



THORNTON 2 WASTE TECHNOLOGY PARK, THORNTON CLEVELEYS, LANCASHIRE

Archaeological Watching Brief



Oxford Archaeology North

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SUMMARY

A planning application (02/05/0997) has been submitted by Waste 2 Resources for the construction of a waste technology park on the former ICI Burn Hall site at Thornton, Lancashire (NGR SD 3334 4437). Part of the proposed development site is known to have been occupied formerly by the medieval Burn Hall, whilst an archaeological evaluation undertaken by OA North in the summer of 2006 identified post-medieval structural remains. Accordingly, Lancashire County Archaeology Service (LCAS) requested that a programme of archaeological monitoring be undertaken during certain groundworks associated with the development. Following submission of a project design to meet LCAS requirements, OA North were commissioned by Waste 2 Resources to undertake the works in October 2007 and June 2008.

The redevelopment concerns a *c* 70 ha area corresponding with the eastern half of the former ICI works. However, the principal area of interest, which formed the focus of the watching brief, was located at the south-western corner of the site where the route of the B5286 Fleetwood Road North was upgraded and a roundabout and access road, together with associated services and footpaths, was constructed on a north-east/south-west alignment towards the site of the refuse plant.

The watching brief results generally followed closely those of the previous evaluation, whilst permitting the more extensive exposure of several structural remains associated with the site of the former Burn Hall manor/farmstead. Towards the centre of the easement, where groundworks for a lay-by projected northward, an extensive cobbled surface, several walls, and elements of a drainage system were identified and recorded; all are thought to be late eighteenth- to early twentieth-century structures associated with the farmstead and can be related to features shown on various editions of the Ordnance Survey (OS) maps. Closer to the junction with the B5286, several parallel shallow ditches are thought to be evidence of horticultural activity, whilst a robbed-out construction cut may have been a boundary feature, or even part of a sun dial shown cartographically in this area. One final feature, an area of cobbles and adjoining path, may have been an earlier, or perhaps short-lived, hardstanding for watering animals.

Overall, within the area that have been subject to monitoring, the watching brief has mitigated the impact of the development upon the cultural heritage resource. However, if future groundworks, as part of this or other development, were to extend beyond the monitored areas, particularly to the north, these are likely to have a serious negative impact upon shallowly-buried archaeological remains associated with the historic settlement focus of Burn Hall Manor/Farm.

ACKNOWLEDGEMENTS

Oxford Archaeology North would like to thank Ian Kemp and Andy Williams of Waste 2 Resources (W2R) for commissioning and co-ordinating the work, and Sam Smith of W2R for his assistance on site.

The watching brief was undertaken by Steve Clarke and Dave Bonner, who also compiled the report. The finds were examined by Rebekah Pressler and the illustrations were prepared by Marie Rowland and Alix Sperr. Stephen Rowland managed the project and edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 A planning application (02/05/0997) has been submitted by Waste 2 Resources (W2R) for the construction of a waste technology park on the former ICI Burn Hall site at Thornton, Lancashire (NGR SD 3334 4437; Fig 1). Part of the proposed development site is known to formerly have been occupied by the medieval Burn Hall, whilst an archaeological evaluation undertaken by OA North in the summer of 2006 identified post-medieval structural remains. Accordingly, Lancashire County Archaeology Service (LCAS) requested that a programme of archaeological monitoring be undertaken during certain groundworks associated with the development. Following submission of a project design to meet LCAS requirements (*Appendix 1*), OA North were commissioned to undertake the works by W2R.
- 1.1.2 The redevelopment concerns a *c* 70 ha area corresponding with the eastern half of the former ICI works. However, the principal area of interest, which formed the focus of the watching brief, was located at the south-western corner of the site where the route of the B5286 Fleetwood Road North was upgraded and a roundabout and access road, together with associated services and footpaths, was constructed on a north-east/south-west alignment towards the site of the proposed refuse plant. The following report details the results of the watching brief, which was undertaken in two phases in October 2007 and June 2008.

1.2 SITE LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The site is located approximately 3km north of the centre of Thornton, on the peninsula between the River Wyre to the east and the Irish Sea to the west. The proposed access road is situated on gently sloping ground rising from *c* 4.5m above Ordnance Datum (aOD) at the entrance to the main site to *c* 11.5m aOD at the proposed junction with the B5268 Fleetwood Road. The site of the former house known as Burn Hall (Bourne Hall) lies on the eastern edge of a slight rise in the ground, at around 10m aOD.
- 1.2.2 The drift geology across site comprises typical humic-alluvial gley soils of the Downholland 2 series (Soil Survey of England and Wales 1983), overlying solid geology comprising Permo-Triassic red mudstones, siltstones and sandstones (Countryside Commission 1998, 87).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.3.1 **Introduction:** the following background has been collated from the Environmental Statement for the site (RPS 2004) and the results of a trial trench evaluation undertaken by OA North (2006). A précis of this information is provided in order that the results of the watching brief have an archaeological and historical context.

- 1.3.2 **Prehistoric Period:** work in the Fylde area by the North West Wetlands Survey (Middleton *et al* 1995) revealed the extensive nature of prehistoric settlement in and around the mosslands. The survey located many previously unknown sites and indicated that the glacial drumlins which occur across the site are particularly favourable locations for prehistoric settlement sites because they are so well drained. The nearest documented site is of a chance find of a Neolithic hand axe 2km to the south-east of the site (LUAU 1998).
- 1.3.3 **Roman Period:** ongoing test pit evaluation work by the Wyre Archaeology Group on the west side of Fleetwood Road North has produced evidence of Roman activity, through the recovery of artefacts (Peter Iles *pers comm*). A few kilometres further south, significant remains of a native Romano-British settlement have been identified at Poulton-le-Fylde (OA North forthcoming).
- 1.3.4 **Medieval Period:** Thornton was a rural township lying in the parish of Poulton-le-Fylde, occupying most of the peninsula between the Irish Sea and the Wyre estuary. The earliest record for the area is in the Domesday Book which states that it formed part of the Pre-Conquest possessions of Earl Tostig, and comprised the three manors of Thornton, Rossall and Burn (Porter 1876, 268). Following the Norman Conquest, these estates were granted to Roger of Poitou, and then to Theobald Walter, later reverting to the Crown (*ibid*). By the fourteenth century, Thornton was divided amongst a number of landholders (Farrer and Brownbill 1912, 231-2). One moiety, or portion, was bought by the Fleetwood family of Rossall in 1593, and this was later considered to be the only manor in Thornton (*op cit*, 232).
- 1.3.5 Burn Manor, the name of which is preserved in the site of Burn Hall (located immediately to the north of the western end of the proposed access road), was in the possession of the Heaton family until the fifteenth century, when it passed to the family of Westby of Mowbreck. This family retained the estate for over 300 years (RPS 2004). The postulated site of Burn Deserted Medieval Village is thought to be within the vicinity of Burn Hall. There is little documentary evidence for this, but sources imply that the area around Burn Hall originally was populated more densely (*ibid*). The work carried out by the Wyre Archaeology Group on the west side of Fleetwood Road North has also produced some pottery of medieval and later date, some of which may be as early as the tenth century AD (Peter Iles *pers comm*).
- 1.3.6 **Post-medieval Period:** Thornton Marsh, which lay in the centre of the peninsula, was common pasture until 1806, when it was enclosed by Act of Parliament (*ibid*). The former Burn Hall survived as a standing structure until demolished in the 1960s. It is referred to in Baines (1867) as having been occupied from the fifteenth century and may have had earlier origins. In 1784 the Fleetwood Hesketh family converted the hall into a farmhouse which, in the 1950s was described as being of two storeys, constructed in brick (plastered over), a slate roof and 'modern' doors, windows and chimneys (RPS 2004). The outbuildings were constructed in cobblestone with brick dressings. There was a 'Chapel room' on the upper floor with a fine plaster ceiling and fireplace with coat of arms. The 1847 First Edition Ordnance Survey (OS) map appears to show a courtyard farm consisting of an arrangement of principal buildings to the north and west with further, ancillary, buildings to

the south and east. The land to the immediate south and east of the complex is shown as orchard and woodland, whilst the land to the north and west is open fields. A topographical survey and a magnetometer survey of the site highlighted the survival of parts of the farm and earthworks shown on the 1847 OS mapping (ArchaeoPhysica 2005).

- 1.3.7 During the evaluation undertaken by OA North in 2006, four trenches excavated in the area of the proposed access road revealed archaeological remains immediately beneath the topsoil (the trenches are plotted onto the inset within Figs 2 & 3). The most westerly of these, Trench 1, placed close to the proposed junction with the B5268, revealed structural evidence of the farmhouse, built in 1784 and shown on the 1847 OS map. These remains comprised an approximately east/west aligned wall constructed of handmade brick, with a further handmade brick wall some 10m to the east, which may well have been a garden feature. A number of linear features, probably relating to horticultural activity, were also revealed, together with numerous postholes, although these formed no discernible pattern. Trench 2, approximately 70m east of the proposed junction, revealed a cobbled surface fronted by a handmade brick wall on its south-eastern side, correlating with a feature of the farm complex shown on the 1847 OS map. The remains of the possible foundations of another wall, constructed of large stones and aligned north-west/south-east, were also observed within Trench 2. Finds associated with these features were dated to the late eighteenth to nineteenth centuries, commensurate with the known history of the latest stages of Burn Hall. Several pottery sherds dating to the seventeenth century were likely to relate to post-medieval activity associated with the hall. Trench 3, 100m north-east of the junction, produced a probable dog burial, whilst a single east/west aligned ditch containing post-medieval pottery and brick was the only feature of significance revealed within Trench 5, 175m north-east of the junction.
- 1.3.8 Salt works were opened at Burn Naze following the discovery of salt deposits at Preesall in the 1870s. Salt from the mines would have supplied the chemical works (the main ICI site), which are marked as Ammonia Soda works on the OS map of 1932. After the start of the Second World War, in 1940, the Ministry of Supply built two chemical defence factories, one at the southern end of the Hillhouse works and the other a new facility at Burn Hall. The facility takes its name from the nearby Burn Hall Farm, which was purchased, together with some of the farmland. The Burn Hall facility produced various substances for the Ministry of Supply and, after the war, the site was expanded and produced chemicals to manufacture a range of goods. After the closure of the ICI works the site was purchased by NPL Developments, with parts of the works being developed as a business park (*ibid*).

2. METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 The LCAS-approved OA North project design (*Appendix 1*) was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists, and generally accepted best practice.

2.2 WATCHING BRIEF

- 2.2.1 Close liaison was maintained between OA North and the groundwork contractors through W2R, who ensured that monitoring took place during all groundworks. An archaeologist monitored negative groundworks associated with the development of the access road, including the stripping of topsoil and subsoil to a depth of c 0.5m by either a 13ton or 22ton 360 mechanical excavator fitted with a toothless ditching bucket. Identified archaeological deposits were cleaned manually to define their extent, nature, form and, where possible, date.
- 2.2.2 All information identified in the course of the site works was recorded stratigraphically, using a system, adapted from that used by the Centre for Archaeology Service of English Heritage, with sufficient pictorial record (plans, sections and photographs) to identify and illustrate individual features. Written notes were made on *pro-forma* recording sheets and accurate plans and sections were produced at an appropriate scale. A full, detailed and indexed photographic record was maintained of individual contexts, features, general views and working shots from standard view points using 35mm cameras on archivable monochrome print film and colour transparency; all frames included a visible, graduated metric scale. Primary records were available for inspection at all times. Artefacts were handled and stored according to standard practice (following current IFA guidelines) in order to minimise deterioration.

2.3 ARCHIVE

- 2.3.1 A full professional archive has been compiled in accordance with the project design (*Appendix 1*), and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited at the County Record Office, Preston and the finds archive will be deposited in the museum of Lancashire, Preston on completion of the project.

3. RESULTS

3.1 INTRODUCTION

3.1.1 For ease of recording, the site was split into three areas. Area 1 ran roughly east/west, covering the whole of the lateral portion of the road easement from a distance of some 75m to the west of the B5268 (Fig 2). The whole area measured some 175m north-east/south-west by up to 100m north-west/south-east. Area 2 comprised a small annex for a proposed lay-by, measuring 30m east/west by 13m north/south, at the north-west end of Area 1. Area 3, a rough rectangle 75m north-east/south-west by 25m, was located to the immediate east of the B5268 in the area of the proposed roundabout (Figs 1 and 3). Detailed descriptions of the features and deposits recorded during the course of the watching brief are presented in *Appendix 2*.

3.2 RESULTS

3.2.1 *Area 1*: across the majority of the easement, topsoil **1000** was a fairly consistent deposit approximately 0.2-0.3m thick. Its removal revealed a subsoil horizon, the origin and consistency of which varied across the site. Although these subsoil horizons were excavated to a depth of 0.2m-0.3m below the base of the topsoil, it was only in exceptional circumstances that areas of this material were completely removed to reveal underlying deposits. Within the western part of Area 1, extending for a distance of *c* 40m, the subsoil comprised deposit **1001**, a mixture of redeposited topsoil and clay with building rubble inclusions. To the east, the subsoil, though still redeposited, contained less reworked topsoil, and was recorded as **1002**, a yellowish-brown clay with red brick inclusions. A sondage excavated through **1002** indicated that this subsoil horizon was at least 0.2m thick and sealed a further redeposited horizon of sandy clay containing brick fragments. In turn, this sealed an apparent relict soil horizon, **1007**, at a depth of 0.9m below the modern ground surface (Plate 1).

3.2.2 At the eastern end of Area 1, clay **1002** petered-out, revealing a layer of soft dark grey clay, **1006**, a possible alluvial deposit, which continued to the stream that bordered the eastern extent of the monitored area (Fig 2). Where the ground was particularly soft, this horizon was excavated to a depth of 0.6m, down to natural geology **1003**. At the most north-easterly point of Area 1, topsoil **1000** and subsoil **1002** were very shallow, with a cumulative depth of 0.2m. Their removal revealed the natural geology of reddish-brown sandy clay, **1003**, directly upon which had been laid surface **1004**, constructed of poorly-sorted cobbles (Plate 2). The surface entered the stripped area from the north in the form of a slightly curving path, 8m long, that expanded to become a sub-square area *c* 5m north-east/south-west by 6m north-west/south-east. No features were identified as being associated with surface **1004**, and it was uncertain whether the observed form represented the original extent of this feature or merely its truncated remains.

- 3.2.3 **Area 2:** topsoil **2000** was removed revealing a shallow layer of demolition debris, **2001**, beneath which was found a series of structural remains and an extensive cobbled surface, **2002** (Fig 2; Plates 3 and 4). Surface **2002** was bordered to the south by discontinuous east/west-aligned brick wall **2003** and to the east by brick wall **2005**. These walls are likely to represent a boundary rather than components of a building, an interpretation reinforced by the presence of 4m long north/south-aligned wall **2006**, which appeared to flank an entrance into the cobbled area. Cobbled surface **2002** continued to the east beyond the limit of excavation, its southern extent defined by a brick-sided concrete sluice (**2004**).
- 3.2.4 **Area 3:** across the entire extent of the easement topsoil **3000** was removed along with a considerable density (*c* 1.25m) of groundcover vegetation, to reveal the reddish-brown sandy clay natural geology **3008**, which dipped to the north-east. The topsoil depth varied greatly across the width and length of the easement, from 0.2m at the south-west end, adjacent to the B5268, to 1.6m towards the north-east limit. This may indicate remodelling and importation of topsoil to compensate for the considerable fall of the underlying natural towards the north-east. Subsoil deposits within this area were minimal or otherwise absent, whilst the entire north-eastern half of the area was affected by severe root disturbance from the woodland that formerly had occupied this area; no archaeological features were identified within this area.
- 3.2.5 At the south-west end of Area 3 north-west/south-east-aligned wall **3001** ran across the width of the easement, parallel to the B5268 at approximately 5m from the end of the site and the road (Fig 3). While only a 12.28m length of the wall remained as an upstanding feature, the evident above-ground collapse indicated that it originally extended along the road for some distance, forming a probably fairly modern perimeter boundary.
- 3.2.6 From the north extent of the stripped area two ditches, **3002** and **3006**, entered the easement. These were aligned south-east/north-west and were running approximately parallel. Both were of a similar profile and depth and appeared to have been truncated considerably, possibly due to more recent landscaping and topsoil formation. Both features were detected in the 2006 evaluation when they were interpreted as horticultural features; there was no evidence uncovered during the watching brief to suggest any alternative interpretation beyond that of a broadly agricultural function. Ditch **3006** was found to truncate an earlier small gully, **3004**, which only survived to a width of 0.65m beyond ditch **3006**. Gully **3004** was filled solely with crushed brick rubble, which may indicate its function to be a disused construction cut, possibly linking **3004** to the earlier manorial or farmhouse site; however, the size of the feature is more suggestive of a less substantial construction such as a garden feature.

3.3 FINDS

- 3.3.1 In total, 18 artefact fragments were recovered during the course of the watching brief (*Appendix 3*). All comprised common types of industrial-period pottery and were representative of a mixture of kitchen and tablewares. As

such they reflect the post-medieval use of the site during the farmhouse phase of Burn Hall. None of the finds offer potential for any further analysis.

4. CONCLUSIONS

4.1 DISCUSSION

- 4.1.1 The watching brief was able to identify a number of features that are likely to be associated with the post medieval period farmstead at Burn Hall. Such evidence was most apparent in Area 2, where those remains first identified during the 2006 evaluation (OA North 2006) were revealed more extensively. Comparison with the 1861 and 1961 OS maps would suggest that the slight curvature of wall **2003** correlates quite closely with the southern boundary of the farmstead, whilst walls **2005** and **2006** can be similarly matched with cartographic features. It is not possible to establish from the maps whether cobbled surface **2002** was restricted to the sub-circular feature shown on the 1861 OS map, or was representative of a more extensive surface across the entirety of the courtyard. Concrete sluice **2004** may be a later feature of the farmstead; though absent from the 1861 OS map, a drain in a corresponding location is marked on the 1961 OS map, and may well have fed into the more extensive drainage system that had been introduced into the surrounding woods/orchards since 1861. Similarly, the gap within wall **2003** may be a later feature permitting access to a post-1861 roadway that curved north-eastward from the route of what is now the B5268.
- 4.1.2 Elsewhere, the results of the watching brief generally followed closely those of the previous evaluation of Trenches 3, 4 and 5. Similarly, the shallow ditches observed within Area 3 could be correlated with those identified in Evaluation Trench 1. If gully **3004** does indeed represent a robbed-out construction cut, there are a number of boundary walls shown on the historic maps of this area, together with a sundial within an ornamental enclosure. The area of heavy root disturbance at the eastern end of Area 3 is likely to relate to the fact that this area is shown on historic mapping as having been the site of a wood or orchard; as such, any archaeological remains that may once have been present are likely to have been truncated by severe bioturbation.
- 4.1.3 Cobbled feature **1004**, which lay between Evaluation Trenches 4 and 5, is somewhat enigmatic as it appears not to relate to any of the features shown cartographically, including other areas of hardstanding or routeways. As such, it may pre-date the 1861 map (although there was no dating evidence that might confirm this), but equally may have been too short-lived or insufficiently important to have been depicted. A possible interpretation may be a hardstanding for livestock to access a waterhole or similar feature within this damper, more low-lying part of the site.

4.2 IMPACT

- 4.2.1 The impact of the present development upon the cultural heritage resource within the area of the easement has been mitigated by the maintenance of the present scheme of watching brief. Groundworks within the northward-projecting layby (Area 2) have demonstrated that well-preserved elements of

Burn Hall Farm/Manor lie to the north of the road and, although they remain unaffected by the present development, they need to be considered within future planning decisions.

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6. ILLUSTRATIONS

6.1 FIGURES

Figure 1: Site Location

Figure 2: Watching Brief Areas 1 and 2, with Inset Showing Locations of Previous Evaluation Trenches

Figure 3: Detailed Plan of Watching Brief Area 3

6.2 PLATES

Plate 1 : East-facing section of sondage showing redeposited clay, **1002**, over relict soil horizon **1007**

Plate 2: Cobbles **1004** in the north-west corner of Area 1, looking north-west

Plate 3: General shot of courtyard area below rubble layer **2001**, looking south

Plate 4: Detail of cobbles, **2002**, adjacent to the courtyard wall, **2003**, looking north

Plate 5: Concrete sluice **2004**, looking south

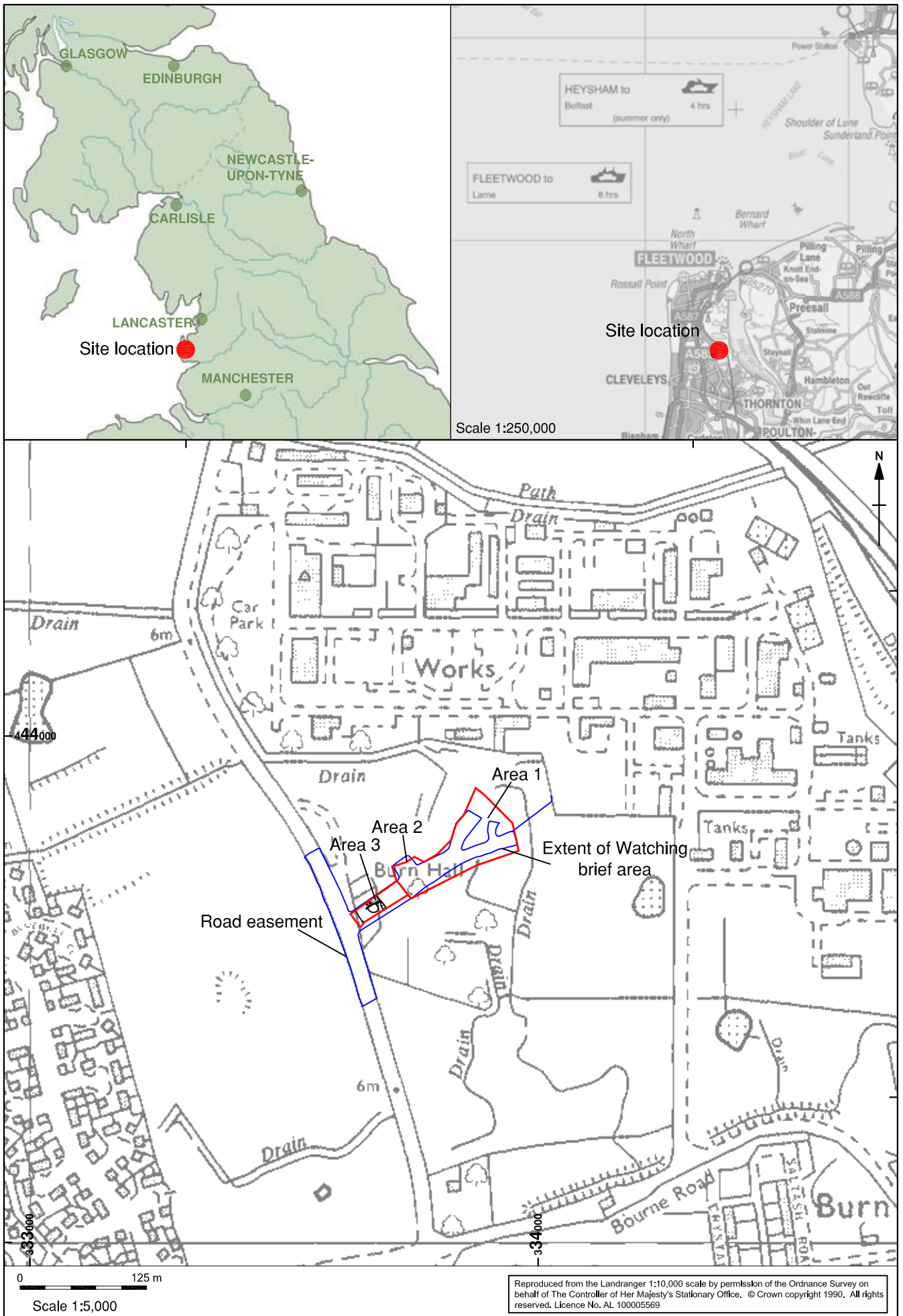


Figure 1: Site Location



Figure 2: Watching Brief Areas 1 and 2, with Inset Showing Location of Previous Evaluation Trenches

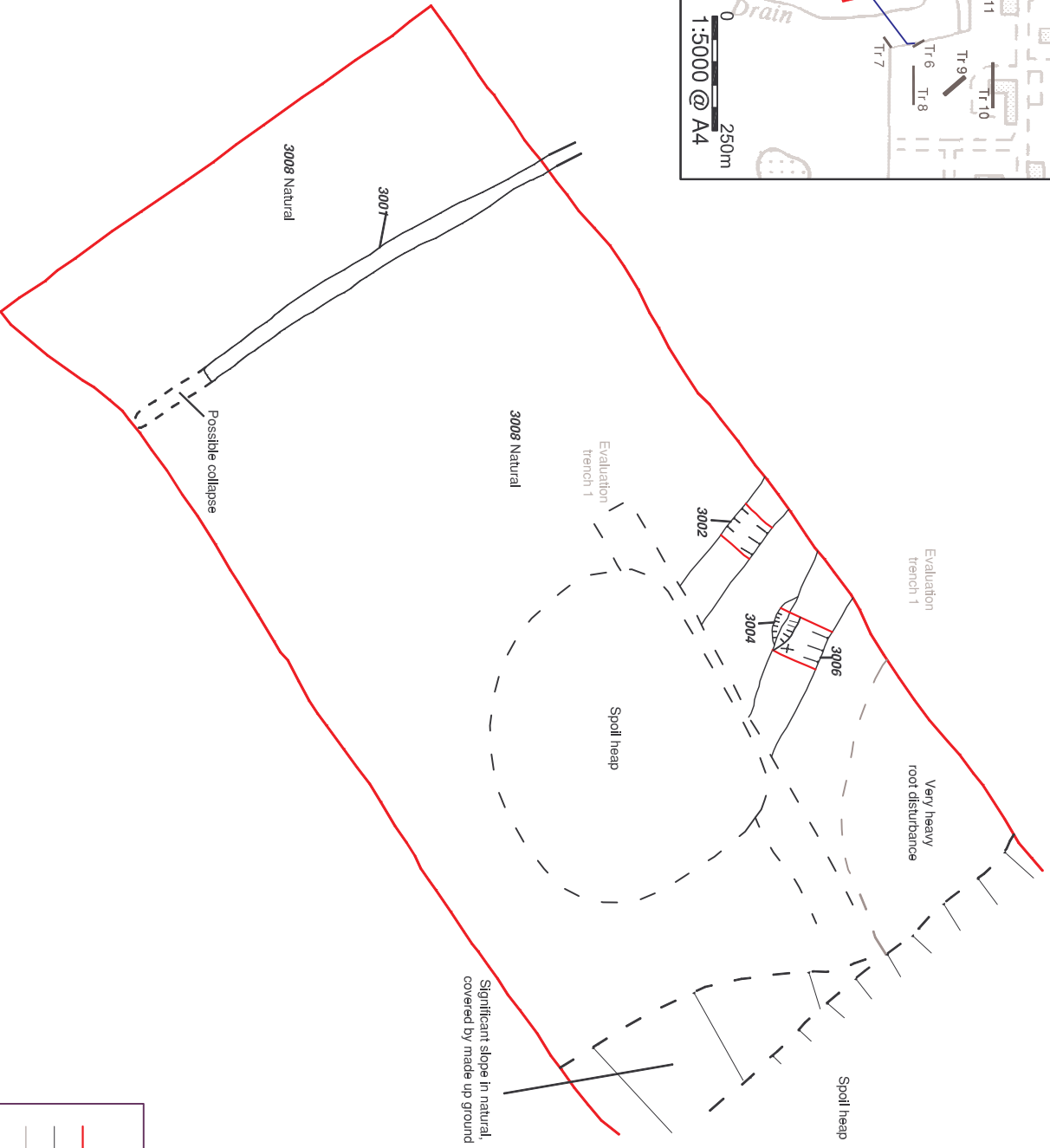
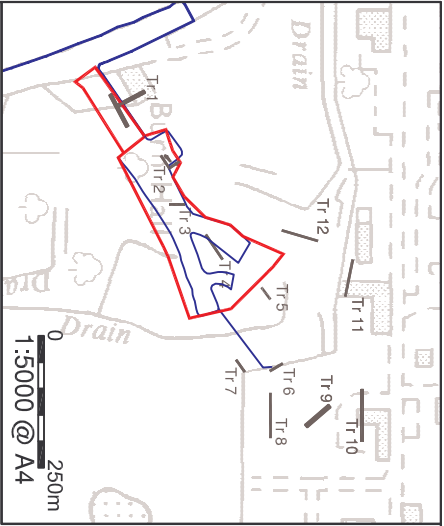


Figure 3: Detailed Plan of Watching Brief Area 3



Plate 1 : East-facing section of sondage showing redeposited clay, *1002*, over relict soil horizon *1007*



Plate 2: Cobbles *1004* in the north-west corner of Area 1, looking north-west

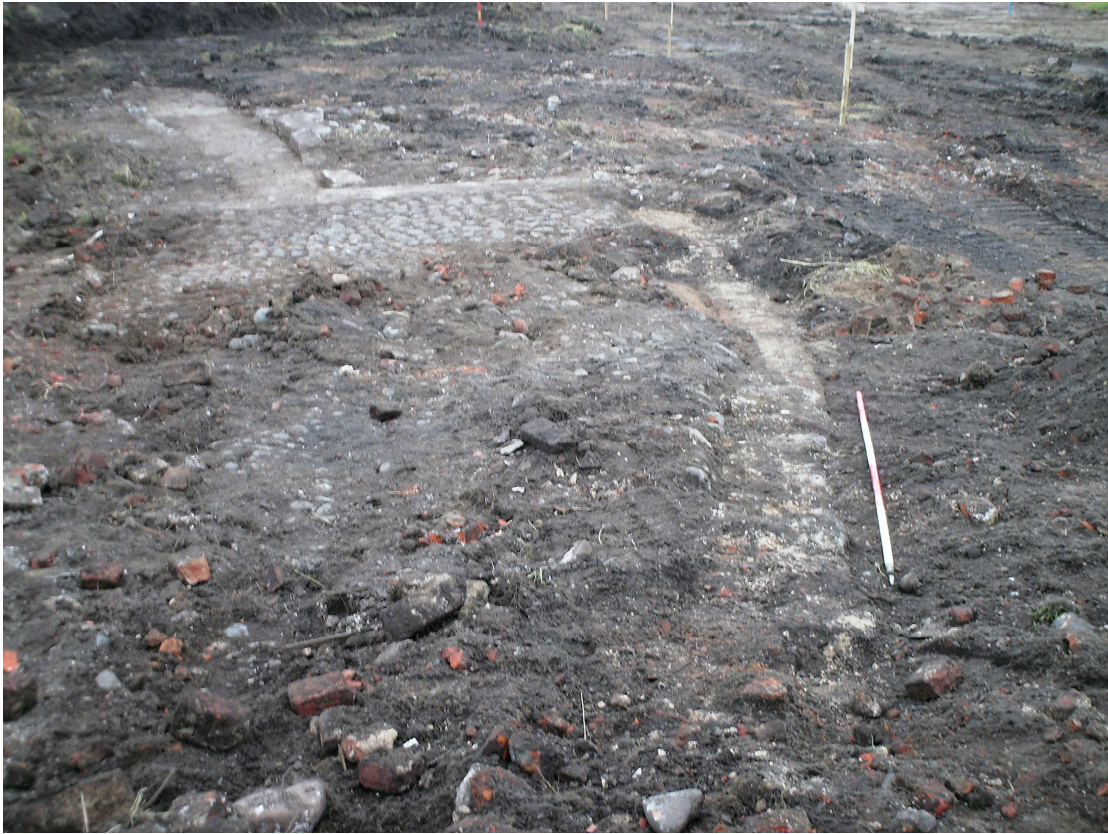


Plate 3: General shot of courtyard area below rubble layer *2001*, looking south



Plate 4: Detail of cobbles, *2002*, adjacent to the courtyard wall, *2003*, looking north



Plate 5: Concrete sluice *2004*, looking south

APPENDIX 1: PROJECT DESIGN

**LANCASHIRE
WASTE PFI
PROJECT: F2,
THORNTON,
LANCASHIRE**

**ARCHAEOLOGICAL
WATCHING BRIEF:
PROJECT DESIGN**



Oxford Archaeology North

June 2007

Waste 2 Resources

OA North Job No: T3031

NGR: SD 3334 4437

Planning Reference: 02/05/0977

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 A planning application (02/05/0997) has been submitted by Waste 2 Resources for the construction of a waste technology park on the former ICI Burn Hall site at Thornton, Lancashire (NGR SD 3334 4437). Part of the proposed development site is known to have formerly been occupied by the medieval Burn Hall and, accordingly, Lancashire County Archaeology Service (LCAS) requested that a programme of archaeological monitoring be undertaken during certain groundworks associated with the development. The following project design has been compiled to meet IFA standards in response to a verbal communication with LCAS. The redevelopment concerns a c 70 ha area corresponding with the eastern half of the former ICI works. However, the principal area of interest, which will form the focus of the watching brief, is located at the south-western corner of the site where the route of Fleetwood Road North will be upgraded and a roundabout and access road, together with associated services and footpaths, will be constructed on a north-east/south-west alignment towards the site of the refuse plant. It has been further requested by LCAS that the known extent of Burn Hall outside of the proposed road corridor be fenced-off to prevent vehicular access; should this prove otherwise, it would be necessary to establish further mitigative measures within this sensitive area.

1.2 ARCHAEOLOGICAL BACKGROUND

1.2.1 A number of archaeological remains are known to lie within, or close to, the proposed development site. The North West Wetlands Survey highlighted a number of archaeological sites within the wider area, many of which are located on raised drumlins, examples of which can be found within the present development site (Middleton *et al* 1995). Roman artefacts have also been recorded during test-pitting on the west side of Fleetwood Road North, although settlement sites in the locality are yet to be identified. The medieval manor of Burn is recorded in the Domesday Book as Pre-Conquest in origin and occupation of the associated hall, which may on occasion have been rebuilt and was converted to a farmhouse in 1784, continued into the 1960s. It is possible that there is an associated deserted medieval village, although no remains of this settlement have as yet been identified. Parts of this farm, and of associated earthworks, were identified during a geophysical survey undertaken in 2005 (ArchaeoPhysica 2005), whilst an evaluation undertaken by OA North in 2006 revealed handmade brick walls, a cobbled surface and a ditch number likely to be associated with these buildings.

1.2 OXFORD ARCHAEOLOGY NORTH

1.2.1 Oxford Archaeology North (OA North) has considerable experience of undertaking watching briefs of all periods, having conducted a great number of small and large scale projects during the past 25 years. Fieldwork has taken place within the planning process and construction programmes, to fulfil the requirements of clients and planning authorities, to very rigorous timetables.

1.2.2 OA North is an Institute of Field Archaeologists (IFA) **registered organisation, registration number 17**, and all its members of staff operate subject to the IFA Code of Conduct.

2. OBJECTIVES

2.1 The following programme has been designed in accordance with the Lancashire County Archaeology Service document entitled *General Conditions for Appropriate Archaeological Contractors in Lancashire* and meets all IFA guidelines and recommended practice.

- 2.2 **Watching Brief:** in order to determine the presence, date, quality and state of preservation of archaeological features on the site, a permanent presence archaeological watching brief will be maintained during any negative groundworks associated with the proposed development, including any topsoil and subsoil stripping or excavation for services and road footings.
- 2.3 **Report and Archive:** a report will be produced for the Client within about eight weeks of completion of the fieldwork. The report will aim to summarise the results of the watching brief within the context of existing knowledge about the site and its surroundings. These results will provide the basis for any recommendations for further work, should this prove appropriate. A site archive will be produced to English Heritage guidelines (MAP 2) and in accordance with the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990).

3. METHODOLOGY

3.1 WATCHING BRIEF

- 3.1.1 A programme of field observation will accurately and systematically examine and record the location, extent, and character of any surviving archaeological features, horizons and/or deposits revealed during the course of ground disturbance, along with any artefacts, identified during observation.
- 3.1.2 During this phase of work, recording will comprise a full description and preliminary classification of features or materials revealed on OA North *pro-forma* recording sheets, and their accurate location (either on plan and/or section, and as grid co-ordinates where appropriate). Features will be planned accurately at appropriate scales and annotated on to a large-scale plan. A photographic record of archaeological features and general working shots, utilising monochrome print and colour slide will be undertaken simultaneously.
- 3.1.3 Putative archaeological features and/or deposits identified during groundworks, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels, depending on the subsoil conditions and, where appropriate, sections will be studied and drawn. Any such features will be sample excavated (ie. selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal).
- 3.1.4 It is assumed that OA North will have the authority to stop the works for a sufficient time period to enable the investigation and recording of archaeological deposits. It may also be necessary to call in additional archaeological support if a find of particular importance is identified or a high density of archaeology is discovered, particularly if it is prudent to continue monitored groundworks in a different area of the site whilst these archaeological remains are being investigated. The scope of detailed investigation works would need to be established in liaison with LCAS and the costs agreed as a variation with the Client.
- 3.1.5 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. EH and the local Coroner will be informed immediately. If removal is essential, the exhumation of any funerary remains will require the provision of a Department of Constitutional Affairs (DCA) license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations, and if appropriate, in compliance with the Disused Burial Grounds (Amendment) Act, 1981.
- 3.1.6 **Recording:** all information identified in the course of the watching brief works will be recorded stratigraphically using a paper system, adapted from that used by the English Heritage Centre for Archaeology, with sufficient pictorial record (plans, sections and both black and white and colour photographs or contact prints) to identify and illustrate individual features as well as the nature of the demolition work. A plan will be produced of the areas of groundworks showing

the location and extent of the ground disturbance and one or more measured sections will be produced, regardless of the presence of archaeology. Levels on plans and sections will be tied into Ordnance Datum as accurately as on-site equipment allows. Primary records will be available for inspection at all times. The archive will include both a photographic record and accurate large-scale plans and sections at an appropriate scale (1:50, 1:20, and 1:10). All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration.

- 3.1.7 **Treatment of finds:** excavated soil will be searched as practicable for finds. The presence and nature of finds definitely dating to the nineteenth and twentieth centuries will be noted but they will not otherwise be retained. All other finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed, as appropriate, in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines. Except where noted above, all identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the recipient museum's archive curator. Organic or metal artefacts may require specialist conservation; the requirement for such work would be agreed with LCAS, and any additional costs would need to be agreed with the client as a variation.
- 3.1.8 **Treasure:** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.
- 3.1.9 **Contingency plan:** in the event of significant archaeological features or human remains being encountered during the watching brief, discussions will take place with the Planning Archaeologist, as to the extent of further works to be carried out, and in agreement with the Client. All further works would be subject to a variation to this project design.

4. REPORT

- 4.1 The results of the data gathered in *Section 3.1* above, will be collated and submitted in report format, illustrated with the relevant photographs and drawings. Where appropriate, the report will attempt to relate any findings to the known history and archaeology of the site, and to its local setting.
- 4.2 One bound and one unbound copy of the report will be submitted to the Client, and one bound copy and another in digital format will be submitted to LCAS for inclusion on the Lancashire Sites and Monuments Record. Any subsequent work arising from this survey will be subject to separate consideration in liaison with LCAS and the Client.
- 4.3 The final report will include a copy of this project design and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above, and will include details of the final disposition of the project archive. It will also include a summary of the fieldwork archive submitted to the Lancashire Record Office, Preston. Illustrations will include a location map, trench location plan and plans and sections of trenches drawn at an appropriate scale.
- 4.4 A brief summary of the fieldwork will be prepared and submitted to the Council for British Archaeology North West *Archaeology North West* within 12 months of the completion of the project.

5. ARCHIVE

- 5.1 The results of the watching brief will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological*

Projects, 2nd edition, 1991). The fully indexed project archive represents the collation and indexing of all the data and material gathered during the course of the project. It will include all the original records and drawings along with fully labelled and indexed slides and contact prints. It will include summary processing and analysis of any features and finds recovered during fieldwork, in accordance with UKIC guidelines. The deposition of a properly ordered and indexed project archive in an appropriate repository, is considered an essential and integral element of all archaeological projects by the IFA, and arrangement to this effect will be made with the museum curator prior to the commencement of the project.

- 5.2 All finds will be treated in accordance with OA North standard practice, which follows current IFA guidelines and will be deposited, along with a copy of the report and of the original site records, with the Lancashire Museum.

6. HEALTH AND SAFETY

- 6.1 OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A written risk assessment will be undertaken in advance of project commencement and copies will be made available on request to all interested parties.
- 6.2 The client would be asked to determine the nature of any utility services to the properties and site prior to any fieldwork being carried out.
- 6.3 OA North has professional indemnity to a value of £2,000,000, employer's liability cover to a value of £10,000,000 and public liability to a value of £15,000,000. Written details of insurance cover can be provided if required.

7. CONFIDENTIALITY

- 7.1 The final report is designed as a document for the specific use of the Client, and should be treated as such; it is not suitable for publication as an academic report, or otherwise, without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project brief and project design, or for any other explicit purpose, can be fulfilled, but will require separate discussion and funding.
- 7.2 Any proposed variations to the project design will be agreed with in co-ordination with the Client. OA North will arrange a preliminary meeting, if required, and EH will be informed of the commencement of the project in writing.

8. WORK PROGRAMME

- 8.1 The following programme is proposed:
- 8.2 **Watching Brief:** the duration of the watching brief will be dependent upon the progress of the contractor.
- 8.3 **Archive/Report:** the report and archive will be produced following the completion of all the fieldwork. The final report will be submitted within about eight weeks of completion of the fieldwork and the archive deposited within six months. If desired, an interim statement could be produced within ten days of completion of the fieldwork.

9. STAFFING

- 9.1 The project will be managed by **Stephen Rowland** (OA North Project Manager) to whom all correspondence should be addressed.

- 10.2 Present scheduling considerations preclude the allocation of a particular member of staff for the watching brief at this juncture, but OA North can guarantee that the works will be undertaken by an OA North Supervisor experienced in fieldwork techniques.
- 10.3 The archaeological work will be monitored by LCAS, which will be arranged accordingly.

REFERENCES

Archaeophysica, 2005 *Thornton Waste Technology Park: Survey Report*, unpubl rep

English Heritage, 1991 *Management of Archaeological Projects*, second edition, London

Middleton, R, Wells, C and Huckerby, E, 1995 *The Wetlands of North Lancashire*, North West Wetlands Survey 3, Lancaster imprints 4, Lancaster

OA North, 2006 *Thornton 2 Waste Technology Park, Thornton, Cleveleys, Lancashire*, unpubl rep

SCAUM (Standing Conference of Archaeological Unit Managers), 1997 *Health and Safety Manual*, Poole

UKIC, 1990 *Guidelines for the Preparation of Archives for Long-Term Storage*, London

UKIC, 1998 *First Aid for Finds*, London

APPENDIX 2: CONTEXT LIST

Context	Type	Description
1000	Topsoil	Blackish-brown friable silty sandy clay
1001	Deposit	Blackish-brown friable silty sandy clay with 20% inclusions of building rubble
1002	Deposit	Light yellowish-brown firm clay with occasional fragments of red brick
1003	Natural geology	Slightly reddish-brown firm sandy clay
1004	Surface	Layer of cobbles
1005	Deposit	Mid-greyish-brown firm sandy clay, occasional brick fragment
1006	Alluvium	Dark grey soft clay
1007	Relict soil horizon	Mid-brown firm sandy clay
2002	Surface	Cobbles
2003	Wall	Red brick
2004	Sluice	Concrete, 8.5m long, 0.7m to 1.4m wide,
2005	Wall footing	Concrete, 3.8m long by 0.4m wide
2006	Wall	Red Brick, double stretcher construction
3000	Topsoil	Blackish-brown friable silty sandy clay
3001	Wall	Modern red brick perimeter wall, 12.28m long by 0.68m wide
3002	Cut of ditch	Shallow, broad profile, heavily truncated along length. Identified as 120 during the evaluation phase. 4.45m by 1.24m exposed.
3003	Deposit	Fill of 3002 . Dark greyish-brown, firm sandy clay containing <1% small river-rolled miscellaneous pebbles.
3004	Cut of gully	Narrow V-shaped gully, possibly a heavily truncated construction cut. Filled with crushed brick rubble 3005 . 1.45m long by 0.65m wide.
3005	Deposit	Fill of 3004 , consisting entirely of crushed and degraded red brick dust and rubble.
3006	Cut of ditch	Broad and shallow ditch base profile indicating significant vertical truncation. 3006 appears to cut 3004 . 5.6m long by 1.91m wide visible. Identified as 116 during the evaluation phase.
3007	Deposit	Fill of 3006 . Dark greyish-brown loose sandy silt containing c2% small to medium sub-angular cobbles.
3008	Deposit	Mid reddish-brown sandy clay natural geology.

APPENDIX 3: FINDS LIST

Context	Material	Category	Qty	Description	Date
1001	Ceramic	Vessel	1	Hand-painted bone china	Twentieth century
1001	Ceramic	Vessel	1	Cream-glazed earthenware	Nineteenth to twentieth century
1001	Ceramic	Vessel	1	Pearlware bowl	c 1830s-40s
1001	Ceramic	Vessel	1	Creamware	Nineteenth century
1001	Ceramic	Vessel	1	Nottingham-type stoneware with rouletted decoration (large vessel)	Nineteenth century
1001	Ceramic	Vessel	1	Asiatic Pheasants transfer-printed plate	Nineteenth century
1001	Ceramic	Vessel	1	Transfer-printed whiteware	Twentieth century
1001	Ceramic	Vessel	1	Blackware, large vessel	Eigtheenth to nineteenth century
1001	Ceramic	Vessel	3	Pearlware	
2004	Ceramic	Vessel	1	Mottled ware, large vessel	
2004	Ceramic	Vessel	2	Willow pattern white ware plates	Twentieth century
2004	Ceramic	Vessel	2	Transfer-printed whiteware cup	
2004	Ceramic	Vessel	1	Hand-painted pearlware plate	c 1780-1820
2004	Ceramic	Vessel	1	White ware cup	Twentieth century

APPENDIX 4: ARCHIVE INDEX

Record group	Contents	Comments	Box/File Number
	Introduction Project Design		1
A	Report Final Report		1
B	Primary Fieldwork Records Context Records & Indices Watching Brief Records		1
C	Primary Drawings Developers Plans Annotated Plans Plans/Sections		1
D	Finds Box and Bag Lists		1
E	Environmental Records		0
F	Photographic Record Photographic Indices Monochrome Colour Slides Digital		1
G	Electronic Media		1