

**Aggregates Levy Sustainability Fund
THORNBOROUGH HENGES
AIR PHOTO MAPPING PROJECT
(ALSF 3897 MAIN)**

**MANAGEMENT OVERVIEW:
SUMMARY OF MANAGEMENT AND RESOURCES**

| | |
|--|---|
| English Heritage AMIE Parent Collection UID: | EHC01/052 |
| English Heritage AMIE Event UID: | 1404468 |
| Project dates: | November 2004 – March 2005 |
| Project authors: | Matthew Oakey, Daniel van den Toorn, Alison Deegan |
| Report produced : | March 2005 |
| Summary report by: | Alison Deegan for Archaeological Services WYAS |

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SUMMARY

The Thornborough Henges Air Photo Mapping Project was funded by the Aggregates Levy Sustainability Fund (ALSF), as disbursed through English Heritage, and operated by Archaeological Services WYAS.

An area of 100km², centred on the nationally important prehistoric henge complex at Thornborough in North Yorkshire was surveyed to NMP standards from existing air photographs. Digital maps, at a nominal scale of 1:10,000, and supporting records were created by a small team of aerial investigators. This team was contracted by Archaeological Services WYAS and based with English Heritage's Aerial Survey and Investigation at Tanner Row, York.

The project identified and mapped sites varying in date and type ranging from a Neolithic cursus to military remains from the twentieth century. New AMIE records were created for 153 monuments or monument groups and a further 41 amendments or enhancements were made to existing records.

All requests to consult the project data should be directed to the National Monuments Record, English Heritage, National Monuments Record Centre, Great Western Village, Kemble Drive, Swindon, SN2 2GZ.

INTRODUCTION

The Thornborough Henges Air Photo Mapping Project was instigated to inform English Heritage's Conservation Plan, which is currently being drawn up for the setting of the Thornborough henges. The Conservation Plan is necessitated not only by the unique character of this landscape but also by the considerable threats it faces from aggregate extraction. Extraction has been active in this area throughout the second half of the twentieth century and in June 2004 planning proposals were submitted for a 40 hectare extension of the quarry at Ladybridge Farm, to the north-east of the henges.

This work will also contribute to English Heritage's National Mapping Programme. The National Mapping Programme (NMP) is ongoing and is generating a comprehensive record of the archaeology that is visible on air photographs for the whole of England. To date, approximately 32% of the country has been covered by the programme.

This project has produced maps and records of the visible archaeological features for an area centred on the nationally important prehistoric henge complex at Thornborough in North Yorkshire. Overall the project comprises four OS 1:10 000 scale quarter sheets and covers an area of 100km².

Work was undertaken by a small team of aerial investigators who were contracted by Archaeological Services WYAS (ASWYAS) and based with English Heritage's Aerial Survey and Investigation (AerSI) at Tanner Row, York.

This project was scheduled to run from the 10th November 2004 to the 15th February 2005. In January 2005, at the request of English Heritage the project remit was expanded to include consideration of certain geological features and the timescale was extended until 2nd March 2005.

This report is a brief overview of the operation of this project. Readers requiring a more comprehensive account of the NMP mapping should consult the entire data set.

AIMS AND OBJECTIVES

The rationale and archaeological background for this project are set out in full in the original project design (ASWYAS 2004).

In brief, the aim of this project was to produce an accurate map and record of features from all periods that are visible as crop marks, soilmarks and earthworks on existing air photographs. This would comply with the standards of the National Mapping Programme and be the first comprehensive and specialist consideration of the air photographs for the henge monuments and multi-period landscapes in their local environs.

This work provides an overview, which has so far been lacking, in which to consider the impact of the Ladybridge Farm proposal, not only in the context of the

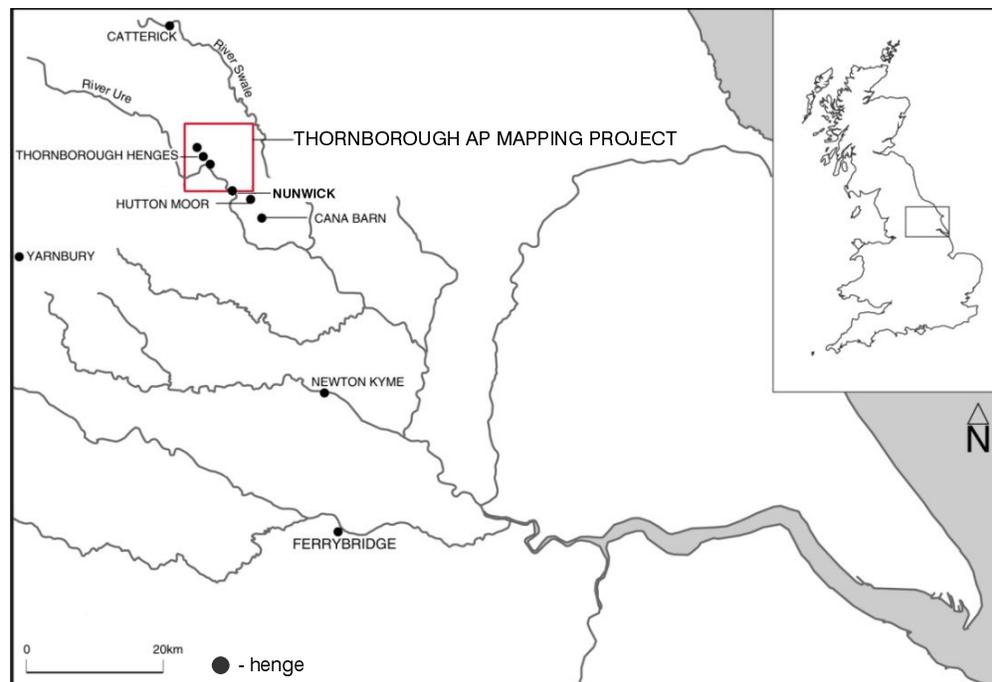
contemporary monuments but also of activity from the later prehistoric periods to the early twentieth century.

SCOPE OF THE SURVEY

Geographical scope of the survey

The Thornborough Henges AP Mapping Project lies entirely within the county of North Yorkshire and covers parts of Harrogate and Hambleton districts. It covers four whole and contiguous 1:10 000 scale quarter sheets (SE27NE, SE28SE, SE37NW, SE38SW), a total area of 100 km².

Figure 1. Location map of the Thornborough AP Mapping Project area and other Yorkshire henges.



The area is approximately centred on the three henge monuments at Thornborough and spans part of the interfluvium between the Rivers Ure and Swale. The River Ure meanders through the south-west quadrant of the project area. The landscape is gently undulating with the ground rising to the west and south-west and falling towards the River Swale in the east. The area around the henges is relatively flat and low lying, being between 40-45m AOD.

The belt of Magnesian Limestone that runs between Nottingham and the north-east coast crosses the western half of the project area and is overlain in parts by Permian and mudstones. The south-west corner of the project area lies on Millstone Grit and the eastern half on Permian and Triassic Mudstones.

The project area is rural in character with large areas of arable and improved pasture interspersed with small patches of woodland and small villages and hamlets. However the large-scale gravel extraction has increasingly become a

feature of the landscape and has gradually taken up more of the area of the landscape surrounding the henges.

Archaeological Scope

The aim of the National Mapping Programme is to increase our understanding of the historic environment. It achieves this by identifying, interpreting and recording all probable and possible archaeological features that are visible on air photographs as crop marks, soilmarks, parchmarks and earthworks. The *NMP Sphere of Interest* draft report (RCHME 1997) documents in full the scope of the NMP. The main aspects relevant to the landscapes of the Thornborough Henges Air Photo Mapping Project are summarised below:

Earthwork archaeology

All extant earthworks identified as archaeological in origin were recorded.

Levelled archaeology

All crop mark, parchmark and soilmark features identified as archaeological in origin were mapped.

Post medieval and modern field boundaries

Field boundaries (upstanding or levelled) that are visible on air photographs but that are also depicted on First Edition Ordnance Survey or later edition maps were not mapped.

Medieval and post medieval ridge and furrow

All extant, vestigial, soilmark and crop mark evidence of ridge and furrow visible on air photos was mapped. Using a simple graphical depiction the extent of the original furlongs (as far as these could be deduced) and the direction of ploughing were delineated. Remains were characterised as either medieval ridge and furrow, post-medieval ridge and furrow and post-medieval narrow ridge and furrow such as steam rigg.

The state of preservation was evaluated from the most recent photography and the visible remains were distinguished in the system of AutoDESK Map 2004® layers and conventions between those that were extant and those that had probably been levelled. It should be noted that the date of the most recent photography does vary considerably. Furthermore earthwork ridge and furrow may survive but be imperceptible on the most recent photographs because of inappropriate lighting conditions. In such cases ridge and furrow will be recorded as levelled even though this may be an erroneously interpretation; this is standard NMP recording practise as established by English Heritage and cannot be ameliorated for individual projects.

Industrial features and extraction

Large-scale disused and active quarry complexes (> 2 hectares) were recorded by a simple outline of their greatest visible extent though some details such as trackways and spoil heaps were recorded as seen. Smaller quarries (1-2 hectares) were recorded if they were not mapped on the relevant Ordnance Survey First Edition six inch to one mile sheet or if they impacted on other archaeological

features. Very small quarries (< 1 hectare) were not recorded unless they were thought to be of pre-medieval data. The remains of pre-modern coal extraction and associated features were recorded.

20th century military features

As it is within the brief of English Heritage to record former military features constructed up to and within the Cold War period these features were mapped where visible. In general the presence of complex and extensive sites such as army camps was denoted by a simple outline though selective features within these sites were occasionally mapped “as seen”.

Buildings

The foundations of buildings visible as earthworks or ruined stonework were recorded. Standing roofed or unroofed buildings or structures were generally not recorded unless they had a particular association in the context of industrial or military sites.

Extension of the archaeological scope

In a departure from the standard NMP specification and the original design of this project, air photo mapping and interpretation was extended to include certain geological features. English Heritage had identified palaeochannels as having significance to the archaeological landscapes and requested that these were considered. It was agreed by English Heritage that the Thornborough Henges AP Mapping Project team would digitise field mapping data produced by the Swale-Ure Washlands project under the auspices of the Geography Department at the University of Durham. This information was supplied as 1:25 000 scale hand-annotated maps that covered approximately 60% of this project's area. An initial assessment of this field mapping data suggested that the available air photographs could contribute greater detail, particular of lesser channels in the low-lying area around the henges. Here, geomorphological features believed to be palaeochannels appear as great swathes of slower ripening crop. So, in addition to digitising the field mapping data the team undertook to rectify and map possible palaeochannels from the best air photographs for an the area between SE 275 800 to SE 300 805.

SOURCES

Air photographs

The available photographs in the following collections were examined for the Thornborough Henges AP Mapping Project:

- English Heritage's National Monuments Record (NMR)
- Heritage Environment Record (HER), NYCC
- Unit for Landscape Modelling (ULM) (formerly known as CUCAP)

The NMR supplied the majority of the specialist oblique photography for this project. These can be categorised into four main groups: the Crawford Collection, CUCAP duplicates, Derrick Riley photographs and the work English Heritage's own

aerial investigators. The Crawford Collection prints are exceptionally early examples of aerial photography dating from the first three years of the 1930s and 1945. These offer an unparalleled insight into the condition of the henge monuments in the first half of the twentieth century. The CUCAP duplicates in the NMR collection date mainly to the 1950s, these prints were not re-requested from the Unit for Landscape Modelling (formerly known as CUCAP). Derrick Riley reconnoitred this project's area in the 1970s. Based on the evidence of the photographs he took, it appears that most of Riley's forays into this landscape were limited to one or two visits per year but in the dry July of 1976 he visited the area on at least 6 different days. There was then a hiatus of some ten years before reconnaissance in the area began again, firstly under the auspices of the RCHME and later by English Heritage. Many of English Heritage's recent photographs have focused on recording excavations in progress. While these have been useful for revealing sub-surface deposits in plan, this does duplicate information that is recorded in greater detail by archaeologists on the ground. Greater priority should be given to those landscapes that are visible only as crop marks and soilmarks.

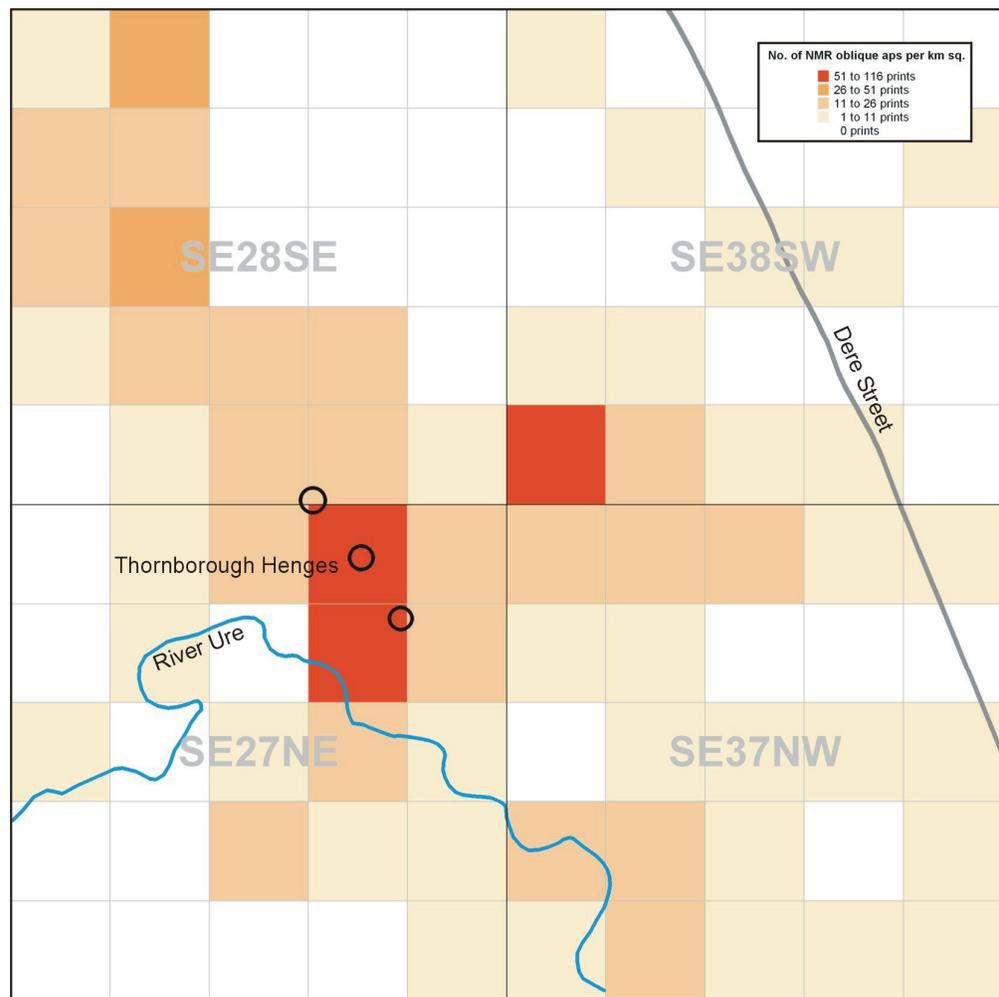


Figure 2. The distribution of specialist oblique photographs by kilometre square.

The distribution of specialist oblique air photographs is heavily biased towards the area of the two exposed henges, the third is largely under woodland and thus less photographed (see Figure 2). Nearly a quarter of all the oblique photographs cover the two square kilometres in which the Central and Southern henges sit. Other major foci are the villa in Snape with Thorpe and boundaries and enclosure complexes in Kirklington-cum-Upsland and Well. Many areas are without any specialist oblique coverage in this collection.

The vertical photographs available from the NMR span the period between 1940 and 1994. Coverage for each decade from the 1940s to the 1970s is relatively comprehensive. However sorties from the 1980s and 1990s cover only the southern half of the project so there is little record of significant recent changes such as quarrying in the northern half of the project.

Oblique photographs were also kindly loaned from the collection of the North Yorkshire HER. These included photographs taken by Derrick Riley, Anthony Crawshaw, Peter Addyman and NYCC photographers as well as a some prints duplicated from the ULM and the NMR. The coverage offered by this collection was of variable quality but was significant in some locations where the NMR and ULM coverage was lacking, particularly along and to the east of Dere Street.

This project was carried out in collaboration with Cambridge University's Unit for Landscape Modelling (ULM): their contribution being the loan of material from their Air Photo Library. This library kindly loaned nearly three hundred oblique photographs and 8 vertical photographs from this collection. As noted above some ULM photographs were duplicated in the NMR and these were not requested again from this library. As with the distribution of the NMR obliques there is a heavy bias in the ULM oblique coverage towards the area of the henges: at least two-thirds of these photographs were taken of henges and features lying in their immediate environs. Beyond the henge complex ULM oblique coverage is relatively sparse. Prints from just two vertical sorties were consulted from this collection. The ULM has flown a couple of other sorties in this area but does not hold print copies of these photographs.

The table below quantifies the holdings of each collection, within which there is considerable duplication. Reference numbers for the NMR loans are given by quarter sheet in Appendix 4 and full contact details for each collection are given in Appendix 5. Lists of all the photographs consulted will be kept by the project team and are available on request.

| Collection Name | No. of oblique photographs | No. of vertical photographs |
|------------------------|-----------------------------------|------------------------------------|
| NMR | 716 | 1013 |
| ULM | 296 | 8 |
| NY HER | 241 | None consulted |

Existing records

The National Monuments Record database (AMIE) was routinely consulted. This process was assisted by the output from English Heritage's GIS, which facilitates graphic representation of the records with attached summary data.

Data for the project areas from the Historic Environment Record (HER) of North Yorkshire were made available by Nick Boldrini, HER Officer for North Yorkshire County Council. Where possible the NMR records that were created or enhanced by this project were concorded with the existing HER records.

Dr Jan Harding, School of Historical Studies, University of Newcastle Upon Tyne, kindly supplied the project with data generated from his ongoing investigations in the area. This included plans from geophysical survey, topographic survey, excavation, field walking, some historic excavations and some basic transcriptions from air photographs. The material supplied was over and above the information already widely available on the website of the ALSF-funded The Neolithic Monument Complex of Thornborough project (<http://thornborough.ncl.ac.uk>).

Other online resources consulted include the draft desk based assessment prepared for the Nosterfield area by Field Archaeology Specialists for Mike Griffiths Associates (Roe 2003).

METHODOLOGY AND RECORDING

Mapping Methods

All the available air photographs from the specified sources were examined under magnification and stereoscopically where possible. Photographs selected for transcription (rectification and mapping) were scanned at a suitable resolution, this was usually 300dpi, and output as uncompressed TIFF format images (.TIF). Where permission to scan was not forthcoming from the copyright holder the necessary information was traced onto acetate sheets and these were scanned and rectified.

Scanned images were rectified using the specialist software AERIAL5.24. Control information was mostly derived from the Ordnance Survey Land-Line™ 1:2500 scale vector maps, which were also used as a base for mapping. Height information from the OS Land-form Profile™ (5m vertical interval, 1:10 000 scale) was used to create Digital Terrain Models in AERIAL where the topography rendered this necessary. Accuracy for the Ordnance Survey raster 1:2500 maps is in the range of ±2m and rectification of photographs is normally within ±2.5m.

Rectified images were produced from AERIAL5.24 in uncompressed TIFF format at a resolution of 300 dpi and a scale of 1:2500. A World file (.TFW) was created alongside each TIFF file and the control information was retained in the AERIAL RDA file (.RDA).

Individual digital drawings were created for each map quarter sheet in Autodesk Map 2004®. The rectified image was placed into the relevant map drawing, the information in the World file determined the image's correct position and scale. The

archaeological features were then traced from the photograph into the standard NMP layers using the established NMP conventions (see Appendix 1).

Recording Strategy

There are three strands to the NMP recording strategy. The main strand is the creation of new or the enhancement of existing monument records in the National Monument Record's AMIE database. In the AMIE database the record entries or enhancements generated by this project record the key locational information, the monument types present and their dating, the nature of the evidence, a free text description of the monument or monument group, the source of record information (i.e. photograph, bibliographic or cartographic references) and administrative details such as concordance with SMR records, record authorship, and links to events and archives.

These records are linked, via the monument UID to the second strand, the graphical representation of the archaeological monuments in Autodesk Map 2004®.

To assist in the management and querying of the actual map data in the Autodesk Map 2004® environment and in English Heritage's planned GIS a summary of some of the database information is attached to each individual mapped feature. Two tables of data are attached to each feature, the content of these tables is listed Appendix 2.

PROJECT MANAGEMENT

The mapping and recording for the project was carried out by Matthew Oakey and Daniel van den Toorn, both ASWYAS. Alison Deegan coordinated and monitored the project for ASWYAS, Ian Roberts was ASWYAS Project Manager and Dave MacLeod, AerSI was English Heritage's Project Officer.

The project started on 10th November 2004 and was completed on the 2nd March 2005. This included an extension to the original project timetable of 24 person days to allow the project team to map and document the visible palaeochannels as requested by English Heritage.

The overall time spent on the Thornborough AP Mapping Project was allocated to the different tasks as follows:

Continued overleaf

| Tasks | Person days |
|-------------------------------------|--------------------|
| Mapping & recording | 95 |
| Management of NMR & SMR loans | 8 |
| Other tasks (greatest first): | 34 |
| Palaeochannel work | |
| Liaison meeting (incl. preparation) | |
| Website | |
| Monitoring and coordination | |
| Data checking | |
| Data migration for North Yorkshire | |
| Management report | 4 |
| Total | 141 |

QUANTIFICATION OF PROJECT RESULTS

Quantification of results

This project created 153 new AMIE (NMR) records and made amendments or enhancements to at least another 41 records. Of the new and amended records 163 were not previously recorded in North Yorkshire's Historic Environment Record as digitised monument records.

The predominant forms of evidence were earthworks and crop marks. A small proportion of remains survived as ruined buildings or structures. The form of evidence is simply a record of the nature of the monument on the photograph from which it is recorded and is not intended to be an indication of current condition of the monument. A full list of the types of monuments represented in this project is given in Appendix 4.

DATA ARCHIVING AND DISSEMINATION

Copyright

The copyright of the air photo mapping and associated records produced by this project lies with English Heritage. Licence to use this data has been extended to the North Yorkshire HER.

With permission from the copyright holders, this project scanned a large quantity of photographs. Copyright of this digital data is retained by the original copyright holders.

Project Archive

This project produced four Autodesk Map® 2004 drawing files, one for each whole quarter sheet. These will be deposited with the NMR archive and AerSI shall also retain digital copies. In addition hard-copies of each map, printed at 1:10 000 scale, in colour will also be archived in the NMR. The records that were created or enhanced by this project are part of the National Monuments Records AMIE database.

All requests to consult the project data should be directed to the NMR (see Appendix 5 for address).

There is no precedent for the formal archive deposition of other digital data associated with the project: the scanned image files (.TIF), rectified image (.TIF) files, World files (.TFW), AERIAL rectification files (.RDA) and lists of consulted material (.XLS). For the time being this information will be retained by AerSI.

Project dissemination

During the course of the project the team were in contact with a number of heritage partners and stakeholders on an informal basis as follows:

- Keith Emerick Inspector of Ancient Monuments, English Heritage
- Dr Jan Harding, School of Historical Studies, University of Newcastle Upon Tyne.
- Neil Campling, County Archaeologist, North Yorkshire
- Representatives from the Friends of Thornborough group

On the 25th February the project team presented a summary of results to the Inspector of Ancient Monuments and North Yorkshire's County Archaeologist.

On completion of the project North Yorkshire HER will be supplied with map data in MAPINFO format. The transfer from Autodesk Map to MAPINFO has retained the attached data table structure and content with the addition of fields recording the original layer name, author, date of completion, and, where a concordance has been made, HER record numbers. The NMR records created and amended by this project will be supplied to the HER in a digital rich text format (RTF) as an accompaniment to the mapping.

A brief overview of the project's results will be posted at www.arch.wyjs.org.uk.

BIBLIOGRAPHY

Roe, A. 2003. *Draft Desk Based Assessment: In depth research into the Nosterfield area*. Prepared for Mike Griffiths & Associates. available at <http://www.archaeologicalplanningconsultancy.co.uk/mga/projects/noster/speciali/envass/envappa.html>

RCHME 1997. The National Mapping Programme – Sphere of Interest. Internal draft document.

Roberts, I. and Deegan, A. 2004. The Thornborough Henges Air Photo Mapping Project. ALSF Project Design. Unpublished ASWYAS report

<http://thornborough.ncl.ac.uk>

APPENDIX 1

Autodesk Map MAP® Layer content and drawing conventions

| Layer Name | Layer content | Attached data tables | Layer colour | Linetype |
|-----------------|---|----------------------|--------------|--------------------|
| 0 | none (AutoDESK map requirement) | none | 7 (white) | CONTINUOUS |
| BANK | closed polygons for supra-surface earthen features such as banks, platforms, mounds and spoil heaps | MONUMENT & MONARCH | 1 (red) | CONTINUOUS |
| BANKFILL | solid fill for bank layer polygons | MONUMENT & MONARCH | 1 (red) | NA |
| DITCH | closed polygons for cut or wear features such as ditches, ponds, pits or hollow-ways | MONUMENT & MONARCH | 3 (green) | CONTINUOUS |
| DITCHFILL | solid fill for ditch layer polygons | MONUMENT & MONARCH | 3 (green) | NA |
| EXTENT OF AREA | closed polygons outlining complex or extensive remains such as mining or army camps | MONUMENT & MONARCH | 2 (yellow) | DASHEDX2 |
| GRID | grid lines at 1km intervals | NONE | 7 (white) | CONTINUOUS |
| KEYLAYOUT | Title boxes, key & copyright statement for printing maps all in paper space. Only appears in drawing layouts. | NONE | 7 (white) | CONTINUOUS |
| MONUMENT_PLYGON | closed polygons encircling all the features comprised within a single NMR record. | MONARCH ONLY | 7 (white) | CONTINUOUS |
| RIGARREWK | polyline showing the direction of ploughing in outlines of extant ridge and furrow | MONUMENT & MONARCH | 4 (cyan) | CONTINUOUS |
| RIGARRLEVEL | polyline showing the direction of ploughing in outlines of levelled or crop mark ridge and furrow | MONUMENT & MONARCH | 6 (magenta) | ACAD_ISO03 W100 |
| RIGDOTSEWK | closed polygon defining the furlongs or extent of area of extant ridge and furrow | MONUMENT & MONARCH | 4 (cyan) | DOTX2 |

| Layer Name | Layer content | Attached data tables | Layer colour | Linetype |
|-------------------|---|-----------------------------|---------------------|-----------------|
| RIGDOTSLEVEL | closed polygon defining the furlongs or extent of area of levelled or crop mark ridge and furrow | MONUMENT & MONARCH | 6 (magenta) | DOTX2 |
| STRUCTURE | for all stone, concrete, metal and timber features, structures and erections | MONUMENT & MONARCH | 7 (white) | CONTINUOUS |
| THACHURE | polyline t-hachure convention to schematise sloped features indicating the top of slope and direction of slope. | MONUMENT & MONARCH | 5 (blue) | CONTINUOUS |
| VIEWPORT | an administrative layer to allow printing | NONE | 7 (white) | CONTINUOUS |

APPENDIX 2

Autodesk Map 2004® Attached Data Tables

MONUMENT DATA TABLE

The Monument Data Table consists of five fields that are input directly through Autodesk Map®. The content of the MONARCH, PERIOD, TYPE and EVIDENCE fields duplicate that of the related fields in AMIE. In this context the PHOTO field identifies the photograph from which the feature was actually traced. This may not reflect the reference given in AMIE as the latter is intended for the “best illustrative” photograph of the archaeology.

| Field name | Field content | Sample data for the Northern Henge |
|------------|--|------------------------------------|
| MONARCH | AMIE Unique Identifier (UID) | 1,043,117 |
| PERIOD | date of features (EH Thesaurus) | NEOLITHIC |
| TYPE | monument type (EH Thesaurus) | HENGE |
| EVIDENCE | Form of remains (EH Thesaurus) | CROPMARK |
| PHOTO | NMR or other reference for the photograph from which the feature was plotted and its date of photography | ULM BTY/043 05-Jul-1975 |

MONARCH DATA TABLE

The Monarch Data Table comprises just one field which records the AMIE Monument UID.

| Field name | Field content | Sample data for the Northern Henge |
|------------|------------------------------|------------------------------------|
| MONARCH | AMIE Unique Identifier (UID) | 1,043,117 |

APPENDIX 3

EH Thesaurus terms indexed by the Lower Wharfedale NMP project.

| | |
|--------------------------|---------------------------|
| A ANGLE TOWER | M MOTTE |
| AVENUE | MOUND |
| B BANK (EARTHWORK) | N NARROW RIDGE AND FURROW |
| BARROW | O ORDNANCE FACTORY |
| BOMBING RANGE | ORDNANCE STORE |
| BOMBING RANGE MARKER | OVAL ENCLOSURE |
| BUILDING PLATFORM | P PARK PALE |
| C CAUSEWAY | PIT |
| CHAPEL | PIT ALIGNMENT |
| CIRCULAR ENCLOSURE | POND |
| CURSUS | POND BARROW |
| CURVILINEAR ENCLOSURE | Q QUARRY |
| D D SHAPED ENCLOSURE | R RAILWAY |
| DESERTED SETTLEMENT | RAILWAY CUTTING |
| DIPPING WELL | RAILWAY EMBANKMENT |
| DITCH | RECTANGULAR ENCLOSURE |
| DOUBLE DITCHED ENCLOSURE | RECTILINEAR ENCLOSURE |
| E ENCLOSURE | RIDGE AND FURROW |
| EXTRACTIVE PIT | RING BANK |
| F FIELD BOUNDARY | RING DITCH |
| FORT | ROUND BARROW |
| G GARDEN FEATURE | ROUND HOUSE (DOMESTIC) |
| GRAVEL PIT | S SAND AND GRAVEL |
| GRUBENHAUS | EXTRACTION SITE |
| H HENGE | STACK STAND |
| HILLFORT | STRUCTURE |
| HOLLOW | SUB CIRCULAR ENCLOSURE |
| HOLLOW WAY | T TEMPORARY CAMP |
| HOUSE PLATFORM | TERRACED GROUND |
| I INHUMATION | TOFT |
| K KILN | TRACKWAY |
| L LIMESTONE QUARRY | TRENCH |
| LYNCHET | V VILLA |
| M MACULA | |
| MARL PIT | |
| MILL | |
| MOAT | |
| MORTUARY ENCLOSURE | |

APPENDIX 4

Map quarter sheet information

| Map | Author | No. of records | | End date | NMR loan ref. |
|--------|--------|----------------|---------|----------|---------------|
| | | New | Amended | | |
| SE27NE | MO | 52 | 16 | 7/01/05 | 69905 |
| SE28SE | DVDT | 34 | 10 | 13/01/05 | 69905 |
| SE37NW | DVDT | 37 | 7 | 3/02/05 | 69905 |
| SE38SW | MO | 30 | 8 | 3/02/05 | 69905 |

APPENDIX 5

The air photo collections consulted for this project:

National Monument Record
English Heritage
National Monuments Record Centre
Great Western Village
Kemble Drive
Swindon
SN2 2GZ
Heritage Unit
North Yorkshire County Council
County Hall
Northallerton
North Yorkshire
DL7 8AH
Unit for Landscape Modelling
University of Cambridge
Air Photograph Library
Sir William Hardy Building
Tennis Court Road,
Cambridge
CB2 1QB
<http://www.uflm.cam.ac.uk>
