

Archaeological Evaluation Works at Chingford Road, Bilborough, Nottingham



For Nottingham City Council

Prepared by Camilla Collins


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Summary

- Trent & Peak Archaeology was commissioned by Nottingham City Council to carry out an archaeological trial trench evaluation at Chingford Road, Bilborough, Nottingham (centred on National Grid Reference SK 52176 41738). The work was undertaken in November 2017 in response to the requirement (Lomax 2017) for a staged evaluation and mitigation strategy at the site of a proposed development.
- The current land use is pasture, having been previously used as sports fields for Westbury School. The site is bound by residential houses off of Wigman Road to the west and Chingford Road to the south. To the south-west there is Westbury School. The eastern extent of the site is bounded by residential housing off Denewood Crescent and to the north there are further residential properties off Yatesbury Crescent and St Martin's Road. The entirety of the redevelopment footprint is approximately 60,000m².
- The scheme of archaeological fieldwork can be summarised as the excavation of nineteen trenches, each measuring 1.8x30-35m, providing a 2% sample of the total redevelopment footprint. The trenches were designed to assess the site's archaeological potential by targeting geophysical anomalies identified in a previous phase of work.
- Historic maps, from Chapman's map of 1774 to the present day, show the site as fields, with no evidence of structural remains. No antiquarian observations, or archaeological work, have taken place within the site boundary. The Nottingham Historic Environment Record (HER) has no records within the site boundary.
- Very few features of archaeological interest were identified during the evaluation, and most of these were modern or post-medieval in date. Two pits, [1303] and [1703], have the most potential for archaeological significance, though no dating evidence was recovered from either feature.
- Deposit (1306), identified immediately below topsoil in Trench 13, comprised loosely compacted very dark grey ashy silt measuring 2m in width and up to 0.2m in depth. The location and alignment of the deposit suggests it may have originally led to the disused coal pits visible on historic maps to the north-east of the site. As such, it is possible that this deposit may be the camber for the former trackbed of a small wagonway of uncertain (but likely early modern) date.
- The results of the evaluation suggest very limited land use in this area with the exception of modern disturbance during its use as playing fields. Deep subsoil/colluvial deposits were identified in the southern parts of the site and some features, such as furrows may have been present in the subsoil only.

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Acknowledgements

The project was managed by Gareth Davies and the fieldwork was undertaken by Camilla Collins, Vicky Owen, Laura Binns and Joe Groarke. Illustrations were produced by Tiago Quierez. Nottingham City Council is thanked for commissioning the work. The project was monitored by Scott Lomax, Acting City Archaeologist for Nottingham City Council.

1 Introduction

- 1.1 Trent & Peak Archaeology was commissioned by Nottingham City Council to carry out an archaeological trial trench evaluation at Chingford Road, Bilborough, Nottingham (centred on National Grid Reference SK 52176 41738) (Fig 1). The work was undertaken in November 2017 in response to the requirement (Lomax 2017) for a staged evaluation and mitigation strategy at the site of a proposed development.

- 1.2 Scott Lomax, Acting City Archaeologist at Nottingham City Council, stated that:

The proposed development area is located immediately south of St Martin's Church, Bilborough, and immediately outside the Strelley Road Archaeological Constraint Area, which represents the known extent of Bilborough as indicated on Chapman's map of 1774.

Although immediately outside the Archaeological Constraint Area, it is considered that there is potential for archaeological remains, of medieval and post-medieval date, surviving within the proposed development site. The close proximity of the site to St Martin's Church (a late 14th century church which may have been built on the site of an earlier church) also raises the possibility of remains of settlement within the proposed development site.

The full extent of the settlement of Bilborough, which existed prior to the Norman Conquest, is uncertain. Occupation and activity, including the practice of agriculture, is expected to have taken place around the periphery of the extent of Bilborough as mapped by Chapman.

In order to assess the archaeological potential for the site a scheme of archaeological evaluation is required. This should consist initially of geophysical survey to identify anomalies which could indicate the presence of archaeological features. Following geophysical survey trial trenching will be required in order to assess the character, extent and preservation of any archaeological features and other remains. This will establish whether further archaeological work is required.

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.

- 1.3 A Written Scheme of Investigation (WSI) was subsequently submitted by TPA and approved by Scott Lomax, Acting City Archaeologist for Nottingham City Council (Appendix 2). The WSI stated that the fieldwork be carried out in accordance with appropriate professional standards, as defined in the Chartered Institute for Archaeologists' (CIfA) *Standard & Guidance for archaeological field evaluation* (2014).
- 1.4 The overall study has employed the methodology developed by TPA for use on similar projects in the region. This methodology conforms to the standard requirements of planning authorities where consent applications are made for development. These follow guidelines presented in the *National Planning Policy Framework* (DCLG 2012) which replaces conservation planning document *Planning Policy Statement 5: Planning for the Historic Environment* (PPS 5 2010).
- 1.5 The TPA site code is CGW.

2 Site Background

- 2.1 The current land use is pasture, having been previously used as sports fields for Westbury School. The site is bound by residential houses off of Wigman Road to the west and Chingford Road to the south. To the south-west there is Westbury School. The eastern extent of the site is bounded by residential housing off Denewood Crescent and to the north there are further residential properties off Yatesbury Crescent and St Martin's Road. The entirety of the redevelopment footprint is approximately 60,000m².
- 2.2 The scheme of archaeological fieldwork can be summarised as the excavation of nineteen trenches, each measuring 1.8x30m, providing a 2% sample of the total redevelopment footprint. The trenches were designed to assess the site's archaeological potential by targeting geophysical anomalies identified in a previous phase of work.

3 Topography and Geology

- 3.1 The development site is relatively flat with a slight incline towards the north. It lies at approximately 78m AOD at its south and 86m AOD at its northern extent.
- 3.2 The overlying soils are freely draining, lime-rich loamy soils (www.landis.org.uk/soilscapes).
- 3.3 The 1:50,000 British Geological Mapping shows the site to be situated on mixed bedrock geology. To the south there is Cadeby Formation – Dolostone, a sedimentary bedrock formed approximately 252 to 2572 million years ago in the Permian Period, indicating a local environment previously dominated by shallow seas. To the north there is Edlington Formation, a mudstone and sandstone sedimentary bedrock formed approximately 252 to 272 million years ago in the Permian Period indicative of a local environment previously dominated by lakes and lagoons. Also towards the north is Lenton Sandstone Formation, a sandstone sedimentary bedrock formed approximately 247 to 272 million years ago in the Triassic and Permian Periods indicating a local environment previously dominated by rivers. (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).
- 3.4 There are no recorded superficial deposits across any of the site.

4 Historical and Archaeological Background

- 4.1 The proposed development site lies immediately outside the Strelley Road Archaeological Constraint Area, which represents the known extent of the settlement of Bilborough as shown on Chapman's map of 1774. The site lies immediately adjacent to the churchyard of St Martin's Church. It is thought that St. Martin's stands on the site of an earlier church. The currently extant structure is predominantly late 14th century in date with 19th and 20th century modifications and extensions.
- 4.2 Bilborough's roots can be traced back to before the Norman Conquest. Bilborough was mentioned in Domesday, when three freemen, three villagers and four slaves were referred to. There is no reference to a church, with neighbouring Strelley recorded as having a priest.
- 4.3 Coal mining is known to have been taking place in Bilborough by 1545. In 1573 pits were dug to a depth of 2 yards. Coal mining increased in the following centuries and by 1604 the Huntington Beaumont Wagonway had been constructed to transfer coal from nearby pits between Strelley and Wollaton by horse-drawn wagons. This structure is generally

regarded as the first embryonic railway to have been built in England. The exact route and location of the wagonway remains unknown.

- 4.4 Approximately 60m to the north of St Martin's Church a possible medieval fortified homestead was excavated in 1939. Trial trench excavations by H Martin and A Oswald, in 1939, revealed an almost square shaped banked enclosure with a rectangular earthwork in its north east corner (Oswald 1939). The inner enclosure contained limestone walls, which varied in width between 3ft and 8ft. The pottery recovered suggested that the site was occupied during the 14th and 15th centuries (Oswald 1939). Romano-British pottery was also found on the site, suggesting the possibility of Romano-British occupation within the vicinity (Houldsworth 1960).
- 4.5 A geophysical survey was undertaken at St Martin's Church in 2016 as part of the Hidden Treasures Project, to investigate the possibility of structural remains associated with an earlier phase of the building. The geophysical survey consisted of detailed earth resistance, high density radar, and dual frequency radar surveys over the northern and southern churchyards. There were no anomalies providing definitive evidence of structural remains. A possible area of ground disturbance was identified to the north of the church. However, it is possible that this relates to the extension of the church in the 1970s. Further anomalies were detected to the north and south of the church which were possibly consistent with remains of stone structures. However, the strength of the anomalies and the fact that they did not share an orientation with the church suggested they were more likely to be of natural origin. Several small anomalies detected by the high density radar could relate to features of archaeological interest. Other anomalies were found to relate to graves, areas of natural variation, a soakaway, drains and underground services.
- 4.6 Historic maps, from Chapman's map of 1774 to the present day, show the site as fields, with no evidence of structural remains. No antiquarian observations, or archaeological work, have taken place within the site boundary. The Nottingham Historic Environment Record (HER) has no records within the site boundary.
- 4.7 **Results of the 2017 Geophysical Survey**
- 4.7.1 A detailed magnetic survey was carried out by SUMO survey in September 2017 (Tanner 2017) in response to the requirement (Lomax 2017) for a staged evaluation at the site of the proposed development. This survey was carried out prior to the trial trench evaluation stage in order to inform the proposed trench locations and target anomalies identified.
- 4.7.2 No anomalies of suspected archaeological origin were detected during the survey. However, several former field boundaries and a past ridge and furrow cultivation regime were identified, in addition to a number of anomalies that likely related to former playing fields. Large areas of ferrous responses were scattered throughout the dataset. It was concluded that these were modern in origin and likely represented sports equipment such as goalpost bases. Smaller scale ferrous anomalies were also present throughout. These responses were characteristic of small pieces of debris such as brick or tile within the topsoil (Tanner 2017).

5 Aims and Objectives

- 5.1 The trial trench evaluation aimed to rapidly establish the depth at which the archaeological horizon lies in addition to the presence, extent, nature and importance of the sub-surface archaeological features, deposits and structures. Furthermore, the evaluation aimed to sample all areas of the site in order to rapidly inform on whether any further mitigation would be required.

5.1 The objectives of the archaeological evaluation were:

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 (Knight, Vynner and Allen, 2012) (See Section 5.3).
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.

5.3 Any buried archaeological remains identified offered an opportunity to address the research priorities of the region as highlighted in the East Midlands Updated Research Agenda and Strategy (Knight, Vynner and Allen 2012). Of particular note are:

6.7.3 Early Mediaeval: *How may crop rotation and the open-field system have developed, and how may this relate to other agricultural innovations such as mouldboard ploughs, water meadows and land-drainage?*

7.3.3 High Mediaeval: *Can we improve our knowledge and classification of moated sites in the region, and how can environmental data add to our knowledge?*

7.7.1 High Mediaeval: *Can we shed further light upon the origins and development of the open field system and its impact upon agricultural practices?*

8.3.1 Post-Mediaeval: *How can we improve our understanding of the early landscapes of enclosure and improvement and the interrelationship between arable, pasture, woodland, commons and waste?*

6 Methodology

- 6.1 All work was undertaken by suitably qualified and experienced archaeologists in accordance with accepted archaeological practice and the *Standard & Guidance* produced by the Chartered Institute for Archaeologists (CIfA 2014).
- 6.2 A total of nineteen trial trenches were excavated within the proposed development area, each measuring 1.8 x 30m.
- 6.3 All trenches were excavated using a 360° tracked excavator fitted with a toothless ditching bucket under constant archaeological supervision.
- 6.4 Trenches were excavated to a level at which archaeological deposits were present, or in their absence, to the natural geological substrate. Subsoil was excavated in spits no greater than 100mm. The trenches and any archaeological features were located by GPS, Leica CS15/GS15 RTK Differential GNSS.

- 6.5 Excavation followed one of two potential sequences depending on the deposits present below the topsoil:
1. If archaeology was present upon removal of initial topsoil/subsoil/rubble then the trench was hand cleaned and features/horizons characterised.
 2. If deep colluviums or made ground was present selected areas will be machined to see if horizons of interest can be sampled with the safe working constraints.
- 6.6 Trenches were hand cleaned and a minimum of one long section of each trench was photographed and drawn at 1:50/1:20.
- 6.7 All exposed surfaces were inspected by a suitably qualified archaeologist and any archaeological deposits were hand cleaned and recorded where appropriate. Features were characterised through excavation where necessary to obtain datable material and understand the levels of preservation. This characterisation also included an attempt to contribute to the overall research aims (dictated above in Section 5). All contexts were given an individual context number. Plans and sections of all features were drawn on drafting film in pencil at a scale of 1:20, and showed at least context numbers, all colour and textural changes and principal slopes represented as hachures. Digital colour photographs of each context were taken using a DSLR at 7 megapixel minimum resolution. Written records were maintained as laid down in the TPA recording manual.
- 6.8 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. Samples were processed within the TPA Environmental Lab, under the supervision of TPA Environmental Officer Alison Wilson.
- 6.9 All works were carried out in accordance with the approved Written Scheme of Investigation prepared by Trent & Peak Archaeology (2017) (Appendix 2) and the Chartered Institute for Archaeologists *Standards and Guidance for an Archaeological Field Evaluation* (CIfA 2014).

7 Results

7.1 Trench 01 (Plate 1)

- 7.1.1 Orientated broadly east-north-east to south-south-west, this trench measured 35 x 1.8m and was excavated to a maximum depth of 1.4m. The trench was located towards the south-west corner of site at the lowest point of a slight incline.
- 7.1.2 Topsoil (0101) consisted of weak dark greyish brown silty loam and was unusually homogenous with no finds recovered. Below this was a thin layer of subsoil (0102) comprised of firmly compacted mid reddish brown silty clay. Colluvium (0103) measured up to 0.45m in depth and consisted of firmly compacted sterile dark reddish brown clay. The natural substratum (0104) was located below (0103) at a maximum depth of 1.4m below the existing ground level. No archaeological features were present in this trench.

7.2 Trench 02 (Plate 2)

- 7.2.1 This trench was located towards the south-west corner of site at the lowest point of a slight incline and was orientated broadly north-east to south-west. It measured 35 x 1.8m and was excavated to a maximum depth of 1.4m.

7.2.2 Topsoil (0201) consisted of weak dark greyish brown silty loam, and was located stratigraphically above subsoil (0202), comprised of firmly compacted mid reddish brown silty clay. Colluvium (0203) measured up to 0.45m in depth and consisted of firmly compacted sterile dark reddish brown clay. The natural substratum (0204) was located below (0203) at a maximum depth of 1.4m below the existing ground level. No archaeological features were present in this trench.

7.3 Trench 03 (Plate 3)

7.3.1 Orientated broadly north-north-east to south-south-west, this trench measured 31.5 x 1.8m and was excavated to a maximum depth of 1.6m. The trench was located towards the south-west corner of site at the lowest point of a slight incline.

7.3.2 Topsoil (0301) consisted of weak dark greyish brown silty loam and was located stratigraphically above subsoil (0302). This layer was comprised of firmly compacted mid reddish brown silty clay. Colluvium (0303) measured up to 0.45m in depth and consisted of firmly compacted sterile dark reddish brown clay. The natural substratum (0304) was located below (0203) at a maximum depth of 1.4m below the existing ground level. No archaeological features were present in this trench.

7.4 Trench 04 (Plate 4)

7.4.1 The trench was located towards the south-west of site and was orientated broadly north-west to south-east. It measured 34.6 x 1.8m and was excavated to a maximum depth of 1m.

7.4.2 Topsoil (0401) consisted of weak dark greyish brown silty loam. Below this was subsoil (0402) comprised of firmly compacted mid yellowish brown silty clay. The natural substratum (0403) was located below (0402) at a maximum depth of 1m below the existing ground level. No archaeological features were present in this trench.

7.5 Trench 05 (Plate 5)

7.5.1 Orientated broadly north-east to south-west, this trench was located towards the south of site and measured 34.5 x 1.8m and was excavated to a maximum depth of 1.05m.

7.5.2 Topsoil (0501) consisted of weak dark greyish brown silty loam. Below this was a thin layer of subsoil (0502) comprised of firmly compacted mid yellowish brown silty clay. Colluvium (0503) measured up to 0.6m in depth and consisted of firmly compacted dark reddish brown clay. The natural substratum (0503) was located below (0502) at a maximum depth of 1.05m below the existing ground level. No archaeological features were present in this trench.

7.6 Trench 06 (Plate 6)

7.6.1 Orientated broadly north to south, this trench measured 30 x 1.8m and was excavated to a maximum depth of 1.2m. The trench was located towards the west of site.

7.6.2 Topsoil (0601) consisted of weak dark greyish brown silty loam and was located stratigraphically above subsoil (0602). This layer was comprised of firmly compacted mid reddish brown silty clay. Below this was colluvium (0603), which was comparably deep and measured up to 0.4m in depth. This layer consisted of firmly compacted sterile dark reddish brown silty clay. The natural substratum (0604) was located below (0603) at a maximum depth of 1.2m below the existing ground level. No archaeological features were present in this trench.

7.7 Trench 07 (Plate 7)

- 7.7.1 This trench was located towards the south of the site on a slight incline, and was orientated broadly north-west to south-east. It measured 34.8 x 1.8m and was excavated to a maximum depth of 1.1m.
- 7.7.2 Topsoil (0701) consisted of weak dark greyish brown silty loam. Below this was subsoil (0702) comprised of firmly compacted mid reddish brown silty clay. The natural substratum (0703) was located below (0702) at a maximum depth of 1.1m below the existing ground level. No archaeological features were present in this trench.

7.8 Trench 08 (Plates 8-9)

- 7.8.1 Orientated broadly north-east to south-west, this trench measured 34.1 x 1.8m and was excavated to a maximum depth of 1.6m. The trench was located towards the centre of site on a slight incline towards the south-west.
- 7.8.2 Topsoil (0806) consisted of weak dark greyish brown silty loam and was located stratigraphically above subsoil (0813). This layer was comprised of firmly compacted mid pinkish brown silty clay. The natural substratum (0814) was located below (0813) at a maximum depth of 1.6m below the existing ground level.
- 7.8.3 Two small gullies were identified towards the north-east of the trench, [0801] which was truncated by [0803]. Both were overlaid by two modern levelling deposits, (0808) and (0809). No dating evidence was recovered from either feature. It is possible that they either related to a historic field boundary or provided modern field drainage during the site's use as playing fields.

7.9 Trench 09 (Plate 10)

- 7.9.1 Orientated broadly north-west to south-east, this trench measured 34.5 x 1.8m and was excavated to a maximum depth of 0.9m. The trench was located centrally towards the east of site.
- 7.9.2 Topsoil (0901) consisted of weak dark greyish brown silty loam and was located stratigraphically above subsoil (0902). This layer was comprised of firmly compacted mid reddish brown silty clay. The natural substratum (0903) was located below (0902) at a maximum depth of 0.9m below the existing ground level. No archaeological features were present in this trench.

7.10 Trench 10 (Plate 11)

- 7.10.1 This trench was located towards the north-west of site and was orientated broadly north-north-east to south-south-west. It measured 33.5 x 1.8m and was excavated to a maximum depth of 0.92m.
- 7.10.2 Topsoil (1001) consisted of weakly compacted dark greyish brown silty loam. Below this was subsoil (1002) comprised of firmly compacted mid reddish brown silty clay. The natural substratum (1008) was located below (1002) at a maximum depth of 0.92m below the existing ground level.
- 7.10.3 A shallow ovoid pit [1003] was identified towards the north of the trench against the east facing section. It contained one fill (1004), which consisted of firmly compacted light brownish yellow clay with frequent inclusions of rounded and sub-angular stones. No dating evidence was recovered from this feature.
- 7.10.4 A second shallow pit [1005] was encountered in a central location in the trench. This feature also contained one fill (1006), comprised of firmly compacted light brownish grey silty clay. No dating evidence was recovered from this feature.

7.11 Trench 11 (Plate 12)

7.11.1 Orientated broadly north-east to south-west, this trench measured 30.5 x 1.8m and was excavated to a maximum depth of 1.45m. The trench was located towards the north of site.

7.11.2 Topsoil (1101) consisted of weakly compacted dark greyish brown silty loam. Below this was a thin layer of subsoil (1102) comprised of firmly compacted mid reddish brown silty clay. Colluvium (1103) was comparably deep and measured up to 0.4m in depth. This layer consisted of firmly compacted sterile dark reddish brown silty clay. The natural substratum (1104) was located below (1103) at a maximum depth of 1.45m below the existing ground level. No archaeological features were present in this trench.

7.12 Trench 12 (Plate 13)

7.12.1 This trench was located towards the north of site and was orientated broadly east-north-east to west-south-west. It measured 20 x 1.8m and was excavated to a maximum depth of 1.2m.

7.12.2 Topsoil (1201) consisted of weakly compacted dark greyish brown silty loam and was unusually homogenous with no finds recovered. Below this was a thin layer of subsoil (1202) comprised of firmly compacted mid reddish brown silty clay. The natural substratum (1203) was located below (1202) at a maximum depth of 1.2m below the existing ground level. No archaeological features were present in this trench.

7.13 Trench 13 (Plates 14-15)

7.13.1 Orientated broadly north-west to south-east, this trench measured 34.6 x 1.8m and was excavated to a maximum depth of 1m. The trench was located towards the north of site.

7.13.2 Topsoil (1301) consisted of weak dark greyish brown silty loam and was unusually homogenous with no finds recovered. Below this was a thin layer of subsoil (1302) comprised of firmly compacted mid reddish brown silty clay. The natural substratum (1305) was located below (1302) at a maximum depth of 1m below the existing ground level. No archaeological features were present in this trench.

7.13.3 Deposit (1306) was located beneath the topsoil (1301) towards the northern extent of the trench. This deposit comprised loosely compacted very dark grey ashy silt measuring 2m in width and up to 0.2m in depth. The location and alignment of the deposit suggests it may have originally led to the disused coal pits visible on historic maps to the north-east of the site. As such, it is possible that this deposit may be backfill of the former trackbed of a small wagonway. As such, it is possible that this deposit may be the camber for the former trackbed of a small wagonway of uncertain (but likely early modern) date.

7.13.4 A circular pit [1303] was located against the west facing section in a central position within the trench. It contained a single fill (1304), consisting of demineralised light brownish yellow silty sand likely to be the product of gradual silting. No dating evidence was recovered from this feature.

7.14 Trench 14 (Plates 16-17)

7.14.1 Orientated broadly north-east to south-west, this trench measured 34.5 x 1.8m and was excavated to a maximum depth of 0.98m. The trench was located towards the north of the site.

7.14.2 Topsoil (1414) consisted of weakly compacted dark greyish brown silty loam and was located stratigraphically above two modern levelling deposits (1415) and (1417). Below this was a thin layer of subsoil (1418) comprised of firmly compacted mid reddish brown silty clay. Colluvium (1419) was comparably deep and measured up to 0.4m in depth.

This layer consisted of firmly compacted sterile dark reddish brown silty clay. The natural substratum (1420) was located below (1419) at a maximum depth of 0.98m below the existing ground level.

7.14.3 Six narrow linears ([1401], [1403], [1405], [1407], [1409] and [1411]) were located towards the south-west end of the trench. Each feature contained a single identical fill comprised of weakly compacted dark grey silty loam with frequent inclusions of charcoal and occasional subrounded pebbles. Linears [1401] and [1403] were overlaid by modern levelling deposit (1415) containing redeposited topsoil, demolition material and a lens of mortar (1416). Linears [1405], [1407], [1409] and [1411] were all overlaid with modern levelling deposit (1417) consisting of redeposited topsoil. No dating evidence was recovered from any of the archaeological features or deposits. It is likely that the six linears were broadly contemporary in date and were possibly used as field drainage for the playing fields.

7.14.4 A small post-hole [1413] was also encountered towards the south-west end of the trench, truncating linear [1411]. No dating evidence was recovered from this feature.

7.15 Trench 15 (Plate 18;)

7.15.1 This trench was located towards the north of the site and was orientated broadly north-north-east to south-south-west. It measured 34.3 x 1.8m and was excavated to a maximum depth of 0.65m.

7.15.2 Topsoil (1501) consisted of weakly compacted dark greyish brown silty loam and was located stratigraphically above subsoil (1502). This layer was comprised of firmly compacted mid yellowish brown silty clay. The natural substratum (1503) was located below (1502) at a maximum depth of 0.63m below the existing ground level. No archaeological features were present in this trench.

7.16 Trench 16 (Plate 19;)

7.16.1 Orientated broadly north-east to south-west, this trench measured 34.1 x 1.8m and was excavated to a maximum depth of 1m. The trench was located towards the north-east of site.

7.16.2 Topsoil (1601) consisted of weakly compacted dark greyish brown silty loam. Below this was a subsoil (1602) comprised of firmly compacted mid yellowish brown silty clay. The natural substratum (1603) was located below (1602) at a maximum depth of 1m below the existing ground level. No archaeological features were present in this trench.

7.17 Trench 17 (Plate 20-22;)

7.17.1 Orientated broadly north-north-west to south-south-east, this trench measured 34 x 1.8m and was excavated to a maximum depth of 0.65m. The trench was located towards the north-east of site.

7.17.2 Topsoil (1701) consisted of weak dark greyish brown silty loam and was unusually homogenous with no finds recovered. Below this was subsoil (1702) comprised of firmly compacted mid reddish brown silty clay. The natural substratum (1709) was located below (1702) at a maximum depth of 0.63m below the existing ground level.

7.17.3 A circular pit [1703] was located centrally against the north-east facing section of the trench. This feature contained a single fill (1704) which consisted of friable light brownish yellow silty sand with occasional inclusions of rounded pebbles. No dateable evidence was retrieved from this feature.

7.17.4 Two modern linears [1705] and [1707], both north-east to south-west aligned, were located at the south-east extent of the trench. Linear [1705] contained a single fill

comprised of loosely compacted very dark grey silt with frequent inclusions of sub-angular and rounded stones. Linear [1707] also contained a single fill that consisted of weakly compacted dark brownish grey silty loam with moderate inclusions of rounded stones. Finds recovered from both features indicate that they are both late 20th century in date. They were possibly used for field drainage and may be associated with the nearby school yard or playing fields.

7.18 Trench 18 (Plate 23;)

7.18.1 This trench was located in the north-east corner of site and was orientated broadly north-east to south-west. It measured 33.5 x 1.8m and was excavated to a maximum depth of 0.6m.

7.18.2 Topsoil (1801) consisted of weakly compacted dark greyish brown silty loam and was located stratigraphically above subsoil (1802), which was comprised of firmly compacted mid yellowish brown silty clay. The natural substratum (1803) was located below (1802) at a maximum depth of 0.6m below the existing ground level. No archaeological features were present in this trench.

7.19 Trench 19

7.19.1 Orientated broadly north-north-west to south-south-east, this trench measured 33.1 x 1.8m and was excavated to a maximum depth of 0.7m. The trench was located towards the north-east corner of site.

7.19.2 Topsoil (1901) consisted of weakly compacted dark greyish brown silty loam. Below this was subsoil (1902), comprised of firmly compacted mid reddish brown silty clay. The natural substratum (1903) was located below (1902) at a maximum depth of 0.65m below the existing ground level. No archaeological features were present in this trench.

8 Finds *By Rosemary Hughes*

8.1 A small quantity of material was recovered during the evaluation. The finds include two pottery sherds, two glass fragments, two pieces of metal, one piece of ceramic building material, and one piece of concrete. These fragments were collected from contexts (1706) and (1708).

8.2 Pottery

8.2.1 Two pieces of pottery were collected from this site, both from fill (1706) of ditch [1705]. One was a large rim fragment of a coarse earthen ware with a yellow slip (AAD). The white slip present beneath the yellow slip of this pot pointed to a 19th century date. This type of ware is commonly found as kitchen vessels and pancheons. The size of the rim suggested a large vessel, possibly a water basin.

8.2.2 The other sherd was a white bodied earthen ware rim with alternating blue and white glaze horizontal stripes around the outside (AAE). This ware could be identified as a piece of T and G Greens Cornish ware, locally produced in Church Gresley, South Derbyshire. This ware is still produced but is no longer manufactured locally. The piece collected from this site was modern in date, the shape of this fragment suggested that it was a mug or tea cup.

8.3 Glass

8.3.1 Three fragments of glass were collected from this site, from fill (1706) of ditch [1705] and fill (1708) of [1707]. One piece was a body sherd of a green glass vessel (AAG) from fill

(1706). The other two pieces were sherds of clear glass (AAA) from fill (1708). All of these pieces are modern in date and could originate from a variety of vessels.

8.4 Ceramic Building Material

- 8.4.1 One piece of ceramic building material was collected from this site. This was a piece of roof tile (AAC). This was the broken corner of a tile, with a nail hole and evidence of an overlapping tile showing on its surface. Collected from fill (1708), this tile was modern in date.

8.5 Concrete

- 8.5.1 As well as the ceramic building materials collected, a piece of sandy concrete sheeting was recovered from the site. Collected from fill (1708), this was a large fragment of flat concrete (AAB). One side of this fragment was completely flat whilst the other was ridged and it appeared to be some kind of modern sheeting.

8.6 Metal

- 8.6.1 Two pieces of metal were collected from the site: a coin (AAH) and a nail (AAF). Both of these were recovered from fill (1706). The coin was too degraded to identify its denomination but could be identified as being made of a copper alloy. The nail was iron and moderately corroded. 93mm long, it had a flat hexagonal head. A post medieval date can be assigned to these pieces.

8.7 Summary

- 8.7.1 The material collected from this site, from both contexts, was post medieval or modern in date. As Cornish ware was first produced in 1924, this provides a secure modern date for fill (1706). The material from (1708) also suggests a modern date.

9 Conclusion

- 9.1 A total of 19 trenches were excavated providing a 2% sample of the site.
- 9.2 Very few features of archaeological interest were identified during the evaluation, and most of these were modern in date. Two pits, [1303] and [1703], have the most potential for archaeological significance, though no dating evidence was recovered from either feature. However, the limited nature of the evaluation makes it difficult to fully interpret these features, and deduce whether they are in indeed contemporary or associated with one another.
- 9.3 Deposit (1306), identified immediately below topsoil in Trench 13, comprised loosely compacted very dark grey ashy silt measuring 2m in width and up to 0.2m in depth. The location and alignment of the deposit suggests it may have originally led to the disused coal pits visible on historic maps to the north-east of the site. As such, it is possible that this deposit may be the camber for the former trackbed of a small wagonway of uncertain (but likely early modern) date.
- 9.4 The results of the evaluation suggest very limited land use in this area with the exception of modern disturbance during its use as playing fields. Deep subsoil/colluvial deposits were identified in the southern parts of the site and some features, such as furrows may have been present in the subsoil only.

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Online Resources

British Geological Survey Map Viewer; <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

Cranfield Soil and Agrifoods Institute. Soilscape Map Viewer; www.landis.org.uk/soilscales

<https://www.cornishware.co.uk/about-us/>,

<http://www.gresleypottery.uk/>



Plate 1: Trench 01 general view, viewed looking east.



Plate 2: Trench 02 general view, viewed looking north-east.



Plate 3: Trench 03 general view, viewed looking north-east.



Plate 4: Trench 04 general view, viewed looking south-east.



Plate 5: Trench 05 general view, viewed looking north-east.

Plate 8: Trench 08 general view, viewed looking south-west.



Plate 6: Trench 06 general view, viewed looking north-west.



Plate 7: Trench 07 general view, viewed looking north-north-west.



Plate 9: North-west facing section of [0801] and [0803], viewed looking south-east.



Plate 10: Trench 09 general view, viewed looking south-west.

Plate 11: Trench 10 general view, viewed looking south-east.



Plate 12: Trench 11 general view, viewed looking south-west.



Plate 13: Trench 12 general view, viewed looking south-west.



Plate 14: Trench 13 general view, viewed looking east.



Plate 15: Post-excavation south-west facing section of [1303], viewed looking north.



Plate 16: Trench 14 general view, viewed looking north-east.



Plate 17: South-east facing section of [1401] to [1411], viewed looking north.

Plate 18: Trench 15 general view, viewed looking west.



Plate 19: Trench 16 general view, viewed looking east.



Plate 20: Trench 17 general view, viewed looking north-west.

Plate 21: South-west facing section of [1705] and [1707], viewed looking north.



Plate 22: North-east facing section of [1703], viewed looking south-west.

Plate 23: Trench 18 general view, viewed looking south-west.



Appendix 1: Trench logs

Trench 01					
Trench Dimensions (LxW)	35 x 1.8m	Trench Alignment	ENE-WSW	Trench Depth	1.4m
Context	Type	Description			Thickness
(0101)	Layer	Topsoil Weak dark greyish brown silty loam			0.3m
(0102)	Layer	Subsoil Firm mid reddish brown silty clay			0.5m
(0103)	Layer	Colluvium Firm dark reddish brown clay			0.45m
(0104)	Layer	Natural Firm mid pinkish red and orange yellow mudstone			-

Trench 02					
Trench Dimensions (LxW)	35 x 1.8m	Trench Alignment	NE-SW	Trench Depth	1.4m
Context	Type	Description			Thickness
(0201)	Layer	Topsoil Weak dark greyish brown silty loam			0.4m
(0202)	Layer	Subsoil Firm mid reddish brown silty clay			0.8m
(0203)	Layer	Colluvium Firm dark reddish brown clay			0.35m
(0204)	Layer	Natural Firm mid pinkish red mudstone			-

Trench 03					
Trench Dimensions (LxW)	31.5 x 1.8m	Trench Alignment	NNE-SSW	Trench Depth	1.6m
Context	Type	Description			Thickness
(0301)	Layer	Topsoil Weak dark greyish brown silty loam			0.4m
(0302)	Layer	Subsoil Firm mid reddish brown silty clay			0.8m
(0303)	Layer	Colluvium Firm dark reddish brown clay			0.65m
(0304)	Layer	Natural Firm mid pinkish red and orange yellow mudstone			-

Trench 04					
Trench Dimensions (LxW)	34.6 x1.8m	Trench Alignment	NW-SE	Trench Depth	1m
Context	Type	Description			Thickness
(0401)	Layer	Topsoil Weak dark greyish brown silty loam			0.4m
(0402)	Layer	Subsoil Firm mid yellowish brown silty clay			0.6m
(0403)	Layer	Natural Loose mid pinkish red sandy silt			-

Trench 05					
Trench Dimensions (LxW)	34.6 x1.8m	Trench Alignment	NE-SW	Trench Depth	1.05m
Context	Type	Description			Thickness
(0501)	Layer	Topsoil Weak dark greyish brown silty loam			0.2m
(0502)	Layer	Subsoil Firm mid yellowish brown silty clay			0.15m
(0503)	Layer	Colluvium Firm dark reddish brown clay			0.8m
(0504)	Layer	Natural Firm mid pinkish red and orange yellow mudstone			-

Trench 06					
Trench Dimensions (LxW)	30 x 1.8m	Trench Alignment	N-S	Trench Depth	1.2m
Context	Type	Description			Thickness
(0601)	Layer	Topsoil Weak dark greyish brown silty loam			0.35m
(0602)	Layer	Subsoil Firm mid reddish brown silty clay			0.6m
(0603)	Layer	Colluvium Firm dark reddish brown clay			0.45m
(0604)	Layer	Natural Firm mid pinkish red mudstone			-

Trench 07					
Trench Dimensions (LxW)	34.8 x 1.8m	Trench Alignment	NW-SE	Trench Depth	1.1m
Context	Type	Description			Thickness
(0701)	Layer	Topsoil Weak dark greyish brown silty loam			0.39m
(0702)	Layer	Subsoil Firm mid yellowish brown silty clay			0.77m
(0703)	Layer	Natural Firm mid pinkish red mudstone			-

Trench 08					
Trench Dimensions (LxW)	34.1 x 1.8m	Trench Alignment	NE-SW	Trench Depth	1.6m
Context	Type	Description			Thickness
(0800)	Fill	Fill of [0801] Friable dark brown silty clay			N/A
[0801]	Cut	NW-SE aligned linear U-shaped profile with shallow sides and a flat base. Contains two fills (0800) and (0811).			N/A
(0802)	Fill	Fill of [0803] Friable dark blackish grey silty clay			N/A
[0803]	Cut	NW-SE aligned linear U-shaped profile with steep sides and a flat base. Contains two fills (0802) and (0812)			N/A
(0804)	Layer	Mixed horizon between subsoil (0813) and natural (0814)			????
(0805)	Layer	Natural substratum Firm mid orange pinkish brown clay with lenses of sand			-
(0806)	Layer	Topsoil Weak dark greyish brown silty loam			0.36m
(0807)	Deposit	Modern levelling deposit comprised of redeposited topsoil			0.34m
(0808)	Deposit	Modern levelling deposit Friable black ashy silt			0.18m
(0809)	Deposit	Modern levelling deposit Loose dark grey ashy silt			0.3m
(0810)	Deposit	Modern levelling deposit Friable light cream mortar lens within (0809)			0.28m
(0811)	Fill	Fill of [0801] Firm mid brownish grey mottled with mid orange brown silty clay			N/A
(0812)	Fill	Fill of [0803] Firm mid greyish brown silty clay			N/A
(0813)	Layer	Subsoil Firm mid pinkish brown silty clay			0.65m
(0814)	Layer	Natural substratum Firm mid pinkish red mudstone			-

Trench 09					
Trench Dimensions (LxW)	34.5 x 1.8m	Trench Alignment	NW-SE	Trench Depth	0.9m
Context	Type	Description			Thickness
(0901)	Layer	Topsoil Weak dark greyish brown silty loam			0.31m
(0902)	Layer	Subsoil Firm mid reddish brown silty clay			0.65m
(0903)	Layer	Natural Firm mid pinkish red silty sand			-

Trench 10					
Trench Dimensions (LxW)	34.5 x 1.8m	Trench Alignment	NNE-SSW	Trench Depth	0.9m
Context	Type	Description			Thickness
(1001)	Layer	Topsoil Weak dark greyish brown silty loam			0.5m
(1002)	Layer	Subsoil Firm mid reddish brown silty clay			0.1m
[1003]	Cut	Ovoid Pit U-shaped profile with a flat base. Contains one fill (1004).			N/A
(1004)	Fill	Fill of [1003] Firm light brownish yellow silty clay			N/A
[1005]	Cut	Circular Pit Elongated U-shape profile with a flat base. Contains one fill (1006).			N/A
(1006)	Fill	Fill of [1005] Firm light brownish grey clay			N/A
(1007)	Layer	Colluvium Firm dark reddish brown clay			0.4m
(1008)	Layer	Natural Firm mid pinkish red and orange yellow mudstone			-

Trench 11					
Trench Dimensions (LxW)	30.5 x 1.8m	Trench Alignment	NE-SW	Trench Depth	1.45m
Context	Type	Description			Thickness
(1101)	Layer	Topsoil Weak dark greyish brown silty loam			0.44m
(1102)	Layer	Subsoil Firm mid reddish brown silty clay			0.05m
(1103)	Layer	Colluvium Firm dark reddish brown clay			0.94m
(1104)	Layer	Natural Firm mid pinkish red and orange yellow mudstone			-

Trench 12					
Trench Dimensions (LxW)	20 x 1.8m	Trench Alignment	ENE-WSW	Trench Depth	1.2m
Context	Type	Description			Thickness
(1201)	Layer	Topsoil Weak dark greyish brown silty loam			0.4m
(1202)	Layer	Subsoil Firm mid yellowish brown silty clay			0.8m
(1203)	Layer	Natural Firm mid pinkish red silty sand			-

Trench 13					
Trench Dimensions (LxW)	34.6 x 1.8m	Trench Alignment	NW-SE	Trench Depth	1m
Context	Type	Description			Thickness
(1301)	Layer	Topsoil Weak dark greyish brown silty loam			0.4m
(1302)	Layer	Subsoil Firm mid yellowish brown silty clay			0.7m
[1303]	Cut	Circular Pit U-shaped profile with steep sides and a flat base. Contains one fill (1304).			N/A
(1304)	Fill	Fill of [1303] Firm light brownish yellow silty sand.			N/A
(1305)	Layer	Natural Firm mid pinkish red silty sand			-
(1306)	Deposit	Modern levelling deposit possibly associated with mining wagonway. Loose very dark grey ashy silt.			0.2

Trench 14					
Trench Dimensions (LxW)	34.5 x 1.8m	Trench Alignment	NE-SW	Trench Depth	0.98m
Context	Type	Description			Thickness
[1401]	Cut	NW-SE aligned linear. U-shaped profile with a concave base. Contains one fill (1402).			N/A
(1402)	Fill	Fill of [1401] Weak dark grey silty loam			N/A
[1403]	Cut	NW-SE aligned linear. U-shaped profile with a concave base. Contains one fill (1404).			N/A
(1404)	Fill	Fill of [1403] Weak dark grey silty loam			N/A
[1405]	Cut	NW-SE aligned linear. U-shaped profile with a concave base. Contains one fill (1406).			N/A
(1406)	Fill	Fill of [1405] Weak dark grey silty loam			N/A
[1407]	Cut	NW-SE aligned linear. U-shaped profile with a flat base. Contains one fill (1408).			N/A
(1408)	Fill	Fill of [1407] Weak dark grey silty loam			N/A
[1409]	Cut	NW-SE aligned linear. Elongated U-shaped profile with a flat base. Contains one fill (1410).			N/A
(1410)	Fill	Fill of [1409] Weak dark grey silty loam			N/A
[1411]	Cut	NW-SE aligned linear. Elongated U-shaped profile with a flat base. Contains one fill (1412).			N/A
(1412)	Fill	Fill of [1411] Weak dark grey silty loam			N/A
[1413]	Cut	Circular post-hole V-shaped profile, sharp break of base. Contains one fill (1421)			N/A
(1414)	Layer	Topsoil Weak dark greyish brown silty loam			0.28m
(1415)	Deposit	Modern levelling deposit Weak dark brown redeposited topsoil and demolition material			0.41m
(1416)	Deposit	Lens of weak cream mortar within levelling deposit (1415)			0.12m
(1417)	Deposit	Modern levelling deposit Weak dark grey clayey silt			0.54m
(1418)	Layer	Subsoil Firm mid reddish brown silty clay			0.1m
(1419)	Layer	Colluvium Firm dark reddish brown clay			0.6m
(1420)	Layer	Natural Firm mid pinkish red and orange yellow mudstone			-
(1421)	Fill	Fill of [1413] Medium dark greyish brown silty loam			N/A

Trench 15					
Trench Dimensions (LxW)	34.3 x 1.8m	Trench Alignment	NNE-SSW	Trench Depth	0.65m
Context	Type	Description			Thickness
(1501)	Layer	Topsoil Weak dark greyish brown silty loam			0.3m
(1502)	Layer	Subsoil Firm mid yellowish brown silty clay			0.3m
(1503)	Layer	Natural Loose mid pinkish red sand			-

Trench 16					
Trench Dimensions (LxW)	34.1 x 1.8m	Trench Alignment	NE-SW	Trench Depth	1m
Context	Type	Description			Thickness
(1601)	Layer	Topsoil Weak dark greyish brown silty loam			0.6m
(1602)	Layer	Subsoil Firm mid yellowish brown silty clay			0.35m
(1603)	Layer	Natural Loose mid pinkish red silty sand			-

Trench 17					
Trench Dimensions (LxW)	34 x 1.8m	Trench Alignment	NNW-SSE	Trench Depth	0.65m
Context	Type	Description			Thickness
(1701)	Layer	Topsoil Weak dark greyish brown silty loam			0.2m
(1702)	Layer	Subsoil Firm mid yellowish brown silty clay			0.43m
[1703]	Cut	Circular pit U-shaped profile with steep sides and a flat base. Contains one fill (1704).			N/A
(1704)	Fill	Fill of [1703] Friable light brownish yellow silty sand			N/A
[1705]	Cut	NE-SW aligned modern linear Elongated U-shaped profile with an uneven base. Contains one fill (1706).			N/A
(1706)	Fill	Fill of [1705] Weak mid-dark brownish grey silty loam			N/A
[1707]	Cut	NE-SW aligned modern linear Elongated U-shaped profile with an uneven base. Contains one fill (1708).			N/A
(1708)	Fill	Fill of [1707] Friable very dark grey ashy silt			N/A

(1709)	Layer	Natural Loose mid pinkish red silty sand	-
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Trench 18					
Trench Dimensions (LxW)	33.5 x 1.8m	Trench Alignment	NE-SW	Trench Depth	0.6m
Context	Type	Description			Thickness
(1801)	Layer	Topsoil Weak dark greyish brown silty loam			0.2m
(1802)	Layer	Subsoil Firm mid yellowish brown silty clay			0.35m
(1803)	Layer	Natural Loose mid pinkish red silty sand			-

Trench 19					
Trench Dimensions (LxW)	33.1 x 1.8m	Trench Alignment	NNW-SSE	Trench Depth	0.7m
Context	Type	Description			Thickness
(1901)	Layer	Topsoil Weak dark greyish brown silty loam			0.2m
(1902)	Layer	Subsoil Firm mid yellowish brown silty clay			0.5m
(1903)	Layer	Natural Loose mid pinkish red silty sand			-

Archaeological Evaluation Works at Chingford/Wigman Road, Bilborough, Nottingham.

**Written Scheme of Investigation for a scheme of Archaeological
Evaluation (Geophysical Survey and Trial Trenching).**

Project Code:

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2017

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1. INTRODUCTION

- 1.1 This Written Scheme of Investigation has been prepared for Nottingham City Council in response to the requirement (Lomax 2017) for a staged evaluation and mitigation strategy comprising of geophysical survey (Stage 1) and trial trenching (Stage 2), at the site of the proposed development land at Chingford/Wigman Road, Bilborough, Nottingham.
- 1.2 Depending on the results of each stage of work, the scope of the proposed work may need to be revised. For example, depending on the result of Stage 1 (geophysical survey) and 2 (trial trenching), there may be no requirement for a further stage of work. As such, this WSI should be seen as a 'live' document which, although establishing the principles by which the archaeological work will proceed within the planning system, will require updated details to be added as the project progresses. TPA and the Client have already made provision for these updates to occur.
- 1.3 The site location (SK 52176 41738) is shown in Figure 1 in addition to the results of the geophysical survey (Stage 1) and the proposed trial trenching (Stage 2) are depicted in the same figure. The entirety of the redevelopment footprint is approximately 60,000m² in size.
- 1.4 Scott Lomax, Acting City Archaeologist at Nottingham City Council, has stated that:

The proposed development area is located immediately south of St Martin's Church, Bilborough, and immediately outside the Strelley Road Archaeological Constraint Area, which represents the known extent of Bilborough as indicated on Chapman's map of 1774.

Although immediately outside the Archaeological Constraint Area, it is considered that there is potential for archaeological remains, of medieval and post-medieval date, surviving within the proposed development site. The close proximity of the site to St Martin's Church (a late 14th century church which may have been built on the site of an earlier church) also raises the possibility of remains of settlement within the proposed development site.

The full extent of the settlement of Bilborough, which existed prior to the Norman Conquest, is uncertain. Occupation and activity, including the practice of agriculture, is expected to have taken place around the periphery of the extent of Bilborough as mapped by Chapman.

In order to assess the archaeological potential for the site a scheme of archaeological evaluation is required. This should consist initially of geophysical survey to identify anomalies which could indicate the presence of archaeological features. Following geophysical survey trial trenching will be required in order to assess the character, extent and preservation of any archaeological features and other remains. This will establish whether further archaeological work is required.

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.

- 1.5 This document is the Written Scheme of Investigation (WSI) for the Stage 2 Archaeological Evaluation (trial trenching) required by Nottingham City Council as part of a brief requesting a WSI. Stage 1 (geophysical survey) has already been carried out and a summary of the methodology and results will be presented. Nottingham City Council will not discharge archaeological conditions on approval of the WSI. The condition requires full completion of the archaeological programme, including reports and archiving, before discharge.
- 1.6 As specified by the Acting City Archaeologist, the archaeological evaluation works will consist of geophysical survey (Stage 1) followed by trial trenching (Stage 2). The results of the assessment of the geophysical survey will guide the location of the trial trenches.
- 1.7 *Geology and Topography:*
The development site is relatively flat with a slight incline towards the north. It lies at approximately 78m AOD at its south and 86m AOD at its northern extent.
- 1.8 The overlying soils are freely draining, lime-rich loamy soils (www.landis.org.uk/soilscapes).
- 1.9 The 1:50,000 British Geological Mapping shows the site to be situated on mixed bedrock geology: to the south there is Cadeby Formation – Dolostone. A sedimentary Bedrock formed approximately 252 to 257 million years ago in the Permian Period, indicating a local environment previously dominated by shallow seas. To the north there is Edlington Formation, a Mudstone and Sandstone. A Sedimentary Bedrock formed approximately 252 to 272 million years ago in the Permian Period. Local environment previously dominated by lakes and lagoons as well as Lenton

Sandstone Formation – Sandstone, a Sedimentary Bedrock formed approximately 247 to 272 million years ago in the Triassic and Permian Periods. Local environment previously dominated by rivers. (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).

- 1.10 There are no recorded superficial deposits across any of the site.
- 1.11 *Current Land Use:* The current land use is pasture, having been previously used as sports fields for Westbury School. The site is bound by residential houses off of Wigman Road to the west and Chingford Road to the south. To the south-west there is Westbury School. The eastern extent of the site is bounded by residential housing off Denewood Crescent and to the north there are further residential properties off Yatesbury Crescent and St Martin's Road.
- 1.12 *Historical and Archaeological Background:*
- 1.13 The proposed development site lies immediately outside the Strelley Road Archaeological Constraint Area. The Archaeological Constraint Area represents the known extent of the area of settlement of Bilborough as shown on Chapman's map of 1774. The site lies immediately adjacent to the churchyard of St Martin's Church. St Martin's Church is a late 14th century structure, with 19th and 20th century modifications and extensions. It is possible that St Martin's Church stands on the site of an earlier church.
- 1.14 Bilborough's roots can be traced back to before the Norman Conquest. Bilborough was mentioned in Domesday, when three freemen, three villagers and four slaves were referred to. There is no reference to a church, with neighbouring Strelley recorded as having a priest.
- 1.15 Coal mining is known to have been taking place in Bilborough by 1545. In 1573 pits were dug to a depth of 2 yards. Coal mining increased in the following centuries.
- 1.16 Approximately 60m to the north of St Martin's Church a medieval possible fortified homestead was excavated in 1939. Trial trench excavations by H Martin and A Oswald, in 1939, revealed an almost square shaped banked enclosure with a rectangular earthwork in its north east corner (Oswald 1939). The inner enclosure contained limestone walls, which varied in width between 3ft and 8ft. The pottery recovered suggested that the site was occupied during the 14th and 15th centuries (Oswald 1939). Romano-British pottery was also found on the site, suggesting the possibility of Romano-British occupation within the vicinity (Houldsworth 1960).

- 1.17 A geophysical survey was undertaken at St Martin's Church in 2016 as part of the Hidden Treasures Project, to investigate the possibility of structural remains associated with an earlier phase of the building. The geophysical survey consisted of detailed earth resistance, high density radar, and dual frequency radar surveys over the northern and southern churchyards. There were no anomalies providing definitive evidence of structural remains. A possible area of ground disturbance was identified to the north of the church. However, it is possible that this relates to the extension of the church in the 1970s. To the north and south of the church anomalies were detected which were possibly consistent with remains of stone structures. However, the strength of the anomaly and the fact it does not share an orientation with the church suggested it is more likely to be of natural origin. Several small anomalies detected by the high density radar could relate to features of archaeological interest. Other anomalies were found to relate to graves, areas of natural variation, a soakaway, drains and underground services.
- 1.18 Historic maps, from Chapman's map of 1774 to the present day, show the site as fields, with no evidence of structural remains. No antiquarian observations, or archaeological work, have taken place within the site boundary. The Nottingham Historic Environment Record (HER) has no records within the site boundary.

2. RELEVANT POLICY AND GUIDANCE

2.1 *National Planning Policy Framework (NPPF)*

In March 2012 the Department for Communities and Local Government published the National Planning Policy Framework (NPPF). This replaced PPS5: Planning for the Historic Environment. The NPPF is supported by guidance given in the National Planning Practice Guide (PPG) and by specific Historic Environment Good Practice Guides issued by Historic England (DCLG, 2012).

2.2 Section 12 of NPPF (Conserving and enhancing the historic environment) states that:

'Local planning authorities should set out in their Local Plan a positive strategy for the conservation and enjoyment of the historic environment including heritage assets most at risk through neglect, decay or other threats. In doing so they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance (para.126).'

2.3 In regard to planning applications, paragraph 128 states that:

'Local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be appropriate to the assets importance and no more than is sufficient to understand the potential impact of the proposal on their significance.'

2.4 In submitting applications;

'As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary.

Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and where necessary a field evaluation.'

2.5 The Historic Environment Good Practice Advice in Planning Note 2 (Managing Significance in Decision-Taking in the Historic Environment) states that:

'To accord with the NPPF, an applicant will need to undertake an assessment of significance to inform the application process to an extent necessary to understand the potential impact (positive or negative) of the proposal and to a level of thoroughness proportionate to the relative importance of the asset whose fabric or setting is affected.'

- 2.6 In determining planning applications it is recommended that in regard to

Designated Heritage Assets:

Substantial harm to or loss of a grade II Listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I & II* Listed buildings, grade I & II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional (NPPF para.132).

- 2.7 Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that out weight that harm or loss (NPPF para. 133).

2.8 *Non-designated Heritage Assets:*

In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset (NPPF para. 135).

- 2.9 In regard to applications it recommends to local planning authorities that:

They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible (NPPF para 141). Any copies of recorded evidence should be deposited with the relevant Historic Environment Record, and any archives with a local museum or other public depository.

Key Definitions

- 2.11 Heritage assets = A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage asset includes designated heritage assets and assets identified by the local planning authority including local listing.
- 2.12 Designated heritage assets = a world heritage site, scheduled monument, listed building, protected wreck site, registered park and garden, registered battlefield or conservation area designated under the relevant legislation.
- 2.13 Archaeological interest = There will be archaeological interest in a heritage asset if it holds, or potentially may hold, evidence of past human activity worthy of expert investigation at some point. Heritage assets with archaeological interest are the primary source of evidence about the substance and evolution of places and the people and cultures that made them.
- 2.14 Significance (for heritage policy) = The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from heritage asset's physical presence, but also from its setting.
- 2.15 Other material considerations, including Scheduled Monuments, Listed Buildings, Setting and Conservation Areas are not directly relevant to this proposed redevelopment.
- 2.16 In the case of the Chingford Road/Wigman Road development, should evaluation suggest that deposits of archaeological potential remain intact, Nottingham City Council, as per the NPPF, would consider a 'proportionate response' to be a Strip, Plan and Sample excavation within the redevelopment footprint.
- 2.17 *Local Policy: The Nottingham City Local Plan (2005, 2014)*

Local Planning Policies are produced by LPAs to address conservation and development issues and set out policies on land use planning matters. Local Plans identify land for development uses as well as land that should be protected such as green belt and areas of environmental quality.

2.18 For Heritage, the Local Plan states that:

Development must have regard to the local context including varied landscape/townscape characteristics, and be designed in a way that conserves locally and nationally important heritage assets and preserves or enhances their settings.

2.19 Policy 11, Historic Environment, states that:

1. Proposals and initiatives will be supported where the historic environment and heritage assets and their settings are conserved and/or enhanced in line with their interest and significance. Planning decisions will have regard to the contribution heritage assets can make to the delivery of wider social, cultural, economic and environmental objectives.

2. Elements of the historic environment which contribute towards the unique identity of areas and help create a sense of place will be conserved and, where possible, enhanced, with further detail set out in part 2 Local Plans. Elements of particular importance include:

- a) the industrial and commercial heritage such as the textile and coalmining heritage and the various canals;
- b) the literary heritage associated with DH Lawrence, Lord Byron and Alan Sillitoe;
- c) Registered Parks and Gardens and important historic landscape features such as Sherwood Forest, ancient or mature woodland and ridge and furrow field patterns;
- d) historic features within Nottingham City Centre such as the medieval street patterns, the networks of caves under the City Centre, the Park Estate and Lace Market; and
- e) prominent Listed Buildings and Scheduled Monuments with a wider visual and economic benefit such as Nottingham Castle, Wollaton Hall, Newstead Abbey, Bennerley Viaduct and buildings D6 and D10 on the Boots campus.

2.20 It adds that:

When considering applications which impact on the historic environment or heritage assets and their settings, the Local Authority will look to ensure they are conserved in accordance with their value and that the ability of the development to enhance that value is explored and taken where possible. When considering sites of archaeological importance, as identified in the Historic Environment Record for the area, the Local Planning Authority will, where appropriate, request a prospective developer to arrange for an archaeological assessment or field evaluation before any decision on a planning application is taken. This will apply to sites currently identified and to any new sites subsequently identified.

2.21 Justification 3.11.4 states that:

When considering applications which impact on the historic environment or heritage assets and their settings, the Councils will look to ensure they are conserved in accordance with their value and that the ability of the development to enhance that value is explored and taken where possible. When considering sites of potential archaeological importance, including those as identified on the Historic Environment Record for the area, the Local Authority will, where appropriate, request a prospective developer to arrange for an archaeological assessment or field evaluation before any decision on a planning application is taken. This will apply to sites currently identified and to any new sites subsequently identified.

2.22 For the Chingford Road/Wigman development this WSI should be considered the statement demonstrating how the archaeological constraints of the site will be overcome.

2.21 This document has been produced in accordance with the guidelines laid out in the Management of Research Projects in the Historic Environment, The MoRPHE Project Managers Guide (English Heritage: 2006, revised 2009), the Standard and Guidance: for archaeological evaluation (English Heritage 2008) and ClfA

Standard and guidance for Archaeological excavation (2014). At all times the ClfA Code of Conduct (2014) will be adhered to.

3. PROJECT DESIGN

3.1 The proposed stages of work are as follows:

3.2 Stage 1 Evaluation: Geophysical Survey

The geophysical survey was undertaken on 19th-20th September 2017 by SUMO Services Ltd. A full report outlines the full methodology, results and recommendations (Tanner 2017), an outline of which will be provided here.

The survey undertaken was a magnetometer survey (fluxgate gradiometer) covering an area of approximately 6ha. Detailed magnetic survey was chosen as an efficient and effective method of locating archaeological anomalies. The instrument was a Bartington Grad 601-2 using a traverse interval of 1.0m and a sample interval of 0.25m.

The geophysical survey report states that:

No anomalies of archaeological origin were detected. Several former boundaries that are depicted on historic mapping were recorded and past ridge and furrow agriculture is in evidence. A number of responses are likely to be due to the use of the site as playing fields. Magnetic disturbance in the east of the site is probably of relatively modern date.

Despite this there were a number of 'uncertain' anomalies:

A grid of linear anomalies is on the same alignment as boundary. The rectilinear arrangement suggests a relatively recent provenance, and their size is typical of paddocks or allotments; however, no such divisions of boundaries are shown in these locations on available historic mapping. This part of the site is recorded on mapping as playing fields from 1955, and as such the anomalies could be associated with that use, perhaps drains or services. The anomalies are accordingly categorised as Uncertain Origin.

Several magnetically weak trends are visible, albeit barely discernible through the magnetic background. No obvious pattern is formed and *an archaeological origin cannot be*

wholly dismissed, they may be due to informal pathways crossing the site, sports installations, agricultural practises or a combination of these [emphasis is the authors and not from the original report].

Most significantly:

Broad parallel linear responses in the western part of the dataset are typical of those produced by past ridge and furrow cultivation. They align with the former field boundary indicating a medieval origin for the latter.

This indicates that medieval agricultural remains survive below the surface. However, the extent and level of preservation of these remains, as well as any other archaeological features associated with them, cannot be determined by geophysical survey alone. Therefore, trial trenching will be undertaken to assess the anomalies detected.

3.3 Stage 2 Evaluation: Trial Trenching

The Stage 2 trial trenching evaluation will be the next stage to be conducted following the successful Stage 1 geophysical survey.

Multiple trial trenches will be excavated, to cover a 2% sample of the total area within the site boundaries. The locations of the trenches will be confirmed following consultation/approval with the Acting City Archaeologist; however a provisional plan has been produced with proposed locations of 19 trial trenches targeting a variety of features of suspected or possible archaeological origin.

This trial trenching will aim to sample all areas of the site in order to rapidly inform on whether any further mitigation would be required.

4. AIMS AND OBJECTIVES

- 4.1 This section describes the main aims of the project. It is the intention of this section to provide the focus by which the benefits in delivering the archaeological project might be measured. Following the site background presented in Section 1, we can propose that the aims of the proposed archaeological exploration might dovetail with the following elements of the East Midlands Heritage Research Agenda and strategy

***6.7.3 Early Mediaeval:** How may crop rotation and the open-field system have developed, and how may this relate to other agricultural innovations such as mouldboard ploughs, water meadows and land-drainage?*

***7.3.3 High Mediaeval:** Can we improve our knowledge and classification of moated sites in the region, and how can environmental data add to our knowledge.*

***7.7.1 High Mediaeval:** Can we shed further light upon the origins and development of the open-field system and its impact upon agricultural practices?*

***8.3.1 Post-Mediaeval:** How can we improve our understanding of the early landscapes of enclosure and improvement and the interrelationship between arable, pasture, woodland, commons and waste?*

These themes will be explored in the different stages of work in the following ways:

4.2 **Stage 1 Geophysical Survey:**

The aim of this archaeological evaluation was to ascertain if features and remains of archaeological interest survive and to what extent they survive as well as a provisional date of the features.

The objectives were:

1. To determine the presence/absence of archaeological features. The results of the survey will inform the requirement and scope for further archaeological investigation.
2. To help inform the locations of subsequent trial trenches.

4.3 Stage 2 Trial Trenching:

The aim of the trial trenching will be to further identify any buried archaeological remains of interest, and characterise their preservation and significance.

The objectives are:

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 assessment 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 (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.

5. METHODOLOGY

5.1 Stage 1 Evaluation: Geophysical Survey

General conditions

An outline of the methodology is provided below. A fully detailed method statement was included in the approved GSB/SUMO WSI.

- 5.1.1 *Staffing*: The work was undertaken by SUMO Services Ltd, a suitably qualified professional geophysical survey company with staff trained to the accepted archaeological practice and to the guidelines set out in the English Heritage Geophysical Survey in Archaeological Field Evaluation, 2008, and CIFA Paper 6: The use of Geophysical Techniques in Archaeological Evaluations.
- 5.1.2 *Services*: The client (NCC) provided plans of all services within the development area. SUMOS were responsible for carrying out CAT scan service checks prior to starting any excavation (of which none was carried out).
- 5.1.3 *Base maps*: The client was requested to supply copies (preferably digital) of base maps for SUMO to use in the report.

5.1.4 *Fencing*: SUMO were responsible for securing the site from unauthorised public access.

5.1.5 *Health and Safety*: SUMO adhered to all relevant health and safety regulations. No archaeological/survey staff were allowed to enter the site until they have undergone a health and safety induction organised by SUMO and/or the principal contractor. SUMO completed a task specific risk assessment and safe working method statement before the commencement of the watching-brief, and copies of this will be approved by the client/principal contractor. This will be in compliance with the industry guidelines laid out in FAME Manual, Health & Safety in Field Archaeology (2006). SUMO staff wore appropriate personal protective equipment at all times.

5.1.6 *Welfare, Access and Insurance*: The client ensured safe access to the ground-works. SUMO were responsible for the provision of toilet and hand-washing facilities for archaeological/survey staff as appropriate.

5.1.7 *Insurance/compensation*: SUMO carries a limit of £10 million Employers liability insurance.

SUMO carries a limit of £10 million Public liability insurance and Products liability insurance.

SUMO carries a limit of £10 million Professional Indemnity insurance.

Stage 2 Evaluation: Trial Trenching

Trench Excavation

5.2.1 Excavation will be carried out with a 360° tracked excavator fitted with a toothless ditching bucket under constant archaeological supervision. Prior to excavation the area of the trench will be scanned with a CAT Scan to locate any services that are not shown on the services plan supplied by the client. Proposed trench locations are shown on Figure 1, but may change according to identified areas of preservation, services and access.

5.2.2 The trenches and any archaeological features will be located by GPS, Leica CS15/GS15 RTK Differential GNSS prior to excavation. If it is impractical to use GPS the Total Station will be used as an alternative.

- 5.2.3 Trenches will be excavated to a level at which archaeological deposits are 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 are stable). Subsoil will be excavated in spits no greater than 250mm.
- 5.2.4 Excavation will follow one of two potential sequences depending on the deposits present below topsoil:
1. If archaeology is present upon removal of initial topsoil/subsoil/rubble then the trench will hand cleaned and features/horizons characterised.
 2. If deep colluviums or made ground is present selected areas will be machined to see if horizons of interest can be sampled with the safe working constraints.
- 5.2.5 If it is necessary within the aims of the evaluation to look at deposits deeper than 1m then stepping/shoring of trenches, funded by the client, will be carried out as appropriate.
- 5.2.6 Topsoil, subsoil and deposits will be stacked separately at a safe distance from the trench.
- 5.2.7 The location of any artefacts recovered in the topsoil/subsoil will be recorded three-dimensionally or by context/spit if appropriate.
- 5.2.8 Trenches will be hand cleaned where appropriate and a minimum of one long section of each trench, plus a photograph from each end of the trench, will be photographed, and drawn at 1:50/1:20 (recording will correspondingly increase with the presence of archaeological deposits). The position of each trench will be located with reference to the OS grid.
- 5.2.9 Where appropriate the depth of potential geological deposits may be determined by a combination of machine excavation and use of a 2m hand auger.
- 5.2.10 On completion of the fieldwork the trenches will be backfilled and reinstated.

Cleaning/Hand Excavation of Archaeological Features

- 5.2.11 All fieldwork will be carried out in accordance with the code of conduct of The Institute for Archaeologists and the ClfA Standard and Guidance for Archaeological Field Evaluation (CIFA 2014).

- 5.2.13 Features will be hand-cleaned and planned. Following scanning by a metal detector features will be sample excavated sufficient to determine their plan and form, and to recover any datable artefacts.
- 5.2.14 Feature fills will be removed by contextual change (the smallest usefully definable unit of stratification) and/or in spits no greater than 100mm. Substantial features will be hand excavated to a maximum depth of 1.m, or a perceived safe depth if the sides are unstable.
- 5.2.15 All finds of medieval date or earlier will be recorded three dimensionally. Post-medieval finds or abundant redeposited structural material will be recorded by context/spit.
- 5.2.16 Spoil will be visually inspected for artefacts, including the use of a metal detector.
- 5.2.17 In the event of the discovery of human remains, disturbance will wherever possible be avoided. Where removal is deemed necessary following discussion with, and the approval of, the client and the Acting City Archaeologist for Nottingham City Council the necessary burial license will be obtained in line with the Ministry of Justice requirements.

Recording and Sampling

- 5.2.18 Plans of all contexts including features will be drawn on drafting film in pencil at a scale of 1:10 or 1:20, and will show at least: context numbers, all colour and textural changes, principal slopes represented as hachures, levels expressed as O.D. values, or levelled to permanent features if a benchmark is absent, sufficient details to locate the subject in relation to OS 1:2500 mapping.
- 5.2.19 Sections will show the same information, but levelling information will be given in the form of a datum line with OD/arbitrary value; the locations of all sections will be shown on plan.
- 5.2.20 Digital images and B&W photos of each context will be taken (as per Brown, 2007) together with general views illustrating the principal features of the excavations.
- 5.2.21 Written records will be maintained as laid down in TPA recording manual.
- 5.2.22 Where appropriate features are identified, soil samples will be retrieved in order to undertake palaeo-environmental sampling. The

sampling of features will follow procedures set out within the English Heritage Centre of Archaeology Guidelines, Environmental Archaeology 2011. Samples will generally be 30litres if possible will be processed within the TPA Environmental Lab, under the supervision of TPA Environmental Officer Alison Wilson.

5.2.23 Depending on the type of deposits identified, soil samples may also be retained for the purposes of retrieving industrial residues or for the provision of scientific dating (e.g. C14 dating). The range of techniques applicable to differing preservation and depositional environments is set out in Table 1 above.

5.2.24 Where it is deemed necessary to take samples for palaeo-environmental analysis, scientific dating, or to identify and interpret industrial processes, the NCC Acting City Archaeologist will be consulted and a contingency cost may need to be enacted with the client.

5.2.26 Samples will be processed within the TPA Environmental Lab, under the supervision of TPA Environmental Officer Alison Wilson.

Post–excavation processing

5.2.26 All finds will be cleaned and stored as recommended in First Aid for Finds (by the Archaeology section of the United Kingdom Institute for Conservation, 2nd edition 1987), and marked with the site and find codes, and relevant accession numbers. These will be deposited with the appropriate museum on completion of the report, subject to the provisions of the brief and the agreement of the client.

5.2.27 If necessary, artefacts will be submitted to the specialists detailed in Section 5.3 below.

5.2.28 **Archive and Finds Deposition:** The archive will be compiled in line with local and national guidelines, and will be deposited with Nottingham City Museums and Galleries within 12 months of the completion of the project. For further details see section 5.3.26 below.

5.2.29 All finds will be submitted for assessment to TPA/YAT in-house specialist or specialists, see Section 5.3 below.

5.2.30 **Report:** A verbal report and where appropriate textual summary will be provided to the client on completion of fieldwork.

5.2.31 A report on the results, whether positive or negative, will be prepared in the appropriate format and presented to the client and the curator within 4 weeks of the completion of the fieldwork.

5.2.32 A final report on results will be completed and copies provided:

- To the client
- To the NCC Acting City Archaeologist
- For accession to the local HER. This will include a copy of the report in PDF format on CD along with indexed copies of all digital on site photography.

5.2.33 The report will include:

- Non-technical summary
- Introductory statement
- Aims and purpose of the project
- Methodology
- An objective summary statement of results
- Conclusion
- Illustrations at appropriate scales, all to include levels tied to Ordnance Datum.
- Illustrative site photography, including key features and working shots
- Supporting data - tabulated or in appendices, including as a minimum a basic quantification of all artefacts, ecofacts and structural data including recommendations for retention/discard and proposals for conservation.
- Index to archive and details of archive location; confirmation of archive transfer arrangements including a provisional timetable for deposition.
- References

5.2.34 Trent & Peak Archaeology will retain the archive of Stages 1 and 2, until all stages are complete. The completed archive will then be deposited with Nottingham City Museums and Galleries (digital and material archive) and the client.

Monitoring

5.2.35 Where possible a minimum 5 working days prior notice of the commencement of the development is to be given to the Acting Archaeologist for Nottingham City Council.

5.2.36 The Acting City Archaeologist for Nottingham City Council may make monitoring visits throughout the duration of the evaluation and will be kept informed of all material facts relating to the excavation.

5.2.37 All phases of the investigation will be undertaken in line with the relevant '*Standard and Guidance*' documents prepared by the IFA.

Access, Health & Safety, Insurances.

5.2.38 The client will arrange safe access to the land.

5.2.39 The client will provide plans showing all services/service routes within the development area.

5.2.40 Any compensation claims for disruption to the land should be directly between the client and landowner.

5.2.41 All health and safety requirements will be adhered to. The procedures outlined in TPA's manual will be followed, a copy of which is available for inspection if required.

5.2.42 TPA will prepare and regularly update risk assessments of archaeological fieldwork and recording tasks for each stage of the archaeological project. Copies of all health and safety documentation prepared for the scheme by TPA will be made available to the client.

5.2.43 TPA carries the appropriate insurances, copies of which are available for inspection if required.

Staffing

5.2.44 The appointed Archaeological Supplier is a Chartered Institute for Archaeologists (CIfA) Registered Archaeological Organisation (RAO) and the archaeologist responsible for project managing the programme of is a member of the CIfA preferably at MCIfA level.

5.2.45 All archaeological works will be undertaken by professional archaeologists employed by Trent & Peak Archaeology (RAO), the appointed Archaeological Contractor.

5.2.46 Stage 2 will be managed by Dr Gareth Davies MCI(A), The attending TPA Project Officer and field team is yet to be specified but will be agreed by the Acting City Archaeologist by email when a site start date is agreed, subject to requirement and availability. The report writer will also be specified at this time.

Ecofact & Artefact Recovery

5.2.47 Artefact Recovery: Any finds will be assigned an individual finds code. In-situ finds will be recorded three dimensionally, while finds from spoil will be noted in relation to their location within the trench/stripped area. All finds will be hand collected as recommended in First Aid for Finds (by the Archaeology section of the United Kingdom Institute for Conservation). Specialist advice to the project archaeologist will be provided by Alison Wilson (TPA).

5.2.48 Sampling (Palaeoenvironmental & Industrial residues): Appropriate sampling of deposits of palaeoenvironmental potential and residues and debris from industrial processes will be conducted in accordance with Table 1 (see below), with appropriate amendments following subsequent specialist advice. Specialist palaeoenvironmental advice will be provided by Alison Wilson (TPA). Samples (both palaeoenvironmental and industrial) will be assessed, followed by full analysis and reporting where appropriate following receipt of specialist advice.

Environmental Sampling and Scientific Dating:

5.2.49 Specialist environmental geoarchaeological advice will be provided by Alison Wilson (TPA). Samples will only be taken if suitable deposits are encountered and there is potential to address the research agenda at this stage. If good quality deposits are identified they will generally be subject to controlled investigation at later stages of the scheme.

5.2.50 The following laboratory sampling/dating techniques may be employed if appropriate:

Sediment analysis: Sediment analysis includes a range of techniques, including particle size analysis, calcimetry, organic content analysis, magnetic susceptibility, and pH. These analyses can determine means of sediment deposition, mineral composition

of sediments, post-depositional processes, and archaeological interferences with sediment properties. These samples are taken as loose, 'bulk', samples.

Pollen analysis: Palynology is the investigation of the vegetation history through the pollen record. Palynological investigation involves the counting of individual grains of pollen and spores of different types of plants in order to reconstruct local and regional vegetation, and is useful in determining changes in climate, landscape, land use, and human impact on the landscape over time (Moore et al., 1991, 9).

Micromorphology: Micromorphology is the analysis of soils and sediments in thin section. This method, especially when used on archaeological strata, can provide a wealth of information about the archaeology that is not visible when excavating. This includes: evidence of waste disposal, burning, trampling, intense manuring, identifying organic concentrations, and details about the post-depositional processes, to name only a few. (Courty et al., 1989; Goldberg and Macphai, 2006; descriptions as per Stoops, 2003).

Radiocarbon dating: Radiocarbon dating can be employed on samples with suitable organic remains, including macrofossils, charcoal, or fine-grained organic sediment. This method is particularly useful for dating palaeochannel deposits that include peat or peaty sediment. This method requires sending to a private lab, where AMS dating measures the isotopic ratio of carbon to get a date of death of the organic matter.

Table 1 – Preliminary Site Environmental Sampling Strategy*

Feature type	Sediment conditions	Overall scope of sampling	MM	CS	C14	OSL	Po/Dm	Ch	BP/BS	Bo	Wd
Sampling method:			Undisturbed block sample	Loose bulk sample, representative of particle size, and quantity for desired methods	A4x1cm (seal)	Light-tight canister, moisture/sediment sample; where available, gamma spectrometry background radiation measurement.	Film caps or column in gutter + Clingfilm	Min.30L+ Tubs (specialists to advise as to appropriate level of sub sampling of deposit)			Wrap each bit separately
Archaeological Feature / buried soil	Waterlogged organic (looks 'peaty')	Each occurrence series of samples if thick (>150mm)		x			x	x	x	x	x
	Dry visible charred material	Each occurrence (C14 selected: best is twigs then layers then flecks)	x	x	X			x		x	
	Waterlogged organic	Each occurrence, at thickest point	x		X		x	x	x	x	x
	Dry visible charred material	Each occurrence, at thickest point, series of samples if thick (>150mm)	x		x		x	x		x	

	Buried soil horizon	Across soil profile	x			x	x	x			
Sediment change, reaction to environmental change	Laminated or changes in sediment in profile	Sample of each sedimentation type, in middle of sediment unit, or over equal interval		x	X	x	x				
Any	Wood structure	Retain all, keep damp, bag each timber separately			X						x
Industrial residues / debris etc.		All process stages to be represented							x		
Abbreviations MM Micromorphology C14 Radiocarbon Po/Dm Pollen/diatoms Ch Charred material BP Waterlogged Beetles/Plant remains Bo small bone Wd wood. BS – Bulk Sample (industrial waste/residues/processing debris) CS Sediment sample											

*Adjustments to be made following specialist advice and liaison with EA/development control archaeologist where appropriate.

- 5.3.1 **Post–excavation Processing:** Any finds will be stored as recommended in *First Aid for Finds* (by the Archaeology section of the United Kingdom Institute for Conservation), and marked with the site and find codes, and relevant accession numbers. These will be deposited with the appropriate museum on completion of the report, subject to the provisions of the brief and the agreement of the client.
- 5.3.2 **Archive:** Any archive created will be compiled with the archive from Stage 2 (see section 5.2.28 below).
- 5.3.3 **Report:** A verbal report and where appropriate textual summary will be provided to the client on completion of fieldwork.
- 5.3.4 A report on the results, whether positive or negative, will be prepared in the appropriate format and presented to the client and the curator within 4 weeks of the completion of the fieldwork.
- 5.3.5 A final report on results will be completed and copies provided:
- To the client
 - To the NCC Acting City Archaeologist
 - For accession to the local HER. This will include a copy of the report in PDF format on CD along with indexed copies of all digital on site photography.
- 5.3.6 The report will include:
- Non-technical summary
 - Introductory statement
 - Aims and purpose of the project
 - Methodology
 - An objective summary statement of results
 - Conclusion
 - Illustrations at appropriate scales, all to include levels tied to Ordnance Datum.
 - Illustrative site photography, including key features and working shots

- Supporting data - tabulated or in appendices, including as a minimum a basic quantification of all artefacts, ecofacts and structural data including recommendations for retention/discard and proposals for conservation.
- Index to archive and details of archive location; confirmation of archive transfer arrangements including a provisional timetable for deposition.
- References

Curatorial Monitoring

5.3.7 The NCC Acting City Archaeologist will be kept fully informed of the progress of the excavations, and will be consulted if modifications to the excavation strategy are required as a result of unexpected archaeological discoveries. Progress reports will be issued at regular intervals for updating NCC. The NCC Acting City Archaeologist will be free to visit site at any time, subject to the necessary health and safety requirements. It is expected that the NCC Acting City Archaeologist will wish to visit the site when the area has been stripped such that the preservation and density of archaeological features is known.

5.3.8 As much prior notice as is possible of the commencement of the work is to be given to the NCC Acting City Archaeologist.

Post Excavation Methodologies

5.3.9 All recording will result in 'the preparation of a report and ordered archive', in line with the guidelines of the IFA Institute of Field Archaeologists.

Post-excavation Processing

5.3.10 All finds will be cleaned and stored as recommended in *First Aid for Finds* (by the Archaeology section of the United Kingdom Institute for Conservation, 2nd edition 1987), and marked with the site and find codes, and relevant accession numbers. These will be deposited with the appropriate museum on completion of the report, subject to the provisions of the brief and the agreement of the client.

5.3.11 Artefacts will be submitted to the following for assessment;

- Prehistoric pottery – Dr David Knight (TPA)/ Sarah Percival (Independent)
- Romano-British pottery – Alex Beeby (APS)

- Anglo-Saxon – Paul Blinkhorn (Independent)
- Medieval/ post-medieval pottery and tile – Chris Cumberpatch (Independent)
- Flint- Peter Webb (TPA Associate)
- Animal bone - Dr Kris Poole (TPA)
- Human Remains – Kate Smart (TPA)
- Conservation – YAT Conservation
- IA/RB Metalwork – Dr David Knight/ Lee Elliott (TPA)
- Metalwork/Small Finds – Nicky Rogers (YAT/Independent)
- Plant Macro - Alison Wilson (assessment- TPA) Val Fryer (Independent), Jennifer Miller (Northlight Heritage)
- Beetles - David Fox (University of Nottingham)
- Pollen – Emily Forster (University of Sheffield)
- Geoarchaeological analysis and OSL dating – Dr Andy Howard
- Dendrochronology- Alison Arnold & Robert Howard (Nottingham Tree-dating Laboratory). Conservation- York Archaeological Trust.

Archive

5.3.12 The archive will be fully indexed and contain where relevant:

- copies of correspondence relating to fieldwork
- site notebooks/diaries
- original photographic records
- site drawings (plans, sections, elevations)
- original context records,
- matrix diagrams showing stratigraphic sequence of all contexts.
- artefacts
- original finds records
- original sample records
- original skeleton records
- computer discs and printout

Archive and Finds Deposition

5.3.13 Where necessary the documentary archive will be sent to the HER for copying.

Finds will remain the property of the client with deposition to the relevant regional museum subject to their approval. The client will be subject to deposition costs of the respective museum.

5.3.14 Trent & Peak Archaeology will retain the archive of Stages 1 and 2 until all stages are complete. The archive will be prepared in line with D. Watkinson and V. Neal, *First Aid for Finds* (London: Rescue/UKICAS, 2001) and *Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation* (Brown, 2007). It will then be deposited with Nottingham City Museums and Galleries within 12 months of the completion of the project. A digital copy of the report will be sent to the ADS (Archaeology Data Service) via the OASIS project.

5.3.15 Trent & Peak Archaeology shall retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved excepting that it hereby provides exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project, with no limitation on the number of times that the client may reproduce any report. The client's contribution will be acknowledged in any future use of the work by TPA.

Staffing

5.3.16 The appointed Archaeological Supplier is a Chartered Institute for Archaeologists (CIfA) Registered Archaeological Organisation (RAO) and the archaeologist responsible for project managing the programme of is a member of the CIfA preferably at MCIfA level.

5.3.17 All archaeological works will be undertaken by professional archaeologists employed by Trent & Peak Archaeology (RAO), the appointed Archaeological Contractor.

Access, Welfare, Health & Safety, Insurances.

5.3.18 The client will arrange access to the land, including space available for car parking, as well as access to toilet and hand washing facilities.

5.3.19 The client will provide plans showing all services/service routes within the development area. If these are not supplied TPA will obtain the information and pass the cost on to the client.

5.3.20 Any compensation claims for disruption to the land should be directly between the client and landowner.

- 5.3.21 All health and safety requirements of the client will be adhered to. The procedures outlined in TPA's manual will be followed, a copy of which is available for inspection if required.
- 5.3.22 TPA will prepare and regularly update task specific risk assessments of archaeological recording tasks for each stage of the archaeological project. Copies of all health and safety documentation prepared for the scheme by TPA will be supplied to the principal contractor's safety representative prior to the start of each phase of archaeological work if required.
- 5.3.23 TPA is part of York Archaeological Trust, a registered charity and IfA registered organisation. YAT carries all appropriate insurances, copies of which are available for inspection on request.

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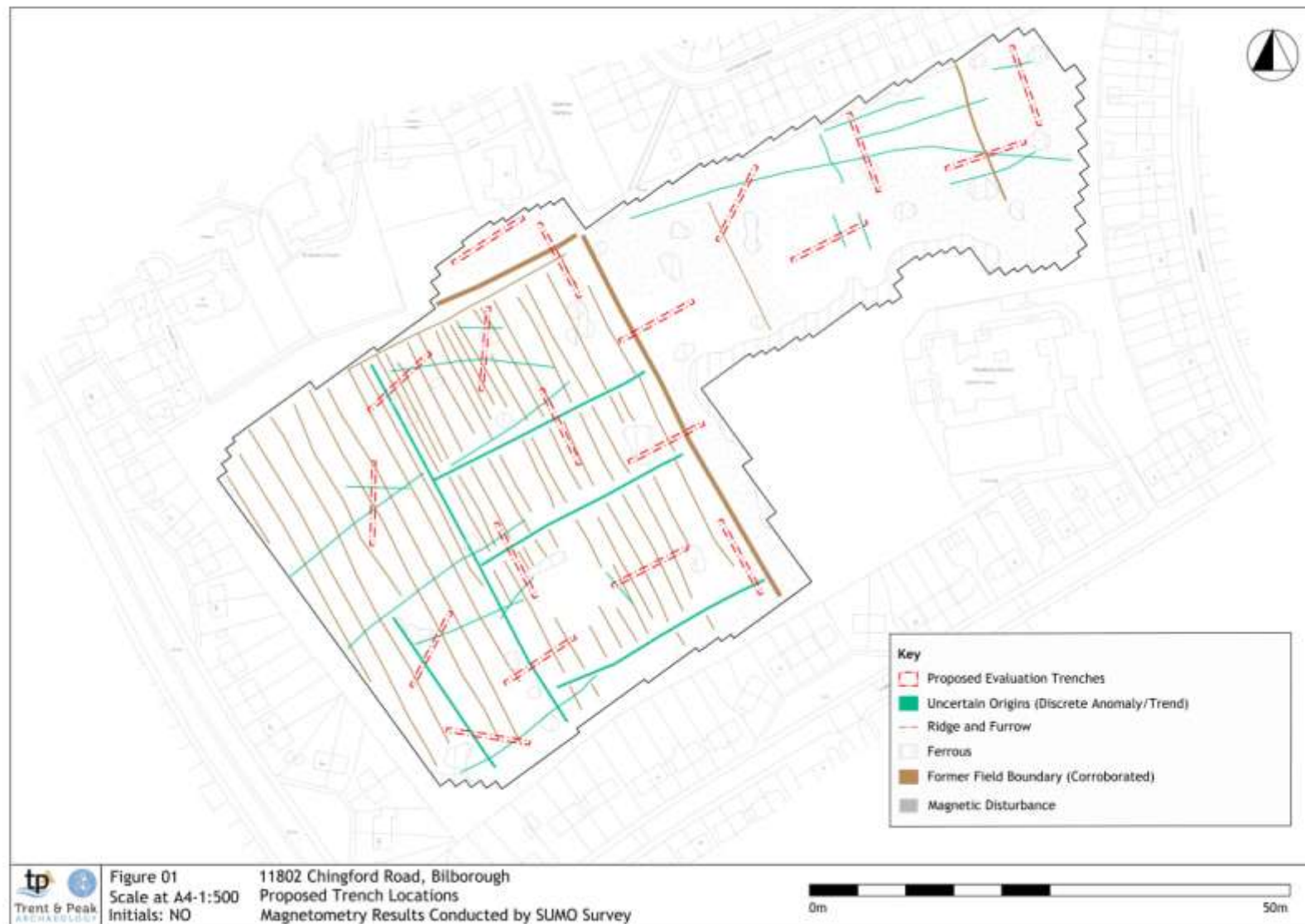


Figure 1: Map showing proposed location of Stage 2 trial trenches and Stage 1 geophysical survey results interpretations

