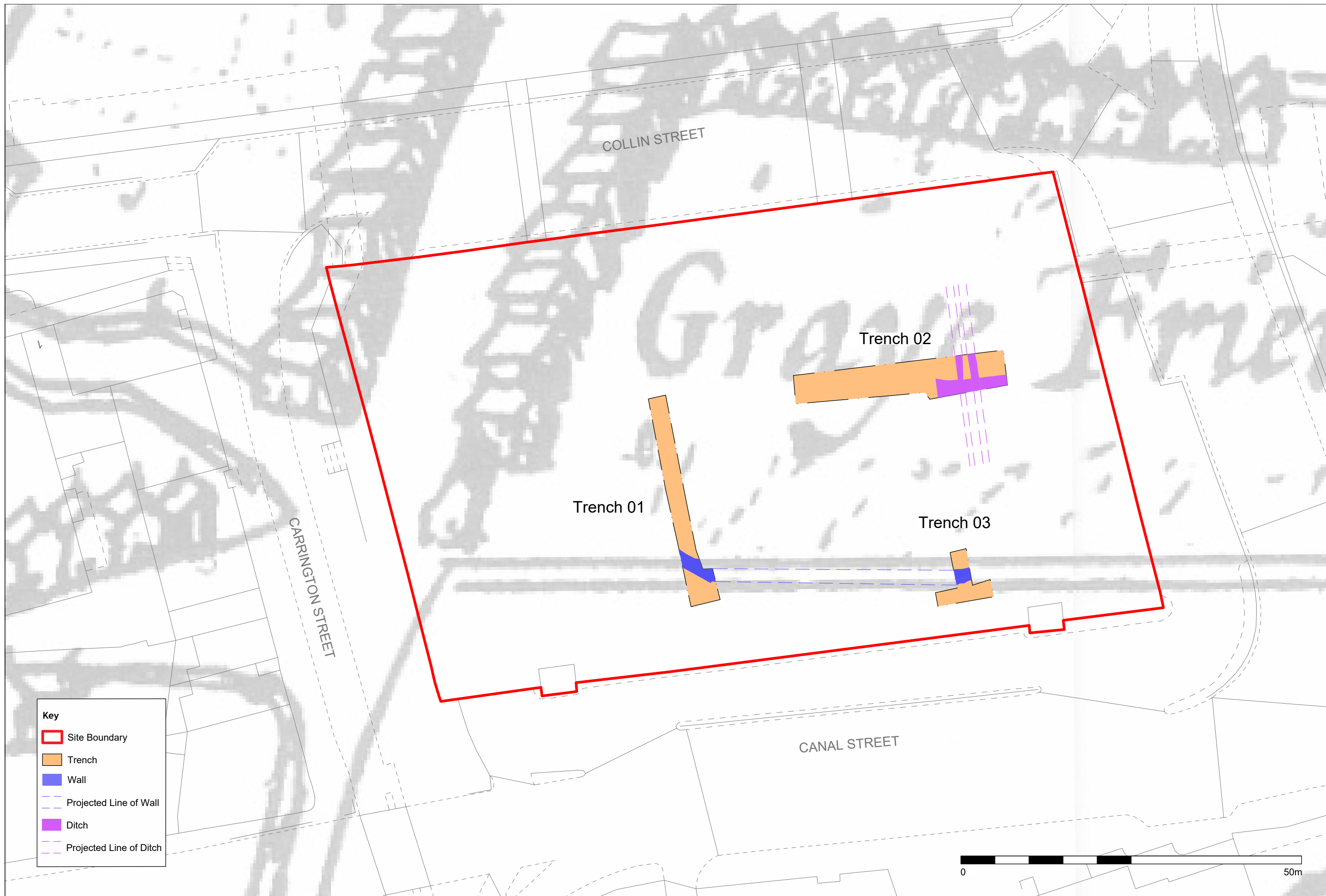
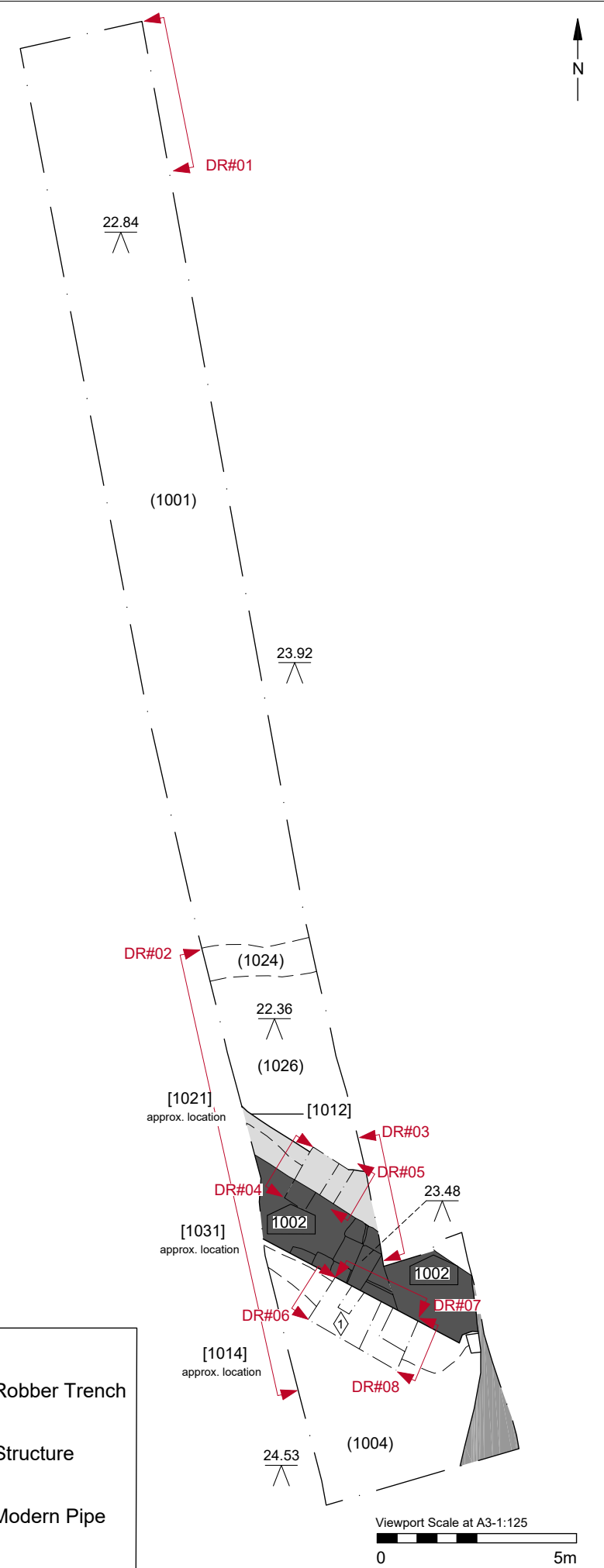
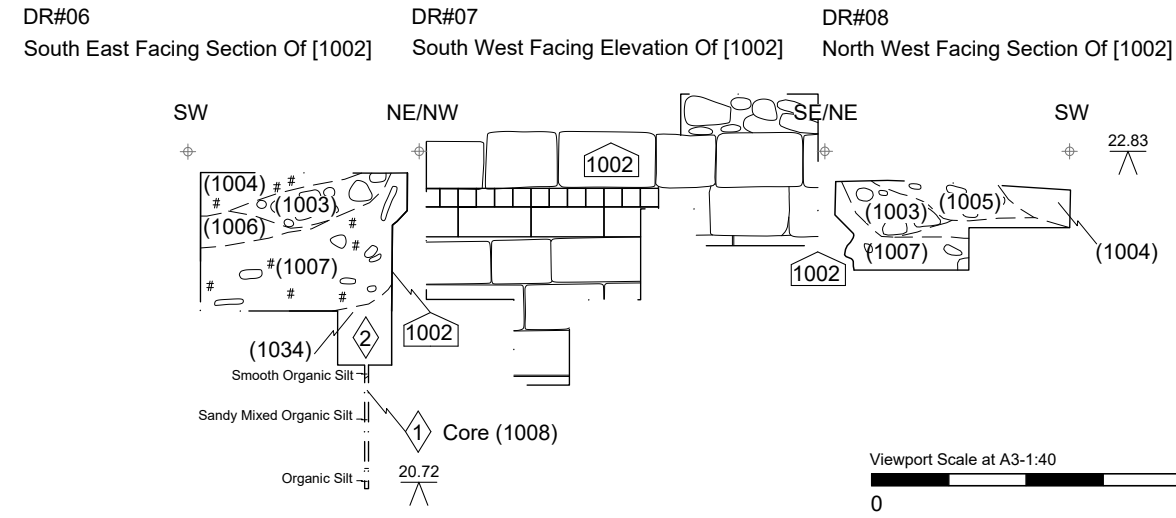
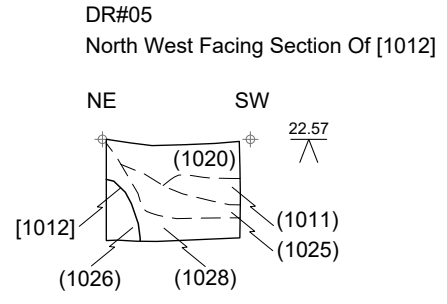
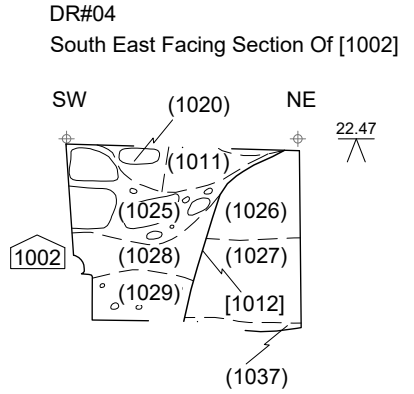
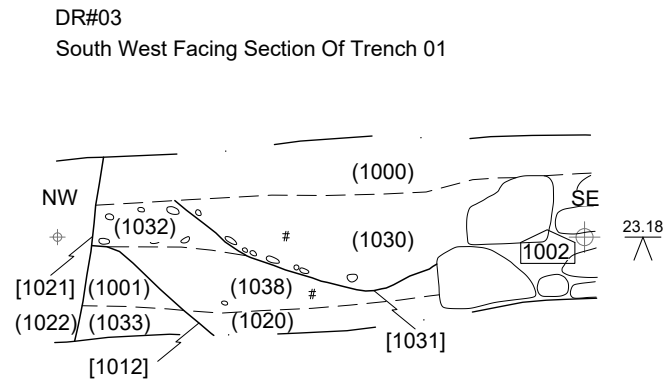
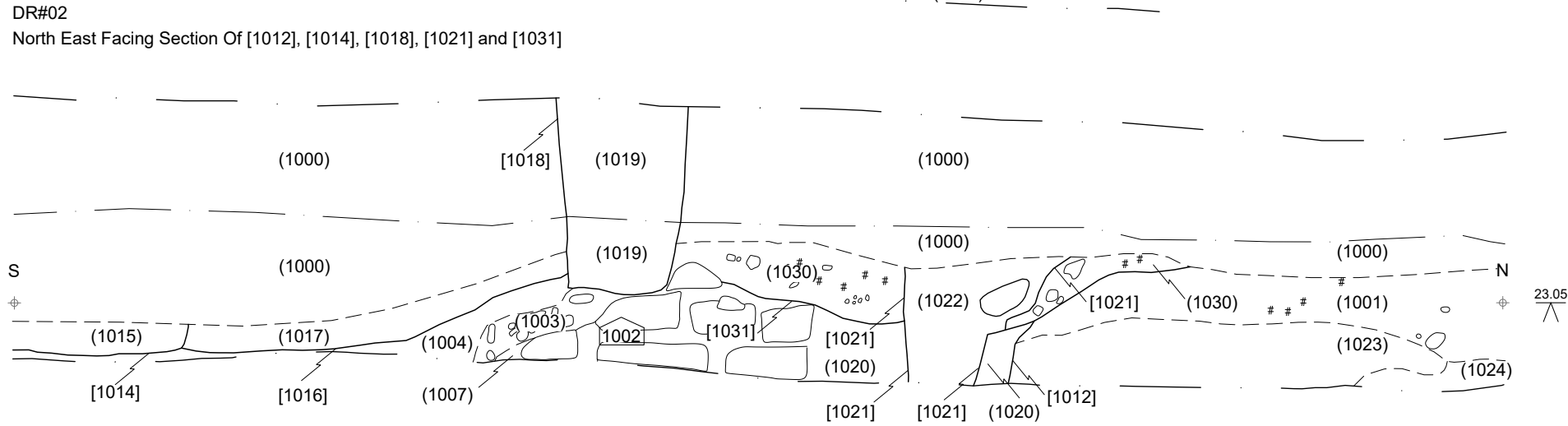
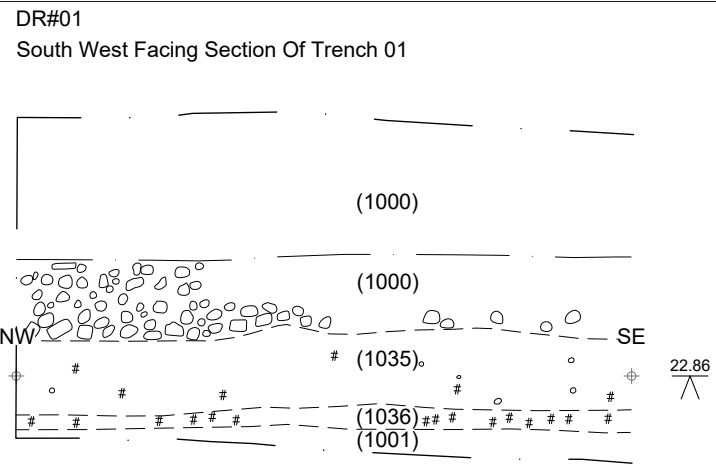
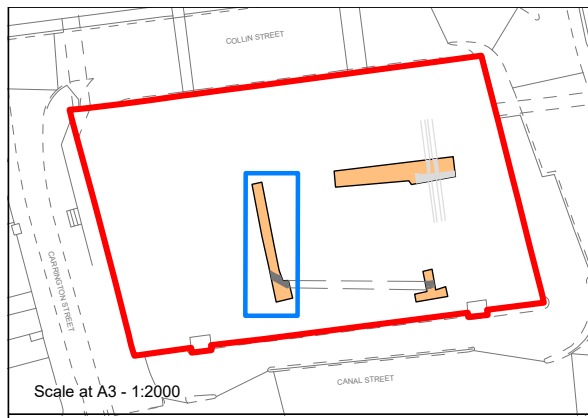



Figure 02 - Site Plan Showing Excavated Features and Speculative Position of Speed Map (1610)
 BRN1 - Broadmarsh Bus Station

Scale at A3 - 1:500
 Drawn by MI

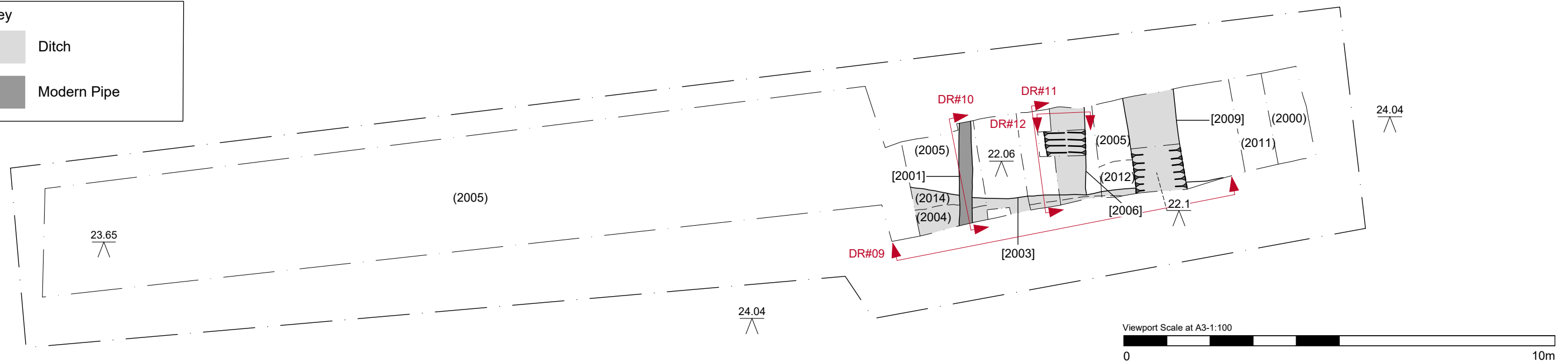


tp Trent & Peak ARCHAEOLOGY
Figure 03 - Trench 01: Plan and Section Drawings
BRN1 - Broadmarsh Bus Station

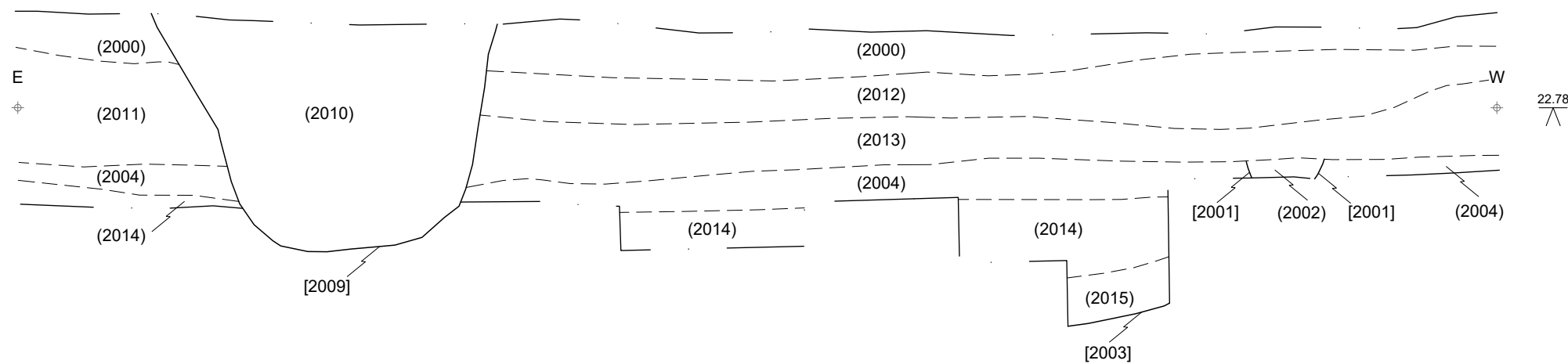
Scale at A3 - varies
 Drawn by MI

Key

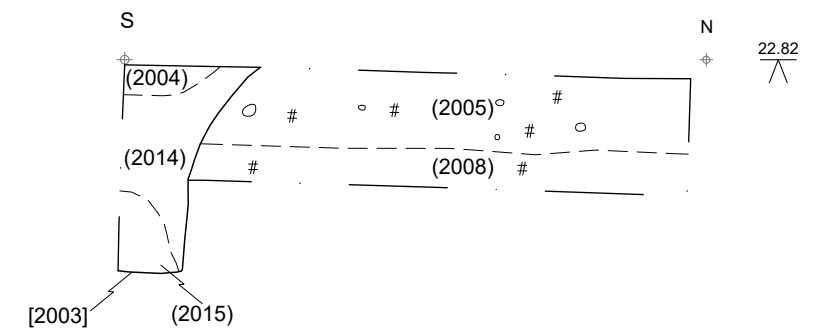
- Ditch
- Modern Pipe



DR#09
North Facing Section Of Trench 02



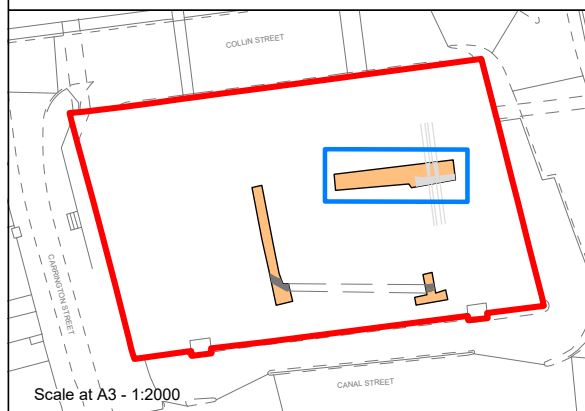
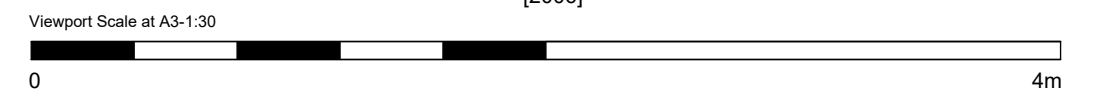
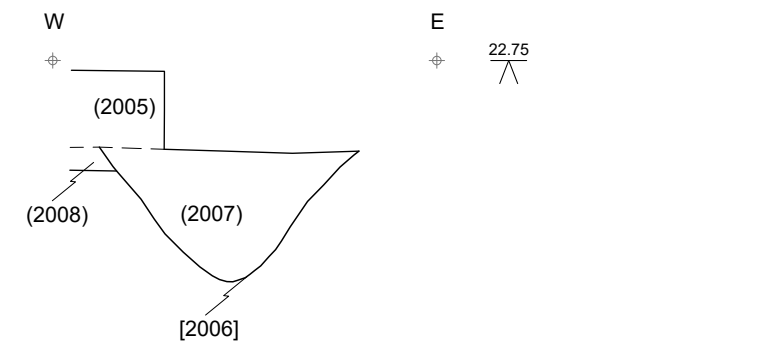
DR#10
East Facing Section Of [2003]

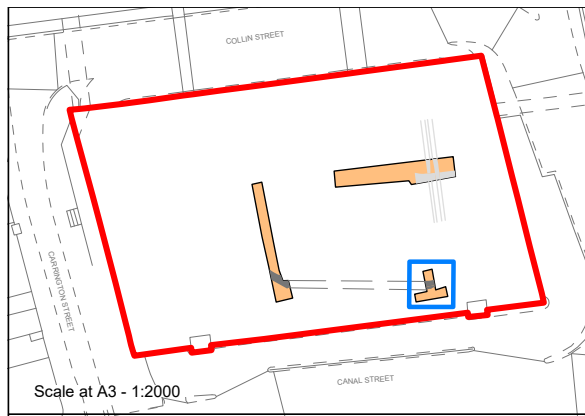


DR#11
East Facing Section [2003]

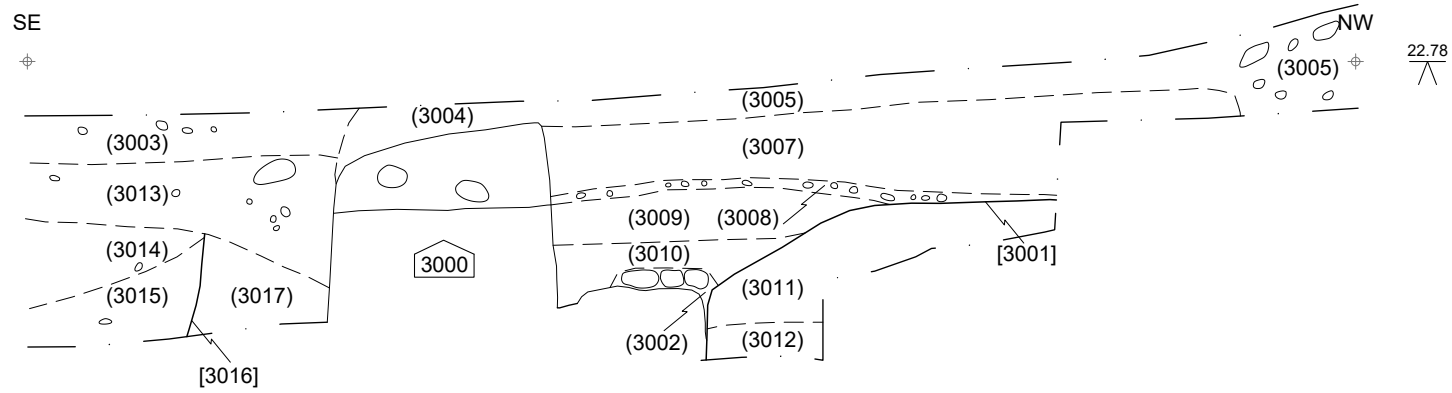


DR#12
South Facing Section Of [2006]

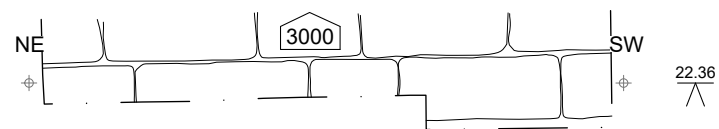




DR#13
North East Facing Section Of Trench 03



DR#14
North West Facing Elevation Of [3000]



Viewport Scale at A3-1:30



- Key
- Post Medieval Ditch
 - Structure

Viewport Scale at A3-1:50

