

**Vale of York National Mapping Programme  
Project Review**

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## **1. BACKGROUND**

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### **Description of the area examined**

The project area is bounded to the south by the rivers Aire and Humber and to the west by the eastern edge of the Magnesian Limestone. The underlying geology of the project area is mainly glacial clays, gravels and aeolian sands, with bands of alluvial deposits along the courses of the rivers Ouse, Derwent, Wharfe and Aire (Figure 1). Nine rivers cut the project area. The project area is bounded on the east by the Yorkshire Wolds National Mapping Programme (NMP) project and to the north by the Howardian Hills NMP project (Figure 2).

The project area covers 1,675 square kilometres (67 quarter sheets). For management purposes the project was split into a series of blocks, each of between six and ten quarter sheets. Some of these blocks were subdivided for the purposes of photographic loans. There were eight blocks in total (Figure 5). The mapping was started in January 1998 and was finished in December 2000.

### **Reasons for and circumstance of the project**

The survey of the Vale of York forms part of the National Mapping Programme, undertaken by the Aerial Survey section. The project was started under the auspices of the Royal Commission on the Historical Monuments of England (RCHME) and continued, after merger, under English Heritage. The surrounding area has benefited from three RCHME air photo interpretation and mapping projects: the Yorkshire Dales (Horne and Macleod 1995), the Yorkshire Wolds (Stoertz 1997) and the Howardian Hills (Carter 1995), for NMP. Therefore, comparisons could be made between areas mapped at a consistent scale.

The Vale of York has been subjected to very little archaeological landscape study, as historically most archaeological work has concentrated on the Wolds of the East Riding or on particular sites. The archaeology of the Vale is subject to continued threats from ploughing and development. Reconnaissance in the area over the past ten years has substantially increased the photographic resource available. It was therefore felt that the area would benefit from a comprehensive survey of archaeological features, establishing the potential of the area and identifying areas for further reconnaissance and research.

The aim was to provide the National Monuments Record (NMR) and local Sites and Monuments Records (SMRs) with a comprehensive database of archaeological information, recorded from air photographs. This information would be used for planning purposes by the County and City councils and would build upon and consolidate work previously undertaken in the Vale, establishing the potential of the area and identifying

areas for further research and reconnaissance. It is anticipated that the results of the Vale of York NMP project will feed directly into the Monuments Protection Programme work for this area.

**Products and Archive deposition**

Items relating to the project are deposited in the archive at the National Monuments Record Centre, Kemble Drive, Swindon SN2 2GZ and the Aerial Survey section, 37 Tanner Row, York YO1 6WP. The items include the original transcriptions (ink versions) for six maps which were manually produced before digital recording was introduced, digital copies of the AutoCAD mapped information and copies of the output from AutoCAD.

Archive	Swindon	York
Digital AutoCAD drawings	√	√
Output from AutoCAD on film overlays	√	√
Original inked transcriptions for Block 1, six overlays in total	√	
Project specification	√	√
NMR photograph loan lists		√
CUCAP photograph loan lists		√
YAT photograph loan lists		√
Anthony Crawshaw photograph loan lists		√
Documentation relating to the liaison group meetings		√
Map showing modern civil parish boundaries in project area		√
Correspondence relating to enquiries		√
Digital copy of MAPS database	√	√

Data Exchange between the SMRs and English Heritage was carried out informally for the length of the project. The SMRs supplied copies of their records and in the case of (North Yorkshire County Council) NYCC their photographs, which were returned at the end of the project. The quality and quantity of SMR records varied enormously for the project area. Some areas had no information at all, other records were one line brief descriptions only, whilst some parts of the area have very detailed records (for example from the North Yorkshire SMR). The project team responded to specific inquiries from SMRs during the project. The expectation is that at the end of the project the SMRs will receive both digital data and records from the project.

### **Previous Work**

The area of the Vale of York has not been the subject of extensive archaeological study previously. However, the balance has begun to be redressed in recent years with the completion of several individual projects, for example work on cropmark sites in Naburn Parish by Bradford University and many other small-scale projects. RCHME had carried out several air photo interpretation surveys, at various levels/scales, previously in the project area - Roall Manor Farm, Skipwith Common, Ferrybridge, Bolesford, Sheriff Hutton and Newton Kyme (for details see Kershaw 1997). RCHME had also completed an earthwork survey at Castle Garth, Cawood.

Wherever possible the air photo interpreters made reference to recent work carried out in the area and benefited from liaison with ongoing projects, especially the following:

Naburn Parish Survey - Bradford University

Excavations at Hayton - Durham University and Peter Halkon

Park Farm, Skipwith (farm survey) - English Heritage funded MAP Archaeological Consultants

Stamford Bridge - Ian Lawton

Yorkshire Water Pipeline - Nick Pearson, Independent Archaeological Consultant

Buttercrambe (geophysical survey) - Durham University

Humber Wetlands Project – Wetland Archaeology and Environments Research Centre, University of Hull

BP Amoco Teeside to Saltend Ethylene Pipeline – AC Archaeology

## **2. AIMS AND OBJECTIVES**

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### **Research design**

There were a number of important reasons for conducting a survey on this area at the present time:

- There is a constant threat to archaeology from deep ploughing on soil that is particularly prone to severe wind erosion.
- There is a threat to medieval earthworks as a result of piecemeal development in and around villages.
- An increased demand for housing and development of green field sites around York is a major threat to archaeology in the Vale.
- The NMR and SMR records (North Yorkshire and the East Riding of Yorkshire) for the areas to the south and north-west of York were deficient. Similarly the new City of York unitary authority needed up-to-date information for the area within its expanded boundaries.
- An opportunity existed for English Heritage to collaborate with local universities and other bodies who were carrying out research in the area for example York, Bradford, Durham and the Humber Wetlands Project. This was an opportunity for English Heritage to have an informing role in designing a future research strategy.
- To the north and east the project area is bounded by two previously completed NMP project areas, the Howardian Hills and the Yorkshire Wolds, providing an opportunity to explore the archaeological relationships between these three topographically diverse areas (Figure 2)
- English Heritage northern reconnaissance flies from within the Vale of York, therefore, there was a need for up-to-date mapped information to maximise the effectiveness of flights.

### **Publication and presentation**

A day school on the archaeology of the Vale of York was held on May 19<sup>th</sup>, 2001. Over 200 delegates attended, from professional peers to interested members of the general public. Papers from this day school will be published in 2002. The papers presented addressed all current research questions, which are being tackled in recent work in the area, including the academic issue of the use of air photography as a research tool in conjunction with field survey and excavation.

The papers are as follows:

- Antonia Kershaw and Peter Horne (English Heritage) ‘An introduction to the Vale of York NMP’
- Dr Andy Howard and R Kingston (University of Leeds) ‘The physical setting of the Vale of York and the relationship of geology and soils to archaeological landscapes identified by the National Mapping Programme’
- Dr Henry Chapman (Wetland Archaeology and Environments Research Centre, University of Hull) ‘Developing an understanding of spatial variations in the archaeology of the southern part of the Vale’
- Terry Manby (Independent Consultant) ‘Earlier prehistoric archaeology in the Vale of York’
- Mark Whyman (York Archaeological Trust) ‘Seen and not seen?: late prehistoric and Romano-British archaeology in the northern Vale of York’
- Dilwyn Jones (English Heritage) ‘Romano-British settlement in the Vale of York – the aerial perspective’
- Peter Halkon (University of Hull) ‘Investigating Iron Age and Roman landscape and land use in the Foulness valley, East Yorkshire’
- Peter Cox (AC archaeology) ‘Archaeological results from the BP Amoco Teeside to Saltend pipeline 1998 – 2000’
- Yvonne Boutwood (English Heritage) ‘Roman roads and military sites in the Vale of York and beyond’
- Barry Harrison (Independent Consultant) ‘Ouse and Derwent – medieval documents and air photographs’
- Peter Horne (English Heritage) ‘An embankment cross and a note on the type’
- Ann Carter (English Heritage) ‘Evidence for the flax and hemp industry in the Vale of York’
- Antonia Kershaw (English Heritage) ‘Twentieth century military remains and the Vale of York’
- Eric Branse-Instone (English Heritage) ‘Vale of York NMP and the MPP – How aerial photographs help with protecting monuments’
- John Oxley (City of York Council) ‘Defining York’s Green Belt: the archaeological dimension’

- Ceinwen Paynton and Linda Smith (Finding Our Past Project and North Yorkshire County Council) ‘Public archaeology and the National Mapping Programme’
- Martin Millet (Southampton University) Concluding discussion

### 3. METHODS STATEMENT

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#### Sources

##### Oblique Photography

A quantification of the air photographs for North Yorkshire was funded by RCHME and carried out between April 1992 and February 1993 (Figure 3). Only oblique photography was quantified. The index of photography held at the NYCC offices at Northallerton was interrogated. This index lists the photographs of regional fliers as well as NYCC's own collection and parts of the Cambridge University Committee for Aerial Photography (CUCAP) collection. The NMR listings were also consulted. No photography post 1991 was quantified. From this quantification there was a total of 8,650 oblique photographs for the project area. The quantification did not cover the East Riding, leaving 14 maps which were not quantified, whilst others, on the border, may have inaccurate figures. There has also been a great deal of reconnaissance in the Vale of York by RCHME/English Heritage in recent years which may have more doubled the numbers of photographs for certain quarter sheets. For some maps the low number of photographs reflects the restrictions on flying within the Military Air Traffic Zones and will be an even less accurate representation of the density of archaeological sites in these areas (Figure 4).

The main source of oblique, 'specialist' photography for the project area is the collection held in the NMR. This includes copies of the photography of some of the main fliers previously active in the area (Derrick Riley, West Yorkshire Archaeological Services, Jim Pickering, NYCC Archaeology Section). A coversearch from the NMR from September 1997 totalled 10,060 prints for the project area. Ultimately 12,200 obliques from the NMR were consulted. In a matter of two to three years the NMR resource for the area had been increased by 2,140 photographs for an area of only 1,675 square kilometres. A brief examination of the coversearches for the whole project showed that approximately 74% of the oblique photography dated from 1990 onwards. It can be assumed that the majority of this photography was taken as part of the RCHME/English Heritage reconnaissance programme, obviously increasing the available photographic resource enormously.

The second important collection for the project area is that of CUCAP. Arrangements to borrow prints from this collection were made on a block by block basis; approximately 750 prints were borrowed. There are collections of local fliers' material, which are not held in the NMR collection, these include the work of Peter Addyman, Anthony Crawshaw and Peter Halkon. Arrangements were made to borrow all of the relevant material from these sources and resulted in loans of 2170 prints from Peter Addyman's

collection; 4170 from Anthony Crawshaw's collection and 90 prints from Peter Halkon's collection. Over 300 photographs were borrowed from Humber Archaeology Partnership. The project also borrowed a large number of photographs from North Yorkshire County Council including over 500 prints from the council's own collection. In total over 20,000 specialist photographs were examined.

The earliest specialist photographs used for the mapping were those from 1929, in the OGS Crawford collection, and the latest were prints from 1999 part of English Heritage's own reconnaissance programme. The majority of the material came from a limited number of flyers/collections – English Heritage (NMR), CUCAP, OGS Crawford, Anthony Crawshaw, Peter Addyman, Peter Halkon, Derrick Riley, Jim Pickering, Fred Hartley, Chris Cox, Humberside County Council, West Yorkshire Archaeology Service. Altogether 19 different sources of specialist photography were used.

### Vertical Photography

The main source was the NMR, which holds extensive cover for this area, almost 21,000 prints from over 300 sorties. The NMR collection includes material from commercial flyers such as Hunting Surveys Limited and Meridian Airmaps Limited as well as Royal Air Force (RAF) and Ordnance Survey sorties.

The earliest vertical photography used was some RAF photographs from 1938, and the latest were from 1986, Ordnance Survey prints. There was quite a lot of vertical photography from the early 1940s, the 'M' series, which were taken to test camouflage and decoys. This testifies to the military importance of the Vale during the Second World War when numerous military airfields and camps were operational in this area.

It was not possible to carry out an exhaustive search for further photography, which may be held by commercial air survey companies or private individuals. Although it is possible that some such coverage exists, it is unlikely to contain significant amounts of archaeological information not already recorded on the photographs, which were available for consultation.

### **Mapping methods**

The recording practice of the National Mapping Programme was under review at the beginning of the project. New working methods were implemented during the project and involved a change to digital mapping and direct input to English Heritage's NewHIS database. Therefore, some time for training and familiarisation was included in the project timetable.

A limited number of days during the project was assigned to fieldwork and landscape reconnaissance, although it was difficult to find time in busy timetables to organise more than a few days. These fieldwork days enable team members to familiarise themselves with the topography, geology and archaeology of the project area, and to visit selected sites which have been identified as being of particular interest, in order to aid interpretation. Fieldwork was found to be particularly useful when undertaken with colleagues from other sections and other members of the liaison group.

### **Recording practice**

Six maps (Block 1) were originally manually transcribed and the resultant overlays were digitised into AutoCAD. The process of mapping then changed to a digital format. Several different working methods were tried before a common scheme was adopted, comprising several stages:

- Drawing set up in AutoCAD with a grid and standard layers
- Ordnance Survey 1:10,000 background imported as layer into AutoCAD
- Photograph of particular site scanned
- Scan manipulated if necessary in either Adobe PhotoShop, Corel Photopaint or Microsoft Photo Editor
- Photograph opened in Aerial 5.12 and rectified
- Rectified photograph imported into AutoCAD
- Archaeology traced from photograph in AutoCAD
- Text record made in NewHIS
- NewHIS reference added to appropriate parts of drawing in AutoCAD
- Morphological record made for selected sites in Aerial Survey Recording Module

### **Sphere of interest**

The aim of the National Mapping Programme (NMP) is to identify, interpret and record all probable and possible archaeological features visible on air photographs as cropmarks, soilmarks, parchmarks and earthworks that fall within the sphere of interest. The recording methods used by NMP are a combination of a transcription (a graphical illustration at a nominal scale of 1:10,000) and an indexed textual record held digitally (see recording practice). The details of the NMP Sphere of Interest are available in a draft document (RCHME 1997); the main points are summarised below. The standard sphere of interest, which was used for the Vale of York project, is detailed in the project specification (Kershaw and Macleod 1997), however, many of the categories of features originally specified were not needed.

### **Sources of Information**

The NMR textual monument record currently held on NewHIS was consulted and was used as the basis for further recording. Other sources of information were assessed, for example data from field survey, geophysical surveys, excavations and historic maps. Where an existing survey was produced to a higher specification and larger scale than the NMP, the plan was used as the basis for drawing a simplified plan to NMP standards. Where it was not possible to verify a pre-existing survey, for example, a site was not visible on any available air photographs (for example tree cover); it was not transcribed but may if necessary have been recorded textually.

### **Buildings**

The foundations of buildings visible as cropmarks, soilmarks, parchmarks, earthworks or ruined stonework were transcribed and recorded. Standing roofed or un-roofed buildings were not transcribed. The only building platforms recorded were generally associated with 20<sup>th</sup> century military remains.

### **Ridge and Furrow**

All ridge and furrow was recorded, regardless of preservation. It was decided to differentiate between extant and levelled ridge and furrow (this was due to a request from NYCC). Two drawing conventions were used. Extant ridge and furrow was depicted, as before, using a dotted outline with a solid outline for the direction of the furrows. Plough-levelled ridge and furrow was depicted with a dotted outline and a dashed arrow showing direction. Rather than outlining post-medieval field divisions large areas of ridge and furrow were outlined where the rig lay in broadly the same direction. A brief textual

record was created describing the preservation and visibility of the rig within modern civil parishes.

#### Post Medieval Field Boundaries

Some post-medieval field boundaries, not recorded on the Ordnance Survey maps, were transcribed, as they may have been mistaken for ancient archaeological features. Field boundaries, which had already been mapped by the Ordnance Survey, were not re-recorded.

#### Parkland, Landscaped Parks, Gardens and Country Houses

Some park features were recorded in a brief text record, but not transcribed. 20th century parks and gardens were not recorded.

#### Industrial Features and Extraction

The only industrial features recorded were some pottery works, there were no large industrial complexes. Widespread and common small-scale extraction of resources for immediately local use was not recorded.

#### Transport

Major transport features (for example main railways) were not normally transcribed although part of a disused canal was recorded.

#### 20th Century Military Features

It is within the brief of English Heritage to record former military sites and installations, and monuments in this category were included in the survey for example searchlight batteries, airfields, decoys, bomb storage and POW camps. Advice was sought on matters relating to this subject from Roger Thomas, Military Recording Officer for English Heritage, based in York.

#### Urban Areas

Archaeological features of the pre-urban landscape meeting the previous criteria, when identified within urban areas either as islands of survival or built over since the date of photography, were recorded. Elements of the urban landscape (for example factories, housing, transport termini), particularly 20th century development, were not recorded. Very little was recorded within the developed areas of York and surrounding villages

apart from fragments of ridge and furrow which had been long since built over.

#### Geological Features

Geological features were not transcribed. If there was a risk of confusion with archaeological features then the geological features were mentioned in the text record.

## **4. RESOURCES AND PROGRAMMING**

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### **Staffing and equipment**

#### **Project Management**

The responsibility for the day-to-day management of the project was split between the team members with each taking on the management of particular aspects, for example monitoring business targets, organising photographic loans, arranging liaison with external bodies, preparing exhibitions and lectures and data exchange.

The core project team for the Vale of York Project consisted of four members - Yvonne Boutwood, Ann Carter, Dilwyn Jones and Antonia Kershaw (all Investigators Grade 3). Intermittently there were five members on the team. Other staff who worked on the project was David Macleod and Jane Stone (Investigators Grade 3). Targets for the project were set each quarter; the progress of mapping and recording was monitored on a computer database, which was filled in at the end of each stage.

A project liaison group was initiated comprising the Head of Aerial Survey, Team Leader Aerial Survey (North), project team members, NMR liaison, Archaeology Field Section and Ancient Monument Inspectors all from English Heritage. Also included were representatives from the local councils, North Yorkshire, York City, colleagues from universities involved in work in the area (Durham, Bradford and York), and of local consultants working in the project area (Humber Archaeological Partnership and York Archaeological Trust, Wetland Archaeology and Environments Research Centre).

## 5. SUMMARY OF RESULTS

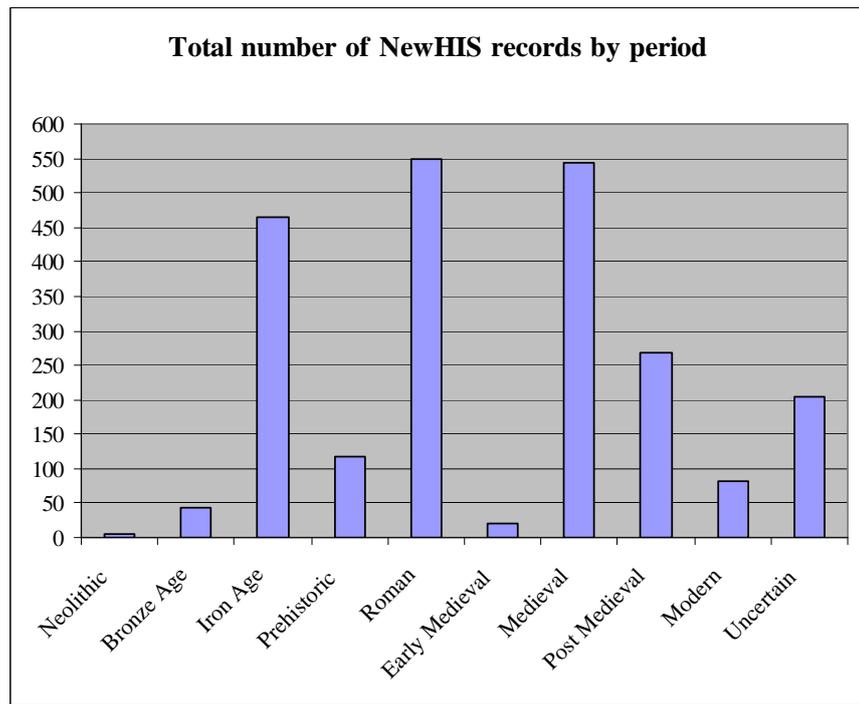
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The results of the project can most easily be illustrated by a few statistics:

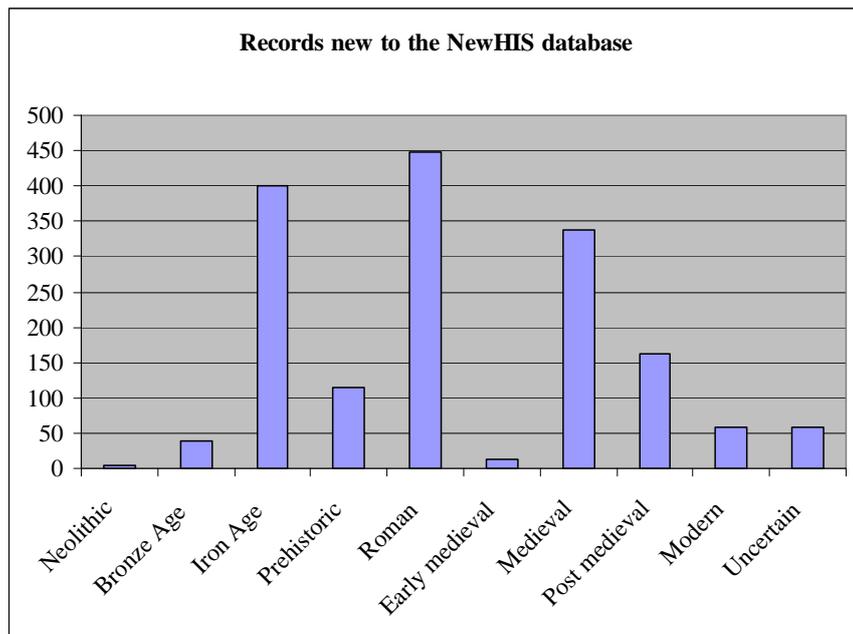
- 1312 records newly created in NewHIS (77% of the total number of records for the project)
- 393 records in NewHIS enhanced (23% of the total number of records for the project)
- 14% of records which have an SMR reference have been newly created or enhanced in NewHIS

In terms of additions to our archaeological knowledge of the area, there were several highlights:

- Remains of extensive Romano-British field systems and settlements were recorded.
- Rare earthwork survivals of Roman or Iron Age enclosures were mapped for the first time.
- The Roman roadside settlement at Stamford Bridge was a new addition to NewHIS.
- New sections of Roman road were plotted throughout the project area. Also previously assumed sections of road were discounted, simplifying the picture of Roman transport networks in the Vale.
- Much evidence of the medieval retting industry (of flax and hemp) was recorded including both rectangular and circular pits, many of these features had never previously been mapped or had been misinterpreted.
- The Roman forts and settlements at Newton Kyme and Roall (which were the subject of previous, more detailed surveys) were put into a landscape context, enhancing interpretation of these sites and reiterating the value of the landscape overview produced by NMP projects.



- Sites which were indexed as two periods (for example, Iron Age and Roman) will appear twice in the figures
- Figures are approximate, not exact
- The ‘uncertain’ category refers to sites where the date cannot easily be discerned.



## 6. BIBLIOGRAPHY

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Carter, A 1995 *Howardian Hills Mapping Project: A report for the National Mapping Programme* (Aerial Survey report series). York: Royal Commission on the Historical Monuments of England

Horne, P D and Macleod, D 1995 *The Yorkshire Dales Mapping Project. A report for the National Mapping Programme* (Aerial Survey report series). York: Royal Commission on the Historical Monuments of England

Kershaw, A and Macleod, D 1997 *National Mapping Programme. Vale of York Mapping Project. Project Design* (Aerial Survey report series) York: Royal Commission on the Historical Monuments of England

RCHME 1997 *The National Mapping Programme – Sphere of Interest* (Aerial Survey report series) Swindon: Royal Commission on the Historical Monuments of England

Stoertz, C 1997 *Ancient landscapes of the Yorkshire Wolds: aerial photographic transcription and analysis*. Swindon: Royal Commission on the Historical Monuments of England

## 7. APPENDICES

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### Appendix A

#### Sources Consulted – Air Photographs

National Monuments Record

National Monuments Record Centre

Kemble Drive

Swindon

Wiltshire SN2 2GZ

Area	Loan Number	Date
City of York	4997/97	25.09.97
Block 1	5630/97A	20.11.97
Block 2	721/9798	13.01.98
Block 3A	8221/9899A	30.11.98
Block 3B	8221/9899B	28.01.99
Block 4	11222/9899	05.03.99
Block 5	3047/9900	11.06.99
Block 6 A	7365/9900	17.11.99
Block 6B	11341/9900	17.02.00
Block 7	13555/9900	18.03.00
Block 8	13783/9900	14.04.00

#### Sites and Monuments Record

Heritage Unit

Environmental Services

County Hall

Northallerton

North Yorkshire DL7 8AH

Photography loaned to the project from North Yorkshire County Council was not consistently listed. Any photographs, which formed part of the collection for an individual quarter sheet, were borrowed regardless of whether some prints may have already been received through another source.

University of Cambridge Committee for Aerial Photography

Mond Building

Free School Lane

Cambridge CB2 3RF

Detailed lists of all CUCAP oblique and vertical photography loaned to the project form part of the project archive held in the York Office. Photography, which was examined at the University in person, was not consistently listed.

Humber Archaeology Partnership

Sites and Monuments Record

The Old School

Northumberland Avenue

Hull HU2 0LN

Detailed lists of all HAP oblique photography loaned to the project form part of the project archive held in the York Office.

York Archaeological Trust for Excavation and Research Ltd

Cromwell House

13 Ogleforth

York YO1 2JG

Detailed lists of all YAT oblique photography loaned to the project form part of the project archive held in the York Office.

Anthony Crawshaw

15 Kings Staith

York YO1 9SN

Detailed lists of all of Anthony Crawshaw's oblique photography loaned to the project form part of the project archive held in the York Office.

**Appendix B Drawing Conventions**

AIRFIELD	- for outlining airfields, including runways and military camps
BANK	- embanked features (features outlined and filled in with stipple)
DITCH	- features seen as ditches and pits and ponds
EXTENT OF AREA	- areas of extraction or disturbance
GRID	- grid corresponding to 1km squares at 1:10,000 scale
PITALIGNMENT	- linear features comprising pits, distinct from ditch layer
RIGARROWCM	- arrow showing direction of ploughing on levelled ridge and furrow
RIGARROWEWK	- arrow showing direction of ploughing on extant ridge and furrow
RIGDOTSCM	- outline of fields of levelled ridge and furrow
RIGDOTSEWK	- outline of fields of extant ridge and furrow
STRUCTURE	- upstanding walls, paths, building foundations etc
T	- scarps, terraces
THINBANK	- thin embanked features too narrow to depict with stipple

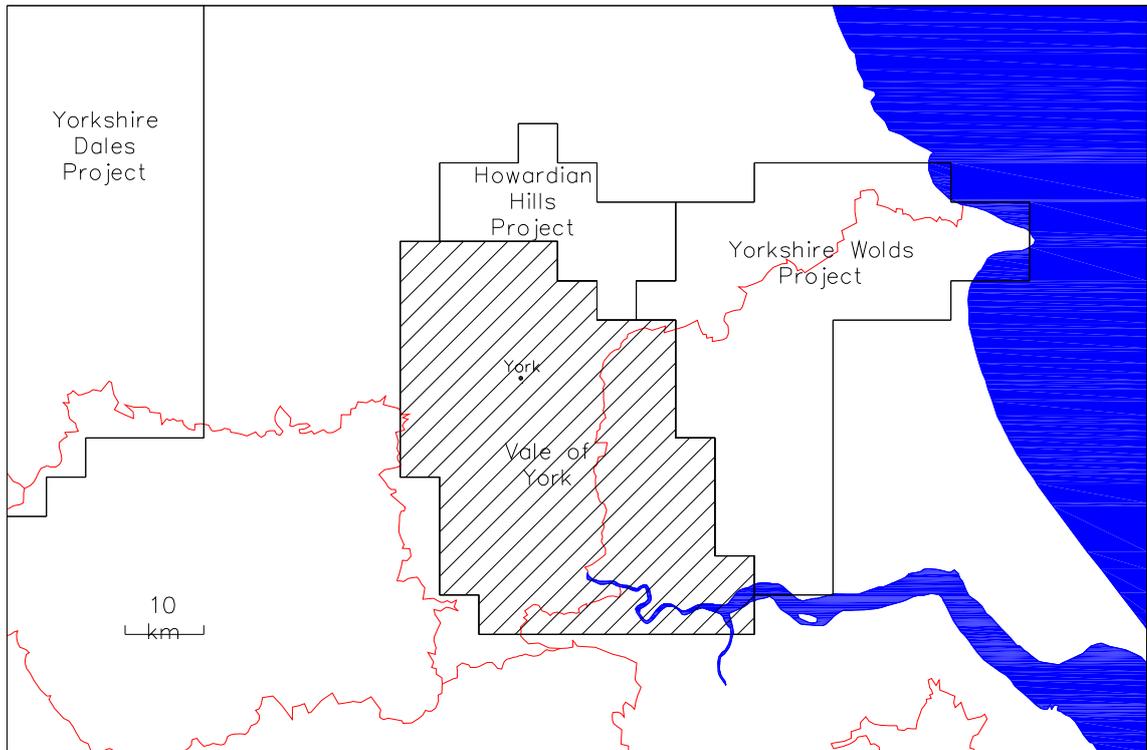
<u>LAYER</u>	<u>COLOUR</u>	<u>LINETYPE</u>
AIRFIELD	8 (grey)	DASHEDX2
BANK	1 (red)	CONTINUOUS
BANKOUT	1 (red)	CONTINUOUS
DITCH	3 (green)	CONTINUOUS
EXTENT OF AREA	8 (grey)	DIVIDE
GRID	7 (white)	CONTINUOUS
PITALIGNMENT	3 (green)	DOT
RIGARROWCM	6 (magenta)	ACAD_ISO03W100
RIGARROWEWK	4 (cyan)	CONTINUOUS
RIGDOTSCM	6 (magenta)	DOTX2
RIGDOTSEWK	4 (cyan)	DOTX2
STRUCTURE	9 (light grey)	CONTINUOUS
T	5 (blue)	ACAD_ISO02W100
THINBANK	1 (red)	CONTINUOUS

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Figure 2  
PROJECT AREA IN THE CONTEXT OF OTHER NMP PROJECTS



*Figure 2 – Project area in the context of other NMP projects*



Figure 4  
AIR TRAFFIC ZONES

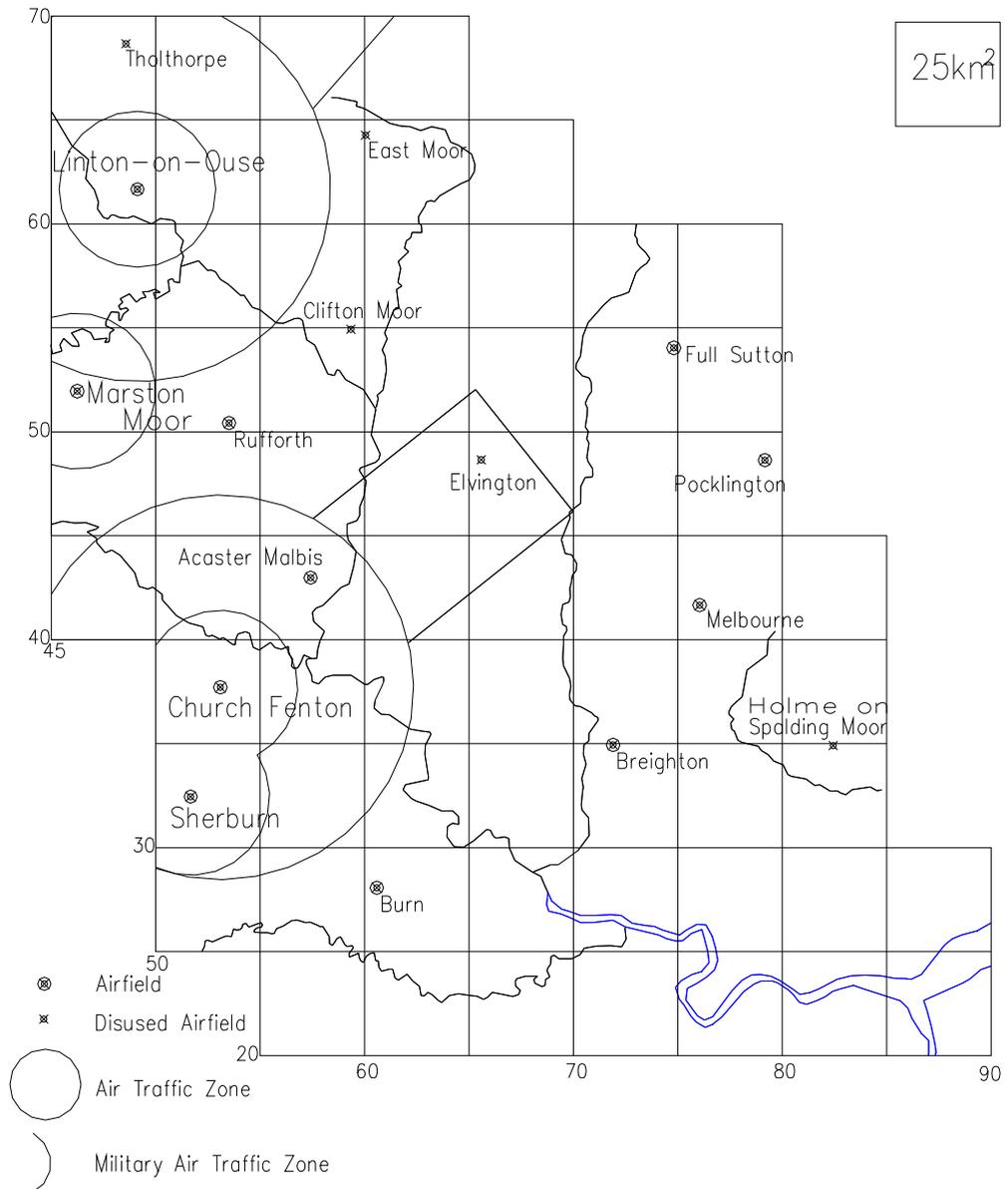


Figure 4 – Air Traffic Zones

Figure 5  
PROJECT AREA BY BLOCK

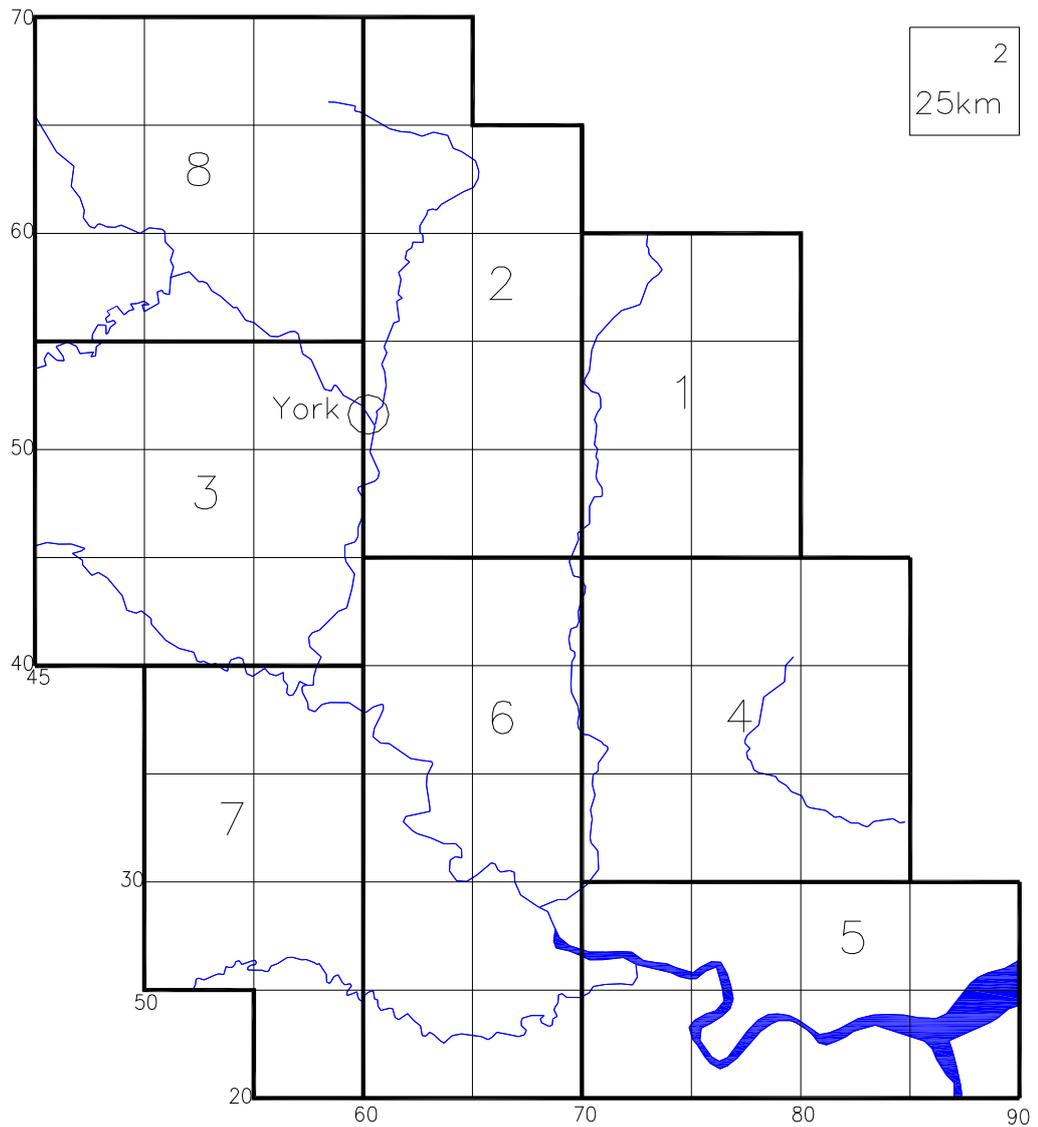


Figure 5 – Project area by block

If you would like this document in a different format, please contact  
our Customer Services department:  
Telephone: 0870 333 1181  
Fax: 01793 414926  
Textphone: 01793 414878  
E-mail: [customers@english-heritage.org.uk](mailto:customers@english-heritage.org.uk)