ARCHAEOLOGICAL SERVICES WYAS

Harewood Whin Waste Management Facility
Rufforth
City of York

Archaeological Evaluation

Report no. 2365

July 2012

Client: Golder Associates (UK) Ltd.

REGISTERED ORGANISATION IfA

Harewood Whin Waste Management Facility
Rufforth
City of York

Archaeological Evaluation

Summary

An archaeological evaluation comprising the excavation of ten trial trenches was carried out across the site of a proposed Material Recovery Facility at the Harewood Whin Waste Management Site. The evaluation followed on from a geophysical survey which did not suggest there were any archaeological features across the site. The trial trenching has confirmed the results of the geophysical survey revealing no archaeological features or deposits. Within the northern area of the site, where no geophysical survey was undertaken, the slight remains of the dispersed accommodation of a World War II airfield were identified within T1 and T2. These were identified as part of the sick quarters and were visible as robbed out foundation trenches and partly extant walls.

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Report Information

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Report Type:	Archaeological Evaluation
Location:	Harewood Whin, Rufforth
County:	City of York
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Acknowledgements

Archaeological Services would like to thank Golder Associates for commissioning the project with special thanks to Antony Brown who provided copies of the site plans for RAF Rufforth (Fig 4) and the aerial photograph (Fig 5). ASWYAS would also like to thank Yorwaste for the on site assistance and support.

1 Introduction

Archaeological Services WYAS (ASWYAS) were commissioned by Golder Associates, on behalf of their client Yorwaste Ltd, to undertake an archaeological evaluation, in the form of trial trenching, in advance of the submission of a planning application for a new Materials Recovery Facility (MRF) at the Harewood Whin Waste Management Facility, Rufforth, City of York. The work was undertaken in accordance with the requirements of Planning Policy Statement 5, The Nation Planning Policy Framework and in consultation with John Oxley, the City of York Archaeologist. The trial trenching was undertaken between the 9th and 12th July 2012.

Site location and topography

The proposed development for the MRF is located on land between the southern boundary of the existing Harewood Whin landfill site and the B1224 York - Wetherby Road, with Heights Land Lane forming the western boundary (Figs 1 and 2). The eastern limit of the village of Rufforth is about 0.9km to the west of the site and the suburbs of York lie 2km to the east. The area of the proposed MRF covers a little over 3 hectares within a large field, part of which has received planning consent for the construction of a Composting Facility. The new MRF is confined to the north-western corner of this larger field. A concrete trackway runs from Heights Lane and separates the northern quarter of the application area. The area is predominantly flat at around 15-16m above Ordnance Datum (aOD).

Soils, geology and land-use

The superficial deposits are recorded as Devensian clay and silts that formed in glacial lakes. The underlying bedrock comprises New Sherwood Sandstone (BGS 2012). The soils in this area are classified in the Foggathorpe 2 association, characterised as stoneless clays and fine loams, permeable and seasonally waterlogged (SSEW 1983). The site was largely overgrown with weeds and occasional bushes (Plates 1, 2, 6 and 7).

2 Archaeological and Historical Background

There is limited archaeological evidence within the vicinity of the site. Former field boundaries have been noted and a pit containing Late Iron Age pottery was discovered in fields to the north-west of the site (NAA 2004). In the wider landscape Harewood Whin lies within the dispersed accommodation of the former RAF Rufforth Airfield.

The airfield was a satellite airfield to RAF Marston Moor, located to the west, and was selected as a site by the Air Ministry in 1940. Construction of the airfield was undertaken by John Laing during 1941-42 with the Airfield runways and technical buildings located to the south of the B1224 and the dispersed accommodation located to the north of the road. The dispersed accommodation was set away from the main airfield to protect it from potential heavy bombing of the airfield runways. The dispersed accommodation would have contained

the barracks, messes, support buildings, sick quarters, gymnasium and cinemas (Mennell 2002). Rufforth was mainly used during the World War II as a training airfield for airmen who were learning to crew Halifax bombers, although from early November 1942 to March 1943, 158 Squadron were on active operations flying out of Rufforth (Otter 2003). After the war the airfield was still actively used by the RAF until 1959 when the last military units left. The airfield was then used as a relief landing area for RAF Church Fenton before being turned over to civilian use in the 1960s (Mennell 2002). The site is currently operated as a private airfield for light aircraft, micro-lights and gliders.

Archaeological work has previously been undertaken within the current area and this comprised a magnetometer survey (Harrison and Gidman 2007) which identified numerous anomalies, although these were largely thought to be caused by the agricultural practice ridge and furrow ploughing, land drains and later agricultural activity.

An archaeological evaluation of the area to the east of the current site, but within the same field, for a Green Waste Composting Facility was also undertaken in November 2007 (Walsh 2007) this confirmed the presence of parallel furrows across the area investigated. No finds, features or deposit of archaeological significance were encountered during this evaluation confirming the interpretation of the geophysical survey results.

3 Aims and Objectives

The construction of the MRF will damage and destroy any surviving archaeological deposits or remains within the evaluation area. Therefore the aims of the evaluation were to gather sufficient information to:

- Validate (or otherwise) the geophysical survey results;
- Establish the presence or absence of archaeological features within the area;
- Determine the extent, date, function, condition, character and quality of survival of any archaeological features; and
- Assess the nature of any surviving remains of the World War II Nissen huts and associated features within the northern part of the site.

The information from this evaluation will allow a decision to be made on the future treatment of any remains and any mitigatory measures which maybe appropriate either in advance of, or during, the construction works.

4 Methodology

The evaluation comprised the excavation of ten trial trenches covering 840m², 2.5% of the area that equates with the footprint of the MRF. Eight of the trenches measured 40m by 2m with one trench measuring 60m by 2m and another measuring 20m by 2m (see Fig. 2 and Table 1). Eight of the trenches were positioned to evaluate various magnetic anomalies and apparently 'blank' areas identified by the geophysical survey whilst the other two were located in an area that had not been surveyed. The size and rationale for each trench is detailed in the table below.

Table 1: Size and rationale for the location of each trench

Trench No	Orientation	Dimension	Area	Rationale
1	North-east to South-west	20m by 2m	40m²	To investigate the area of the site formerly utilised as part of Rufforth Airfield and to assess the level of previous disturbance in this area.
2	North-east to South-west	60m by 2m	120m²	To provide a transect across the group of four Nissen huts visible on air photos.
3	North-west to South-east	40m by 2m	80m²	To investigate a sub-circular cluster of anomalies of possible archaeological interest.
4	North-east to South-west	40m by 2m	80m²	To sample an apparently blank area.
5	North-west to South-east	40m by 2m	80m²	To investigate a discrete anomaly of possible archaeological interest at the eastern end of the trench, and to characterise its relationship with the former field boundary that crosses at this point.
6	North-west to South-east	40m by 2m	80m²	To investigate a particularly strong isolated ferrous anomaly at the western end of the trench. This trench will also intersect with a broadly east-west oriented linear identified as a land drain during the previous evaluation.
7	North-east to South-west	40m by 2m	80m²	To provide a section across the north-west to south-east oriented linear anomalies which are parallel to the course of a drainage ditch to the north. These features were targeted during the previous evaluation further to the east, but only a slight discolouration in the soil was noted. An isolated ferrous anomaly is also targeted.
8	North-west to South-east	40m by 2m	80m²	To test an area devoid of anomalies except for the furrows.
9	North-west to South-east	40m by 2m	80m²	To investigate a ferrous anomaly.
10	North-east to South-west	40m by 2m	80m²	To sample an apparently blank area between two furrows.

All trenches were set out and their limits recorded using a Differential GPS (dGPS) accurate to +/- 0.01cm. All trenches were also tied in to local permanent features shown on published Ordnance Survey 1:2500 mapping.

All work was carried out in accordance with accepted professional standards and guidelines (Institute for Archaeologists 2008, English Heritage's 2008 MoRPHE PPN3: Archaeological

Excavation), in accordance with ASWYAS site recording manual (ASWYAS 2012), the Harewood Whin MRF: Specification for Archaeological Evaluation (Golder Associates 2012) and the Project Design.

The trenches were opened in a controlled manner using a JCB back-hoed mechanical excavator fitted with a flat bladed bucket under direct archaeological supervision. All topsoil deposits were removed in level spits (not more than 0.2m) with the topsoil and subsoil being separated to allow for re-instating in reverse order. Machining was stopped at the first identifiable archaeological horizon or natural deposits. All excavation of archaeological deposits was undertaken manually with the stripped surface being cleaned and inspected for archaeological remains.

All identified archaeological features were accurately recorded in plan at a scale of 1:50. All plans also include spot heights that relate to Ordnance Datum in metres. A full written, drawn and photographic record was made of all archaeological features.

The evaluation took place between July 9th and July 12th 2012 and was monitored by John Oxley the City of York Archaeologist; this included a site monitoring visit on July 10th. An inventory of the primary archive is presented in Appendix 1, and a concordance of contexts, in Appendix 2. A copy of the Project Design is presented in Appendix 3. ASWYAS currently hold the site archive in a stable and secure location.

5 Results

Summary

Topsoil and a rubble or demolition layer to a depth of between 0.60m and 0.65m were recorded in T1 and T2. Topsoil and a very thin and intermittent layer of subsoil to a depth of between 0.28m and 0.40m were recorded in T3-T10 (Table 2).

The natural deposits across the site comprised bright grey-yellow orange clay, which had been heavily compacted within T1 and T2 making it look slightly darker. At the request of John Oxley a sondage was excavated into the natural clay at the south-eastern end of T9. This revealed a 0.38m thick layer of yellow orange clay sitting upon a 0.06m thick layer of grey sand, which in turn was located on top of yellow brown sandy clay. All deposit were natural in origin and are consistent with the geology of the area.

The trenches that targeted magnetic anomalies identified as potential archaeological features in T3 and T5 in both cases were demonstrated to not be archaeological, being due to slight variation in the natural clays.

The remaining features summarised in Table 2 were all deemed to be of recent agricultural origin as they were consistently filled with topsoil deposits.

T1 and T2 were excavated within the southern part of the dispersed accommodation site of RAF Rufforth. The buildings located on this site are suggested by Mennell (2002) and the site plan of RAF Rufforth from World War II (Fig. 4) to be part of the Sick Quarters.

Table 2. Summary of the results of the evaluation

Trench	Trench depth	Stratigraphic information	Notes
1 Plate 1	0.60	Topsoil – 0.20m Rubble/subsoil – 0.40m Natural at 15.32m AOD	North-east end of trench not fully excavated due to presence of cables and small asbestos fragments. Traces of a drain and cable run identified possibly defining area of ambulance garage.
2 Plate 2-5	0.65	Topsoil – 0.30m Rubble/subsoil 0.35m Natural at 15.26m AOD	Robbed out walls associated with Nissen huts, three walls identified in south-west end of trench, associated with Nissen Hut 4 (See Fig. 3).
3	0.32	Topsoil – 0.32m Natural at 15.45m AOD	Remains of plough furrows identified. No archaeological features identified.
4	0.32	Topsoil – 0.32m Natural at 15.62m AOD	Modern land drain. No archaeological features identified.
5 Plate 6	0.28	Topsoil – 0.28m Natural at 15.69m AOD	No archaeological features identified.
6	0.40	Topsoil – 0.30m Subsoil – 0.10m Natural at 15.54m AOD	No archaeological features identified. Discolouration of the natural associated with a boundary depicted on the 1st edition Ordnance Survey map.
7	0.40	Topsoil – 0.35m Subsoil – 0.05m Natural at 15.49m AOD	Trench excavated through slight bank next to drain. Bank was formed from topsoil 0.65m deep. Modern land drains. No archaeological features identified.
8	0.40	Topsoil – 0.30m Subsoil – 0.10m Natural at 15.49m AOD	Plough furrow as identified by geophysical survey. No archaeological features identified.
9 Plate 7-8	0.35	Topsoil – 0.30m Subsoil – 0.05m Natural at 15.49m AOD	No archaeological features identified. Sondage excavated into the natural at the request of John Oxley. This revealed a 0.38m thick layer of yellow orange clay sitting upon a 0.06m thick layer of grey sand, which in turn was located on top of a yellow brown sandy clay.
10	0.35	Topsoil – 0.30m Subsoil – 0.05m Natural at 15.59m AOD	Modern land drains. No archaeological features identified.

Trench 1 (Fig. 2; Plate 1)

Trench 1 was located across a structure that is identified on the site plan of RAF Rufforth to be the Ambulance Garage. No clear evidence of the structure was visible within the trench although full excavation of the north-east end of trench was not possible due to the presence

of cables and small asbestos fragments. A drain and an electric cable cover were identified within the area of the building.

Trench 2 (Fig. 2-3; Plates 2-5)

Trench 2 was located across the north-western end of four buildings identified on the site plan of RAF Rufforth and aerial photograph (Fig 4 and 5). This appears to form the main part of the sick quarters with a small building listed as ‘sick quarters annexe b’ to the north-west. The sick quarters were formed from Huts 3 and 4, with an extension for the Women's Auxiliary Air Force (WAAF) to the north, Huts 1 and 2. Parts of all four Nissen huts were exposed within T1.

Most of the features exposed were very shallow foundation trenches that were only slightly cut into the natural and in-filled with subsoil and demolition rubble (102), that appears to have originated from the complete demolition of the buildings. The deposit comprised dark grey brown silty clay with large quanties of brick, rubble, sandstone and concrete.

Nissen Hut 1 was formed by a slight feature (116) which was cut into the natural and in-filled by rubble material. The trench covered the north-western end of the hut and exposed a single concrete pad which appears to have formed a supporting column for the building. A further concrete slab was also identified further to the south-west but was removed during machining. The internal span between the identified walls of the building measured 7.22m. The finds recovered from this area of machining consisted of the base of a brown glass bottle and a red floor tile.

Nissen Hut 2 was represented by Features 113 and 114, both were again very slight cuts 0.40m wide and were very slight. The north-east side of Feature 114 contained a drain down pipe which could be from roof drainage or perhaps a waste drain. The internal span of the building between Features 113 and 114 was recorded as 6.97m.

Nissen Hut 3 only had the north-eastern wall footing located (110), no trace of the south-western foot was observed reiterating the very shallow and slight nature of the walls, the possible internal span of this building, could not be ascertained with any certainty. A possible feature was observed in the centre of the hut and could be the remains of a service trench. A plastic handle was recovered from the rubble layer.

Nissen Hut 4 was defined by Features 103 and 106, with 106 a robbed out wall footing and 103 an extant single course of bricks, bonded with a dark mortar, the internal span between Walls 103 and 106 was 7.24m. Unlike the other huts there were four walls recorded within the floor plan of the hut, three of which retained the lowest course of bricks; Features 103, 104 and 105. Features 104 and 105 appear to be walls made up of a single skin of bricks around a concrete core. Part of the concrete core appeared to have been damaged and partly removed as had some of the brick skin. Wall 104 had a wider concrete core 0.55m wide

where as Wall 105's concrete core was 0.30m wide. The bricks used in Walls 103, 104 and 105 were all uniform and measured 0.23m by 0.10m by 0.06m, although they were not all of the same type of brick as the frogging differed, with some brick possessing an oval ended frogging and others containing raised dimples.

Located between Huts 1 and 2 and Huts 2 and 3 was a spread of black clinker material (115 and 112), that appeared to be industrial slag/waste product. This may have formed a path between the two huts. Also located between Hut 2 and 3 was a cable trench that was covered in ceramic blocks which had the words 'electric cable' impressed upon them. Two further Features 107 and 108 were located between Huts 3 and 4 and appear to form a corridor that is visible on the site plan and aerial photograph (Fig. 4 and 5). Both these footings were well defined and filled with a rubble material but also a black silty deposit making the features stand out against the natural deposits.

Nissen huts were fairly ubiquitous during World War II and were also regular in their construction having internal spans of either 4.88m (16ft), 7.32m (30ft) and 9.15m (30ft). The lengths could vary but are found in multiples of 1.83m (6ft), constructed on a concrete floor (Lowery 2002). The internal spans of the recorded buildings ranges from 6.97m to 7.24m and places them into the middle category of size. No evidence of a concrete floor were observed and it is assumed that this has been removed. There was also no evidence of the steel sheeting that would have been used for the roof although again this is assumed have been removed during demolition.

6 Artefact Record

Finds recovered during the evaluation were all from T1 and T2, with the exception of a single glass bottle base from T9. All the finds are of 20th century origin and are summarised in Table 3 below. The provenance of the finds from T1 and T2 is problematic as they are clearly 20th century in date and the comprehensive demolition of the site could have lead to material that has been imported or dumped upon the site. The tile fragments is, however, likely to have originated from one of the Nissen hut's floor and the brown glass bottle base from T2 could also have been of medical origin and therefore associated with the sick quarters. The full analysis of all finds should be undertaken at the conclusion of any future archaeological work on this site.

Table 3: Summary of finds

Finds Type	Context No.	Trench No.	Quantity	Notes
Glass				
	100	T9	1	Base of glass bottle-20th century?
	102	T2	1	Base of brown glass bottle
Tile				

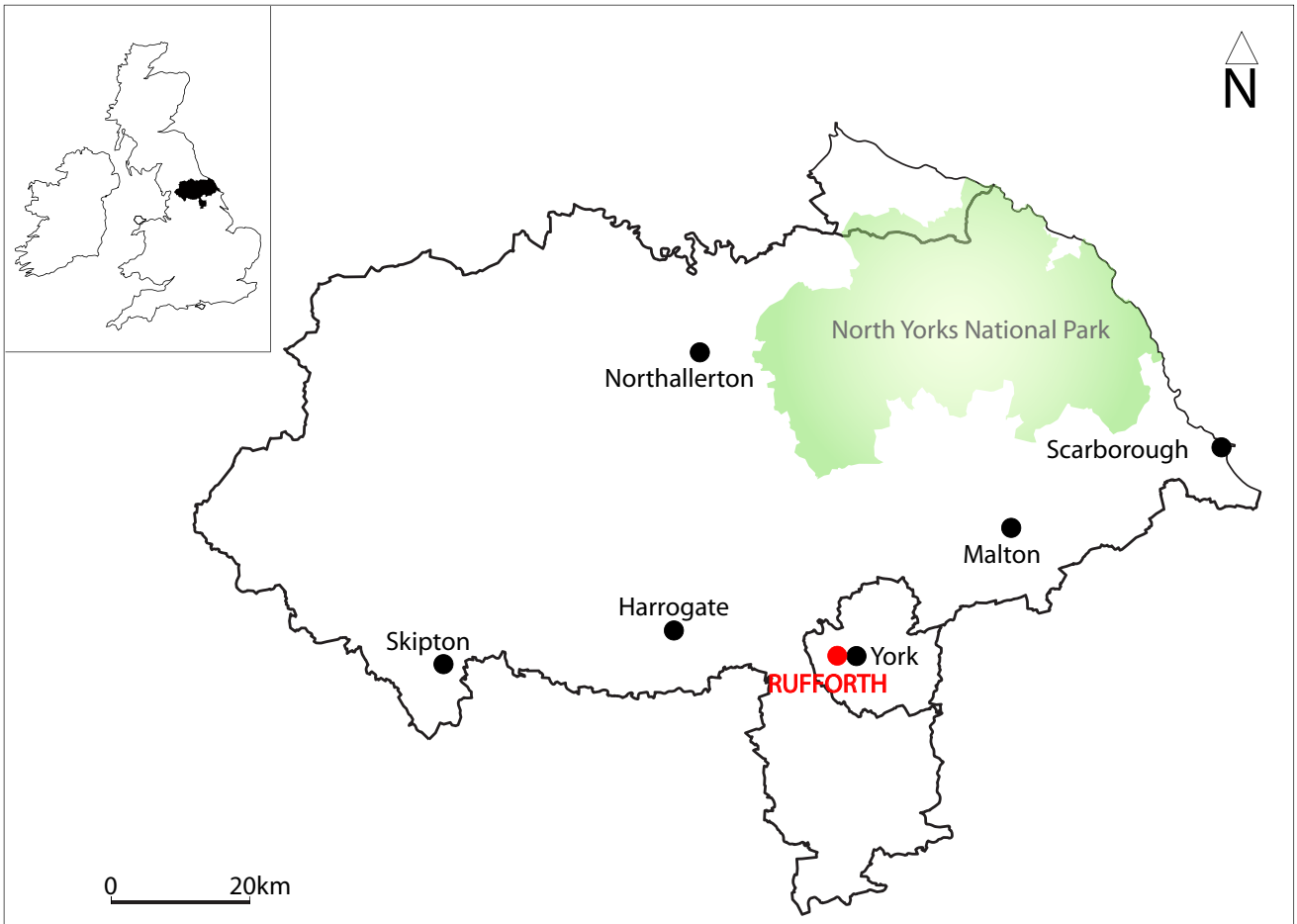
	102	T2	1	Red ceramic tile with 'M' and two crown symbols on the reverse
	102	T1	1	Electric cable cover, with the words 'ELECTRIC CABLE' stamped into it
Plastic Handle				
	102	T2	1	Plastic handle recovered from demolition layer, does not appear to be modern plastic and could be from Nissen huts

7 Discussion and Conclusions

The trial trench evaluation of the site of the proposed Harewood Whin MRF has confirmed the results of the geophysical survey and established that the site is most likely devoid of archaeological remains.

Where trenches were targeted on magnetic anomalies interpreted as potentially being due to archaeological features, in all cases the cause of the response was found to be variation in the natural deposits.

In the area to the north where no geophysical survey was undertaken the evaluation trenches have located the remains of RAF Rufforth's sick quarters that date from the 1940s. It seems likely that these were demolished in the 1960s following the closure of the airfield. Although the sick quarters appears to have been comprehensively demolished traces of the buildings were visible and correspond with RAF's site plan from the 1940s and also with later aerial photographs.



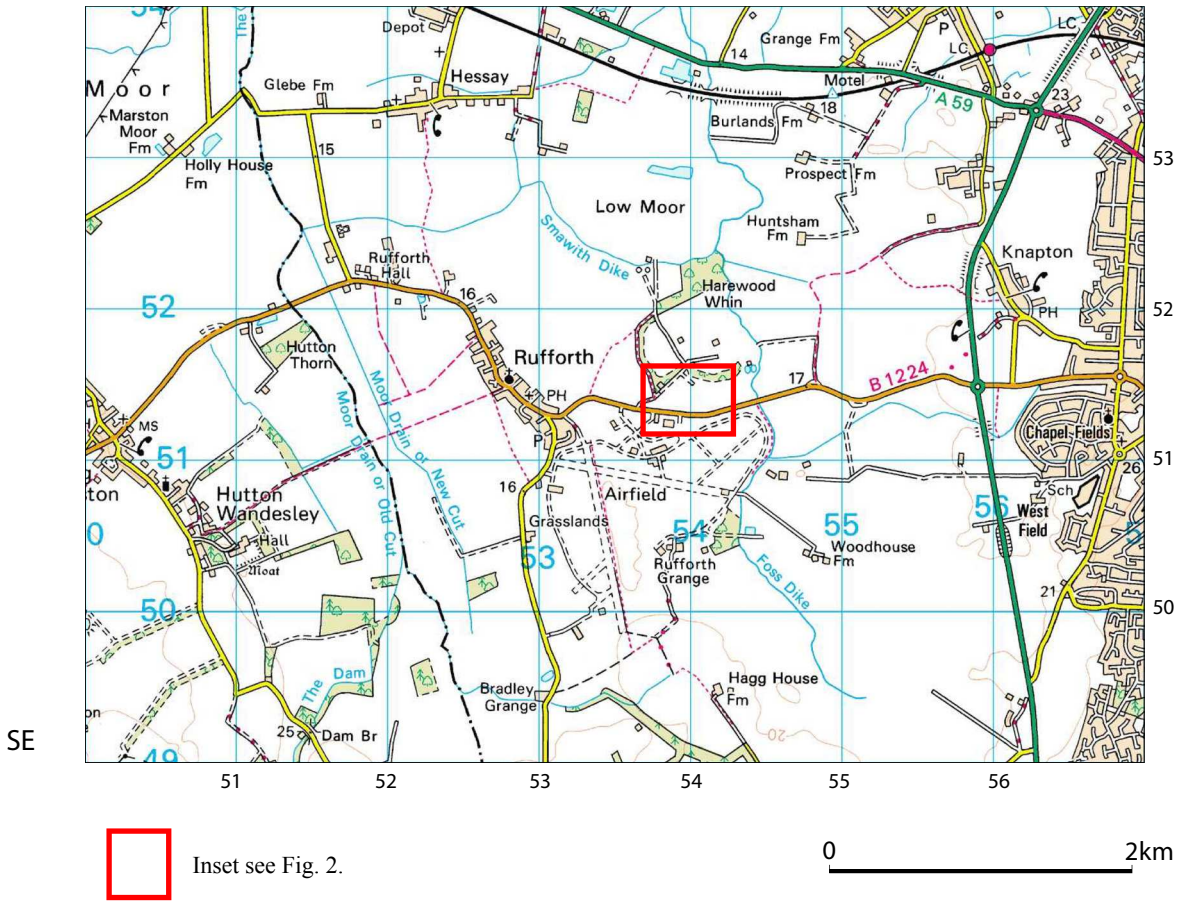


Fig. 1. Site location

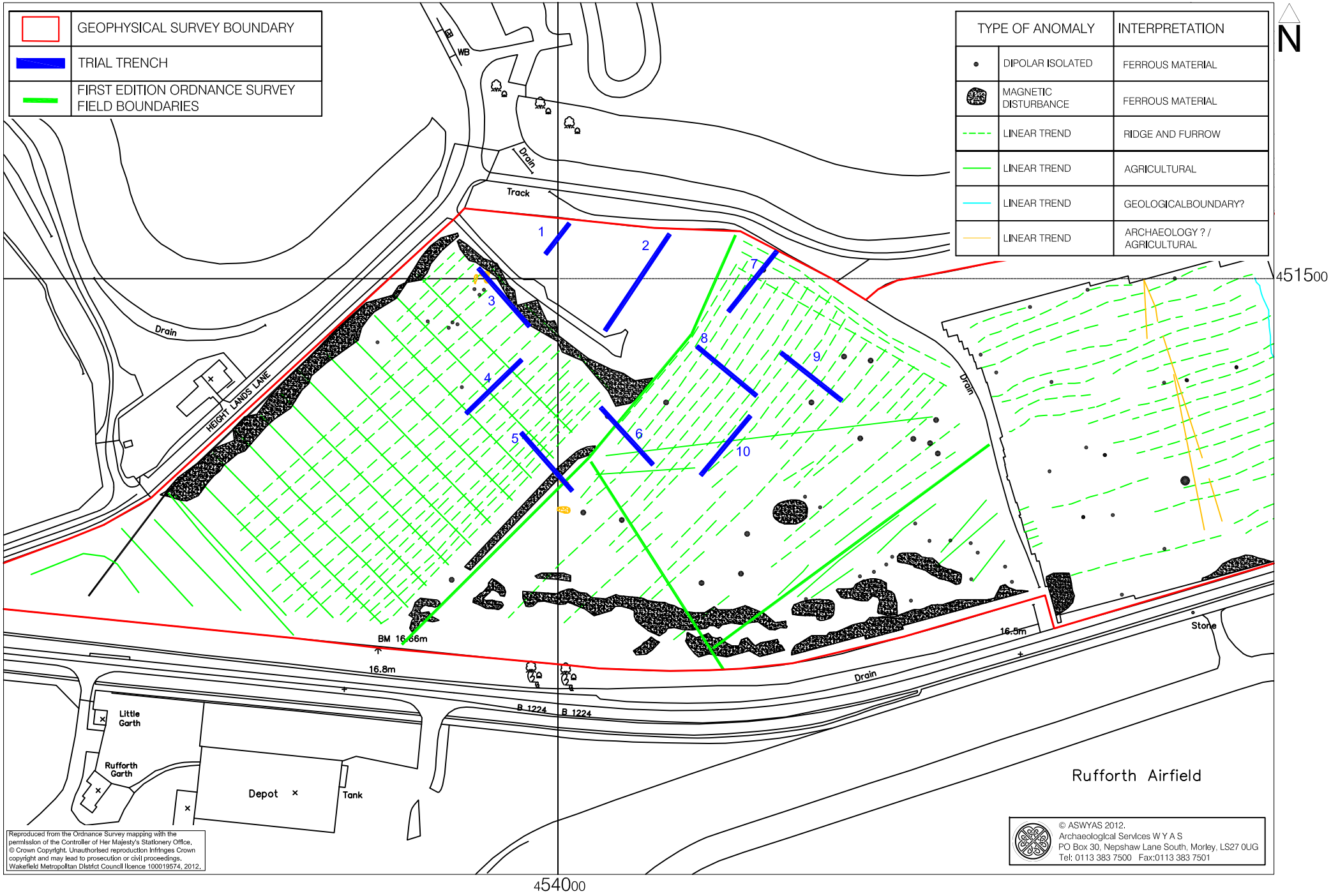


Fig. 2. Site location showing magnetometer interpretation and trial trench location (1:2500 @ A4)

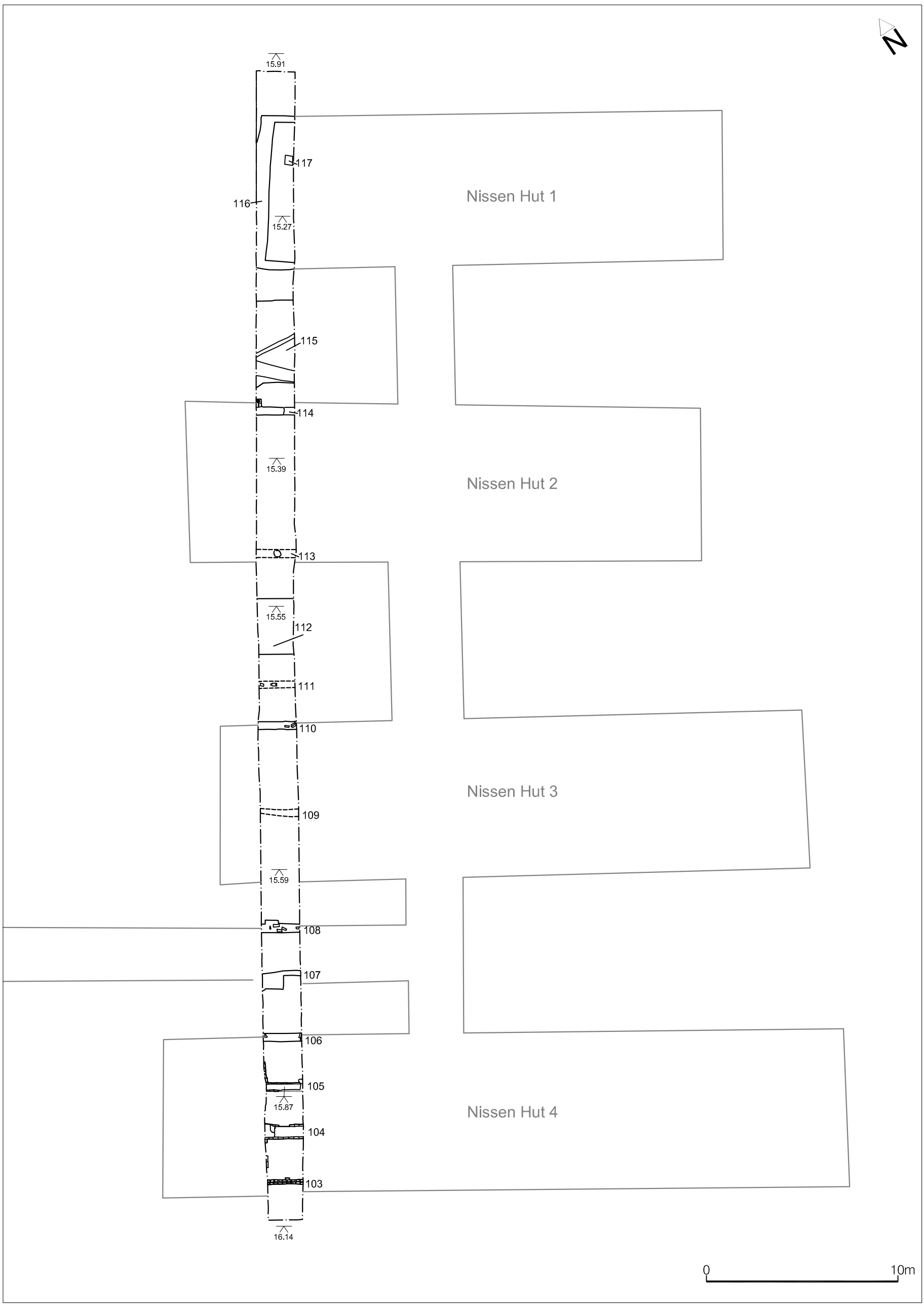


Fig. 3. Plan of Trench 2 with location of Nissen Huts from aerial photographs (1:200 @ A3)

	Sick Quarters		
640	Picket Post 'B'	12404·41	T.B.
641	Sergeants & Orderlies Quarters 'A'	2965 42	Nissen
642	Ablutions, Latrs & Drying (Sick Qtrs)	902 41	
643	Ambulance Garage 'A'	13207 41	
644	Sick Quarters Annexe 'B'	2456·42	
645	Sick Quarters & Extension (WAAF)	671·42	
646	Transformer Plinth	318·43	
		E1,37·1	B
647	Ejector House	17657·40	T.B.
	Pow &		

Fig 4. Extract from World War II site plan of RAF Rufforth, showing the sick quarters (Courtesy of the RAF Museum, Hendon)

Fig 5. Detail of the sick quarters from aerial photograph RAF/540/642 frame no.5012, 10 Dec. 1951 (NMR AP collection)

Plate 1. Trench 1 looking south-west, with area of cables in foreground

Plate 2. Trench 2 showing footing of Nissen Hut 1, looking south-west

Plate 3. Trench 2 showing Feature 105, looking south-east

Plate 4. Trench 2 showing Feature 103, looking south-east

Plate 5. Trench 2 showing feature 110, cable run 111 and clinker deposit 112, looking north-east

Plate 6. Trench 5, looking south-east

Plate 7. Trench 9 showing sondage into natural, looking north-west

Plate 8. Trench 9 showing sondage into natural, looking south-west

Appendix 1: Inventory of primary archive

Phase	Description	Quantity
Evaluation	Context register sheets	1
	Context sheets (nos. 100-117)	18
	Drawing register sheets	1
	Photograph record sheet	1
	Digital photograph record sheet	2
	Trench record sheets	10
	Find and sample record	1
	Site plan	1
	Digital survey file HAR090612	1

Appendix 2: Concordance of contexts

Context	Trench	Description	Artefacts
100	-	Topsoil deposit: dark grey brown silty clay.	Glass (1)
101	3-10	Subsoil deposit: mid to light grey clay.	
102	1-2	Rubble/demolition layer subsoil: dark grey brown silty clay.	Glass (1); Tiles (2); Plastic handle (1)
103	2	Wall: single course of bricks laid in stretcher fashion, footing for Nissen hut 4, bonded with a dark mortar. Brick 0.23m by 0.10m by 0.06m.	
104	2	Wall: brick skin with a concrete core, single course of wall laid their long side. Signs of possible demolition on concrete.	
105	2	Wall: brick skin with a concrete core, single course of wall laid their long side. Signs of possible demolition on concrete. Similar to 104 except concrete core was narrower.	
106	2	Feature: cut of wall footing, filled by a rubble subsoil and grey brown black course fill. Footing for Nissen hut 4	
107	2	Feature: large linear feature part of corridor into sick quarters, filled with a dark deposit.	
108	2	Feature: large linear feature part of corridor into sick quarters, filled with a dark deposit.	
109	2	Feature: very slight cut into natural possible service trench?	
110	2	Feature: cut of wall foundation for Nissen hut 3. Contains bricks within fill	
111	2	Cable run: cut of a cable run covered in tiles that have ‘eclectic cable’ impressed upon them	
112	2	Thin clinker deposit 0.05-0.06m thick: black grey gritty industrial waste. Path between Huts 2 and 3.	
113	2	Feature: slight trace of wall footing for Nissen hut 2.	
114	2	Feature: footing for wall of footing of Nissen hut 2. Feature contains a dragnet pipe at the northern side.	
115	2	Thin clinker deposit 0.05-0.06m thick: black grey gritty industrial waste. Path between Hut 1 and 2.	
116	2	Feature: wall footing for north-western end of Nissen hut 1	
117	2	Concrete pad located within Nissen hut 1, possible support post.	

Appendix 3: Project Design

ARCHAEOLOGICAL SERVICES WYAS

Harewood Whin Waste Management Facility

Rufforth

City of York

Trial Trench Evaluation Project Design

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July 2012

REGISTERED ORGANISATION IfA

Project Design for an Archaeological Evaluation by Trial Trenching at Harewood Whin Waste Management Facility, Rufforth, City of York

1. Introduction

1.1 This Project Design has been prepared by Archaeological Services WYAS (ASWYAS) for Antony Brown of Golder Associates on behalf of their client Yorwaste Ltd, in advance of the determination of a planning application for a Materials Recovery Facility.

1.2 The proposed trenching is designed to provide additional information on the archaeological resource at this site, and how it will be impacted by the proposed development, to allow the impact of the scheme to be assessed and to therefore provide sufficient information to allow the planning application to be determined.

1.3 The scheme of work will be undertaken in accordance with the requirements of Planning Policy Statement 5 following consultation with John Oxley, The City of York's Planning Archaeologist.

1.4 This document details a programme of evaluation by archaeologically controlled trial trenching and has been produced to the standards laid down in English Heritage's guideline publication *Management of Research Projects in the Historic Environment (MoRPHE): Project Managers Guide* (2006) and the MoRPHE *Project Planning Note 3: Archaeological Excavation* (PPN3) (2008).

2. Site location, Description and Topography

2.1 The proposed development for the Materials Recovery Facility is located on land between the southern boundary of the existing Harewood Whin landfill site and the B1224 York - Wetherby Road. The eastern limit of the village of Rufforth is about 900m to the west of the site and the suburbs of York lie 2km to the east. The area subject to evaluation comprises a little over 3 hectares of the whole application area (some 8 hectares) and is located to the south of the current Waste Management Site. The site is located in the northern part of the field and equates with the footprint of the proposed development. One third of the area comprised a triangular piece of rough ground situated on the north side of a concrete trackway. This area is largely overgrown with weeds and occasional bushed. The remainder of the site is open pasture, and is generally flat at around 15-16m AOD.

3. Geology and Soils

3.1 The underlying bedrock comprises New Sherwood Sandstone (BGS 2011). The soils in this area are classified in the Foggathorpe 2 association,

characterised as stoneless clays and fine loams, permeable and seasonally waterlogged (SSEW 1983).

4. Archaeological Background

4.1 There is limited archaeological evidence within the vicinity of the site. Former field boundaries have been noted and a pit containing Late Iron Age pottery was discovered in fields to the north-west of the site (NAA 2004). In the wider landscape Harewood Whin lies north of former RAF Rufforth which was opened in 1943 and closed in 1955; the site is still operated as a private airfield.

Archaeological work has previously been undertaken within the current area and this comprise a magnetometer survey (Harrison and Gidman 2007) which identified numerous anomalies, although these were largely thought to be caused by the agricultural practice ridge and furrow, the presence of land drains and later agriculture activity. The site is suggested to have a low archaeological potential.

An archaeological evaluation of the area to the east of the current site for a Green Waste Composting Facility was also undertaken in November 2007 (Walsh 2007) this confirmed the presence of parallel furrows across the area investigated. No finds, features or deposit of archaeological significance were encountered during this evaluation.

5. Aims and Objectives

5.1 The overall aim of the evaluation is to provide detailed information on the presence or absence and the extent, character, date, depth of burial and degree of survival of any archaeological features or deposits which may be present within the area. The evaluation will also aim to assess the nature of any surviving remains of the World War II Nissen huts and associated features that are likely within the northern part of the site.

5.2 To achieve this aim, 10 trenches will be excavated as indicated on the attached figure (Figure 1). In total, the trenches cover an area of 840m² a total of 2.5% of the site. Each trench is located in order to answer specific questions and designed to provide as much archaeological information with minimum ground disturbance. The dimensions and rationale for each of the excavated areas is given below.

Trench Number	Size	Rationale
1	2m by 20m	To investigate the area of the site formerly utilised as part of Rufforth Airfield and to assess the level of previous disturbance in this area.
2	2m by 60m	To provide a transect across the group of 4 Nissen huts visible on air photos

3	2m by 40m	To investigate a sub-circular cluster of anomalies of possible archaeological interest
4	2m by 40m	To sample an apparently black area
5	2m by 40m	To investigate a discrete anomaly of possible archaeological interest at the eastern end of the trench, and to characterise its relationship with the former field boundary that crosses at this point
6	2m by 40m	To investigate a particularly strong isolated ferrous anomaly at the western end of the trench. This trench will also intersect with a broadly east-west oriented linear identified as a land drain during the previous evaluation
7	2m by 40m	To provide a section across the northwest to southeast oriented linear anomalies which are parallel to the course of a drainage ditch to the north. These features were target during the previous evaluation further to the east, but only a slight discolouration in the soil was noted. An isolated ferrous anomaly is also targeted.
8	2m by 40m	To test an area devoid of anomalies except for the furrows
9	2m by 40m	To investigate a ferrous anomaly
10	2m by 40m	To sample an apparently blank area between two furrows.

6. Methodology

6.1 All excavation will be undertaken in line with the IfA guidelines *Standard and Guidance for Archaeological Excavation* (2008a), and in compliance within the English Heritage MoRPHE *PPN3: Archaeological Excavation* (2008), and the Harewood Whin MRF: Specification for Archaeological Evaluation (Golder Associates 2012)

6.2 The controlled stripping of ploughsoil, to the archaeologically required level, shall be carried out using a mechanical excavator equipped with a toothless ditching bucket under archaeological supervision. Stripping will take place in level spits to the top of the first archaeological horizon or undisturbed natural. The resulting surface will be inspected for archaeological remains. Where archaeological remains require clarification, the relevant area will be cleaned by hand. Under no circumstances will the machine be used to cut arbitrary trenches down to natural deposits.

6.3 Archaeological Services WYAS will first plan and then manually excavate a sample of all archaeological features in an archaeologically controlled and stratigraphic manner in order to meet the aims and objectives outlined above.

6.4 Features, where excavated, will be investigated employing the following sampling strategies:

- Linear features: sufficient excavation will be carried out to investigate the depth, profile and fills of a ditch or gully and to recover dating and environmental evidence from its fills. Normally this will involve a minimum of 10% sample dispersed along the length of the feature (each sample section to be not less than 1m), or a minimum of a 1m sample section if the feature is less than 10m long or if only a small part of it is exposed. With respect to trial trenches, one 1m section will be located and recorded adjacent to the trench edge. Feature intersections will always be excavated in such a way to determine a stratigraphic relationship.

- Discrete features: pits, post–holes and other discrete features will normally be half-sectioned to determine and record their form with a minimum sample of 50% of discrete features in each area. The complete excavation of such features may be appropriate, but only following consultation with the City of York Archaeologist John Oxley.

6.5 A full written, drawn and photographic record of all material revealed during the course of the work shall be made. The excavation limits will be surveyed using electronic survey equipment with larger scale hand drawn plans of features at 1:20 or 1:50, as appropriate. Sections of linear and discrete features will be drawn at 1:10. All sections, plans and elevations will include spot-heights related to Ordnance Datum in metres as correct to two decimal places and survey. Tie-in information will be undertaken during the course of the evaluation and will be fixed in relation to nearby permanent structures and roads and to the National Grid.

6.6 All artefacts recovered will be retained and removed from the site for assessment and analysis, and where it is appropriate finds shall be recorded three dimensionally. Non–modern artefacts will be collected from the excavated topsoil and subsoil, although finds associated with the Nissen huts should be retained. Finds material will be stored in controlled environments, where appropriate. All artefacts recovered will be retained, cleaned, labelled and stored as detailed in the guidelines laid out in the IfA Guidelines for Finds Work. Any conservation work will be undertaken by approved conservators working to UKIC guidelines.

6.7 Archaeological Services WYAS shall fully record all excavated archaeological contexts by detailed written records giving details of location, composition, shape, dimensions, relationships, finds, samples, and cross-references to other

elements of the record and other relevant contexts, in accordance with best practice. All contexts, and any small finds and samples from them will be given unique numbers. Bulk finds will be collected by context. Colour digital and monochrome negative photographs at a minimum format of 35mm will be taken.

6.8 A soil-sampling programme shall be undertaken during the course of the investigation for the identification and recovery of carbonised and waterlogged remains, vertebrate remains, molluscs and small artefactual material. English Heritage's Regional Science Advisor, environmental and soil specialists will be consulted during the course of the excavation with regard to the implementation of this sampling programme should waterlogged deposits be identified. Provision should be made for the removal of soil samples of a minimum 30 litres from deposits with clear potential, and larger samples (40 – 60 litres) from any rich carbonised deposits. Samples may also be taken from seemingly sterile deposits. Particular attention will be paid to the sampling of primary ditch fills and any surviving buried soils beneath banks or other positive features. Environmental material removed from site will be stored in appropriate controlled environments. The collection and processing of environmental samples will be undertaken in accordance with guidelines set out in the Association for Environmental Archaeology's (1995) Working Paper No. 2, "Environmental Archaeology and Archaeological Evaluations - Recommendations concerning the environmental archaeology component of archaeological evaluations in England" and English Heritage's Environmental Archaeology Guidelines (http://www.english-heritage.org.uk/publications/environmental-archaeology-2nd/environmental-archaeology-2nd.pdf). In addition, the processing of environmental samples will only take place within facilities approved for such purposes by English Heritage's Regional Science Advisor.

6.9 In the event of human remains being discovered they will be left *in situ* and covered and protected in the first instance. The removal of human remains will only take place in compliance with the Burial Act 1857 and with an exhumation licence obtained form the Ministry of Justice (MoJ) prior to the removal of the remains. Provision will be made for the specialist reporting of the remains by a recognised osteoarchaeologist.

6.10 Provision will be made for the recovery of samples suitable for scientific dating (e.g. radiocarbon / AMS dating, archaeomagnetic and dendrochronological dating).

6.11 All finds of gold and silver and associated objects shall be reported to HM Coroner according to the procedures relating to the Treasure Act 1997.

7. Analysis and Reporting

7.1 At the conclusion of the trenching a report shall be produced in order to provide the level of information required to enable the determination of the planning application to be made.

7.2 At this stage the archive will be assembled in line with the recommendations provided in English Heritage's MoRPHE Project Planning Note 3: Archaeological Excavation (PPN3).

7.2 In addition to the site records, artefacts, ecofacts and other sample residues, the archive shall contain all the data collected during the excavation, including records, finds and environmental samples. It will be quantified, ordered, indexed and internally consistent. Adequate resources will be provided during fieldwork to ensure that all records are checked and internally consistent. Archive consolidation will be undertaken immediately following the conclusion of fieldwork and will involve:

- the site record being checked, cross–referenced and indexed as necessary;
- all retained finds being cleaned, conserved, marked and packaged in accordance with the requirements of the recipient museum;
- all retained finds being assessed and recorded using pro forma recording sheets, by suitably qualified and experienced staff. Initial artefact dating will be integrated within the site matrix; and
- all retained environmental samples being processed by suitably experienced and qualified staff and recorded using pro forma recording sheets.

7.3 In addition to the site records, artefacts, ecofacts and other sample residues, the archive shall contain:

- site matrices where appropriate;
- a summary report synthesising the context record;
- a summary of the artefact record; and
- a summary of the environment record.

7.4 The integrity of the primary field record will be preserved. Security copies will be maintained where appropriate.

7.5 Provision will be made for the deposition of the archive, artefacts and environmental material, subject to the permission of the relevant landowner (and if no further archaeological work is to be initiated), in the appropriate

recipient museum. The museum will be advised of the timetable of the proposed investigation prior to excavation commencing. The archive will be prepared in accordance with the guidelines published in "*Guidelines for the preparation of Excavation Archives for long–term storage"* (United Kingdom Institute for Conservation, 1990) and *Standards in the Museum care of archaeological collections* (Museums and Galleries Commission 1994). Provision will be made for the stable storage of paper records and their long–term storage.

7.6 Upon completion of the investigations, the artefacts, ecofacts and stratigraphic information shall be assessed as to their potential and significance for further analysis.

7.7 An assessment report will be prepared within an agreed timescale following the completion of on-site archaeological investigations and include the following:

- a non–technical summary of the results of the work;
- a summary of the project's background;
- the site location;
- an account of the method;
- the results of the excavation, including phasing and interpretation of the site sequence and spot–dating of artefacts, if recovered;
- an assessment of the stratigraphic and other written, drawn and photographic records;
- a catalogue of the archaeological material recovered during the excavation
- a summary of the contents of the project archive and its location
- recommendations for any further work.

7.8 The report will be produced within an agreed timetable. It will be supported by an overall plan of the site, accurately identifying the location of the trial excavations.

7.9 The report will outline the archaeological significance of the deposits identified, and provide an interpretation of the results in relation to other sites in the vicinity.

7.10 Copies of the report will be supplied to Golders Associates, York Historic Environment Record and English Heritage.

7.11 A final report, including all finds analysis and scientific dating results, shall be produced in accordance with English Heritage's *Management of Archaeological Projects* (English Heritage 1991).

7.12 Upon completion of the work, the archaeological contractor will make their work accessible to the wider research community by submitting digital data and copies of reports online to OASIS (http://ads.ahds.ac.uk/project/oasis/). Submission of data to OASIS does not discharge the planning requirements for the archaeological contractor to notify City of York Historic Environment of the details of the work and to provide the Historic Environment Record (HER) with a report on the work.

7.13 It is possible that the excavation findings will warrant wider publication. This shall be effected either through one of Archaeological Service WYAS's in-house series of publications or through publication with an appropriate archaeological journal.

8. Copyright, Confidentiality and Publicity

8.1 Copyright in the documentation prepared by the archaeological contractor and specialist sub-contractors should be the subject of additional licences in favour of the repository accepting the archive City of York Historic Environment to use such documentation for their statutory educational and museum service functions, and to provide copies to third parties as an incidental to such functions.

8.2 Under the Environmental Information Regulations 2005 (EIR), information submitted to the HER becomes publicly accessible, except where disclosure might lead to environmental damage, and reports cannot be embargoed as 'confidential' or 'commercially sensitive'.

8.3 Requests for sensitive information are subject to a public interest test, and if this is met, then the information has to be disclosed. The archaeological contractor should inform the client of EIR requirements, and ensure that any information disclosure issues are resolved before completion of the work. Intellectual property rights are not affected by the EIR.

8.4 Unless the Client commissioning the project wishes to state otherwise, the copyright of any written, graphic or photographic record and reports will rest with the originating body (Archaeological Services WYAS).

9. Health and Safety

9.1 Archaeological Services WYAS has its own Health and Safety policy which has been compiled using national guidelines such as SCAUM. These guidelines conform to all relevant Health and Safety legislation.

9.2 In addition each project undergoes a 'Risk Assessment' which sets project specific Health and Safety requirements to which all members of staff are made aware of prior to on–site work commencing. Health and safety will take priority over archaeological matters. Necessary precautions will be taken over underground services and overhead lines at the outset of the project.

10. Health and Safety

10.1 Archaeological Services WYAS is covered by the insurance and indemnities of the City of Wakefield Metropolitan District Council. Insurance has been effected with: Zurich Municipal Insurance, Park House, 57–59 Well Street, Bradford, BD1 5SN (policy number RMP 03GO39–0143). Any further enquiries should be directed to: The Chief Financial Officer, Insurance Section, Wakefield MDC, PO Box 55, Newton Bar, Wakefield WF1 2TT.

11. Monitoring

11.1 Access to the site should be arranged through the commissioning body.

11.2 It is the archaeological contractor's responsibility to ensure that Health and Safety requirements are fulfilled.

11.3 The project will be monitored by The City of York Archaeologist John Oxley to whom written documentation should be sent before the start of the work confirming:

- the date of commencement,
- the names of all finds and archaeological science specialists likely to be used in the evaluation, and
- notification to the proposed archive repository of the nature of the works and opportunity to monitor the works.

11.4 Where appropriate, the advice of the Regional Advisor for Archaeological Science (Yorkshire and the Humber Region) at English Heritage will be called upon.

11.5 It is the responsibility of the archaeological contractor to ensure that any significant results are brought to the attention of The City of York Archaeologist and the commissioning body as soon as is practically possible. This is particularly important where there is any likelihood of contingency arrangements being required.

11.6 It is the archaeological contractor’s responsibility to ensure that monitoring takes place by arranging monitoring points as follows:

- a meeting or discussion prior to the commencement of the work to agree in writing the locations of the proposed works;

- progress meeting(s) during the fieldwork phase at appropriate points in the work schedule, to be agreed; and
- a meeting during the post-fieldwork phase to discuss the draft report and archive before completion.

12. Resources and Programming

Project personnel :

Project Management:	Alistair Webb BA MifA
Project Supervisor:	David Williams BA PIfA

Post–excavation specialists :

Prehistoric pottery specialists:	Dr Chris Cumberpatch
Roman pottery specialist:	Dr Ruth Leary
Medieval pottery specialist:	Dr Chris Cumberpatch
Flint specialist:	Dr Ian P Brooks
Environmental specialist:	Dr Jane Richardson
Faunal analyst:	Dr Jane Richardson
Human bone specialist:	Malin Holst MA
Metalwork specialist:	Dr Hilary Cool
Artefact conservationist:	Karen Barker

The list of Archaeological Services WYAS project personnel may be subject to change.

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