

December 2000

---

**BIRCHWOOD PARK**  
**RISLEY**  
**CHESHIRE**

**Assessment Report**

Birchwood Park, Risley  
Cheshire

---

Archaeological Assessment Report

Report no 2000-2001/045/AUA8038

Checked by Project Manager. ..... Date
Passed for submission to client. ..... Date

© Lancaster University Archaeological Unit  
Storey Institute  
Meeting House Lane  
Lancaster  
LA1 1TH

December 2000



---

## CONTENTS

---

<b>ACKNOWLEDGEMENTS.....</b>	<b>3</b>
<b>SUMMARY .....</b>	<b>4</b>
<b>1. INTRODUCTION.....</b>	<b>5</b>
1.1 Project Background.....	5
<b>2. METHODOLOGY.....</b>	<b>6</b>
2.1 Project Design .....	6
2.2 Desk-Based Study .....	6
2.3 Field Inspection.....	6
2.4 Archive.....	7
<b>3. BACKGROUND.....</b>	<b>8</b>
3.1 Location and Geology .....	8
3.2 Historical Background .....	8
<b>4. ASSESSMENT RESULTS .....</b>	<b>11</b>
4.1 Sites and Monuments Record.....	11
4.2 The Landscape before the Royal Ordnance factory .....	12
4.3 The Royal Ordnance Factory .....	14
<b>5. SIGNIFICANCE AND IMPACT .....</b>	<b>17</b>
5.1 Schedule of Significance.....	17
5.2 Impact.....	17
<b>6. BIBLIOGRAPHY .....</b>	<b>18</b>
6.1 Primary sources .....	18
6.2 Published Cartographic Sources .....	18
6.3 Secondary Sources .....	18
<b>APPENDIX 1.....</b>	<b>20</b>
Project Brief	
<b>APPENDIX 2.....</b>	<b>21</b>
Project Design	
<b>APPENDIX 3.....</b>	<b>26</b>
Gazetteer of Sites	
<b>APPENDIX 4.....</b>	<b>28</b>
Field Names	
<b>ILLUSTRATIONS .....</b>	<b>29</b>
Fig 1 Birchwood Park: Location Map	
Fig 2 Section of Yates' map of Lancashire (1786)	
Fig 3 Study area superimposed onto the OS 1st edition map (1848)	
Fig 4 Plan of the proposed Royal Ordnance Factory in 1939 (RL A13 ms 2587)	

- Fig 5 Plan of the Royal Ordnance Factory in 1945 (WRL P82335)
- Fig 6 Study area superimposed onto the 1970 OS 1:10,000 map
- Fig 7 General Site Map (1:10,000)
- Fig 8 Vertical Air Photograph of Birchwood Park taken in 1993

---

## ACKNOWLEDGEMENTS

---

Thanks are due to the staff of Lancashire Record Office in Preston and the Warrington Reference Library, and to Mark Leah of Cheshire County Council Archaeology Service for Sites and Monuments Record information and advice. We would also like to thank Simon Witney and Pat Chillingworth of DPDS Consulting group for considerable assistance and for providing the detailed borehole information.

The documentary survey and the rapid field identification survey were carried out by Richard Newman of Lancaster University Archaeological Unit (LUAU). The report was compiled by Richard Newman and edited by Jamie Quartermaine and Rachel Newman. The project was managed by Jamie Quartermaine.

---

## SUMMARY

---

An archaeological assessment of Birchwood Park, Risley, Cheshire (centred on SJ 655 925) was undertaken by Lancaster University Archaeological Unit (LUAU) on behalf of DPDS Consulting, in advance of a business park development. The assessment was undertaken in accordance with a project design prepared by LUAU, which itself was based on a project brief by Mark Leah Archaeological Officer (Development Control) Cheshire County Council. The assessment comprised a desk-based study, compiling data from the Cheshire Sites and Monuments Record, Lancashire Sites and Monuments Record, and Warrington Reference Library and Lancaster University Library, as well as a field inspection.

The Sites and Monument Record contained seventeen sites from the environs of the study area, but none from within the study area.

The site is situated within an area of former mossland on the north bank of the River Mersey which in historic times came to be known as the Rixton/Risley Moss complex. Palaeoecological study of the surviving peats in the Rixton/Risley complex indicates that in the Neolithic period the fen carr was widely established across the shallow wet depressions which characterised the future mosslands (Leah *et al* 1997). Wetter conditions from the early Iron Age led to the coalescence of wetlands into a single continuous moss which persisted in the study area until the medieval/post-medieval reclamation of the mosslands.

While there is evidence of localised reclamation of the moss in the medieval period, centred on sites such as Old Abbey Farm, Risley, it was not until the post-medieval period that any significant reclamation of the mossland occurred. The vicinity of the study area appears to have been reclaimed from moss and was being farmed by the eighteenth century and the land was predominantly in agricultural use until the late 1930s.

At the outset of the Second World War a Royal Ordnance Factory (ROF) was established on the site which filled shells, mines and bombs. It consisted of an array of buildings set within a rectilinear pattern by a road and rail network. Buildings included those for security, administration offices, barracks, magazines and filling sheds and they were divided into groups; the magazines were surrounded by earthen bunkers and probably formed the most prominent landscape feature of the sites.

At the end of the War part of the site was taken over by the Ministry of Supply for atomic energy research and the remainder was acquired for use by the Admiralty as a storage depot. When the Admiralty left in 1961 the site remained derelict until acquired by Warrington New Town in 1968 for redevelopment. Redevelopment of the site since 1972 has removed much of the former fabric and layout of the ROF, although there are localised elements of the road system and some buildings that still survive.

The construction of the ROF involved the removal of the underlying peats prior to construction and consequently there is little or no pre-ROF features within the site. The most significant site within the study area is the remains of the ROF itself, and if it was not for the considerable disturbance to the site inflicted upon it since the 1970s it would be a nationally important site, but in its present condition it is only of local importance.

---

## 1. INTRODUCTION

---

### 1.1 PROJECT BACKGROUND

- 1.1.1 An archaeological assessment was undertaken by Lancaster University Archaeological Unit (LUAU) on behalf of DPDS Consulting, in advance of a business park development (centred on SJ 655925). The study area comprises an area of about 50ha, approximately 6km to the north-east of Warrington (Fig 1).
- 1.1.2 The assessment was undertaken in accordance with a project design prepared by LUAU, which itself was based on a project brief by Mark Leah, Archaeological Officer (Development Control) Cheshire County Council. The purpose of the assessment was to provide an accurate archaeological appraisal of the proposed development area, within its broader context, and it was intended that it should collate all available information relating to the archaeology of the site and to determine the significance of the archaeological resource.
- 1.1.3 The desk-based study consisted of a search of existing records held by the Cheshire Sites and Monuments Record (CSMR), the Lancashire County Record Office in Preston (LRO), and Warrington Reference Library (WRL), as well as available secondary sources held in Lancaster University Library. Both published and unpublished sources were examined. The desk-based survey and the field inspection were undertaken between August and October 2000.
- 1.1.4 This report sets out the results of the work as an appended gazetteer in conjunction with a methodology statement, a brief text description of desk-based and field results, an assessment of the archaeological potential within the study area, and an evaluation of the impact that the development will have upon the archaeological resource, with recommendations for any further archaeological response considered necessary.

---

## 2. METHODOLOGY

---

### 2.1 PROJECT DESIGN

- 2.1.1 A project design (*Appendix 2*) was submitted in June 2000 by LUAU in response to a request by DPDS Consulting Group, for an archaeological assessment of Birchwood Park in advance of a business park development.
- 2.1.2 The project design was prepared in accordance with a brief (*Appendix 1*) by Mark Leah, Archaeological Officer (Development Control) Cheshire County Council. This provided for a desk-based study, a site investigation and the compilation of a written report. The survey has been carried out in accordance with the project design.

### 2.2 DESK-BASED STUDY

- 2.2.1 Existing archaeological information was obtained from the Cheshire SMR. Manuscript maps and selected other documents were studied in the Lancashire Record Office and Warrington Reference Library, along with published antiquarian sources. Available maps and plans were restricted to the Ordnance Survey 6 inches to one mile, 1<sup>st</sup> edition map of 1848 (Sheet 109), Ordnance Survey 6 inches to one mile, 2<sup>nd</sup> edition quarter sheets of 1891, Ordnance Survey 1:10,000 map of 1970, and to estate plans attached to sales particulars. There were very few directly relevant documents in the Lancashire Record Office; however, a list of the documents consulted is given at the end of this report. A set of sale particulars in Warrington Reference Library provided useful information concerning the development of the landscape in the later nineteenth and early to mid-twentieth centuries. Engineer's borehole logs were consulted to assess the survival of peat in the immediate vicinity of the development site (Wimtec Environmental Ltd 1997). Secondary sources were obtained from LUAU's library and the Lancaster University Library.
- 2.2.2 The archive of the Old Abbey Farm, Risley, excavation project, held by LUAU, was consulted. This provided some background information on the development of the local landscape and on the development of local land tenure.

### 2.3 FIELD INSPECTION

- 2.3.1 A field visit was made to the Birchwood area to assess the general nature of the modern landscape in relation to Risley Moss and to locate structures surviving from the period of the Royal Ordnance Factory (ROF) amongst the modern industrial estate buildings. A plan of the ROF dated 1945 (WRL P82335; Fig 5), a copy of the 1970 Ordnance Survey (OS 1:10,000, 1970; Fig 6), and an aerial photograph taken in 1993 (CSMR aerial photograph 1993; Fig 8) were used to identify buildings relating to the ROF. Access was not available to the interior of any of the buildings and detailed inspection of the exterior of some buildings was limited for security reasons, notably those of the United Kingdom Atomic Energy Authority (UKAEA).

## **2.4 ARCHIVE**

- 2.4.1 A full archive of the desk-based study and the field inspection has been produced to a professional standard in accordance with the current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition 1991). The archive will be deposited with the Cheshire Record Office with a copy of the report given to the Sites and Monuments Record. An archaeological fieldwork record form, as recommended by SCAUM, will be forwarded to the National Monuments Record.

---

### 3. BACKGROUND

---

#### 3.1 LOCATION AND GEOLOGY

- 3.1.1 The study area is centred on Ordnance Survey grid reference SJ 655925, in an area of flat reclaimed mossland at about 20m AOD, 6km to the north-east of the centre of Warrington.. Most of the study area lies within the historic township of Risley, formerly part of Lancashire but transferred to Cheshire after 1974 and now part of the unitary authority of Warrington. The area is made up of a mix of industrial units of varying designs and age but all of twentieth century origin.
- 3.1.2 The highest part of the assessment area is at the northern end, at 26m AOD. The solid geology comprises rocks of the Triassic Age consisting of Upper Mottled Sandstone, Keuper Sandstones and Keuper Waterstones (Wimtec Environmental 1997, 2). The overlying drift geology is boulder clay overlain by recent dumped material. There is documentary evidence suggesting the former presence of peats but these were removed at the outset of World War II during the preparation of the site for development (*Section 4.3*). No evidence of peat survival, desiccated or otherwise, is recorded from recently compiled borehole or test pit records (Wimtec Environmental 1997).

#### 3.2 HISTORICAL BACKGROUND

- 3.2.1 The site is situated within an area of former mossland. By the time of the earliest known detailed mapping (nineteenth century), the area was already reclaimed and subdivided into fields.
- 3.2.2 **Prehistory:** the mossland, within which the site is situated, is part of an area of lowland mire on the north bank of the River Mersey which in historic times became known as the Rixton/Risley Moss complex. The earliest evidence for human exploitation of the area is found on the western fringes of Woolston Moss, the north-western portion of the Rixton/Risley complex, and consists of a small concentration of burnt and worked flint of late Mesolithic/early Neolithic date (Leah *et al* 1997, 23). Physically associated with this material were other worked flints considered to be of a late Neolithic/early Bronze Age date. Few other finds of early material have been found in the Rixton/Risley Moss area, though a shaft-holed stone axe of likely Bronze Age date was found on Risley Moss at SJ 66709180 (CSMR 2326). Neither of the two putative, late prehistoric enclosures, as identified from aerial photography, at Hole Mill Farm and Moss Hall, have produced prehistoric artefactual evidence (Leah *et al* 1997, 24).
- 3.2.3 Palaeoecological study of the surviving peats in the Rixton/Risley complex indicates that in the Neolithic period the fen carr was widely established across the shallow wet depressions characterising the future mosslands, although the ridges above the carr may have been more heavily wooded. During the Bronze Age, conditions appear to have been drier and the local environment may have consisted of a series of valley mires interrupted by ridges dominated by scrub woodland. Wetter conditions, probably by the early Iron Age led to the coalescence of the wetlands into a single continuous moss formed of *S imbricatum*-dominated bog. After the establishment of these wet, spongy *Sphagnum* communities, the influence of fire, which had previously been clearly evident on the local environment declined (Leah *et al* 1997, 33). This seems to have been the type of environment



that persisted in the study area until the post-medieval reclamation of the mosslands.

- 3.2.4 **Romano-British and Early Medieval:** no material of Romano-British date has been recorded from the vicinity other than a small and illegible bronze coin found at SJ 66039022 (CSMR 2657). Nothing of post-Roman/early medieval date has come from the vicinity, although the Mersey and its mosslands may have formed the boundary between the Anglo-Saxon kingdoms of Mercia and Northumbria (Higham 1993), perhaps reflecting earlier territorial divisions. The general lack of material from within the immediate vicinity of the mossland area post-dating the Bronze Age and pre-dating the eighteenth century, may be indicative of a low level of activity occasioned by the mossland nature of the local environment. The area was marginal land for most of the time in terms of exploitation, but also some of the time politically; the area would have been subject to secondary landscape exploitation activities such as fowling, fishing, rough grazing, rush gathering and peat cutting (Taylor 2000, 174).
- 3.2.5 **Medieval:** aside from an unglazed base sherd of medieval pottery found at SJ 68248958, little of medieval date has been recovered from the vicinity other than from excavations at the site of Old Abbey Farm, Risley (Heawood forthcoming). This proved to be the site of a sub-manorial moated farmstead established in the thirteenth century, possibly within an assart that was partially reclaimed from mossland. In general it is claimed that mossland habitats did not have permanent settlements established within them until the sixteenth century at the earliest (Taylor 2000, 167), but it is clear that in the Warrington area assarting and the establishment of permanent settlements was being undertaken around the mossland margins during the medieval period (Heawood forthcoming); it is not clear, however, whether the land being assarted was mire and it is likely that most was only mire fringe.
- 3.2.6 **Post-medieval:** the reclamation of most mosslands had to await the agricultural improvements of the post-medieval period, when widespread drainage and land reclamation projects were carried out throughout the wetland areas of England. The general extent of the moss as persisted throughout the period from the Iron Age to the eighteenth century is probably broadly depicted on Yates' county map of Lancashire of 1786 (Fig 2; Barley 1968). This shows a large area of mossland called Risley Moss, with the settlements of Woolston, Martinscroft and Rixton to the south and Risley and Risley Chapel to the north-west. The study area lies between Risley Chapel and the Moss as depicted on Yates' map. Woolston, Rixton and Risley all have names of Anglo-Saxon origin and are suggestive of settlements probably dating to the early medieval period (Mills 1976). Martinscroft too is probably of Anglo-Saxon origin, though its derivation from Martin's field suggests that as a settlement it was of later origin. Risley, like Martinscroft, may be of post-Anglo-Saxon origin as a settlement as its meaning is 'open area with scrub' (Mills 1976, 126); however, by the thirteenth century it appears to have existed as a settlement and to have been a dependency of the manor of Culcheth (Farrer and Brownbill 1911, 156). Risley Chapel is of later origin as a settlement, taking its name from an eighteenth century dissenter's meeting house. A barn was registered at Risley in 1689 as a meeting place for dissenters and a chapel erected in 1706-7 (Stell 1986). The chapel was demolished in the 1970s.
- 3.2.7 The vicinity of the study area appears to have been reclaimed from moss and was being farmed by the eighteenth century (Barley 1968). Activity within the area appears to have been primarily agricultural until the 1930s.

- 3.2.8 In the 1930s, the relative seclusion of the area, but with a close proximity to a large workforce, and nearness to the chemicals industry of the Mersey/Dee basin, led to Risley Moss being chosen to be the site of one of the new planned shell filling factories. These factories were planned from the late 1930s as a response to the deteriorating international situation. Approval for a Royal Ordnance Factory (ROF) at Risley was given late in 1939 (Cocroft 2000, 212). The subsequent history of the study area and its environs has been dominated by the building of this factory and its subsequent use.

## 4. ASSESSMENT RESULTS

### 4.1 SITES AND MONUMENTS RECORD

- 4.1.1 There are 15 known archaeological sites recorded on the Cheshire SMR in the vicinity of the assessment area, none of which actually lie within the study area itself.

SMR Number	NGR Coords	Site Type	Period
2326	SJ 6670 9180	Stone Axe-head	Prehistoric
2656	SJ 6580 9093	Flint Find	Prehistoric
2725	SJ 6772 9233	Building	Nineteenth Century
2726	SJ 6784 9265	Cropmark Enclosure	Unknown
2723	SJ 6742 9312	Cropmark (Natural ?)	Unknown
603	SJ 6642 9013	Moated Manor House	Medieval
2658	SJ 6552 9013	Pot sherds	Post-medieval
2656	SJ 6588 9021	Flint Scatter	Mesolithic
2657	SJ 6603 9022	Coin	Romano-British
2661	SJ 6880 9218	Isolated Flint Flake	Prehistoric
2683	SJ 6902 9282	Potsherd	Post-medieval
2661	SJ 6906 9286	Unretouched Flint	Prehistoric
2663	SJ 6822 9400	Water Mill	Post-medieval
2662	SJ 6809 9436	Copper Disk	Unknown

- 4.1.2 The area does not contain any scheduled monuments or listed buildings. It does not contain any conservation area, registered historic parklands or registered battlefields.
- 4.1.3 The Birchwood District Area Plan (adopted by Warrington New Town Development Corporation in 1973), states under section 3.2.8 ‘archaeological and historical remains’ that “*the director of the Warrington museum has advised that there is, at present, no evidence of any remains of interest within the district. It is hoped, however, to carry out a survey before development takes place*”. The majority of the archaeological work that has subsequently taken place in the vicinity of the survey area was carried out as part of Lancaster University Archaeological Unit’s North West Wetland Survey project. It is as a consequence of that project that many of the sites recorded on the Cheshire SMR were noted. It should not be assumed, however, that the Cheshire SMR forms a complete record of the archaeologically significant remains within the area.

### 4.2 THE LANDSCAPE BEFORE THE ROYAL ORDNANCE FACTORY (ROF)

- 4.2.1 The assessment area lies in the modern civil parish of Croft, but was situated within the Risley subdivision of the township of Culcheth within the historical parish of Newchurch (Farrer and Brownbill 1911). None of these place-names were recorded in the Domesday Book of 1086 (Morgan 1978), but both Risley and Culcheth were identifiable landed entities by at least the thirteenth century (Heawood forthcoming).
- 4.2.2 It was recorded that during the building of the ROF, the construction engineers considered that the blanket of peat which covered the area was too unstable to be built upon; hence it was removed by machine stripping and the solid clay underneath was exposed (WRL ms 2587). The peat was left in a mound in Gorse Covert at SJ 66739210, as shown on the 1970 OS 1:10,000 map (Fig 6). Thus the peat within the study area, which had been forming since the Neolithic period, was totally removed during the construction of the ROF and along with it would have been removed the post-Neolithic pre-reclamation archaeological record of the study area.
- 4.2.3 The massive earth moving that was involved in the construction of the ROF is also likely to have removed or greatly truncated any remains relating to the post-reclamation landscape of the study area, even where activities had previously removed or cut through the peat. Detailed depictions of the local post-reclamation landscape only occur from the mid-nineteenth century, as on the 1<sup>st</sup> edition 6 inches to 1 mile Ordnance Survey map (OS 1<sup>st</sup> edition 1: 10,560, Sheet 109, 1848). Superimposition of the study area on to this (Fig 3), clearly shows the sites of two former farmsteads within the study area, Garret Farm and Nash End Farm, both of which were situated in the part of the study area which lay outside the main development area of the ROF. Garret Farm was described in 1853 as a farmhouse with barn, stable, shippon, hay bay, piggeries and cart shed (WRL A13 PS43). This site is unlikely to survive as it appears to lie close to the western corner of a large office block built before 1970. The site of Nash End Farm, however, appears to be located in the south-west corner of the study area (Fig 3), in what seems to be a relatively undeveloped part of it (Fig 8). It is possible, therefore, that remains of Nash End Farm survive.
- 4.2.4 Both Garret and Nash End Farms were depicted on the tithe map of 1838 (LRO DRL 1/21) but their origins before this are obscure; indeed, the names of both would fit farms of a post-medieval origin. The fieldscape associated with them, consisted, in the mid-nineteenth century, of small rectilinear, sub-regular enclosures, little distinct from the general fieldscape of the district. Some of the enclosures were strip-like though the area lacked the concentration of obviously enclosed strip fields, which can be taken as indicative of the former practice of open field farming. The road to the west of the farms was an extension of Fearnhead Lane and was known in the early twentieth century as the Warrington Road (WRL A13 ms 2587; Fig 4). Its sinuous shape and connections suggest that the road is of some antiquity and may have marked the western edge of the Risley/Rixton Moss complex prior to post-medieval reclamation, though a perhaps more convincing moss boundary may be formed by the hedge, footpath and drain to the east of the farms that appeared in 1848 to connect with an old drain to the south. To the north the study area was part bounded by New Lane, which appears to be a route established to give the inhabitants of Risley access to the moss, following reclamation of the mossland margins (Fig 3: OS 1<sup>st</sup> edition 1:10,560, 1848). Despite its name it is impossible to attribute a date for the origins of this lane.

- 4.2.5 The dating of these farms is little assisted by examination of the nineteenth century field names, which, for the most part, do not indicate either antiquity or recent reclamation (see *Appendix 2* for a list of field names in 1853). Most names are either topographical or relate to farming practices, however, the origins of some fields can be inferred from their names. To the south of New Lane was an enclosure known as Black Hey (WRL A13 PS43); here the 'hey' suffix probably means enclosed piece of land but is an element that usually has a medieval rather than a post-medieval origin (Field 1972, 270). The 'black' prefix presumably is a reference to the colour of the peaty soil. The two fields adjoining to the south, Big and Little Blakely, also have black as a prefix attached to a suffix suggesting a medieval origin. The 'ley' element here probably refers to meadow rather than to a woodland clearing (*op cit* 272), but again would seem an archaic element to be applied to a field that in the nineteenth century was of recent naming. In each case the black colour of the soil indicated by the field-name prefix is indicative of the peat content of the soil. Another name which indicates the mossland origin of the fields depicted on nineteenth century maps is Moss Field, which, interestingly, was situated on the western boundary of the study area abutting Warrington Road.
- 4.2.6 Other field names which may suggest some antiquity in the fieldscape are Near and Further Wheat Ridges, which lay between Moss Field on the north and Nash End Farm on the south (WRL A13 PS43). The use of the term ridge within a field-name is either a reference to a unit of ploughing (Field 1972, 273), as in a medieval open field, or is a physical description of ridge and furrow within a field. Ridge and furrow does not necessarily equate with open field farming of medieval origin, for the ridging of fields was a common post-medieval farming practice. Even so, the occurrence of the field name element was within an area of strip-like enclosures in the nineteenth century (Fig 3). These enclosures may be indicative of the former presence of a small common field, in which case the origins of the fieldscape are likely to be pre-seventeenth century. A cautionary note, however, is that the newly reclaimed areas of moss, shown on the 1848 Ordnance Survey map, were also strip-like in appearance.
- 4.2.7 The field-names clearly demonstrate that the farming landscape depicted in the nineteenth century was reclaimed from Risley Moss. Both the field pattern and the field names recorded in the nineteenth century exhibit features which tend to suggest that this reclamation may have occurred before the eighteenth century. The date of the reclamation and of the establishment of the farms need not be contemporary, however. It is noted in the North West Wetland Survey volume for Cheshire that the fields east of Old Abbey Farm, as shown on the Pesfurlong Estate map of 1757 (LRO DDRf11/54), exhibit much evidence of mossland reclamation and are considered to be piecemeal intakes undertaken throughout the medieval and post-medieval periods (Leah *et al* 1997, 38). Indeed it has been posited that the Pesfurlong estate may have originated as a medieval, partial-mossland, assart (Heawood forthcoming). This localised reclamation was, however, alongside a coincident natural pressure for expansion of the mosses during the sixteenth to eighteenth centuries, as a consequence of climatic deterioration (Leah *et al* 1997, 37). In conclusion, therefore, there is sufficient evidence to suggest that the Risley/Rixton Moss complex was being eroded through small-scale reclamation from the medieval period through to the eighteenth century. It is within this context that the development of the fieldscape to the east of the Warrington Road should be seen.

- 4.2.8 One other field-name of interest was Brick Kiln Field situated at SJ 6567 9197 on the south-eastern edge of the study area (WRL A13 PS43). This name may indicate the former presence of a small brick manufactory in the vicinity. The site lies well within the area of the later ROF and it is unlikely that any evidence will survive.
- 4.2.9 The 1848 Ordnance Survey map shows a track leading towards a pond within Little Blakely (OS 1<sup>st</sup> edition 1: 10,560, Sheet 109, 1848). By 1907 the pond had a building adjacent to it known as Risley shooting lodge (WRL A13 PS43). The pond is depicted as having an island within the centre and may have been used to attract ducks for shooting, although it was not a duck decoy in the strict archaeological sense of having channels (pipes) extending out of it for netting duck (Aston and Bettey 1998, 132). By 1939 the building was known as the Gamekeeper's lodge. Its location places it within a heavily developed part of the later ROF, and there is unlikely to be much surviving evidence for the former shooting lodge or even the pond.
- 4.2.10 A series of sale particulars for the Risley estate, dated between 1853 and 1907 (WRL A13 PS43), show little change in the landscape from that depicted in 1848 (OS 1<sup>st</sup> edition 1: 10,560, Sheet 109, 1848), with the exception that some of the fields shown in 1848 were subdivided. This is an unusual feature as generally during the course of the eighteenth and nineteenth centuries the average size of enclosures tended to increase

### 4.3 THE ROYAL ORDNANCE FACTORY (ROF)

- 4.3.1 The study area was by the 1930s farming land with some scrubby woodland (Anon nd). It was also close to areas of high unemployment and this factor appears to have been an important consideration in the purchase of much of the area for use as a ROF filling factory (WRL A13 ms 2587). Permission to build the site was given in the Autumn of 1939 (Cocroft 2000, 215), though some sources claim construction began in August of that year (WRL A13 ms 2587).
- 4.3.2 The purpose of a filling factory was to fill shell, bomb and cartridge cases with high explosives and Risley was the second most expensive filling factory approved in the period 1936-40, at a cost of £13.39 million (Cocroft 2000, 212). It covered 927 acres (375ha) and was operational by 1941 (WRL A13 ms 2587).
- 4.3.3 Filling factories were planned with scientific precision and are amongst the first industrial undertakings to have benefited from the rational centralised planning and technocratic approach to industry that had been fostered during the 1930s (Cocroft 2000, 211). As a consequence there was a high degree of standardisation and a unity of design across the different filling factories at this time. They were planned on a playing card shape (*op cit*, 211-2), which is clear at Risley both in the planned division of the landscape, shown on a Government proposal plan of 1939 (WRL A13 ms 2587; Fig 4), and in the final layout of the site as recorded in 1945 (WRL A13 P82335; Fig 5). As a consequence Risley ROF was similar in appearance to other such factories as at Chorley, Lancashire, and Thorp Arch, West Yorkshire (Cocroft 2000).
- 4.3.4 The factory consisted of an array of buildings set within a rectilinear pattern by a road and rail network. Buildings included those for security, administration offices, barracks, magazines and filling sheds and they were divided into groups, the numbers of which are shown on the 1945 plan of the sites overall layout (WRL

A13 P82335; Fig 5). The magazines were surrounded by earthen bunkers and probably formed the most prominent landscape feature of the site. The buildings used for fuse filling were heavily built on three sides with a weaker fourth wall, so that, in the case of an explosion, the blast would escape in one direction limiting the amount of damage (WRL A13 ms 2587).

- 4.3.5 The Risley ROF appears to have been rarely bombed despite being referenced on a Luftwaffe targeting document of 1940 when it was described as partially under construction (WRL A13 ms 2587). Locally this was considered to be the result of the site being obscured by mists which gather in the mire hollow in which the ROF was built (WRL A13 ms 2587). Attractive as this theory is the lack of raids on Risley ROF was probably more to do with the filling factory not being completed until 1941, by which time Germany's resources were becoming ever more sucked into the conflict with the Soviet Union.
- 4.3.6 During World War II Risley ROF produced over one million mines and 500,000 bombs, and it employed a workforce of 22,000. At the end of the War, in 1946, part of the site was taken over by the Ministry of Supply for atomic energy research (WRL A13 P82531). The part of the ROF acquired by the Ministry of Supply is within the study area and is still occupied by the descendant of the Ministry of Supply, the United Kingdom Atomic Energy Authority (UKAEA).
- 4.3.7 The remainder of the site was acquired for use by the Admiralty as a storage depot. The Admiralty left in 1961 and the site remained derelict until acquired by Warrington New Town in 1968 for redevelopment; demolition of the factory began in 1972 (WRL A13 ms 2587). As a consequence of this history, the ROF remained largely intact until 1970 when it was depicted on the 1:10,000 Ordnance Survey map (Fig 6).
- 4.3.8 Redevelopment since 1972 has removed much of the former fabric and layout of the ROF (Fig 8). There are some elements and buildings, however, that do survive within the study area. The road leading from the main entrance into the Birchwood Park industrial estate is ROF Street No3 North. On the west side of this road are three large rectangular buildings utilised by UKAEA, all of which originated as ROF buildings. All three have been modernised to a lesser or greater extent, particularly being reclad with metal sheeting but their steel frameworks and their pent roofs still retain the basics of the original construction. These buildings were part of the 'Group 8' complex where high explosives were mixed and put into bombs and mines (Cocroft 2000, 212). At the southern end of the study area is a long rectangular structure with a pent roof aligned east/west; this also appears to have been ROF building, although the western end of it seems to have been rebuilt at a later date. This structure was one of a pair that formed the main structures in the 'Group 5' complex, and was used for filling cartridges with cordite. To the north of the east/west aligned structures are a number of brick-built, flat-roofed, small buildings all forming part of Group 5. These were the filling sheds and some of these are little altered from their original appearance, even retaining the Group numbering designation, such as 5C25. Other structures appear to fit the size and locations of ROF buildings but their present external appearance belies their historical origins. A more detailed search of the study area than was possible during the site inspection undertaken as part of this assessment may reveal other surviving elements of the ROF.

---

## 5. SIGNIFICANCE AND IMPACT

---

### 5.1 SCHEDULE OF SIGNIFICANCE

- 5.1.1 The sites are graded 1-4. Grade 1 sites are of national importance and include those that would merit being scheduled and/or listed grade I or II\*; such sites should always be preserved wherever possible. Grade 2 sites are of regional importance and should be preserved for preference, but if this proves difficult within a development scheme they must be fully recorded, including if necessary by total excavation. Grade 3 sites are of local importance, and again preferably should be preserved, but where this would be inconvenient appropriate measures should be taken to ensure they are adequately recorded before removal. Grade 4 sites are of little or of no importance, and no further investigation beyond that undertaken to complete this report is deemed necessary.
- 5.1.2 **Grade 1:** no sites within the study area are considered to merit a grading of 1. The ROF site, as it remained until the early 1970s, would now be potentially considered to merit a Grade 1 rating. However, there is little integrity left to the site and the original appearance, as well as function, of all the buildings and elements relating to it have been altered to a greater or lesser degree. Whilst the site is of national interest in terms of its history there are better surviving, though equally threatened, examples of ROF filling factories, as at Chorley, Lancashire. Consequently, the remaining ROF buildings are considered not to merit more than a Grade 3 rating.
- 5.1.3 **Grade 2:** no sites within the study area are considered to merit a grading of 2.
- 5.1.4 **Grade 3:** in addition to the ROF buildings, the site of Nash End Farm is also considered to merit a rating of 3. It is likely to be a post-medieval farm that may have some surviving below-ground remains.
- 5.1.5 **Grade 4:** the remaining sites of archaeological interest, noted within the study area, are not considered to merit a grading higher than 4, since they are not sites of great historical importance and the likelihood of any survival of remains is low given the later redevelopment of their sites.

### 5.2 IMPACT

- 5.2.1 The proposed development, where its nature has been defined, will totally remove the remaining ROF structures and any evidence of Nash End Farm.



---

## 6. BIBLIOGRAPHY

---

### 6.1 PRIMARY SOURCES

#### 6.1.1 *Lancashire Record Office (LRO)*

LRO DDRf11/54 Pesfurlong Estate Map, 1757

LRO DRL 1/21 Culcheth Tithe Map, 1838

#### 6.1.2 *Warrington Reference Library (WRL)*

WRL A13 ms 2587 Royal Ordnance Factory, Risley: Teachers Pack

WRL A13 P82531 Lease of part of Royal Ordnance Factory, Risley to the United Kingdom Atomic Energy Authority, 1946

WRL A13 P82335 Royal Ordnance Factory, Risley: A description of the position, site, buildings and facilities of the factory by the Ministry of Supply, c1945

WRL A13 PS43 Sale Particulars for the Risley Estate, 1853, 1872 and 1907

### 6.2 PUBLISHED CARTOGRAPHIC SOURCES

OS 1848 1: 10,560, *Sheet 109*, 1<sup>st</sup> edn, Southampton

OS 1891 1: 10,560, *Sheet 109*, 2<sup>nd</sup> edn, Southampton

OS 1970 1: 10,000, Southampton

### 6.3 SECONDARY SOURCES

Anon, nd *Mossland Memories*, private publ

Aston, M, and Bettey, J, 1998 The post-medieval rural landscape c 1540-1700: the drive for profit and the desire for status, in Everson P and Williamson T (eds), *The Archaeology of Landscape*, Manchester

Barley, JB, 1968 *A Map of the County of Lancashire, 1786, by William Yates*, Hist Soc Lancashire Cheshire

Cocroft, WD, 2000 *Dangerous Energy*, London

DoE, 1990 Planning Policy Guidance Note 16 *Archaeology and Planning*, London

English Heritage, 1991 *Management of Archaeological Projects*, 2nd edn, London

Farrer, W, and Brownbill, J, 1911 *The Victoria History of the County of Lancaster*, **4**, London

Field, J, 1972 *English Field Names*, Newton Abbot

Heawood, R, forthcoming *Old Abbey Farm, Risley, Warrington Borough. Building Survey and Excavation at a Medieval Moated Site*, Lancaster Imprints

Higam, NJ, 1993 *The Origins of Cheshire*, Manchester

Leah, MD, Wells, CE, Appleby, C, and Huckerby, E, 1997 *The Wetlands of Cheshire*, NWS 4, Lancaster Imprints **5**, Lancaster

Mills, AD, 1976 *The Place-Names of Lancashire*, London

- Morgan, P (ed), 1978 Cheshire, in J Morris (ed) *Domesday Book*, **26**, Chichester
- Taylor, C, 2000 Fenlands, in Thirsk J (ed), *The English Rural Landscape*, Oxford, 167-187
- Stell, C, 1986 Risley Chapel, Lancashire, *Ancient Monuments Soc Trans*, **30**, 131-138
- Wimtec Environmental Ltd, 1997 Caledonian Land Warrington – *UKAEA Risley Site Report on Ground Investigation*, unpub rep

## APPENDIX 1 PROJECT BRIEF

---

## APPENDIX 2 PROJECT DESIGN

---

**June 2000**

**Lancaster  
University  
Archaeological  
Unit**

### **BIRCHWOOD PARK WARRINGTON CHESHIRE**

### **ARCHAEOLOGICAL ASSESSMENT**

#### ***Proposals***

*The following project design is offered in response to a request from DPDS Consulting Group for an archaeological assessment at Birchwood Park, Warrington, Cheshire.*

## 1. INTRODUCTION

### 1.1 CIRCUMSTANCES OF PROJECT

1.1.1 Lancaster University Archaeological Unit (LUAU) has been invited by DPDS Consulting Group to submit a project design and costs for an archaeological assessment at Birchwood Park, Risley, Warrington, Cheshire in advance of a proposed business park development. The archaeological work is undertaken to inform a Environmental Impact Assessment, and is line with Planning Policy Guidance Note 16; the project design has been prepared in accordance with a project brief prepared by the Archaeological Officer (Development Control) Cheshire County Council.

1.1.2 **Archaeological Background:** the site was historically at the edge of Risley Moss, and to the immediate south of Risley village. In the medieval period there were two Manorial sites with lordship over the study area and environs the first was the moated site at Old Abbey Farm to the north of the study area, and which has recently been the subject of excavations and recording by LUAU. The other manorial site (Old Hall) was located 500m to the east of the study area at SJ 664 926. Yates map (1786) shows that at that date the study area was on the immediate edge of the Risley Moss unenclosed waste lands. Subsequent to that date there was some reclamation of the mosses increasing the extent of arable land. The essentially agricultural landscape of the study area was dramatically transformed in 1938 with the construction of the Risley Royal Ordnance factory. The site has subsequently been redeveloped for housing, retail and industrial purposes (Leah *et al* 1997).

1.1.3 The wetland origins of the site are particularly important, as such landscapes have been subject to less modern disturbance and have the potential to retain organic remains of early activity. Prehistoric and Roman artefacts have been identified from the environs, and there is a potential for survival of archaeological remains or palaeoenvironmentally significant deposits within the extent of the study area.

### 1.3 LANCASTER UNIVERSITY ARCHAEOLOGICAL UNIT

1.3.1 LUAU has considerable experience of the evaluation and excavation of sites of all periods, having undertaken a great number of small and large scale projects during the past 18 years. Evaluations and assessments have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables. LUAU has undertaken a major archaeological excavation and fabric survey of the nearby moated site at Old Abbey Farm, and LUAU has undertaken a major landscape study of the Cheshire Wetlands on behalf of English Heritage (Leah *et al* 1997), which has provided an in depth assessment of the environs of the Risley Moss. LUAU has undertaken numerous archaeological assessments to inform Environmental Impact Assessments both within Cheshire and elsewhere in the North West. LUAU has the professional expertise and resource to undertake the project detailed below to a high level of quality and efficiency. LUAU and all its members of staff operate subject to the Institute of Field Archaeologists (IFA) Code of Conduct, and LUAU is a registered organisation with the IFA (No 27).

## 2. OBJECTIVES

2.1 The following programme has been designed in accordance with a brief by Mark Leah of Cheshire County Council to provide an accurate archaeological evaluation of the designated area, within its broader context. The principal purpose of the evaluation is to collate information about the archaeology of the site and its environs. This will enable an assessment of the significance of the identified archaeological resource. The required stages to achieve these ends are as follows:

### 2.2 **Desk Top Survey**

To accrue an organised body of data to inform the walk-over survey and assessment report.

### 2.3 **Walk-over Survey**

A general identification survey of the study area to provide a topographic context for the desk-top study.

### 2.3 **Assessment Report**

A written assessment report will assess the significance of the data generated by this programme within a local and regional context in order to inform the Environmental Impact Assessment. It will advise on the impact of the proposed development.

### 3. METHODS STATEMENT

- 3.1 The following work programme is submitted in line with the stages and objectives of the archaeological work summarised above.

#### 3.2 DESK-BASED STUDY

- 3.2.1 The following will be undertaken as appropriate, depending on the availability of source material. The level of such work will be dictated by the timescale of the project.

- 3.2.2 **Documentary and cartographic material:** this work will rapidly address the full range of potential sources of information. It will include an appraisal of the Cheshire Sites and Monuments Record, as well as appropriate sections of County histories, early maps, and such primary documentation (tithe and estate plans etc.) as may be reasonably available. Particular emphasis will be upon the early cartographic evidence which has the potential to inform post-medieval occupation and land-use of the area. Any photographic material lodged in either the County Sites and Monuments Record or the County Record Offices will also be studied. Published documentary sources will also be examined and assessed. The work will examine in detail the archive of the North West Wetlands Survey (held by LUAU) which has considerable detailed information pertaining to the study area. This work will involve visits and or correspondence searches of the following repositories: Cheshire Sites and Monuments Record, the Cheshire Record Office in Chester, Warrington Local Studies Library, and the Lancashire Record Office.

- 3.2.3 The study will examine place and field name evidence for the site and its environs. Any engineering or bore-hole data made available by the client will be examined.

- 3.2.4 **Aerial photography:** a brief survey of the extant air photographic cover will be undertaken. This would provide an indication of recent land-use, but is not likely to significantly inform the archaeological potential of the site. The Cheshire Sites and Monuments Record and Cheshire County Council has a valuable aerial photographic collection. Aerial photographic work will entail liaison with the Royal Commission on the Historical Monuments (England) (NMR), although, within the timescale available, it is unlikely that prints will be forthcoming from this body for inclusion in this report.

- 3.2.4 **Physical environment:** a rapid desk-based compilation of geological (both solid and drift), pedological, topographical and palaeoenvironmental information will be undertaken. It will be based on published geological mapping and any local geological surveys in the possession of the county council or the client. This will not only set the archaeological features in context but also serves to provide predictive data, that will increase the efficiency of the field inspection.

- 3.2.5 Considering the wetland potential of the site an assessment will be made of the palaeoenvironment of the site on the basis of the North West Wetlands archive held by LUAU. In particular the study will examine the potential for survival of peats and waterlogged deposits within the study area. The work will be undertaken by Elizabeth Huckerby who was involved in the original study.

#### 3.3 WALK-OVER SURVEY

- 3.3.1 **Access:** liaison for basic site access will be undertaken through DPDS.

- 3.3.2 It is proposed to undertake a basic walk-over survey of the study area, which is typically undertaken alongside a desk top study as part of a site assessment. It is an initial site inspection intended to consider fully the archaeological implications of a development and to provide a correlation between the results of the desk-top study and the topography and land-use of the area. The site has been subject to considerable recent development and landscaping and it is anticipated that relatively little evidence of archaeological features will survive on the surface. Such a survey serves as the basis for undertaking and planning further archaeological work on the site and represents the minimum standard of record for such an assessment.

- 3.3.3 A photographic record will be undertaken simultaneously. This fieldwork will result in the production of plans at a scale of 1:5000 or any other appropriate scale required, recording the location of the sites listed in the gazetteer. Any archaeological information collected in the course of field inspection will be recorded in standardised form, and will include accurate national grid references. This will form the basis of a gazetteer, to be submitted as part of the report.
- 3.3.4 LUAU provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997) and risk assessments are now being implemented for all projects.

#### 3.4 IMPACT ASSESSMENT REPORT

- 3.4.1 **Archive:** the results of Stages 3.2-3.3 will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (*The Management of Archaeological Projects, 2nd edition, 1991*). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. It will include summary processing and analysis of any features and finds recovered during fieldwork. The deposition of a properly ordered and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the IFA in that organisation's code of conduct.
- 3.3.2 This archive can be provided in the English Heritage Central Archaeology Service format, both as a printed document and on computer disks as ASCII files (as appropriate), and a synthesis (in the form of the index to the archive and the report) will be deposited with the National Monuments Record (RCHM(E)), as appropriate. LUAU practice is to deposit the original record archive of projects (paper, magnetic, and plastic media) with the Cheshire Record Office.
- 3.3.3 **Collation of data:** the data generated by 3.2 (above) will be collated and analysed in order to provide an assessment of the nature and significance of the known surface and subsurface remains within the designated area. It will also serve as a guide to the archaeological potential of the area to be investigated, and the basis for the formulation of any detailed field programme and associated sampling strategy, should these be required in the future.
- 3.3.4 **Assessment Report:** one bound and one unbound copy of the report will be submitted to the Client, and a further copy submitted to the Cheshire Sites and Monuments Record. The report will include a copy of this project design, and indications of any agreed departure from that design. It will present, summarise, and interpret the results of the programme detailed above and will include a full index of archaeological features identified in the course of the project, together with appropriate illustrations, including maps and gazetteers of known or suspected sites identified within or immediately adjacent to the study area. It will also include a complete bibliography of sources from which the data has been derived, and a list of further sources identified during the programme of work, but not examined in detail. It will include a copy of the brief and project design. It will provide an assessment of past and present land use.
- 3.3.5 The report will identify areas of defined archaeology, an assessment and statement of the actual and potential archaeological significance of any features within the broader context of regional and national archaeological priorities will be made. Illustrative material will include a location map, which can be tailored to the specific requests of the client (eg particular scales etc.), subject to discussion. The report will be in the same basic format as this project design; a copy of the report can be provided on 3.5" disk (IBM compatible format).
- 3.3.6 **Proposals:** the report will make a clear statement of the impact of the proposed development upon the identified archaeological resource.
- 3.3.7 **Confidentiality:** the assessment report is designed as a document for the specific use of the client, for the particular purpose as defined in the project brief and this project design, and should be treated as such; they are not suitable for publication as an academic report, or otherwise, without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project brief and project design, or for any other explicit purpose, can be fulfilled, but will require separate discussion and funding.

#### 4. WORK TIMETABLE

- 4.1 It is envisaged that the various stages of the project outlined above would follow on consecutively, where appropriate. The phases of work would comprise:

- i*                    ***Desk-Based Assessment***  
5 days (on site)
  - ii*                   ***Walk-over Survey***  
1 day
  - iii*                  ***Assessment Report***  
6 days (desk-based).
- 4.2            LUAU can execute projects at very short notice once an agreement has been signed with the client. The desk-based study is scheduled for completion within three weeks from the completion of the field work.
- 4.3            The project will be under the project management of **Jamie Quartermaine, BA Surv Dip MIFA** (LUAU Project Manager) to whom all correspondence should be addressed. All Unit staff are experienced, qualified archaeologists, each with several years professional expertise.



---

## APPENDIX 3

### GAZETTEER OF SITES

---

**Site number** 01  
**Site name** ROF Risley  
**NGR** SJ 654923 (centred)  
**Site type** Ordnance factory  
**Period** World War II  
**Source** Cocroft 2000, field inspection

**Description**

The remains of a ROF filling factory. Modified buildings survive which date from the period of the ROF, some of which have been incorporated into the UKAEA complex. There are good surviving examples of relatively unaltered filling sheds.

**Assessment**

The site is of considerable historical importance but both its integrity and surviving fabric have been severely compromised by redevelopment and this reuse has reduced its archaeological value - Grade 3.

---

**Site number** 02  
**Site name** Garret Farm  
**NGR** SJ 65159222  
**Site type** Farmstead  
**Period** Post-medieval  
**Source** OS 1<sup>st</sup> edition map 1848

**Description**

A farmstead in existence in the mid-nineteenth century. It was demolished for the construction of the ROF.

**Assessment**

The site is likely to have been completely destroyed by the building of a post-ROF and pre-1970s office block - Grade 4.

---

**Site number** 03  
**Site name** Nash End Farm  
**NGR** SJ 65159190  
**Site type** Farmstead  
**Period** Post-medieval  
**Source** OS 1<sup>st</sup> edition map 1848

**Description**

A farmstead in existence in the mid-nineteenth century. It was demolished for the construction of the ROF.

**Assessment**

The site of farmstead may survive as it appears to lie within an area that was little developed for the construction of the ROF - Grade 3.

---

**Site number** 04  
**Site name** Risley shooting lodge  
**NGR** SJ 65659218  
**Site type** Shooting lodge  
**Period** Late nineteenth/early twentieth century  
**Source** OS 1<sup>st</sup> edition map 1848; WRL A13 PS43

**Description**

A shooting lodge adjacent to a pond.

**Assessment**

The site is in the midst of the ROF, and it is very unlikely that there are any surviving remains - Grade 4.

---

**Site number**                    **05**  
**Site name**                    Brick Kiln Field  
**NGR**                            SJ 6567 9197  
**Site type**                    Site of brick kiln  
**Period**                        Post-medieval  
**Source**                        WRL A13 PS43

**Description**

A nineteenth century field-name indicative of the former location of a brick kiln.

**Assessment**

Nothing seems to have survived above ground by the mid-nineteenth century. The site in the midst of the area of the ROF and thus it is very unlikely that anything survives - Grade 4.

---

---

## APPENDIX 4 FIELD NAMES

---

Field Names as recorded in 1853 (WRL A13 PS43)

64	Further Well Croft
65	Nearer Well Croft
81	Black Hey
82	Long Field
83	Half Acre
85	Lower Mill Field
127	Little Orchard Meadow
128	Orchard
129	Garret Farm
129a	Fold and garden
130	Rough Hey
131	Big Meadow
135	Far Acre
136	Three Acre Field
137	Vetch Field
138	Further Long Field
139	Nearer Long Field
140	Big Field
141	Old Woman's Field
142	Further Croft
143	Nearer Croft
144	Orchard Meadow
145	Further Long Lea
146	Nearer Long Lea
147	Big Blakely
148	Little Blakely
149	Higher Brook Field
150	Brook Field
151	Lower Brook Field
158	Crab Tree Field
159	Brick Kiln Field
160	Rake Field
161	Sand Field
162	Long Lea
163	Moss Field
185	Near Wheat Ridges
186	Further Wheat Ridges
187	Twist Field
188	Long Field
189	Nearer Nework

---

## ILLUSTRATIONS

---

- Fig 1 Birchwood Park: Location Map
- Fig 2 Section of Yates' map of Lancashire (1786)
- Fig 3 Study area superimposed onto the OS 1st edition map (1848)
- Fig 4 Plan of the proposed Royal Ordnance Factory in 1939 (RL A13 ms 2587)
- Fig 5 Plan of the Royal Ordnance Factory in 1945 (WRL P82335)
- Fig 6 Study area superimposed onto the 1970 OS 1:10,000 map
- Fig 7 General Site Map (1:10,000)
- Fig 8 Vertical Air Photograph of Birchwood Park taken in 1993



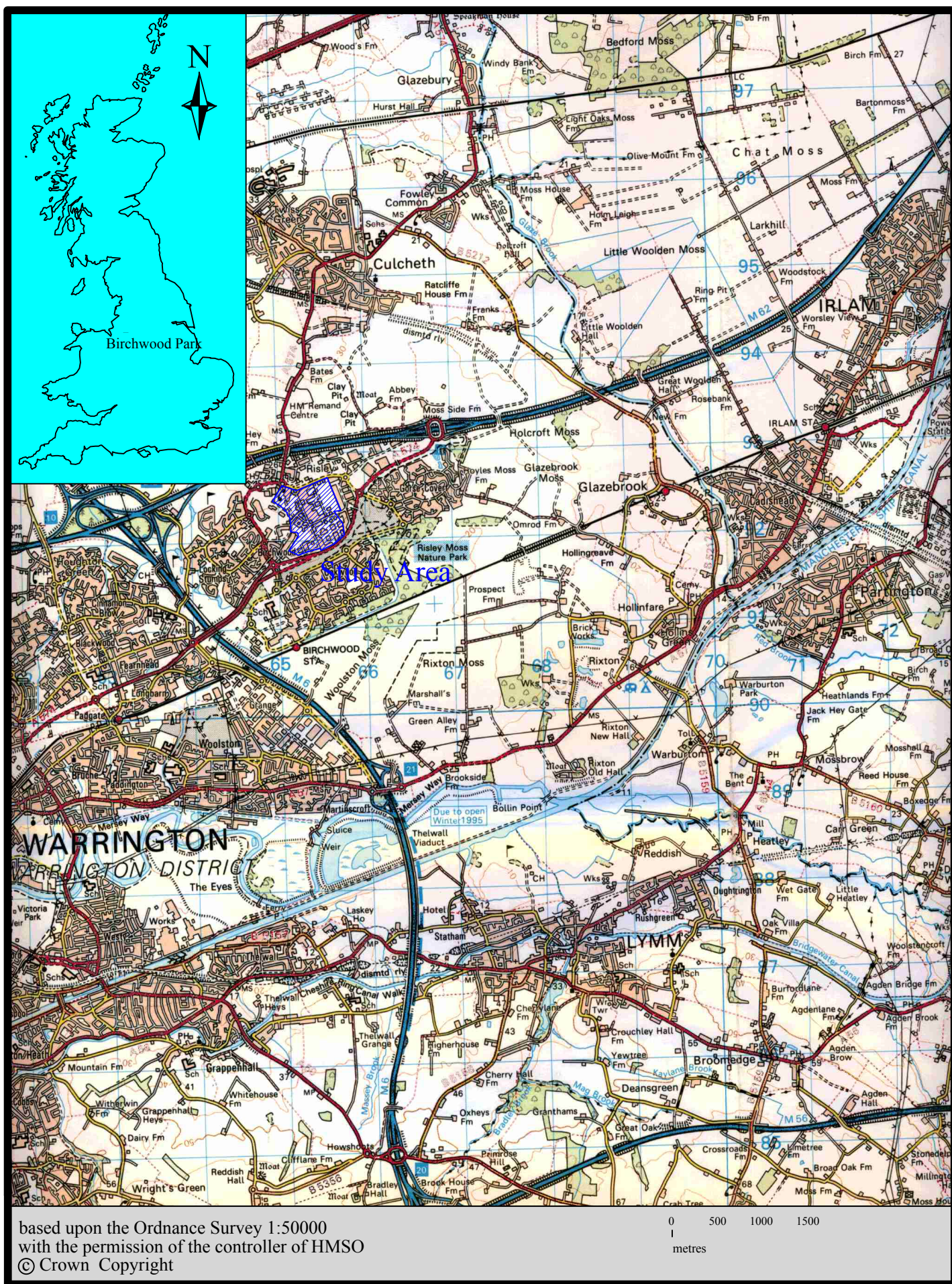


Figure 1 Birchwood Park: Location Map



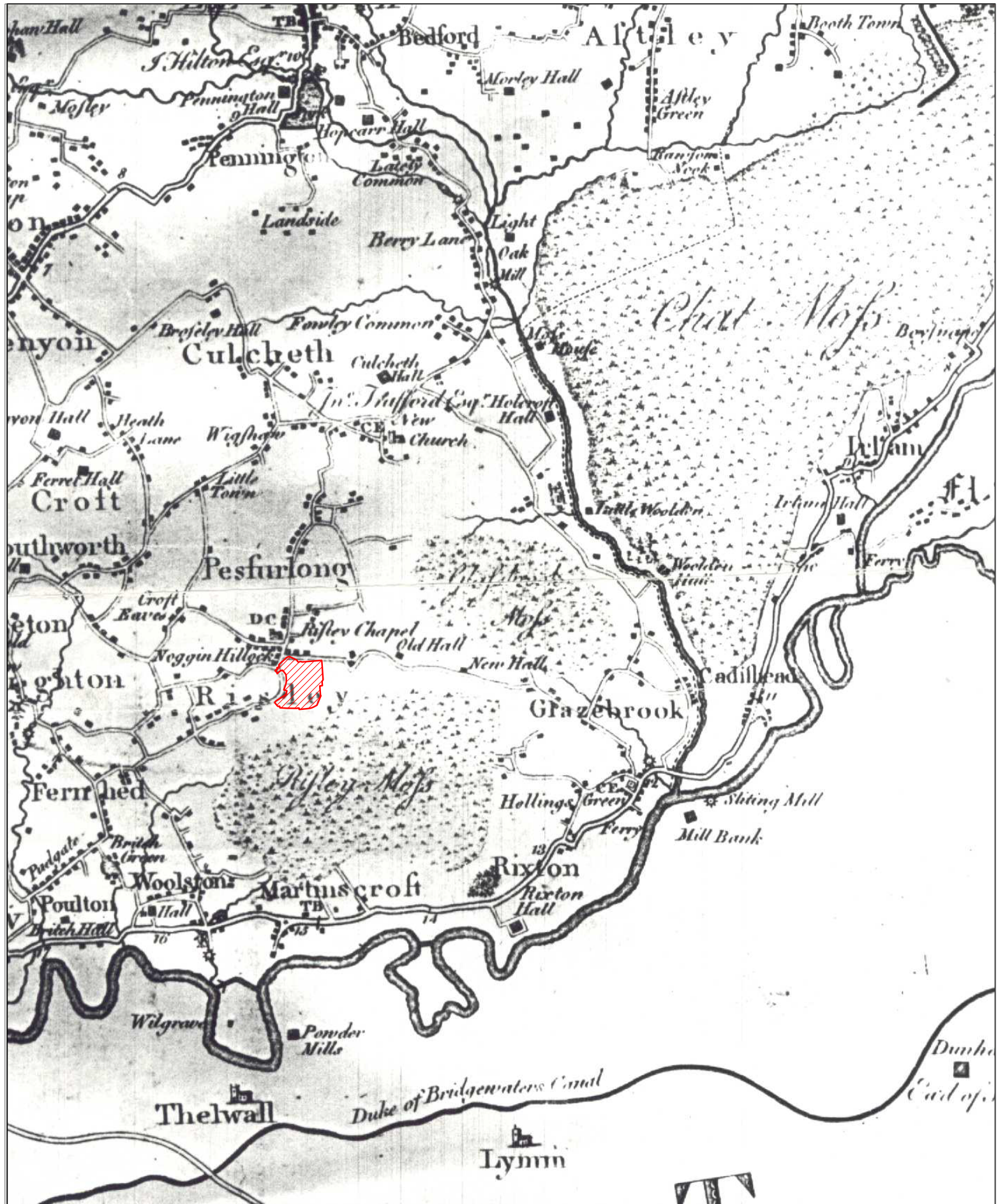


Fig 2: Section of Yates' map of Lancashire (1786)







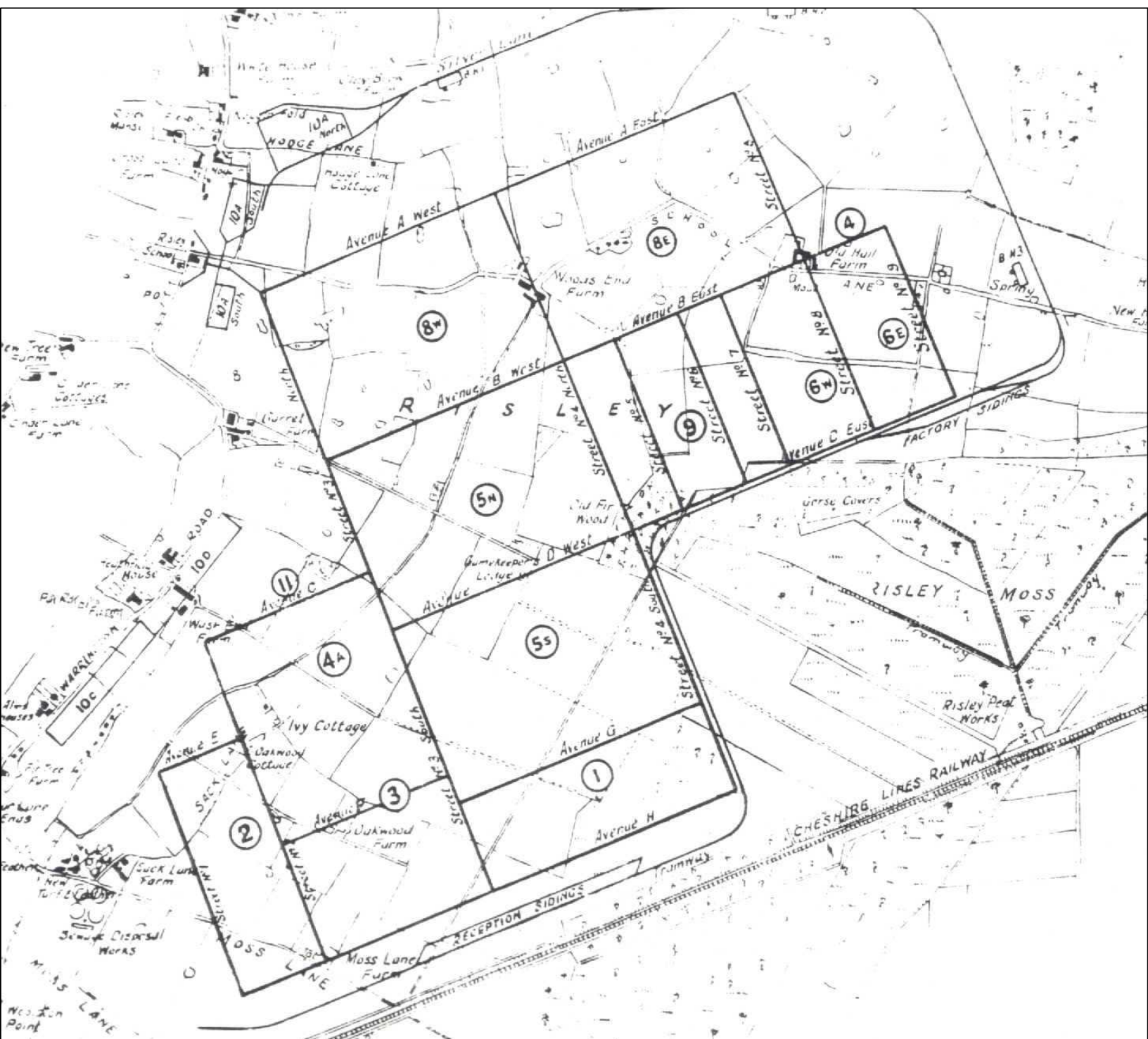


Fig 4 Plan of the proposed Royal Ordnance Factory in 1939 (RL A13 ms 2587)



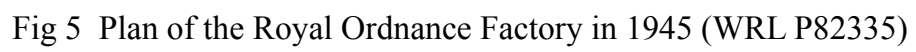


Fig 5 Plan of the Royal Ordnance Factory in 1945 (WRL P82335)



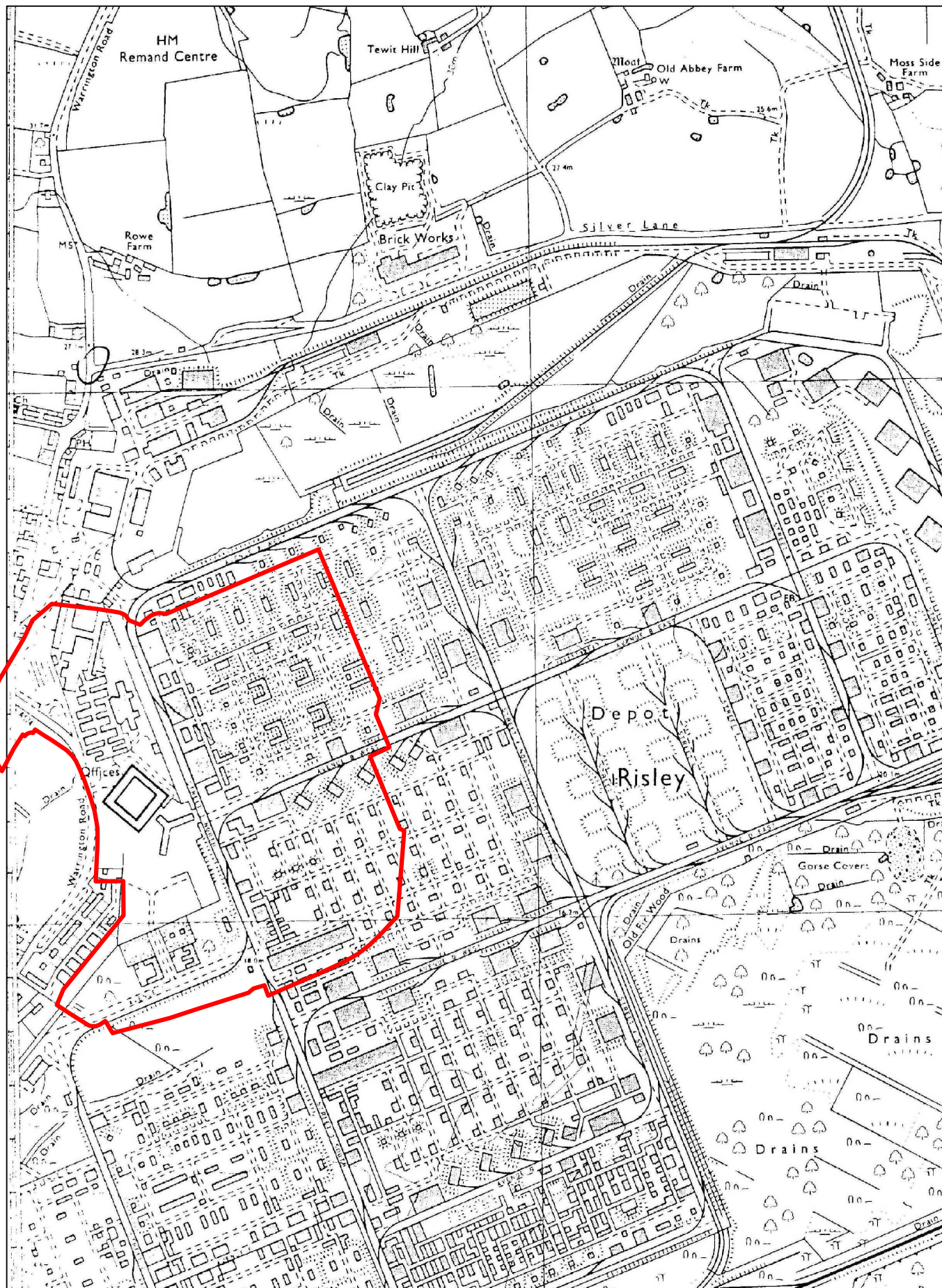


Fig 6: Study Area Superimposed onto the 1970 OS 1:10,000 map



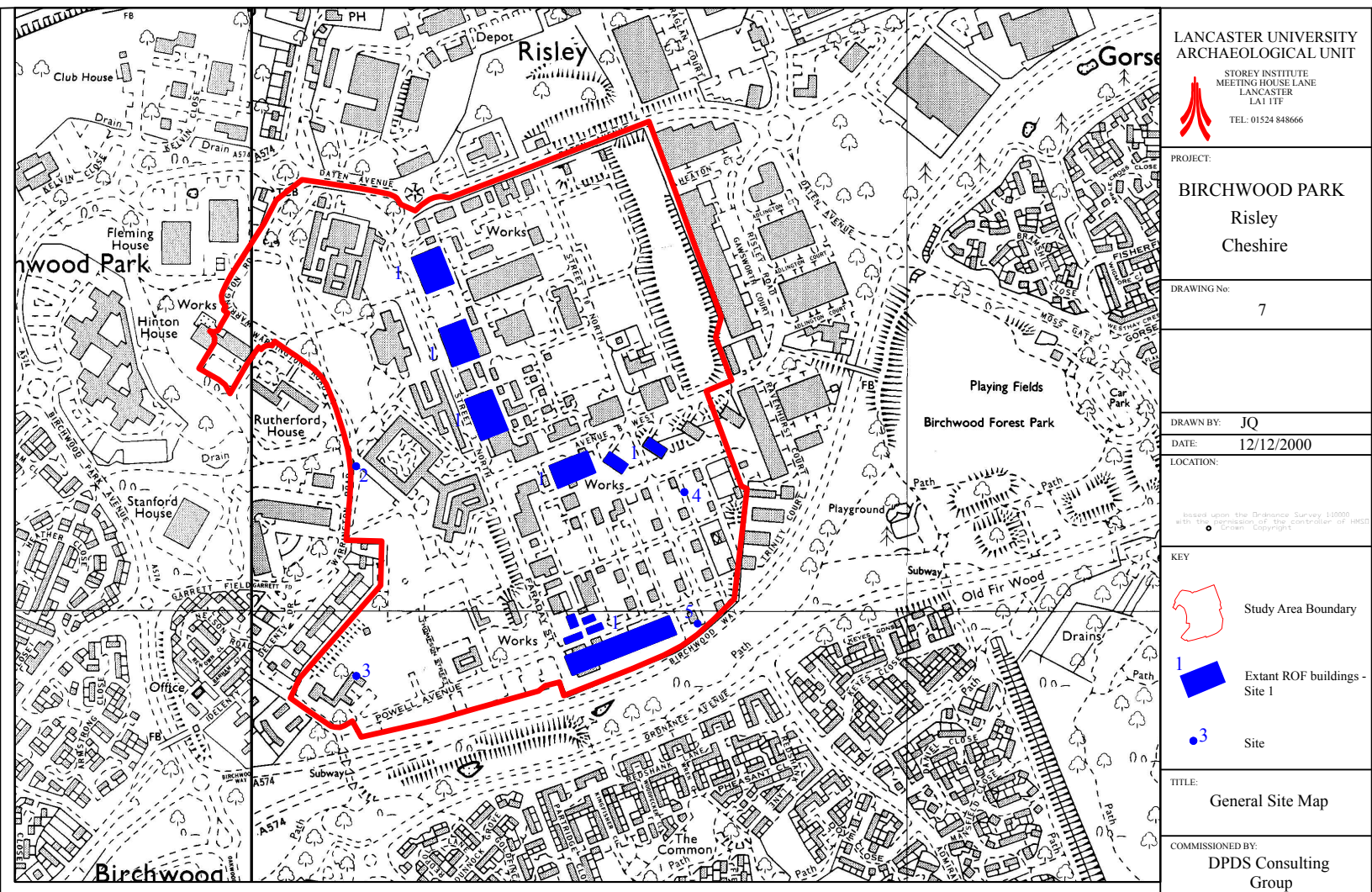


Fig 7: General Site Map (1:10,000)





Fig 8 Vertical Aerial Photograph of Birchwood Park taken in 1993





**Head Office/Registered Office/  
OA South**

Janus House  
Osney Mead  
Oxford OX2 0ES

t: +44 (0) 1865 263 800  
f: +44 (0) 1865 793 496  
e: [info@oxfordarchaeology.com](mailto:info@oxfordarchaeology.com)  
w: <http://oxfordarchaeology.com>

**OA North**

Mill 3  
Moor Lane  
Lancaster LA1 1QD

t: +44 (0) 1524 541 000  
f: +44 (0) 1524 848 606  
e: [oanorth@oxfordarchaeology.com](mailto: oanorth@oxfordarchaeology.com)  
w: <http://oxfordarchaeology.com>

**OA East**

15 Trafalgar Way  
Bar Hill  
Cambridgeshire  
CB23 8SQ

t: +44 (0) 1223 850500  
e: [oaeast@oxfordarchaeology.com](mailto: oaeast@oxfordarchaeology.com)  
w: <http://oxfordarchaeology.com>



Chief Executive Officer  
Ken Welsh, BSc, MCIfA  
Oxford Archaeology Ltd is a  
Private Limited Company, N<sup>o</sup>: 1618597  
and a Registered Charity, N<sup>o</sup>: 285627