ArcHeritage

The Physical Landscape Legacy Phase 2:

The Heritage of the Nottinghamshire Coalfield

Historic England Project 6742

ArcHeritage 2018

Historic England

Report commissioned by Historic England

The Physical Landscape Legacy Phase 2:

The Heritage of the Nottinghamshire Coalfield

ArcHeritage Campo House, 54 Campo Lane, Sheffield, S1 2EG

Phone: +44 (0)114 2728884 Fax: +44 (0)114 3279793
archeritage@yorkat.co.uk www.archeritage.co.uk

Key Project Information

Project Name	The Physical Landscape Legacy Phase 2: The Heritage of the Nottinghamshire Coalfield, Character Assessment and Management
Report Title	The Physical Landscape Legacy Phase 2: The Heritage of the Nottinghamshire Coalfield, Character Assessment and Management
Report status	Final
ArcHeritage Project No.	4177141
Type of Project	Assessment
Client	Historic England
Authors	Glyn Davies, Mark Stenton, Jayne Rimmer, Christopher Atkinson
Illustrations	Karen Weston
Editor	Glyn Davies, Mark Stenton
Report Number and Date	2017/14 31.1.2018
Version and filename	V1 HE Notts Coal Phase 2

Title	The Physical Landscape Legacy Phase 2: The Heritage of the Nottinghamshire Coalfield, Character Assessment and Management
Author(s)	Glyn Davies, Mark Stenton, Jayne Rimmer, Christopher Atkinson,
Derivation	Follows on from *The Physical Landscape Legacy: an assessment of the Nottinghamshire Coalfield*
Origination date	31.01.2017
HE project No.	6742 MAIN
Reviser(s)	Mark Stenton, Glyn Davies
Date of last revision	20 Feb 2018
Version	V2
Status	Final
File name	HE Notts Coal Phase 2

CONTENTS

Cover: Clipstone Colliery headstocks

Figures

PREFACE

Commissioned and funded by Historic England, the Nottinghamshire Coal Field project was carried out by ArcHeritage between 2014 and 2017 to establish a framework for understanding the character and development of the historic landscape of the coal industry in Nottinghamshire, and the extent and condition of its heritage assets. It looked at all aspects of the industry including technology, transport networks, housing and community buildings, providing comprehensive baseline data to inform the future management and appreciation of the former coalfield and its surviving remains.

Stage 1 involved a scoping study to determine the nature of the archival resources available for the investigation of the coal industry in the county, and to quantify and locate the surviving remains. Stage 2 combined a documentary-based study of the expansion of the Nottinghamshire coal industry with an archaeological and architectural assessment of the identified heritage assets to evaluate the character, significance and condition of the surviving coalfield landscape. The public perception of this landscape was also gauged through a series of community-based workshops.

By Jayne Rimmer (Historic England)

1 INTRODUCTION

This report presents the results of the second stage of the Historic England funded project *The Physical Landscape Legacy Phase 2: The Heritage of the Nottinghamshire Coalfields, Character Assessment and Management* (6742 PILS). This project was undertaken to assess the character, significance and condition of the physical heritage of the former coal industry in Nottinghamshire and public perception and interest in such remains.

The second stage of the project follows on from a scoping study undertaken as the first stage of the project. The scoping study, *The Physical Landscape Legacy: an Assessment of the Nottinghamshire Coalfields Scoping study* (6742PILS), assessed the quantity, character and interpretative potential of archive and documentary evidence relating to the physical and landscape heritage of the coalfields. The scoping study also identified gaps in our knowledge, based on the archive and documentary sources reviewed. The second phase of the project provides baseline data on coalfield heritage assets, their condition, vulnerability and historic and landscape contexts in relation to the development of the coal industry in Nottinghamshire. This has been undertaken in order to aid in the management and promotion of the Nottinghamshire coalfield landscape.

This project was undertaken in line with the project design agreed with Historic England. A copy of the project design is included in Appendix 1.

1.1 Project

This report builds on the results of the scoping study through the further investigation of the coalfield landscape through analysis at two levels. At the large scale, additional documentary research was undertaken to fill gaps in knowledge, in order to provide a broad-brush understanding of the Nottinghamshire Coalfield. At a more local scale, six area case studies were undertaken to investigate the development of the coal industry and to identify surviving heritage assets and assess their condition, significance and vulnerability, and the potential risks that they face. The case study areas (Strelley, Selston, Hucknall, Eastwood, Clipstone and Edwinstowe/Thoresby) were chosen to reflect and investigate potential variations in landscape character and types of heritage assets across the coalfield. This was done to investigate and understand how heritage assets reflect historic landscape character and how this relates to the eastwards expansion of the coalfield and its relationship to technological development, over time. This was achieved through a combination of detailed documentary research, walkover survey and engagement with local community groups.

The results of the project provide a strategic overview of Nottinghamshire's coal mining heritage. This aids in the protection and conservation of Nottingham's coal mining heritage by providing a framework within which to develop and assess management and development proposals. The project also enhances the Nottinghamshire Historic Environment Record (HER) and provides a starting point for the development of education and community engagement. Through a steering group and a stakeholder group, the project engaged with the wider community to access local knowledge and provide a means by which the project outputs and recommendations could be taken forward and acted upon in the long term.

1.2 Context and interactions

Nottinghamshire's historic coal industry exploited the carboniferous coal measures. The location and density of mining activity within the county was determined by a variety of factors related to physical and human geography. The physical factors relate to the accessibility of the coal, its depth, seam thickness, quality and drainage requirements. The human factors relate to land ownership, workforce availability, technological development, investment potential and investor interest. The interplay of these factors influenced the industry's development, the distribution of coal mines and their associated activities and infrastructure, and the ways in which these developments created the coalfield landscape.

2 Themes

The mining industry of the Nottinghamshire coalfield has influenced the development and appearance of the area's physical and human landscape. In addition to direct impacts through the construction of buildings and associated infrastructure, the industry has also influenced the wider landscape through its impacts on settlement, transport, land ownership and land use. The report places the study of the Nottinghamshire mining industry and its physical remains in the context of their historical development and expansion across the coalfield.

The influence of the coal industry on the landscape is investigated through a range of themes that relate to the industry and to the people who lived and worked under its influence. Each theme has been investigated through the related landscape features that survive. The physical remains, both standing and archaeological, of buildings, settlement patterns and transport networks are examined, along with their distribution and interrelationships.

Within each theme, a number of different topics have been considered in order to gain a greater understanding of landscape and the local society:

2.1 Industry

- Technology;
- mines - shafts, pit heads, buildings, goods yards;
- waste - including spoilheaps and pollution;
- secondary coal products – coke and coal gas;
- power production – power stations and transport links; and
- related industries - suppliers and engineering.

2.2 Transport

- development of transport networks and their relationship to the transport of products and people;
- roads;
- canals; and
- railways.

2.3 Settlement

- settlement patterns;
- pit villages - new foundations or expansion of existing villages;

- housing – workers' housing and model villages versus organic village development;
- health and education – schools, clinics and hospitals;
- community and public buildings - mining institutes, pubs, shops, churches and chapels, recreation; and
- owners' houses - country houses and estates.

2.4 Economic

- the role of landowners – various development models can exist, such as old landowners investing in new industries; old landowners renting land to entrepreneurs; and new landowners acquiring land for mining development;
- the rise of entrepreneurial capitalism;
- company villages and social control of communities; and
- company tokens and shops, etc.

2.5 Relationship to the wider world

- relationship to farming and other industries, food supply, land use and workforce.

2.6 Landscape and local society

- how do local people perceive the Nottinghamshire coalfield as a lived and worked environment;
- what were community perceptions of the collieries, settlement and the wider world beyond the coalfield and what was the wider world's perception of mining and its communities.

3 AIMS AND OBJECTIVES

3.1 Project Aims

The project was undertaken to provide a framework for understanding the character of the historic landscape of the coal industry in Nottinghamshire. To achieve this, the project contextualised heritage assets from the coal industry within their historic landscape context and identified the contribution that heritage assets have made to the character and identity of the coalfield. This will enable better informed management and promotion of the heritage of the coal industry in Nottinghamshire.

The project sought to accomplish this through the following specific aims:

1. to provide a characterisation of the coalfield's historic landscape, in order to gain an understanding of the development of that landscape and the features and interrelationships that give it its character;
2. to assess the vulnerability of the historic landscape and its assets and to identify the potential risks to which they are exposed;
3. to aid in the management and promotion of the coalfield's historic landscape and to provide context in determining conservation issues relating to mining features.

3.2 Stage 2 Project Objectives

The objectives for Stage 2 of the project are to:

1. identify and record the condition of heritage assets related to the project;
2. identify the distribution, group value and significance of heritage assets related to the coal industry;
3. identify the impact of the industry on related themes (settlement, transport, culture and economy);
4. identify the significance of the industry and its related culture on community identity in the coalfields;
5. provide a strategic overview of the Nottinghamshire coalfield landscape and its heritage;
6. assess the impact of the coalfield landscape and its heritage assets on local perceptions of place and belonging;
7. identify risks to heritage assets related to the coal industry and to the overall character of the former coal industry landscape;
8. enhance community engagement with the heritage of the coalfield landscape, including heritage assets, documentary sources and memorabilia;
9. enhance the local HER;
10. make general recommendations regarding the management and promotion of the Nottinghamshire coalfield's heritage; and
11. consider methodologies and approaches to the assessment and management of a coalfield landscape that could be applicable to other coalfield areas.

It was determined that the objectives of the project could be achieved only if local communities, planners and managers dealing with the heritage of the Nottinghamshire coalfields were involved from the onset. The establishment of steering and stakeholder groups were determined to be the primary means of meeting these objectives and obtaining the support of these groups and individuals. This provided the opportunity for an ongoing dialogue through the duration of the project, enabling stakeholder contributions and the maximising of the value of the project's outputs and recommendations.

4 PROJECT METHODOLOGY

4.1 Steering group

A steering group was formed to guide the project, this consisted of Tim Allen (Historic England), Ursilla Spence (NCC), Jason Mordan (NCC), David Knight (Trent and Peak Archaeology) and Glyn Davies (ArcHeritage). The choice of study areas was made following discussion within the study group, drawing on the experience and expertise of the members.

4.2 Documentary research data collection

The documentary and historical research was carried out by Mark Stenton. This part of the project aimed to:

- fill in gaps in knowledge, at the large scale, relating to the themes identified from the Stage 1 scoping exercise;
- undertake a detailed analysis, at the small scale, of the documents relating to the case studies in order to enhance our understanding of the project themes and their interrelations.

4.2.1 Large Scale

Filling in gaps in knowledge involved archival and library research on the themes that, based on the archives examined in the scoping exercise, had been identified as having low research potential:

Industry: secondary coal products

power production

related industries

Transport: roads

Settlement: health and education

community and public buildings

owners' housing

Economics: company villages and social control of communities

company tokens and shops

Relationships to the wider world: relationship to farming and other industries, food supply, land use

The Stage 1 scoping assessment suggested that while additional archival work may identify further documentary sources on these topics, this was not the case for some topics. If viewed analytically, library research on secondary, published material relating to these topics, for example the development of turnpikes for roads and landed estates for owners' housing, may enhance our knowledge and understanding.

An additional theme was been added to the project since Stage 1:

Landscape and local society:

- *how do local people perceive the Nottinghamshire coalfield as a lived and worked environment;*
- *what were workers' perceptions of the industry and their relationship to the underground environment and to the surface environment;*
- *what were community perceptions of the collieries, settlement and the wider world beyond the coalfield*.

For this theme, a scoping search was made for documents, e.g. diaries and published sources held in:

- National Record for the Historic Environment;
- Nottinghamshire Archives;
- East Midlands Collection, University of Nottingham;
- Nottinghamshire Historic Landscape Characterisation;
- Nottinghamshire Extensive Urban Survey;
- STEP reports;
- Published sources and reports on previous research.

Additional information was also obtained via the project's community engagement element.

4.2.2 Small-scale case studies

The six case studies were undertaken to analyse the details of development within the study areas and to gain an understanding of the interrelationships of the themes within these areas. For the documentary sources, this was focused on an examination of the documents that had been identified during the scoping study. Consequently, the relevant archives were revisited and the documents examined. This involved visits to or the consultation of information from:

- Nottinghamshire Historic Environment Record (HER);
- Nottinghamshire Historic Landscape Characterisation;
- Nottinghamshire Extensive Urban Survey;
- National Record for the Historic Environment;
- Historic England Archive for photographs of collieries and buildings;
- Nottinghamshire Archives;

- Coal Authority;
- British Geological Survey;
- Material and collections held by groups and individuals;
- East Midlands Collection, University of Nottingham;
- North of England Institute of Mining and Mechanical Engineers;
- National Coal Mining Museum for England;
- Parks and Gardens UK;
- Landscape and Reclamation, NCC;
- published sources and reports on previous research.

Initial searches were made online, where possible. Site visits were undertaken to consult documents of interest.

The archival work was undertaken with the fieldwork on the case study areas in mind. During documentary research, consideration was given to the identification of potential heritage assets that are not recorded on the HER, but which fall within the interest of the project.

4.2.3 Documentary research data collation

The data collected during the documentary research was collated and prepared for inputting to the project GIS.

4.3 Field survey

4.3.1 Field Survey

The field survey was undertaken on the six case study areas by Jayne Rimmer and Toby Kendall and comprised a walkover survey of each study area to examine known and potential heritage assets of interest, based on the project themes.

The provisional list of heritage assets was compiled from features recorded on the HER and from possible assets identified on historic maps and via documentary research. During the field survey, each known or potential site was visited where public access was available. A number of possible features identified on historic maps (e.g. 'old mining remains') were located on private land, for example in fields and woods that could not be accessed.

Due to the number of coal industry related features in planned pit villages that could be considered heritage assets, including every house and building, not all features have been given asset numbers. In planned pit villages, a general village number has been allocated along with numbers for coal industry features and key community features.

During the fieldwork, a record was made for each heritage asset visited. The record comprised a description recorded on a recording sheet adapted from the Historic England Assessment Form for assessing historic buildings. Two forms were developed, one for buildings and one for other features. Examples of the recording sheets are provided in Appendix 3. In addition to the written description, a photographic record was made of each heritage asset.

Where heritage assets had existing descriptions on the HER, or as Scheduled Monuments or listed buildings, the existing descriptions were modified. The exteriors of the heritage assets were examined (with interior examination if open to the public) in order to identify five key factors regarding their:

Preservation: are they complete or fragmentary?;

Condition: are they well-maintained or in poor repair?;

Current use: are they currently in use and, if so, is this related to their original function?;

Context: are they related to other coal industry heritage assets and their settlement context?;

Identifiable risks: are there any obvious risks to the asset and its context from either neglect or development?

Consideration of these five factors aided in the assessment of the heritage asset, its relationship to the wider coalfield landscape and the potential risks faced by the heritage asset.

4.3.2 Data collation and production of the GIS

The data collected on heritage assets during both documentary research and the field survey was collated, sorted and input into the project GIS. The GIS was produced by Karen Weston.

The project GIS covers the Nottinghamshire coalfield and the attributes used in data inputting were structured so that the results can be displayed and analysed both at the coalfield level and for the individual case study areas. The GIS has an associated database, with descriptions of the heritage assets. For the purposes of the database, existing National Heritage List For England (NHLFE) and Nottinghamshire HER numbers have been used to identify heritage assets. For heritage assets without previous codes, reference numbers with a prefix specific to each study area have been allocated (eg. C1, E2, H3, for Clipstone, Eastwood and Hucknall, respectively). For clarity, however, the heritage assets have also been assigned consecutive site numbers (1-157) for use on the GIS and are shown with these numbers on the figures. In the asset table, each study area has been allocated a colour code.

4.4 Assessment of significance and vulnerability

The data collected during documentary research and the walkover surveys was used to assess the significance and vulnerability of the coalfield landscape in each study area and the heritage assets that lie within that landscape.

This was carried out in line with existing Historic England nomenclature and principles. Some of the terms and principles used in assessing significance are outlined, below:

Vulnerabilities - these represent the different processes by which significance might be lost.

Risk - this brings together how bad the loss of significance resulting from a vulnerability would be versus how likely that would be to happen - this can often be expressed as a matrix.

Table 1. Risk matrix

Risk Priority	High Loss of Significance	Medium Loss of Significance	Low Loss of Significance
Short Term	High Risk	High Risk	Medium Risk
Medium Term	High Risk	Medium Risk	Low Risk
Long Term	Medium Risk	Low Risk	Low Risk

Significance - is the product of dialogue about what makes a particular asset special or interesting.

Importance - is the relative rank status applied to an asset on the basis of a cultural consensus or formal designation process.

The significance and importance are based on perceived values of individuals and groups.

Values - encompass all the culturally and socially formed and contextualised reactions of individuals to the world around them.

4.5 Community engagement

Stage Two of the project contained a significant community engagement element. This was based on the six case study areas and was focused around a series of workshops. These were undertaken by Glyn Davies and Christopher Atkinson in order to identify public perceptions of the coalfield landscape and to identify potential community-based initiatives that could be undertaken to enhance the landscape's public understanding and appreciation. The potential for community engagement was a factor in determining the case study areas, with the workshops being focused around the study areas.

4.5.1 Set-up

For each workshop, the set-up involved contacting local groups, identifying a workshop location, publicising the workshop and preparing material for the workshop.

4.5.2 Workshops

There were four sessions in each workshop.

Session 1 - Project outline.

An update of Phase 1 and an introduction to Phase 2 of the project.

Session 2 - Perceptions of mining heritage

This began with an ArcHeritage staff member highlighting their perceptions of mining heritage; in turn, this acted as a springboard for participation from the community. A series of pre-defined questions were asked, for examples:

- What is the value of mining heritage?
- Is it important and why?
- How can local people contribute to the preservation and enhancement of mining industry heritage assets (e.g. monitoring, reporting)?

The discussion was intended to identify local perception of, and interest in, the heritage of the coal industry in each of the study areas.

Session 3 - Sharing of memorabilia/memories

The scoping study identified the existence of several community-held collections of documentation and memorabilia relating to the coal industry. This session was intended to explore the potential of community-held material, documents and artefacts relating to and forming part of the coal industry heritage :

- What is the value of the collections?
- How can the material be catalogued and made publicly-available?
- How should collections be maintained and conserved?
- What is the value of digitising collections?

Session 4 - Community project proposals

This session looked at the potential for community groups, either individually or collectively, to develop community-based projects relating to coalfield heritage. A possible project relating to cataloguing and disseminating information on a community groups' archive collection was outlined as an example of the type of projects that could be undertaken. This then led on to a discussion of what the community group themselves would like to do. The Sharing Heritage (£3,000-£10,000) and Our Heritage (£10,000-£100,000) grants from the HLF were discussed as potential financial leads.

4.5.3 Feedback

Following completion of the workshops, a short report outlining the results was produced. This identified the main concerns of the local community regarding the surviving heritage of the coalfield and summarised the types of projects that people would like to see undertaken. This was submitted to members of the steering group in their capacity of representatives of the local authority and to Historic England, in order to elicit comment on the potential of the community proposals to obtain support for these bodies with regard to potential funding applications to the HLF.

5 CASE STUDY AREAS

The choice of six case study areas was made following consultation with the project Steering Group. The case study areas were chosen to reflect the geographical spread of the coal industry in Nottinghamshire and to investigate potential variations in the development and landscape character of the coal industry as identified in the scoping study (Davies, Stenton *et al.* 2014). The scoping study identified variation in the character and date of coal industry heritage assets across the coalfield; this variation related to the eastwards expansion of the coalfield as technology developed over time. The choice of case study areas was made to further investigate these variations. The case study areas chosen were:

Strelley: Erewash Valley: early mining, bell pits and tramways

Selston: early mining, collieries developed from the 18th century continuing through to the 20th century

Eastwood: more developed mining, influencing the development of small existing towns, birthplace of D.H. Lawrence

Hucknall: more developed mining influencing the development of small existing towns

Clipstone: deep mining planned colliery and pit village, very active local group.

Thoresby/Edwinstowe: deep mining planned colliery and pit village, the last Nottinghamshire colliery.

In the description of the history and documentary resources, and the heritage assets of each study area, unnumbered sub-headings are used to identify the themes to which the available information relates. The historic background was written by Mark Stenton, the assessment of heritage assets by Jayne Rimmer.

6 HISTORIC DEVELOPMENT OF NOTTINGHAMSHIRE COAL MINING

This section summarises the historical development of coal mining in Nottinghamshire in order to provide context for the follow sections. The historic development outlined here builds on the results of the scoping study: this identified the origins of the industry on the exposed coal measures in the west of the county and its gradual expansion east as mining technology developed (**Figure 2**).

6.1 Early mining

No evidence of Roman coal mining has been discovered in Nottinghamshire. It has been suggested, however, that coal recovered from Roman deposits in the Lincolnshire Fens may have been transported from Nottinghamshire, the closest coalfield to that part of the fenland (Palmer and Neaverson 1992, 28; Forbes 1966, 28). While Sutton in Ashfield, to the north of Selston, has been suggested as the source of this coal (Patterson 2012, 92), this remains speculative.

There is no evidence of early medieval coal mining in Nottinghamshire and the period in which the county's coal reserves began to be exploited is unclear. Coal was used extensively by 1257, however, when Queen Eleanor felt compelled to leave Nottingham 'owing to the smoke of the sea coals' (Page 1910, 324; Swinnerton 1910, 61). The source of the coal that drove the queen from the town is unknown. While the term 'sea coal' typically refers to coal recovered from the

coasts of the North East, it also appears to have been used in a more general sense during the medieval period, with 'a mine of sea coal' being recorded at Cossall, to the north-west of Strelley, in 1316 (Stevenson 1911, 88). Documentary sources record coal mining at Brinsley, to the north of Eastwood, at Selston and at Wollaton, to the south-east of Strelley, in the medieval period (Griffin 1971, 3).

Late medieval coal mining in Nottinghamshire took place on the outcrops or shallow seams of the 'exposed coalfield' in the south-west of the county, typically through the sinking of simple shafts from the surface to the coal seams. The remains of many of these so-called 'bell pits' remain visible in areas such as Strelley. Documentary evidence suggests that some 'underground working may have been more extensive than simple bell pitting', however, as the 1316 Cossall mining lease recorded 'le sowe', a sough or subsurface drainage feature that was used to remove water from the mineworkings (Lewis 2006, 205; Stevenson 1911, 88). Despite this reference to more developed technology, the vast majority of coal extraction during this period was undertaken through the excavation of 'bell pits'.

Due to the limitations of medieval mining technology, shallow coal seams were abandoned when the easily-accessible reserves had been worked out or the depth of the workings or problems with drainage became insurmountable or unprofitable. Coal reserves at greater depths typically remained unexploited, with new shafts sunk instead on different parts of the shallow seams. This resulted in clusters or lines of bell pits, rather than fewer but deeper workings. Early mining is therefore characterised by large numbers of small pits; these are particularly prevalent on the western edge of the county. **Figures 3** (HER data) and **4** (Coal Authority data) show the distribution of extraction features and mine entries. While the Coal Authority data on mine entries covers all dates, the density of mine entries on the exposed coal measures to the west of Nottingham is due primarily to numerous early mining features of medieval and early post-medieval date.

Medieval coal mining appears to have been dominated by private landowners, such as the Willoughbys of Wollaton, and religious houses, such as Beauvale Priory, to the north-east of Eastwood. Landowners such as these typically sold leases to mine coal for a set period of years, although the Willoughbys appear to have managed their own pits from at least the 15th century.

6.2 Early post-medieval mining

The monks of Beauvale and Lenton retained extensive mining interests into the early 16th century. Following the Dissolution of the Monasteries in the 1530s, however, private landowners such as the Byrons of Newstead acquired monastic lands and began to exploit the mineral rights, either through the sale of coal leases for cash or by direct control of coal mines. The economic development of coal mining in this period was such that the Willoughbys were able to build a new hall at Wollaton from the profits of their mines.

Documentary evidence indicates that coal mining remained mostly confined to the 'exposed coalfield' in the west of Nottinghamshire during the early post-medieval period, with mining taking place at Selston, Strelley, Eastwood, Hucknall, Risshall and Greasley, among others (NA DDP/CD/13; DDP 114/12; NAK E 329/333; NA DD/LM/33/1/2; NA DD/LM/187/3/3; NA DD/LM/208/2/2). The available data from Nottingham HER (**Figure 3**) and the Coal Authority (**Figure 4**) show similar distributions of coal extraction features. There are, however, differences

in the distribution of 'bell pits' between the HER and the Coal Authority. While the HER data includes a number of possible 'bell pits' to the north-west and south-west of Mansfield, these features are not recorded by the Coal Authority. Given their location on the concealed coalfield, where the coal seams typically lay at great depth, it appears unlikely that these are the remains of bell pits. 'Bell pits' could be present in areas where deep valleys cut through the overburden to the concealed coal measures; however, this is unlikely to be a significant factor. These could be mining-related features that have been misidentified as bell pits. As these features are currently recorded on the HER, they have been shown on Figures 2 and 3.

During the early post-medieval period, advances in mining technology allowed the exploitation of deeper coal seams to the east of the medieval mining areas. Innovations included horse-driven 'rag and chain pumps', the shoring-up of shafts and roadways, and the increased use of soughs, such as the 'long sough' that was constructed at Wollaton in 1552 (Palmer and Neaverson 1992, 95; Griffin 1971, 3).

Huntingdon Beaumont, a private 'coal speculator', introduced several technological innovations at Strelley from 1603. These included the earliest known waggonway or tramway, on which coal was transported away from the pits in horse-drawn waggons along railed tracks (Palmer and Neaverson 1992, 95). Beaumont also introduced new transport arrangements for moving coal to the London market, new drainage techniques to allow deeper working, new working practices to increase production and provided accommodation for his workforce. Many of the innovations that Beaumont introduced at Strelley were subsequently replicated throughout the British coal industry.

Technological developments in this period also included the use of hand-driven windlasses and the horse-driven 'cog and rung gin', while new mining techniques included the use of pillar and stall workings at sites such as Selston, Skegby and Swanick (PRO 1973, 119; Griffin 1971, 3-4). Increased mining activity within the county's exposed coalfield is indicated by new mines which opened at Hucknall, Cossall, Bilborough and Trowell in the 17th and 18th centuries (NA DDE5/7; DD2P/28/465).

Nottinghamshire's landed gentry retained interests in coal mining throughout the 18th century through the leasing of mineral rights on their various estates, with the Duke of Newcastle involved in works at Hucknall, Lord Middleton at Bilborough and Wollaton, and the Earl of Stamford at Moorgreen, to the north-east of Eastwood (Griffin 1971, 5, 21-22; NA X94 208/18). During this period, however, coal came to be worked increasingly by small companies who leased mineral rights from the landowners at fixed rents and undertook the mining operations themselves (Griffin 1971, 26). Among the most successful of these were Barber Walker & Co., who worked coal at Bilborough, immediately to the east of Strelley, in the early 18th century and at Brinsley, immediately to the north of Eastwood, at the time of Philip Hutchinson's 1739 map of the Nottinghamshire coalfield (NA XM 7 S).

Technological developments helped to resolve the problems of deeper mineworkings during this period and several soughs were shown on the 1739 Hutchinson plan. By the late 18th century, the Wollaton sough was drained by a Newcomen engine, one of a range of new coal-powered steam engines (Griffin 1971, 5). Improvements in ventilation also facilitated the sinking and working of deeper and larger mines in this period (Griffin 1971, 5).

With the development of larger mines, roads were constructed specifically for the transportation of coal from pitheads, such as the 'carriage road…for carrying coals from Blackwell Colliery and Hucknall' in 1768 (NA DDE 40/1). While the Skegby Colliery account books record turnpike charges and demonstrate the use of major road networks to move coal (Griffin 1971, 65), the development of the canal network (**Figure 6**) meant that more coal could be transported more quickly and more cheaply and thus provided a major impetus to the expansion of the Nottinghamshire coal industry.

The relationship between the mining industry and the canals is demonstrated by the construction of the Erewash Canal, which opened in 1779. The canal had been 'proposed by the gentlemen and owners of the extensive coal mines of Heanor, Langley…Eastwood &c. to carry their coals to the Trent, which, for want of a water carriage, lay useless both to the owners and to the public' (Phillips 1793, 265).

The Erewash Canal was followed by the opening of the Cromford Canal in 1790 and the Nottingham Canal in 1796. Barber Walker & Co. were the prime movers in the construction of the latter. Canals were authorised by Act of Parliament, with coal owners typically being granted the 'Power to make Railways' (ie. waggonways) to transport coal from their pits to the canal. Waggonways ran to a canal wharf, such as that at Eastwood Lock, where coal was loaded onto barges to be transported to Nottingham or shipped to markets further afield. With far greater amounts of coal able to be moved from 'landlocked' mining areas, the exploitation of Nottinghamshire's coal reserves became increasingly economically viable, leading to a rapid growth in the industry. The impact of the coal industry on canal development is shown by the distribution of early canals on the exposed coal measures in the west of the county (**Figure 6**).

6.3 Nineteenth century

By the early 19th century, Nottinghamshire's coal industry had expanded substantially and mines were being worked in the western part of the county in areas such as Brinsley, Eastwood, Strelley (**Figure 7**), Wollaton, Trowell and Greasley, along with a spread onto the concealed coal field (**Figure 3**). Coal companies continued to take advantage of developments in transportation, such as the replacement of wooden-railed tramways by iron-railed lines that could take waggons with a greater capacity. The interrelationship of the waggonway and canal networks is indicated by the network of waggonways that connected pits at Strelley, Wollaton and Bilborough with the Nottingham Canal or with cuttings such as the Robinnetts Arm that served particular pits, while extensive lines linked the Portland and Pinxton pits with the Cromford Canal.

By the mid-19th century, however, the canal network had been superseded by the developing railway network as the principal means of transporting coal (**Figure 6**). The coal companies themselves played a key role in this transformation, with Barber Walker & Co. playing a prominent role at the 1832 meeting at The Sun Inn, Eastwood, that resulted in the formation of the Midland Railway. Almost a third of the cost of developing the railway was provided by this coal company (Griffin 1971, 68). By connecting the coal mines of Eastwood and the Erewash Valley with wider markets in Nottingham, Derby and Leicester, the creation of the Midland Railway led to a reduction in traffic along the canals by more than 50% between 1848 and 1869 (Griffin and Griffin 1982, 127). Indirect influence also came from Nottinghamshire coal owners such as the Duke of Portland, who had financial interests in the railway companies and

encouraged the interrelationship between the coal industry and the developing rail network in the second half of the 19th century (Gray 2008, 103; Griffin 1971, 97).

The majority of the old colliery waggonways were replaced by mineral railways during this period. While some of these were constructed by coal owners such as Thomas North, others were operated by the large railway companies such as the Midland Railway (Griffin 1971, 26, 99). Obsolete waggonways were sometimes rebuilt as mineral railways, such as the Mansfield and Pinxton line, immediately to the west of Selston, which had been constructed in 1819 and was rebuilt as a railway after being acquired by the Midland Railway in 1847 (Gray 2008, 102; Griffin 1971, 28).

While all of Nottinghamshire's early mines had been sunk in the county's exposed coalfield (Griffin 1971, 97), technological advances in drainage and ventilation techniques allowed the industry to exploit the deeper seams of the concealed coalfield to the east of the Erewash Valley by the mid-19th century (Palmer and Neaverson 1992, 96). Many of the new mines were sunk around the Leen Valley, in areas such as Hucknall (**Figure 7**), Bulwell, Annesley, Bestwood and Newstead. Many of these pits were served by the Midland Railway's new lines between Nottingham, Mansfield and Worksop (Griffin 1971, 98). Sunk in 1860, Hucknall no.1 was the first colliery to work the previously-untapped deep coals of the Leen Valley.

Thomas North, who had worked mines at Strelley in 1838, opened Cinderhill Colliery, one of the largest mines on the concealed coalfield (Griffin 1971, 25). The rate of the coal industry's expansion in this period is demonstrated by North's ownership of over 9000 acres within the deep-mine coalfield by 1856. Given the increased demand for coal and its prominence within the local and national economies, several owners of large estates formed coal companies with private investors in this period, such as William, 10th Duke of St. Albans, who formed the Bestwood Coal and Iron Company.

Many older mines closed during the mid-19th century, while pits such as Portland no.1 were modernised in order to compete with new collieries that featured recent technological advances in ventilation, roadway construction and haulage systems (Griffin 1971, 117). The pace of technological development is demonstrated by the introduction of ventilation furnaces in Nottinghamshire pits in 1843 and their replacement by sub-surface ventilation fans by 1887 (Griffin 1971, 7-8).

Population statistics demonstrate the impact of the coal mining industry in the previously largely agricultural areas of the concealed coalfield. At Hucknall, the population grew from 2,836 in 1861 to 4,257 a decade later and to 10,023 by 1881 (Stroud 1999, 8). The population of Newstead increased by 400% between the 1871 census and that of 1881, with the opening of a colliery in 1875 being followed by the construction of a planned village for the miners and their families (Gray 2008, 103). Some limited workers' housing had previously been constructed by coal companies, such as Portland Row, Selston. Thomas North's construction of a mining village at Cinderhill in the 1840s was a rarity (Gray 2008, 102), however, with smaller developments in existing villages, such as The New Buildings and The Breach at Eastwood, or Bentinck Town, Kirkby in Ashfield, being more typical. By the late 19th century, purpose-built mining villages became more common, with the construction of Annesley and Bestwood.

Due to the increasingly large numbers employed in coal mining in this period, predominantly rural estates could be rapidly and substantially redeveloped following the opening of a new colliery. This transformation was particularly conspicuous following the early 20th-century development of deep mines in the Dukeries coalfield, a large agricultural area in the north-east of Nottinghamshire that lacked any previous tradition of coal mining.

6.4 Twentieth and twenty-first centuries

Mining spread into the Sherwood area with the opening of Gedling Colliery in 1902, Rufford in 1911 and Welbeck in 1913-15 (Gray 2008, 130). In the 1920s, the Dukeries coalfield expanded with the opening of collieries and associated villages at Clipstone, Thoresby (**Figure 7**), Bilsthorpe and Blidworth. In the north-west of the county, Mansfield Colliery was producing a million tons of coal per year by 1912, while new mines such as Shireoaks and Manton began operating in the area around Worksop (Gray 2008, 130). The development of the railway network into these areas enabled the transportation of large quantities of coal and facilitated the viability of the new pits.

While deep-mined coal was comparatively expensive to produce, the profits were high and landowners such as the Duke of Portland, the Duke of Newcastle and Lord Savile earned substantial sums from the leasing of mineral rights in the new coal-producing areas. This economic impetus led previously-reluctant figures such as Earl Manvers, who had sought to prevent coal mining in Sherwood Forest, to begin leasing mining rights to the coal beneath his estates (Gray 2008, 130).

With the development of Thoresby Colliery, immediately to the east of Edwinstowe, a formerly agricultural area was so transformed through the influx of miners and the construction of a new village that 'the place was never the same again' (Woodhead 2010, 26). The area's existing population reportedly felt great resentment when the district 'was disrupted by so many…comers in', their 'way of life was disturbed, traffic and noise upset their peace' and their social events 'were invaded' (Woodhead 2010, 26). Similar reactions occurred elsewhere, including Ollerton, where the sinking of a new mine and the construction of New Ollerton village saw the population increase from 676 to 3,912 between 1921 and 1931 (Gray 2008, 132).

During this period, several planned settlements were envisaged as 'model' villages (**Figure 7**), such as Forest Town. Extensive housing for miners was also constructed at Clipstone, Bilsthorpe, Blidworth and Harworth. Social and recreational facilities were a key feature of the new mining villages, with Clipstone including features such as a cricket ground, a bowling green, institutes, halls, clubs, tennis courts, pavilions, churches, chapels and allotments. Technological developments also influenced the development of the new villages, with the houses at Thoresby/Edwinstowe supplied with electricity from the colliery company's pits and those at New Ollerton being heated by exhaust steam, and supplied with hot water, from the colliery (Gray 2008, 135).

By 1926, miners' wages had fallen to £3.90 per week from £6 per week in 1919. A proposal to impose further wage cuts whilst increasing working hours was resisted by the Miners' Federation of Great Britain and the TUC called a General Strike in support of the miners on 3rd May 1926. When the TUC called off the General Strike a week later, the MFGB remained on strike. George Spencer, General Secretary of the Nottinghamshire Miners Association, urged Nottinghamshire

miners to break the strike and negotiated with local mine-owners for a return to work. The strike petered out thereafter, until finally being called off in November. The fallout from the strike and George Spencer's actions led to his expulsion from the MFGB and his founding of the Nottinghamshire and District Miners' Industrial Union. In the coal industry as a whole ,miners' wages continued to fall, and hours increase, while thousands of strikers remained unemployed for several years thereafter.

During the early 20th century, the changing relationship between coal companies and the owners of the great estates is indicated by the companies' acquisition of properties such as Edwinstowe Hall and Edwinstowe House, which were bought by the Butterley Company, while Ollerton Hall became a home for mining managers and Berry Hall became a miners' convalescent home (Gray 2008, 131-132, 137, 143).

Coal had been used increasingly for industrial purposes since the early 19th century, when the Butterley Company began supplying non-domestic users such as Mansfield Gas Works (Gray 2008, 102). Supply to industry increased following the nationalisation of the coal industry in 1947. By the time that Bevercotes, the world's most advanced colliery, opened in the 1960s, Nottinghamshire coal was used predominantly for the electricity industry. By 1982, the Central Electricity Generating Board took approximately 80% of the county's coal (Gray 2008, 139) and dedicated railway lines transported coal from mines at Clipstone, Thoresby, Bentinck and Bevercotes directly to power stations such as Ratcliffe on Soar, Cottam and Staythorpe (**Figure 6**).

Nottinghamshire's coal industry had begun to decline in the post-war period, however, with the closure of pits such as High Park, Oakwood Grange and Bulwell. The majority of closures occurred in the 1960s, however, when sites such as Bestwood, Firbeck and Kirkby Summit were closed (Gray 2008, 140).

The 1984-1985 Miners' Strike led to profound impacts on the future of the British coal industry. In Nottinghamshire, additional impacts stemmed from the role played in the strike by the county's miners. While miners at many Nottinghamshire pits supported the strike, the majority worked throughout the dispute. At Bentinck Colliery, where the majority continued to work, even the union officials were split. Todd Clark, NUM Treasurer at Bentinck, remained on strike throughout and suggested that Nottinghamshire miners felt little or no sense of community loyalty, as the county had become 'an integrated coalfield' with miners employed from various parts of the country (Bloomfield 1986, 77). The strike also led to the formation of the Union of Democratic Mineworkers (UDM) and split communities and families. Many of these wounds have never healed.

Following the end of the Miners' Strike, colliery closures accelerated with the loss of Moorgreen, Hucknall, Blidworth, Shireoaks, Rufford and Bevercotes. Clipstone Colliery closed in 2003 and, by the end of 2008, Thoresby and Welbeck were the only active collieries in the county. Thoresby Colliery, the last working coal mine in Nottinghamshire, closed in 2015.

Extensive opencast mining had taken place in many parts of the Nottinghamshire coalfield, such as Eastwood, in the post-war period and continued in areas such as Selston, Hucknall and Clipstone during the late 20th and early 21st centuries. **Figure 5** shows the distribution of opencast operations pre-1994, based on Coal Authority data. Following the completion of opencast operations, landscaping works tended to remove all traces of the mining heritage in these areas,

with features such as a golf course and business parks being created at Hucknall, nature reserves at Selston and the Vicar Water Country Park at Clipstone.

7 STRELLEY

7.1 Location and historic context

The Strelley study area is located on the exposed coal measures bedrock on the west side of the county. The study area lies in the valley of the River Erewash, to the west of Nottingham. This area also contains the Erewash and Nottingham canals. The topography around Strelley generally slopes down to the west, towards the River Erewash.

Strelley's location on the exposed coal measures led to the early exploitation of coal in the area, along with the early transport developments typical of the exposed coalfield, as identified in the scoping study (Davies, Stenton *et al.* 2014). The early development of the exposed coalfield was characterised by the development of multiple small mines, although larger operations developed with time.

Figure 8 shows the location of coal industry-related heritage assets in the Strelley area.

7.2 Documentary research and history

7.2.1 Medieval

Industry

The origins of coal mining in the Strelley study area are uncertain, but could date back to the medieval period. While there is no direct evidence to demonstrate that mining took place within the study area during this period, lucrative coal-mining operations were conducted by the Willoughby family of Wollaton Hall, approximately 3.15km to the south-east of Strelley, from at least 1480 (Carpenter 1992, 112, 181). Within the study area, the remains of bell pits near the present-day Broad Oaks Farm, Main Street, Strelley, are typical of known medieval mining practices. The bell pits are a Scheduled Monument (SM no.30959).

The surface remains at Broad Oaks Farm comprise a series of undisturbed bell pit shaftmounds created by the spoil upcast from the sinking of the shafts. The shafts themselves are up to 5m in width and are likely to have been approximately 12m in depth, with radial mineworkings up to 10m from the base of the shaft (Bell *et al* 2009, 17).

Aerial photographs show further potential bell pits between the Scheduled area and the A6002, to the south-east. However, none of the Strelley bell pits, including the SM, have been dated and, as this method of mining continued to be used into the early post-medieval period, the date at which coal-mining commenced in the Strelley area remains unclear. Coal Authority data for Strelley shows extensive early mining activity within the study area (Figure 8).

7.2.2 Post-medieval

Documentary sources provide extensive evidence for the majority of the study themes in early post-medieval Strelley: the role of land-owners and their relationships with private coal speculators; technological innovation in mining techniques; the intensification of coal production; developments in transport systems; access to wider markets; employer-provision of

housing for mineworkers; and the movement into Nottinghamshire of experienced miners from other coalfields.

The Coal Authority record large numbers of former mine entrances kin the Strelley are. These are distributed across the landscape, but often form lines and clusters. The density and form of distribution suggest that these are early small-scale mining features, possibly bell pits.

7.2.2 Sixteenth century

Economic

Documentary evidence demonstrates that local land-owners played a key role in the development of coal-mining within the Strelley study area. The earliest surviving evidence dates from 1571, when Sir Philip Strelley borrowed money from Sir John Byron to finance coal mining on his estates at Strelley (Nef 1966, 13). Sir Phillip may have also been influenced by recent events at Wollaton, where the Willoughbys had used the profits of coal mining to finance the rebuilding of Wollaton Hall (Platt 1994, 229). The involvement of important land-owners in the development of coal mining in Strelley is also likely to have been responsible for the survival of the evidence, as the documentary sources were preserved by being held in the estate archives of families such as the Byrons.

There is no evidence to demonstrate the way in which Sir Philip Strelley's mines were operated. It is not clear if mining was undertaken on a full-time basis by experienced colliers, perhaps hired from the established coalfields in Leicestershire and Staffordshire, or on a part-time basis by Sir Phillip's tenants, perhaps as a supplementary activity to agricultural work. The location and scale of Strelley's late 16th-century coal mines are also unclear.

Industry

Bell pitting is likely to have continued to be practiced in this period, perhaps along with the pillar-and-stall technique whereby coal was cut along a grid of roads with rectangular pillars left for support (Bell *et al* 2009, 17). Strelley's mines were less successful than those at Wollaton, however, and Sir Philip's debts led to the acquisition of the area's 'coalmynes, delves and vaynes of coal' by Sir John Byron in 1597 (quoted in Nef 1966, 13). Byron appears to have had no personal interest in the exploitation of the Strelley coal reserves, however, preferring instead to control mineral rights and accept payment for coal leases. Mining at Strelley thereby illustrates the contrasting views towards coal mining that were held by different land-owners in this period.

7.2.3 Seventeenth century: Huntingdon Beaumont

Economic

The Middleton Collection, held at the University of Nottingham Archive, contains leases, letters and accounts relating to the rapid transformation of coal mining at Strelley in the first decade of the 17th century. This material demonstrates the key role of coal 'adventurers' or 'prospectors' (Greasley 1883, 2), individual entrepreneurs who worked in partnership with landowners in order to exploit the county's coal reserves, during this period.

In 1601, Huntingdon Beaumont, a man 'reputed to be very skyllful in Coleworkes, having spent a great part of his life and tyme in such works' at Coleorton, Leicestershire, took over the running of the Wollaton pits for Sir Percival Willoughby (Smith 1989, 66). In 1603, Beaumont paid £4,000 to Sir John Byron in order to take over Byron's lease on the mines at Strelley (Grifffin 1971, 3-4).

Given their extent and location, the Broad Oaks Farm Scheduled Monument bell pits may have been sunk or extended by Huntingdon Beaumont in 1603-'04. There is no direct evidence to demonstrate this, however, and the locations of Beaumont's mines at Strelley are unclear.

Sir Percival Willoughby allowed Beaumont to extend the 16th-century Wollaton sough to the Strelley pits and, in 1604, assumed responsibility for half of the costs of operating the mines in return for half of Beaumont's profits (Smith 1989, 67). The interrelationship between coal speculators and landowners is also indicated by the subsequent renewal of Beaumont's coal lease being granted as part of the marriage settlement between Sir Percival's daughter and Sir Philip Strelley's son (Smith 1989, 78).

Industry

References in papers relating to Beaumont's operations at Strelley reveal several aspects of early 17th-century mining practice. Among these was a declaration that the Strelley pits were mined in accordance with 'the Arte of Collierie' (quoted in Nef 1966, 34). This suggests that, by the early 17th century, successful coal-mining techniques had become sufficiently established to be recognised as good practice. The terms of Beaumont's lease required him to operate no more than seven 'chawderable' mines at any one time and to leave six pits 'open and chalderable in good worke' at the end of the lease (quoted in Smith 1989, 77, 80). It is not clear if this clause referred to six individual bell pits or to six mines, each of which contained a cluster of bell pits. Upon expiry of the lease, Beaumont was also required to construct a sough to allow the continued drainage of the workings 'for the benefitt of future times' (quoted in Nef 1966, 34). This indicates that the Strelley mines were not expected to be worked to exhaustion during the period of the lease and that, by the insertion of these clauses, Sir John Byron sought to ensure that Strelley's coal reserves and mineral rights would remain a lucrative source of income (quoted in Nef 1966, 34).

The Willoughby-Beaumont papers held by the University of Nottingham contain references to technological innovations in mining techniques at Strelley, including the use of boring rods to locate coal reserves without the expense of sinking a shaft and the use of horse-driven pumps to drain the mineworkings (Lewis 2004, 11).

The early 17th-century documentary sources for Huntingdon Beaumont's mining operations at Strelley indicate that his innovations in both technology and working practices led to the intensification of coal production in this period.

Transport

Beaumont's principal innovation relates to the transportation of mined coal from the pit head to coal wharves for loading and transportation. Prior to the 17th century, coal was moved from pits by carts travelling along rural 'summer roads'. As these were impassable by heavily-laden carts in winter, transportation necessarily limited coal output, sales and profits. A 1604 letter from Sir Percival Willoughby, however, noted that coal from the Strelley mines would soon be transported year-round due to 'Master Beaumont's…new invention' (UON Mi X3/47-61). This was a transportation system on which coal could be moved 'with great ease and expedition' in horse-drawn 'waggons, with small wheels made from a single slice of oak, running on wooden rayles' (UON Mi X3/47-61). Beaumont's introduction of the waggonway at Strelley has been

credited as the earliest overground waggonway in the world and is thus a development of international historic significance (Smith 1989, 77; Griffin 1971, 3).

Described by Francis Strelley as 'new and extraordinary inventions and practices for the spedy and easy conveyance away of the said coales', Beaumont's waggonway cost under £200 to construct (Smith 1989, 77, 97; Griffin 1971, 3). The Middleton Collection does not include any plans or depictions of Beaumont's waggonway. While likely to have been a single-line track, it is not clear if a single train of loaded waggons was taken to the terminus and then returned empty or if pass-bys were included along the route, so that empty waggons making the return journey could be taken off the main line to allow further loaded waggons to be sent along the route. Given the exceptionally early date of Beaumont's waggonway, the former is perhaps the most likely. The number of waggons sent along the waggonway at any one time is also unclear, although a 1607 letter to Percival Willoughby from Robert Fosbrooke requested that five waggons be used to transport coal from the Strelley pits along Beaumont's waggonway for stacking in Wollaton Old Park (Smith 1989, 72).

The route of Beaumont's waggonway has been projected from references in various documentary sources but is not currently supported by archaeological evidence. Francis Strelley stated that the line ran 'the length of two myles or thereboutes' (quoted in Smith 1989, 77), while Sir Percival Willoughby wrote that the 'new rayles' terminated at a coal yard at Wollaton Lane End (Smith 1989, 77; Griffin 1971, 3). The bell pits at Broad Oak Farm are approximately two miles (3km) from Wollaton Lane End and Paul Nix has suggested that Beaumont's waggonway ran south-east from the Scheduled Monument, crossed Bilborough Road and ran through Wollaton Old Park to Oldpark Farm. From the farm, Nix suggested that that the present-day Old Coach Road marks the waggonway's former course (Nix 2013, 4). Shown as a track on the 1880 Ordnance Survey map, this route followed the southern edge of Broomhill Wood and ran between the two compartments of Harrison's Plantation, before it terminated at Wollaton Lane End. Given the extent of the coal-mining at Wollaton in the 15th and 16th centuries, the Wollaton Lane End coal yard may have been established by the Willoughbys prior to Beaumont's involvement and so formed a pre-existing terminus for the waggonway. The majority of the waggonway's projected route lies outside the Strelley study area.

Sir Percival Willoughby stated that Beaumont's waggonway had allowed 'a hundred and twenty rooke of coales uppon in a weeke' to be 'conveyned away uttered and solde' and that this was substantially 'more than otherwise there could bee by the ordinarie and customarie course of the gettinge and carryinge away of the said coales' (quoted in Nix 2013, 1). By avoiding the unmade 'summer roads', Beaumont's waggonway also allowed coal to be moved in winter.

Early 17th-century coal-mining in the Strelley area also indicates the importance to the coal industry of an integrated transport system. In addition to traditional coal sales from the pits themselves, Beaumont and Willoughby sought to sell Strelley coal at 'Nottingham Bridges' (Trent Bridge) (Smith 1989, 71-72). An attempt was also made to establish 'a continual trade to London' by contracting with carriers to transport Strelley coal to the capital by boat (Smith 1989, 69, 71). The enterprise foundered when the carriers were unable to fulfil their part of the agreement (Smith 1989, 69, 71). Documentary evidence demonstrates that Beaumont and Willoughby subsequently acquired 11 'barges, boates or keeles' in which to ship the coal along the Trent to markets in Newark and Gainsborough (quoted in Nef 1966, 31). It is not clear if it was customary

for coal-owners to transport coal using their own boats or if this was another of Beaumont's innovations. This enterprise also appears to have been unsuccessful as, in 1607, Robert Fosbrooke, who controlled a coal wharf at Trent Bridge, contracted to transport the Strelley coal along the river (Smith 1989, 72).

Beaumont's 'rayles' do not appear to have led to the development of other waggonways in the immediate area or in the wider Nottinghamshire coalfield until the 19th century (Lewis 2004, 9-10). This is in contrast to the Shropshire and North East coalfields, where their introduction rapidly led to the construction and use of waggonways by all medium- and large-scale coal-owners in those counties.

Economic

Due to the scale of Beaumont's operations, Richard S. Smith has said that 'there is no reason to believe that any other of the large-scale inland collieries before 1640 could compare with Strelley in its heyday' (Smith 1989, 96). This is supported by Francis Strelley's 1615 statement that while mining in Nottinghamshire had traditionally been undertaken on a 6.00 a.m. to 6.00 p.m. single-shift system, with coal brought to the pit top in a single corf, Beaumont was working the mines at Strelley 'in a manner hitherto unknown in Nottinghamshire', using double (day and night) shifts and raising coal in double corfs (Smith 1989, 77). As a result, the quantity of coal produced by Beaumont was so great that 'the land around the pits was encumbered with great stacks' (Smith 1989, 77).

A 1618 account reported that a 'stocke of coles' of approximately 12,000 tons was 'stacked upp above the ground and ready for sale' at Strelley (quoted in Nef 1966, 34-35). In addition to indicating the scale of coal production, this offers an insight into the practices employed in the sale and distribution of coal during the early 17th century and suggests that coal was held at the pits where it had been mined and was only transported along the waggonway once it had been sold. Willoughby's 'coal yard' at Wollaton Lane End may therefore have functioned as a loading and distribution point, rather than a stack yard. It is not clear if staithes had been constructed at either end of the waggonway for loading and unloading the wagons, or in the coal yard for loading the carts, or if these operations were carried out entirely manually.

The University of Nottingham Archive hold several letters detailing the breakdown and subsequent dissolution of the Willoughby-Beaumont partnership (UON Mi X3/47-61). Handwritten annotation on the reverse of a number of these papers gives the perspective of the Willoughbys and suggests that Beaumont had secretly entered into agreements with other partners; had wrongfully excluded Willoughby from any share of the profits from the time of the renewal of the Strelley coal lease; that Beaumont's annual payments from the profits of the Strelley mines were greatly in arrears; and that Beaumont had either neglected to repair or had deliberately damaged the Wollaton sough in an attempt to flood Willoughby's own pits and prevent their reopening (Smith 1989, 77-78). The Willoughby-Beaumont partnership was dissolved in 1615.

The acrimonious dissolution of the partnership provides early evidence of the potential tensions that could arise in the relationships between private coal entrepreneurs and the land- or lease-owners with whom they dealt. The end of the partnership also impacted on the operation of Strelley's coal mining industry when, in 1617, Sir Percival Willoughby sought to re-open the

nearby Wollaton pits. The ensuing dispute greatly influenced the immediate future of coal mining in the Strelley study area. Aware that 'Strelley cart way is so fowle as few carriages can passe' and, faced with the prospect of transporting coal 'by mule', Willoughby sought 'libertie to bring coales down the rayles by wagon' (quoted in Smith 1989, 74). This reinforces the key role that Beaumont's waggonway played in the area's mining industry.

Beaumont appears to have refused permission for Wollaton coal to be moved along the waggonway, whereupon Willoughby retaliated by refusing to allow Strelley coal to be transported across his lands (Smith 1989, 77-78). As the majority of the waggonway ran through the Wollaton estate, this greatly affected the ability to transport Strelley coal to market. There is no evidence to indicate that Beaumont's waggonway remained in use after this date and it is possible that Percival Willoughby had it dismantled.

Following the end of Beaumont's relationship with Willoughby, a variety of documentary sources reveal the eventual collapse of the early 17th-century Strelley coal industry. In 1617, Beaumont sought to gain a foothold in the lucrative Newcastle coal industry with an endeavour that was financed partly by a syndicate of London merchants. Following the failure of the Newcastle scheme, Beaumont was imprisoned for debt and the London merchants attempted to recoup their losses by taking control of the pits at Strelley (Smith 1989, 70-71; 78-79).

While Beaumont was incarcerated in Nottingham, the London merchants badly mismanaged the mines at Strelley in their desire for quick profits, while their workforce 'disorderlie wrought' the coal reserves (quoted in Nef 1966, 34). Seeking quick profits, they extracted only the 'coals to be gotten at an easie chardge', while 'greate Ribbs of Coales' in more difficult workings were 'left most shamefullie' (quoted in Smith 1989, 80 and Nef 1966, 34). While Beaumont had introduced innovative drainage techniques, the merchants' men neglected even basic drainage practices and the deeper workings were flooded and abandoned.

Settlement

Letters and court proceedings relating to Beaumont's dispute with the London merchants reveal several further aspects of Beaumont's practices. Upon their arrival at Strelley, the merchants 'put out' the 'accustomed workmen of these mines' (quoted in Nef 1966, 34). This may be the earliest account in the Nottinghamshire coalfield of coal-owners replacing the existing experienced labour force with imported labour, presumably to increase control and profits. Having expelled Beaumont's miners, the merchants then 'put into their Roomes and places others of their own' (quoted in Nef 1966, 34). This indicates that Beaumont had provided accommodation for his miners and may be the earliest documentary evidence for the provision of workers' accommodation by a Nottinghamshire coal-owner. It is not clear if the provision of accommodation was standard practice, perhaps replicating the arrangement between landowners and their agricultural workforce, or was another of Beaumont's innovations. The nature and location of the 'Roomes and places' in which Beaumont's colliers were housed is unknown.

7.2.4 Seventeenth century: post-Beaumont

Economic

By 1623, the damage to 'all the workes' in the Strelley mines was so extensive that large quantities of coal were 'ungotten and lost forever' (quoted in Nef 1966, 34). Beaumont issued a

Chancery petition arguing that sufficient coal could therefore no longer be mined at Strelley to pay his debts and that he would thus be condemned to permanent incarceration unless the London merchants were forced to pay compensation. When called upon in court to justify their methods, the merchants claimed that they had not been driven by a desire to extract the most profit for the least expenditure, but had mismanaged the Strelley mines simply through 'ignorance and unskyllfullnes' (quoted in Nef 1966, 34). The Strelley mines were left inoperable and closed in 1624. Huntingdon Beaumont died that same year, while still imprisoned in Nottingham.

Strelley's mines had been so mismanaged by the London merchants that 'nowe nothing can be done without great new charge' (quoted in Nef 1966, 34). Richard S. Smith has suggested that, given the expense and the example of Beaumont's ultimate failure, 'the confused conditions there after Beaumont's death…cannot have favoured any large-scale activity' (Smith 1989, 81). There is no substantive evidence for further coal mining in the study area until 1651 when Ralph Edge, the new owner of Strelley Hall, complained that the agent of Sir John Byron had allowed Nicholas Strelley to fell 24 oak trees in Strelley Park 'for use in the mines' (NA DDE 5/8). The location of these mines is unknown.

The 1651 reference is one of several in this period which again reveal the often turbulent nature of the relationship between landowners, tenants, the holders of the coal leases and the miners themselves. A new mine sunk at Strelley in 1654 (NA DDE 5/7) may have been the pit in Strelley Park that was at the centre of a legal dispute which saw Richard Byron, William Byron, six riders and 10 footmen driving out the clerk of the mine 'and other workers, with swords and stones' (NA DDE 5/21). The lessee subsequently refused to comply with an injunction to readmit the miners and 'held the Park with armed men on behalf of Byron' (NA DDE 5/25).

Coal accounts demonstrate that mining was again taking place in Strelley Park by 1656 (NA DDE 5/34) and that the Park pits continued to be worked into the late 17th century. An agreement to carry coal through the park was made in 1670 (NA DDE 5/7; DDE 46/66-75; DDE 46/80; DDE 5/76), while Ralph Edge made an agreement with colliers from Wollaton, Kimberley and Bilborough 'to sink a hard-coal pit in Strelley Park' in 1684 (NA DDE 46/80). The locations of these Strelley Park pits are also unknown.

Industry

'Maps' showing the locations of pits at Strelley begin to be included in the documentary sources during this period (DDE 46/66-75). These are little more than rough sketches of isolated plots, however, and attempts to locate particular mines within the wider Strelley area remain problematic. For example, a *c*.1660 document details a prospective 'Coal Myne in the Hare Close, Strelley' (NA DDE 46/67) and includes a plan of how the workings would be arranged, but does not show Hare Close in its wider context and the location of the intended mine is unknown.

The *c*.1660 document provides detailed evidence for 'making a Coal Myne' in this period and lists the materials and costs required, while the accompanying illustration contains details of mine construction, engineering and layout. The Hare Close pit was to contain three 'Coal Pitts' (two 'Hard Coals Pitts' and a 'Soft Coales Gynn Pitte'), two 'water pitts', a sough 400 yards (approximately 366m) in length with 'ten Sough Pitts in the 400 yards', a 'Great Gynn Pitte' and roads leading from the shafts to the coal-workings (NA DDE 46/67). The required distances

between these features were also listed, while horse- and water-wheels were to be used to raise coal and remove water from the workings.

7.2.5 Eighteenth century

Economic

Documentary sources show that coal mining continued in the Strelley area throughout the 18th century, with leases, coal sales and accounts being recorded from 1727 (NA DDE 14/43-46, 81; DDE 28/23-24, 30, 32, 34). A 1732 agreement granted 'the tenants of the coalwork now in Strelley' the right to construct a road 'for the carriage of coals' from Chilwell Dams Farm, in the eastern part of the study area (NA DDE 46/48). The Coal Authority record over 30 abandoned mineshafts over the Chilwell Dam Farm site. Francis Barber, later one of the founders of Barber Walker & Co., one of Nottinghamshire's major coal companies, took a lease on coal at Strelley and nearby Bilborough from Ralph Edge in 1738 (Griffin 1971, 23). Specifically excluded from the lease was an existing mine 'under' Gorsy Close, a plot at Strelley that was also owned by Ralph Edge (NA DDE 14/45). The location of Gorsy Close is unknown. The extent of Strelley's coal mining industry in the second half of the 18th century is unclear. While 'Coal Pits' were marked at Bilborough on John Chapman's 1774 map of Nottinghamshire, none were shown at Strelley.

7.2.6 Nineteenth century

Transport

Cartographic evidence for coal-mining within the study area becomes more plentiful during the 19th century. An 1808 map by J. Green depicted the 'present and intended Coventry roads through Bilborough and Strelley' (NA XH 3 L). 'Coventry Roads' was a colloquial term for colliery waggonways in this period. Green's map therefore shows that, almost two centuries after Huntingdon Beaumont introduced these features, coal was again being moved by waggonway in the Strelley area. Bilborough Road, immediately to the east of the Broad Oak Farm bell pits, was named 'Coventry Road' in 1808 (NA DDE 14/73). While Beaumont's line had crossed the road in the early 17th century, the road is likely to have acquired its 19th-century name due to a modern waggonway which terminated at Strelley Coal Wharf on the west side of the road (Fyfe 1856, 252).

In 1811, John Farey listed 'Robinets' among the collieries that were being worked in Nottinghamshire (Farey 1811, 208). Operated by Barber Walker & Co., this was Robbinetts Pit, which stood in the north-west part of the study area and was served by the Robbinetts Arm of the Nottingham Canal. The canal, which opened in 1796, linked existing collieries across the landscape to an efficient means of transport for their coal. While many mines that were not directly adjacent to canals quickly constructed waggonways to connect the pits with the waterway, the construction of a dedicated canal branch 'arm' to serve a particular pit demonstrates the importance of the canal network to Nottinghamshire's rapidly developing coalfield. In 1817, John Farey stated that a 'railway' – possibly a waggonway – also ran to Robbinetts (Farey 1817, 398). Barber Walker & Co. were also mining coal on the Edge estates at Strelley in this period (NA DDE 14/77). The precise locations of these pits are unclear. No obvious mines or mining-related features were shown on the 1824 Strelley enclosure map (NA SY 1L).

A plan included with Thomas North's 1838 coal lease from Ralph Edge (NA DDE 46/67) depicted the course of a waggonway that led south from Babbington Colliery into the northern part of the

study area. It is not clear if an 'engine' at the colliery site was for use at the mine or if it indicates that this part of the waggonway included a steam-powered incline plane for the lowering and raising of wagons along a gradient. The waggonway was described as a 'new railway' in 1839 (Jukes 1839, 20) and is therefore likely to have been a recent construction at the time of the North plan. The waggonway ran south through fields to the east of Strelley Park Farm, before veering south-east through Spring Wood and on towards Strelley Park and Lord Middleton's pits at Bilborough.

A further waggonway was shown on the 1838 plan of North's lease from Edge (NA DDE 46/67). This crossed Sandy Lane to the south-west of Strelley village and ran west through the fields to the north of Catstone Hill Farm, before turning north-west to Old Moor Wood. From here, the branch line turned into the central part of the wood, while the main waggonway continued north to Robbinetts Pit and the Robbinetts Arm. While a canal wharf and staithes must have been present at the terminus of the Arm in order to load the coal onto barges, these features are not shown on the surviving historic maps.

W.W. Fyfe's 1856 *Rambles Around Nottingham* included an account of coal mining activity and practices in the Strelley area, with eye-witness descriptions of various mining-related features. At Coventry Lane, the present-day Bilborough Road, Fyfe noted 'Strelley Coal Wharf, emerging upon the highway' (Fyfe 1856, 252). While the wharf, which stood on the west side of the road (NA DD 262), was not shown on the 1858 plan of Thomas North's mining operations (NA DDE 14/90), the waggonway that had been shown crossing Sandy Lane on the 1838 plan was described by Fyfe as an 'iron tram road that communicates with the coal wharf, passes westwards through the gorge on the north of Catstone Hill and taking several other pits in its way, gains the Nottingham Canal Wharf' (Fyfe 1856, 253).

A feature described by Fyfe as the 'Branch Mineral Railway, from Cinder Hill coal field to the Erewash valley' (Fyfye 1856, 254) was shown crossing the northern part of the study area on the 1858 North plan and was named in the accompanying lease as the 'Railway from Babbington to Cinder Hill and from the Stationary Engine to the pits at Kimberley'. While these mines were located outside the Strelley study area, a three-line waggonway or mineral railway junction with the stationary steam engine at its centre was depicted on the 1858 plan. The waggonway from Babbington Colliery that had been shown on the 1838 North plan continued to be shown on the 1858 North plan.

North's 1858 lease contained several clauses which demonstrate that the coal industry was closely-regulated, with numerous restrictions placed on the lease-holders. 'Waggon Roads or Railways…or tram roads' were not to be constructed or used unless they were specifically covered by the lease and the lines were 'not to be used for any other than General Colliery Business' (NA DDE 14/90). In addition, the routes of 'Every such Gang tram, waggon road or railway' were to 'communicate only to from or between' the pits that were covered by the lease and each line was to be secured with a 'good quick fence or stone or Brick wall with proper gates' (NA DDE 14/90). While North was granted the right to construct a new 'Gang road', he was not allowed to use existing occupation roads 'for the carriage of Coals' and could not 'use existing or substituted Railways' within 300 yards (approximately 274m) of the mines at Kimberley.

Economic

As had been the case with Huntingdon Beaumont and Sir Percival Willoughby in the early 17th century, it appears to have been the relationship between private coal entrepreneurs such as Thomas North and landowners such as the Edge family which provided the impetus for the transformation of coal mining at Strelley in the early 19th century. North, who subsequently became one of Nottinghamshire's leading coal-owners, leased mines in the area from Thomas Webb Edge in 1838 (NA DDE 46/67).

Testimony included in the 1842 Report of the Commissioners to the Children's Employment Commission into child labour reveals details of Barber Walker & Co.'s Strelley pits and their working practices. William Sissons, a nine year-old child employed 'at the Robinette', worked from 6.00 a.m. to 8 p.m. and was paid one shilling (5p) per day (Winstanley 1998, 50). Patrick Pollard, aged 11, stated that he worked 'from six to eight', during which the 'engine stands for about 20 minutes for dinner' (Winstanley 1998, 50). On 'three-quarter' day shifts, however, 'they work from six to five and have no dinner time allowed' (Winstanley 1998, 50). Patrick and his brother, George, aged nine, drove the asses who pulled the coal waggons underground. George reported that both boys were 'punished every day' by one of the loaders, who 'often makes the children cry' by beating them 'with the ass stick' (Winstanley 1998, 50).

Industry

Reports by John Boot, mineral surveyor, demonstrate that coal was being mined at Turkey Field in the western part of the study area, by 1851 (NA DDE 28/30). Boot reported difficult mining conditions at these pits, with 'bad coal', drainage problems and frequent periods in which the mines were not being worked. A waggonway was shown serving the Turkey Field pits on an 1858 plan of Thomas North's mining operations at Strelley (NA DDE 14/90), while the Coal Authority hold seven plans of Turkey Field Colliery itself from 1860. The proximity of the two shafts suggests that these may have been downcast and upcast shafts, perhaps with tandem headgear.

Thomas North's 1858 lease stipulated how many shafts could be sunk and worked, and gave time limits in which works were to commence. The landowner retained the power to 'ascertain the quantity of coals being got' and to 'inspect' the mines. Should inspection reveal that the pits were being worked 'improperly', North would forfeit the lease and be liable to pay compensation for any damages. While North undertook to 'fill up' those 'pits, shafts, sluices and watercourses…which they have ceased working', he could also be obliged to 'leave same open if required' (NA DDE 14/90).

The 1858 lease granted North the right to set up new, or alter existing, 'Steam or other engines, Whimseys, Cranks, Gins and other machines'. Restrictions were placed on the locations of the engines, with none being allowed in the areas that were shaded in blue on the 1858 plan. These were the areas around Strelley Hall and its gardens, and in the main parts of Strelley and Bilborough villages. North was also prevented from stacking coal in these same areas and from constructing any 'headway, drift, adit or water course' of a greater width or height than 2.75m through or under them. Coal, along with 'earth rubbish and soil to be raised out of the said pits or shafts and mines', could also be deposited in the areas shown in green, while ventilation shafts could be sunk only in areas that were marked in red. North was also liable to pay compensation for any damages done to buildings as a result of mining operations (NA DDE

14/90). It is not clear if these various clauses were customary during the mid-19th century or were particular to North's 1858 lease.

John Boot's 1877 plan of Strelley Colliery (NA XM 2L) showed the extent of the mineworkings to the north-east of Strelley Park. Annotations on the plan show that this pit had been worked since 1864. Given the date at which it was sunk, Strelley Colliery is likely to have been a relatively large, modern mine. Its site was marked as 'disused' on the 1881 Ordnance Survey map and the colliery buildings had been cleared.

No working mines were shown within the Strelley study area on the 1881 OS map. An 'Old Coal Pit' was shown in a wooded area to the east of Strelley Lodge, with another in the fields to the north-east of Strelley Park. A sub-triangular band of trees occupied the site of Strelley Coal Wharf, which suggests that the wharf had closed several years before the 1881 map was surveyed.

In the northern part of the study area, the large mineral waggonway with its three-way junction continued to be shown on the 1881 OS map. An engine house stood at the centre of the junction by that date. Further disused coal mines, spoilheaps and a disused tramway were shown around Strelley Park Farm and Spring Wood. The tramway that had run through the wood in 1858 was disused by 1881, as were two mines to the south of Turkey Farm and one on the northern edge of Old Moor Wood. The waggonway that had run through the southern part of the study area to the Robbinetts Arm had been dismantled, although part of the trackbed of the Old Moor Wood branch line was shown as a path. While the Arm continued to be shown and labelled on the 1881 OS map, Robbinetts Pit itself was disused and no features were shown at its former site. In the southern part of the study area, three 'Old Coal Pits' were shown to the west of Shaw's Plantation.

7.2.7 Modern

Industry

Ordnance Survey maps produced in the early 20th century demonstrate that little substantive change occurred within the Strelley study area during this period. 'Old Coal Shafts' continued to be shown on the 1900 Ordnance Survey map, along with hachured areas indicating the extent and form of excavations, dumping or spoilheaps at the sites of the former mines. The waggonway in the northern part of the study area had been dismantled, although a short section of the trackbed remained extant to the south-east of the junction and engine house. While the Robbinett's Arm continued to be shown, the site of the colliery was labelled 'Brickyard Plantation' on the 1900 OS map. Little substantive change was shown within the study area on the 1915 Ordnance Survey map, although the engine house at the tramway junction had been demolished by that date.

Grange Colliery was a small pit sunk in the north-west part of the study area in 1930 by A. Lomas. The mine closed in the same year, but was re-opened as Oakwood Grange Colliery in 1931. Accessed by a track that led from Robbinetts Lane through the entrance to Grange Farm, the mine was shown as on the 1937 Ordnance Survey map with two long, narrow 'Incline Shafts'. These were drifts, as opposed to vertical shafts, which indicates that the mineworkings were shallow. An open-sided rectangular feature and spoilheaps were also shown at the mine on the 1937 OS map.

The Robbinetts Arm appears to have largely silted-up by 1937. The disused mining features to the west of Shaw's Plantation had been removed and little further change was depicted within the study area at that date. Several buildings shown at Oakwood Grange Colliery on the 1955 Ordnance Survey map may have been built after the nationalisation of the coal industry in 1947. While Oakwood Grange was merged with Cossall Colliery in 1955 and closed the following year, further buildings and a substantial spoilheap were shown at the site on the 1960 OS map. It is possible that while coal was no longer minded from Oakwood Grange, the pit remained open to provide ventilation for Cossall. The majority of the disused mines within the study area were not marked on the 1960 map.

A 1967 study conducted as part of a CBA 'industrial monuments survey' (NA DD 262) covered the area bounded by Main Street, Strelley, at the north, Sandy Lane at the west and Bilborough Road at the east. While 'various bell pits' were marked in the fields to the south of the embankment, none were identified in the area now designated as the Broad Oaks Farm Scheduled Monument.

Transport

The site of Strelley Wharf, described as the 'former landsale wharf', was marked on a CBA monuments survey field sketch (NA DD 262) and the land at the site was described as 'soil blackened', presumably from coal inclusions. Embankments to the north and south marked the positions of the terminus of the former waggonway that had been shown in this area on the 1838 Thomas North plan. A single embankment to the west marked the waggonway's former course. The embankment survived to a height of between 0.30m and 0.45m in 1967 and was approximately 1.5m in width (NA DD 262). No sleepers were observed *in situ* along the former trackbed. To the east of Sandy Lane, the embankment became 'very indistinct' and had been removed entirely to the west of the lane. 'Everything' to the west of this area had been 'obliterated by opencast mining'. The Broxtowe Countryside Plan confirmed that opencast mining occurred in the Strelley area in the 1960s (BCB, 7.04). This may be the 'Robbinettes Opencast' site (NA Pac 89/6/5).

A depot occupied the site of Oakwood Grange Colliery by the time of the 1968 Ordnance Survey map. The site of Robbinetts Pit was labelled 'Mine (Disused)' at that date. This and a single 'shaft' between Strelley Park and the new Woodhouse Way were the only former mine locations marked within the study area on the 1990 OS map. With the exception of a short section on the north-east side of Windmill Farm, the waggonway trackbed in the northern part of the study area had been removed by the latter date.

7.3 Assessment of heritage assets in Strelley

This section discusses the surviving heritage assets in Strelley based on a walkover survey undertaken of the study area. Details of all the heritage assets identified and assessed are provided in the gazetteer (**Appendix 2**).

7.3.1 Industry

The earthwork remains of former bell pits (177, 181) in the fields to the south of Main Street, Strelley, are clearly visible from aerial images (Google Earth), although they are less obvious from ground level (**Plates 1 and 2**). The fields are grassed over and appear to be used mainly for grazing horses. Situated in the relatively secluded village of Strelley, and not subject to intensive use, they are in a stable condition. No other mining features (1, 50) could be identified in this

area. There were no visible remains of the old coal pit to the north of Strelley (43). The coal pits at 167 and 171 have been recently built over by a housing development to the east of Woodhouse Way.

Plate 1: Fields to the south of Main Street, Strelley looking south from Bilborough Road (A6002) (DSCF0176)

Plate 2: Fields to the south of Main Street, Strelley looking north-west from Bilborough Road (A6002) (DSCF0179)

Robinetts Colliery (173) (**Plate 3**) was situated at the east end of the Robinetts Arm, a branch of the Nottingham Canal (see 176 below). This area is now planted with woodland. The mine has been abandoned, although several upstanding buildings still remain. The site was accessed from a public footpath to the south of Robinettes Lane and the buildings were viewed from a distance.

There is a long, brick-built structure built into the side of a mound, which is presumably the former pit head. This building is industrial in appearance and probably dates to the 19th century. Situated next to it is a further brick-built structure, possibly dating to the early 20th century. The buildings are in a derelict condition and look like they are falling into decay. The owners of the site, and the long term future management of the buildings, are unknown.

Plate 3: Buildings at the site of Robinetts Colliery (DSCF0332)

Plate 4: Old coal pit (5, 170), now wood, to the east of Babbington (Photograph DSCF301)

The old coal pit (5, 170) (**Plates 4 and 5**) to the east of Babbington is located in a private woodland area that has recently been bought by the owners of the end property on Westby Lane. Access to the wood was allowed by the owners at the time of the walkover survey. The

woodland has grown over the mounds and spoilheaps of the former mine. There is a culvert/watercourse at the north side. Natural rock is lying loose on the ground surface (Photograph DSCF0310), which was probably brought up during mining. Badgers are active in the area and have dislodged the spoil below the ground surface. There are loose bricks in the pathways which are suggestive of former structures on the site and a concrete structure is evident below the ground surface. The woodland is lightly maintained by the owner, who has established paths and walking routes through it. The badgers are causing some superficial disturbance to the mounds and spoil heaps by burrowing through them. All told, the remains of this coal mine are stable and well-managed by the private owner.

Plate 5: Old coal pit (5, 170), now wood, to the east of Babbington (Photograph DSCF0310)

No further mining features could be identified in this area. Coal pits (41, 162) and possible mining remains (19, 34) to the south, and bell pits to the east (32), could not be identified. To the south-east, no access was gained to Spring Woods (33, 36) or to Turkey Fields Farm (18) to view to old coal pit. Mine shafts (37, 38, 39) could not be identified. No access was gained to the old coal pit (172) in Oldmoor Wood to the south-east of Cossall. It is probable, like the old coal pit to the east of Babbington, that the site has been subsumed into the woodland. No access was obtained to the old coal pits to the west of Shaw's Plantation (182).

7.3.2 Transport

The main cut for the Nottingham Canal (176), now disused, winds its way from Eastwood to the south of Cossall and to the east of Strelley. The Robinetts Arm (4, 174), a branch of the Nottingham Canal (**Plates 6 and 7**), is managed as a nature reserve and forms part of the Erewash Valley Trail. Though the branch is overgrown with vegetation and is no longer navigable, the area has attracted a lot of wildlife, including mirror carp and herons. The towpaths and bridges over the canal are in a good state of repair and are managed as part of the nature reserve. It is a pleasant location for a quiet walk and appears to attract visitors and dog-walkers. The swing bridge (175) has been removed and replaced by modern infrastructure for Dead Lane/Cossall

Road. There is an Erewash Valley Trail sign in the parking area which explains the history of the Nottingham Canal and its connection with coal mining. A former tramway or waggonway to the east of the Robinetts Arm (17) could not be identified.

Plate 6: Nottingham Canal and Robinetts Arm (DSCF0344)

Plate 7: Nottingham Canal and Robinetts Arm (DSCF0353)

The route of former tramways (178, 179) to the south of Main Street, Strelley, could not be identified, either on aerial images (Google Earth) or on the ground. The tramways ran through open fields which have more recently been used for farming and it is probable that these features have been ploughed out. A possible earthwork on the east side of the field bounding Bilborough Road may be the site of the coal wharf (180), but this is uncertain.

Aerial images (Google Earth) show that the route of the former tramway leading to the village of Babbington (6, 160) has been preserved as a public road called Westby Lane, the main road into Babbington from Awsworth. The tramway branched off to the east of Babbington (158, 159), to link up with Babbington Engine House. This line partially survives as a plot boundary and banked-up routeway through the fields, although the eastern section of the line (161, 164, 165) has been lost. The site of Babbington Engine House (29) has since been replaced by a massive telephone mast. A further tramway from Swingate to the Engine House is marked by a plot boundary to the north and a row of trees to the south-east. No remains of the incline planes (163 and 166) associated with this line could be identified. The route of a tramway leading from Babbington southwards through Spring Woods (12, 168, 169) can be seen as a field boundary on aerial images (Google Earth) and is now a public footpath. The engine at 27 was not observed.

7.3.3 Settlement

Strelley Hall (51) is a country house dating to 1789-'92 (**Plates 8 and 9**). It is listed Grade II and was built by Thomas Gardner of Uttoxeter for Thomas Edge. The square-shaped building is constructed from brick and rendered on the exterior, and has a slate hipped and gabled roof. The south frontage has a central projecting bay with a pediment. The entrance porch is to the east. There is a complex of service buildings to the rear which date to the 19th century. The complex is now used as private offices. The building is in a good/fair condition. There was some water damage to the stonework on the porch and the render to the chimneystack at third floor level is partially coming away. The roof structure is in a good condition. Scaffolding to the rear of the building, and the presence of an on-site maintenance team, suggests that the Hall, surrounding buildings and grounds are kept in good working order. Additional buildings within the grounds of the Hall are also used as offices and for functions, as well as a farm shop and public cafe.

Plate 8: Strelley Hall (Photograph DSCF0214)

Plate 9: Strelley Hall (Photograph DSCF195)

8 SELSTON

8.1 Location and historic context

The Selston study area is located on the west side of the county, 16km to the north-west of Nottingham, and lies on the exposed coal measures in the valley of the River Erewash. The topography around Selston generally slopes down to the west, towards the river.

Selston's location on the exposed coal measures means that early exploitation of coal took places here, typical of the exposed coalfield as identified in the scoping study (Davies, Stenton *et al* 2014). As with Strelley, the early development of the exposed coal field was characterised by the development of multiple small mines, although larger operations developed with time.

Figure 9 shows the location of coal industry-related heritage assets in the Selston area.

8.2 Documentary research and history

8.2.1 Medieval

Economic

In 1457, the monks of Beauvale Priory were granted a 99-year lease for 'all coal and right of digging for the same in Selston parish, and of all wood growing there to make punches and proppes' (Page 1910, 107). The lease was confirmed in 1462. Beauvale Priory itself controlled numerous coal leases in Nottinghamshire during this period. The extent of the Beauvale coalholdings demonstrates the key role of major landowners in the exploitation of mineral resources during the late medieval period.

Documentary evidence also refers to Beauvale's ownership of Selston mines in areas named 'le Held' and 'le Westwod' in 1489 and 1490 (NA DD/P/CD/13; NA DD/P/CD/157). It is possible that these immediately post-medieval pits had also been worked during the medieval period, but that the evidence to demonstrate this no longer survives.

8.2.2 Sixteenth to eighteenth centuries

Economic

In addition to the Beauvale pits being worked in 1489-'90, documentary evidence provides direct evidence for coal being mined on the Priory's lands at Selston in 1515 and on their former lands in 1558 (NAK E 329/333; NA DD/LM/33/1/2). Sir John Byron controlled a former Beauvale Priory pit in 1571, which he assigned to a 'Charles Morison' in 1573 (NA DD/LM/187/3/3; NA DD/LM/208/2/2). This was Sir Charles Moryson, who acquired a further former Beauvale pit that same year (NA DD/LM/187/2/5). This illustrates the extent to which, following the Dissolution in the 1530s, private landowners exploited former monastic mineral rights, either through the sale of coal leases for cash or by direct control of coal mines.

Moryson's 1573 lease allowed him to 'dig pits and watergates', required him to work the pits 'so that they will not be damaged by neglect', granted 'wayleave and staithleave' for the loading and transporting of the coal and stipulated that he was to 'leave sufficient pyllers for the support of the pits' (PRO 1973, 119). This indicates that Moryson's mine was to be worked using the pillar and stall method. Typical of such documents of this period, the 1573 lease did not include a map and the location of Moryson's mine is unknown.

Coal leases, correspondence and deeds survive, demonstrating that several pits were being worked in the Selston area between the late 16th and early 18th centuries (NA DD/LM/33/1/4; NA DDLM/208/2; NA DD 138/42; NA DD/LM/33/1/6). Again, given the absence of location maps, it is not clear if any of these mines were situated within the study area itself. A 1615 plan of the Cavendish estates at Kirkby in Ashfield, in the northern part of the study area, does not show any coal mines (NA KA 1R).

Industry

Phillip Hutchinson's 1739 plan of 'several Veins of Coal in the counties of Derby and Nottingham' (NA XM 75) is the earliest cartographic evidence for coal mining at Selston. While the locations of pits were not marked, Hutchinson showed Selston and the projected line of the principal coal seam beneath it, while his annotations state that 'The Colliery (unwrought) belongs to Sir Wollastan Dixy & Sir Robert Sutton. Some part of the parish wrought by Cooke Esq. called Pinxton Field'. Pinxton was located to the west of the study area, while 'Sir Wollastan Dixy' was Sir Willoughby Dixie of Wollaton Hall, whose family had been involved with coal-mining since the late medieval period (see Section 5.1, above).

A 1739 bill for the 'destruction of collieries' at Selston (NA DDE 42/11) is likely to relate to a standard clause in coal leases of this period, which typically stipulated that colliery buildings and other mining-related features had to be removed at the end of the lease or if the mine ceased to be worked. By requiring the reinstatement of sites to their pre-mined condition, these clauses have had a significant impact on the potential survival of early mining remains. A 1768 account recording the construction of a road to a colliery at Kirkby in Ashfield (NA DDE 40/1) is the earliest documentary evidence held by Nottingham Archives for coal-mining in the northern part of the study area. The location of this mine is unknown.

8.2.3 Nineteenth century

Economic

Accounts of deaths in mining accidents from 1808 and 1811, along with references to a 'Selston Colliery' at the latter date (NA DDE 8/25, 28), indicate that coal mining activity continued in the Selston area during the early 19th century. However, the principal mining operations in the region during this period were carried out by Coke & Co. at Pinxton, immediately to the west and south-west of the study area. John Farey's 1811 list of collieries did not record any pits at Selston or Kirkby in Ashfield (Farey 1811, 188-215).

The Butterley Company, founded by Benjamin Outram in 1790, began test-boring for coal at Selston and Kirkby in Ashfield in 1818-'19. Extensive seams were identified in the latter area and the company sank Portland No.1 and No.2 collieries in 1819. Both pits opened in 1821. Named officially after the Duke of Portland, No.1 and No.2 were known locally as the 'Isiah Pit' and 'Jerry Pit' after their butties, Isiah Rigley and Jeremiah Lowe. The 'Butty' was a sub-contractor, who had been engaged by the mine owner and who, in turn, hired the miners. While butties supplied mining equipment and paid wages, they had no legal responsibility for safety or standards and the system was notoriously flawed.

J.M. Fellows interviewed several miners and coal company employees at the Portland collieries for the 1842 Report of the Commissioners to the Children's Employment Commission into child labour in the coal industry. In explaining Butterley Company policies at the Portland pits and

elsewhere, Bradley Mart, colliery clerk, stated that 'When a shaft is sunk it is put to the lowest bidder amongst the butties at so much per ton, a month's notice to be given by either party. The butty underlets it to the loaders and banksman at per ton, to the holers at per stint, the hammerers, woodmen, corporals, hangers on and children by the day and the company consider they do not have anything to do with any of these parties except the butties' (Winstanley 1998, 68).The Butty system was abolished under the 1872 Coal Mines Act.

Portland No.1 and No.2 both opened in 1821, with Portland No.3 being sunk by the Butterley Company the following year. Said to have been situated approximately 18m from Portland No.1, the location of Portland No.3 is not labelled on any Ordnance Survey maps. Langton Colliery was sunk by Pinxton Coke & Co. on the Coke family's Langton Hall estate. The mine had been sunk prior to 1841, when its location was marked on a surface plan showing mines in the Kirkby in Ashfield area (NA MP/XM/1/5). While Langton Colliery's steam engine was marked on the plan, neither the colliery waggonway nor the mine itself were depicted. The waggonway ran south-west from the pit to join the Mansfield-Pinxton Railway, the course of which was depicted clearly on the 1841 plan.

As part of the 1842 Royal Commission investigation, Bradley Mart stated that the Portland pits did not carry out 'Sunday work and no children work by night' (Winstanley 1998, 68). Mart stated that all of the Portland shafts were 'laid in lime' and that there was 'a cabin at every pit' (Winstanley 1998, 68). Twenty-nine children under the age of 13 were employed at the various Portland pits in 1842, with the youngest being seven years-old (Winstanley 1998, 68). The children 'work from six to eight' (ie. 06.00 to 20.00) with 'two hours for meals when the engine stops' (Winstanley 1998, 68). Levi Bradby, aged 10, stated that he had in fact worked from 6.00 a.m. until 1.00 a.m. 'and had nothing more for it' (Winstanley 1998, 69). Numerous accounts were reported of children being forced to work harder by being 'driven on' and beaten by 'corporals' (Winstanley 1998, 68-69). John Bonser, aged 10, worked as a driver at Portland No.5, where 'The corporal thrashes him…with an ass stick and weals him'. John was paid one shilling (5p) per day (Winstanley 1998, 68-69).

Settlement

A.R. Griffin argued that 'there must have been an influx' of new miners and their families into the area following the opening of the Portland pits (Griffin 1971, 42), although direct evidence of this is lacking. Movement of labour within the locality was noted, however, with colliers leaving existing mining areas such as Pinxton in order to work in the new Portland pits (Griffin 1971, 42). Documentary evidence demonstrates that the Butterley Company constructed housing for the new workforce at Portland Row, a terrace of 47 houses, on the border of Selston and Kirkby in Ashfield in 1823. While this is one of the earliest examples of purpose-built miners' housing being constructed by a colliery company, the Butterley Company had previously built Furnace Row and Foundry Row for the employees of their iron works at Codnor Park, Derbyshire, and were also responsible for the construction of Lime Kiln Row, Codnor.

Details of Portland Row are recorded in an undated 'Description of the Materials contained in the Cottages at the Portland Collieries' (NA DD4P 70/64). Built of brick 'in a continuous row', each house cost £60 to construct and stood '16.9 (5.1m) high to Eaves and 8.9 (2.7m) from Eaves to Ridge'. The ground floor contained the living room, kitchen and pantry, while the 'Chamber Floor' comprised two bedrooms, a passage and a staircase. The 'house' had a stone floor, while

there was a brick floor in the kitchen and a lime floor in the 'chamber'. Staircases consisted of stone steps, while the windows had cast iron frames and the roofs were tile. Portland Row is likely to have been built with material from the Butterley Company's own brick works.

No.1 Portland Row, at the north-west end of the terrace, functioned as both a Butterley Company beerhouse and a Tommy Shop. The latter operated on the truck system, whereby employees and their families were obliged to purchase items at inflated prices from a company shop. The truck system compelled the use of the Tommy Shop by the part-payment of wages in tokens that could only be redeemed in the company shop. The Truck Acts of 1831 and 1887 made this practice illegal by compelling employers to pay wages in 'coin of the realm'. The 1851 census recorded no.s 25 and 26, in the centre of Portland Row, as a single-property beerhouse (Griffin 1971, 41).

Industry

In 1842, Bradley Mart stated that Portland No.1 was 'run out' and gave no further details of this mine (Winstanley 1998, 67). Portland No.2 was 180 yards (164m) deep and, like No.4 and No.5, was ventilated from another shaft by a 'wind sough' approximately 0.40km from the pit (Winstanley 1998, 68). The location of this wind sough or air channel is unknown. Thomas Spinks, 'engineman to No.2 Pit', stated that a 25hp steam engine powered the winding at Portland No.2, while the waggons were 'drawn by ponies, asses and mules' (Winstanley 1998, 68).

Portland No.3 was 'worked out' by 1842 (Winstanley 1998, 67-68). This mine was subsequently used as a 'pumping pit', which utilised a Cornish beam engine to drain water from the workings at No.1 and No.2 pits. Portland No.4 was 140 yards (128m) deep, while No.5 was 180 yards (164m) deep. The winding for both pits was powered by a single, 20hp steam engine located at Portland No.4. John Spinks, the engineman, stated that this 'engine pumps as well as draws both shafts and the gang waggons' (Winstanley 1998, 69).

The 1842 Royal Commission report also included evidence relating to working practices at the Portland collieries. While Bradley Mart stated that 'every pit has a Davy lamp', Spinks revealed that these were not in use as standard, but that miners 'may have a Davy by sending to the office a quarter of a mile off' (Winstanley 1998, 68). The location of the colliery office is unclear. Miners were 'let down the pits by rope and no regard is paid to the number' of men lowered at any one time. (Winstanley 1998, 68).

Advances in mining technology, principally relating to drainage and ventilation, led to the development of deeper mines by the mid-19th century. Mexborough Colliery No.1 and No.2 had been sunk by the Butterley Company at Holly Hill, to the south-west of the present-day Portland Road, by 1855. Named after the Earl of Mexborough, one of Selston's major landowners, these were known locally as the 'Top Pit' and 'Bottom Pit'. Both mines opened in 1854. Mexborough Colliery No.3, sunk to the south-west in 1856, was known locally as the 'Bog And Wink'.

Langton Colliery was shown to the south-east of Langton Hall on the 1880 Ordnance Survey map. Several buildings stood to the north of the colliery's waggonway sidings, with a gasometer and a pump to the south. The waggonway crossed Beaufit Lane, before it ran south-west to the Langton Siding and joined the Mansfield Branch of the Midland Railway. An 'Old Coal Pit' was marked in a field approximately 0.28km to the south-west of Portland Farm. The identity of this mine and the period in which it was worked are unclear.

Portland No.1 was shown to the east of Portland Farm on the 1880 OS map. Two mineshafts were marked to the west of the principal colliery building, while further buildings and a spoilheap stood on the north side of a track that led through the pit yard and on into the fields.

To the south of Portland Row, the 1880 Ordnance Survey map showed that Mexborough Colliery had been sunk in an area that had previously been the site of gravel extraction. At the north of the site, No.1 pit comprised a shaft, an air shaft, a spoilheap and a single, small building. Further buildings, a shaft and a spoilheap were shown at No.2 pit, to the south.

Numerous mining-related features are depicted on an 1891 plan showing the proposed route of a waterpipe intended to convey water from Mexborough Colliery to the Butterley Company's iron works at Codnor Park (NA DDLM 215/5). The colliery appeared unchanged from its depiction on the 1880 Ordnance Survey map, although annotation on the 1891 plan identified a pumping shaft at No.2 and the presence of a coal wharf along the waggonway at Mexborough No.3. Between Brake House and an area to the south-west of Jacksdale Farm, the Butterley Company waggonway was marked as an incline plane. The Coal Authority hold five plans of Mexborough Colliery from 1894.

The New Hucknall Colliery Company acquired land in Kirkby in Asfield in 1892. Sunk to the north-east of the Portland collieries in 1894, Bentinck Colliery opened in 1896 at a total cost of over £80,000 (Griffin 1971, 106-107). The new mine took the name 'Bentinck' from the surname of the dukes of Portland. The Coal Authority hold seven 1896 plans of Bentinck Colliery.

Transport

The importance to the coal industry of an integrated transport system is demonstrated by the locations chosen for the sites of Portland No.1 and No.2, which had easy access to the Mansfield-Pinxton Railway. This was a horse-drawn waggonway that moved coal to the Pinxton Wharf on the Cromford Canal, where it was loaded onto barges for transportation to Nottingham. Within five years, carriage fees led the Butterley Company to construct their own waggonway to the canal. This terminated at the company's new Portland Wharf, where coal was loaded onto barges or taken directly to the Butterley Company's Codnor Iron Works, directly over the Derbyshire border on the west side of the canal. A steam-powered incline plane raised and lowered waggons along part of the Portland Collieries line.

An 1845 plan of Selston parish (NA SE 1L) shows the area between Portland Row and the Cromford Canal. Being situated in Kirkby in Ashfield, neither Langton Colliery nor any of the Portland collieries were shown on this plan. Portland Row was depicted in block outline, with the Portland collieries waggonway shown running through fields to the west of Mansfield Road and beneath Stoney Lane. Immediately to the south of the lane, a pass-by allowed empty waggons returning up the line to be taken off the main route in order to allow loaded waggons to travel down the waggonway unhindered. This was the only pass-by shown along the route of the waggonway on the 1845 plan.

At Sleepy Hole, the route veered south-west to run beneath Nottingham Road at Dore Green and on to Ashes Farm. From here, the waggonway continued to Barrows Hill Lane, where it crossed over the road and continued to Wagstaff Lane. Between the lane and the Cromford Canal basin, the waggonway's depiction on the 1845 plan changed from a railed route and trackbed, to a dashed line. The reason for this change is unclear. While this part of the route was an incline

plane rather than a simple waggonway, other incline planes along the route had not been depicted in this way. Similarly, while the dashed line could suggest that this part of the waggonway had been dismantled, this is not the case as the line continued to operate into the 1890s.

The continued importance of transportation in this period is demonstrated by the construction of a new waggonway which featured a self-acting incline plane, known locally as a 'jig', that ran between Mexborough No.1 and No.2. From the Bog And Wink, waggons were lowered by the 'Coffee Pot Engine' across Barrow Hill Lane to the Brake House on Wagstaff Lane. From here, they were sent down to Ashes Farm where the line connected with the earlier Portland Collieries waggonway and continued on to the Portland Wharf on the Cromford Canal. In addition to the new colliery, the Butterley Company invested heavily in order to upgrade Portland No.1, which 'had been converted into a modern colliery' with a 'capacity of 500 tons a day or more' by this period (Griffin 1971, 117).

To the south of Portland No.1, the 1880 OS map showed the colliery waggonway and the Midland Railway running parallel, leading to Langton Junction at the south-west and to Portland No.2 at the south-east. The main building at No.2 stood on the south of the pit yard, with the shaft and a waggonway to the north. The waggonway led to the colliery spoilheap, before it continued east to an incline plane that served quarries and lime kilns at the Annesley Wharf.

To the west of Portland No.2, the colliery waggonway ran south to a junction where the line branched south-east to Portland Colliery No.4. and west to No.6 and No.7. At Portland No.4, several tracks separated the colliery buildings from the mineshafts and a spoilheap. To the south, an embankment led to a further spoilheap and a mineshaft. The latter was labelled 'shaft' on the 1880 OS map, but was otherwise unidentified. Given its absence from the map, this may have been the site of Portland No.5. A rail was not shown along the embanked trackbed, which indicates that this part of the waggonway had been dismantled and that the 'shaft' was disused.

Portland No.6 and No.7 comprised shafts and spoilheaps to the north and south of a single building, with a waggonway at the west. To the north of the pits, an incline plane appears to have been controlled by a steam engine at Engine House. From here, the Portland waggonway ran to Portland Row, where it terminated. While the trackbed remained extant in 1880, the rail had been dismantled and the route was labelled 'Old Tramway'.

Short waggonways ran from Mexborough Colliery no.1 and no.2 to a centrally-located, larger building that stood at the terminus of the colliery's principal waggonway. The latter ran south-west through a substantial cutting to a series of sidings at Mexborough No.3, where the shaft, two air shafts, several buildings, a spoilheap, a pond with a sluice and an engine house were marked on the 1880 OS map.

Having left Mexborough Colliery, the waggonway crossed over Mansfield Road to enter a large cutting that contained a pass-by. The waggonway then crossed Nottingham Road and veered south-west at Dove Green, where a small siding was shown immediately before the line entered a cutting. Two bridges providing access over the waggonway and into the surrounding fields, before the line joined the course of the earlier Portland Collieries waggonway at Ashes Farm. From here, the waggonway followed the route that had been shown on the 1845 Selston parish plan. While the latter had depicted the waggonway as a railed route until it reached Brake House

and as a dashed line thereafter, the 1880 Ordnance Survey map showed the route as a railed waggonway along its full the length. The Coal Authority hold an 1885 plan of Mexborough Bottom Pit.

Settlement

In testimony included in the 1842 Royal Commission report, Bradley Mart stated that 'there is a day school at Portland Houses, principally supported by the Duke of Portland, the Butterley Company and the rector where they (miners' children) are taught reading, writing and accounts but he is very sorry to say very few take advantage of it' (Winstanley 1998, 68). The 'day school' may have been the building that was shown at the south-east corner of Portland Row on an 1845 plan of Selston parish (NA SE 1L). This had been replaced by a National School by the time of the 1880 Ordnance Survey map.

On the 1880 OS map, Portland Row was shown with small outbuildings to the rear of the houses, toilets at the bottom of the yards and long, narrow gardens beyond. At the centre of the row, a large block was shown to the rear of the houses, while an infants' school was marked at the terrace's south-east corner. This had been constructed as a National School in 1875. Nottingham Archives hold the school log book for the period 1875-1903 (NA S/L147/4).

8.2.4 Modern

Industry

Portland No.1 was marked 'disused' on the 1900 OS map. The colliery buildings and other mining-related features remained extant, however, and appeared to be little changed from 1880. Portland No.2 had been redeveloped, with the demolition of the main 19th-century buildings and their replacement by newer, larger buildings. A 6.7m Waddle fan was installed at No.2 in 1900, while additional railway sidings and a new spoilheap were shown at the pit and the 'Upper Portland Sidings' were marked to the east of the mine on the 1900 OS map.

Bentinck Colliery stood to the north-east of Portland No.2 and was a large, modern colliery spread over a large site. Three shafts were shown between the main colliery buildings and the railway sidings to the north. Brick works immediately to the north of the pit are likely to have been those that were listed as part of Bentinck Colliery in a 1943 New Hucknall Colliery Company report (NA NCB 1/125).

The site of Mexborough Colliery had been largely cleared of buildings by 1900, although two small structures associated with No.3 remained standing. Air shafts in the latter area were the only shafts marked within the former colliery site. While the trackbed of the colliery's waggonway and the cuttings in which it had run were shown on the 1900 OS map, the rails had been dismantled by that date. The Coal Authority hold five 1901 plans of Bentinck Colliery.

Transport

Rail's dominant role in the transportation of coal during this period is demonstrated by the extensive railways and sidings shown at Langton Colliery on the 1900 Ordnance Survey map. The Langton Colliery Branch Railway connected the mine with the Mansfield-Pinxton Railway at the south-west and the new Grand Central Railway line at the north-east, while the Bentinck Branch Railway ran east to Bentinck Colliery. Langton's colliery waggonway also continued to be shown at this date.

To the south of Portland No.2, the waggonway junction and its route to the west had been dismantled by 1900. The waggonway continued to serve Portland No.4, where the principal developments were the construction of a new building and further sidings. The disused mine to the south was marked 'Old Coal Shaft' at this date, while the trackbed of the dismantled waggonway to the west of No.4 remained extant. The sites of Portland No.6 and No.7 had been cleared of buildings and waggonways by 1900, although the spoilheaps remained extant and the locations of the shafts continued to be marked.

Economic

The use of child labour continued into the 20th century, as evidenced by H. Elliott's short memoir which contained details of working at Bentinck Colliery as a 12 year-old child in 1904 (NA DD 306/13/1). Taken by his father to see the pit manager, Elliott was hired immediately and commenced work the following day. For four days' work, he received 2 shillings (10p), minus a deduction of 3d (1½p) for the 'sick fund'. 'It was long and hard shifts…The stables were underground and we had to gear the pony and walk underground to the place of work. Start at 7 a.m. and work til 4 p.m. The only break was 20 minutes at midday' (Elliott 1966, 2). Elliott 'stuck it for 37 years till chest trouble caused me to leave' in 1941: 'I remember asking the pit manager for a light job on the pit top but he told me it was not a philanthropic society' (Elliott 1966, 2).

A 1935 internal coal company report on Bentinck Colliery revealed the extent of the New Hucknall Colliery Co.'s subsidiary activities within the study area during this period. While colliery company Tommy Shops had been illegal for several decades, the 1935 report stated that the coal company owned a shop at Mayfield Road that was leased to the Mansfield & Sutton Co-Operative Society. While the locations of the Welfare Institute and 'Cottages' were not given in the report, these may have been at Labernum Road and Mill Lane, where the New Hucknall Company were responsible for, but had failed to carry out, repairs to the roads (NA NCB 1/125).

Settlement

The 'Bentinck Cottages' shown on the 1900 OS map along the present-day Labernum Avenue to the north of Bentinck Colliery are likely to be the New Hucknall Company cottages listed that were listed in a 1935 Bentinck report (NA NCB 1/125; see below). The cottages are located just outside the Selston study area.

The 1900 OS map showed little change at Portland Row, although the individual gardens to the rear had been cleared and the area was shown as a single, open plot. Several wells were marked in the yards on the north side of the row and the school continued to be shown at the south-east corner.

On the 1916 O.S. map 'Bentinck Town' was shown to the north-west of the pit. New rows of terraced houses at Mayfield Street are likely to be among the New Hucknall Colliery Company properties that were listed at 'Mayfield Lane' in a 1943 Bentinck Colliery report (NA NCB 1/125). Further new housing at Princess Street may also have been built by the colliery company. The housing developments are situated just outside the Selston study area.

The 1943 New Hucknall Colliery Company report also detailed the 'Bentinck Colliery Cottages' (NA NCB 1/125). These included 93 houses, Mill Farm and the shop and house at the junction of Mayfield and Pinxton Lane that was leased to the Mansfield & District Co-Operative Society. The majority of the colliery company properties were also located in the latter area, with 74 houses

at Mayfield and Pinxton Lane and 16 on Laburnum Avenue. The colliery manager occupied Labernum House in 1943. While the undermanager's and enginewright's houses were listed, their locations were not given in the report.

Industry

The Coal Authority hold a 1910 plan of Portland No.1. Two shafts, a chimney, a spoilheap and additional lines and sidings of the Langton Colliery Branch railway were shown at Langton on the 1916 Ordnance Survey map. While Portland No.1 continued to be labelled 'disused' and the majority of the buildings had been demolished, new buildings and a short section of waggonway had been constructed on the west side of the colliery site. The shafts, a chimney and a spoilheap continued to be shown and extensive new railway sidings and a new spoilheap were shown at Portland No.2. Portland No.4 was disused by 1916. Little substantive change was shown at the site of this mine or those of Portland No.6 and No.7. With the exception of the demolition of the large building to the rear, Portland Row also appeared little changed and no changes were shown at the site of Mexborough Colliery on the 1916 map. Bentinck Colliery appeared largely unchanged at that date, with the exception of a waggonway and spoilheap that had been established on the former site of three small, detached buildings to the east of the pit.

Little substantive change was shown within the study area on the 1921 Ordnance Survey map, with the exception of a mineral railway that had replaced the waggonway immediately to the west of Portland No.2. Portland No.1, No.2 and No.5 closed in 1921 and the Coal Authority hold four 'Portland Colliery' abandonment plans from that year. The No.2 shaft remained open as a ventilation shaft for Kirkby Summit Colliery in Kirkby In Ashfield. During this period, minewater from other Pinxton Collieries Ltd pits was drained by gravity along a borehole to Langton Colliery, where it was pumped in stages to the surface.

Following the 1926 General Strike, the government attempted to reduce the extent of river pollution caused by coal-mining. On a weekly basis, '30,000 gallons of almost boiling, brownish liquid was discharged from the boilers at Bentinck colliery into the Erewash, over a 30-minute period' (Sheail 2002, 56). In 1929, a tank was therefore installed at the colliery to 'hold the entire discharge until it had cooled sufficiently and some settlement had taken place' (Sheail 2002, 56). The Coal Authority hold two 1929 plans of Langton Colliery.

Internal coal company reports reveal key details about Bentinck Colliery during this period. A 1935 report revealed that Bentinck had 2,817 'trams', 19 haulage engines, three self-acting subsurface incline planes and 52 pit ponies (NA NCB 1/125). Pithead baths, the provision of which had been required by the 1926 Mining Industry Act, were still under construction at Bentinck in 1935.

Little change was shown at Langton Colliery on the 1938 Ordnance Survey map. At Portland No.1, the shafts continued to be labelled, although the buildings and waggonway had been cleared. Buildings remained extant at Portland No.2. and the Upper Portland Sidings continued to be labelled, although the mineral railway had been dismantled. Several new buildings, tanks and railway sidings had been added at Bentinck Colliery, while part of the spoilheap to the east had been cleared by this date.

A 1943 New Hucknall Colliery Company report on Bentinck Colliery (NA NCB 1/125) revealed various activities, features and practices at the pit, including the presence of a 365m face where

coal was 'machine cut' and 'conveyor loaded'. The mine had 2,850 'trams', 17 haulage engines and 47 pit ponies. One of the self-acting incline planes that had been recorded in the 1935 report was disused, while mechanisation at the mine had increased, with the installation of four conveyors and three coal cutters. Features referenced at the pit in the 1943 report included the Screening Plant, Washing Plant, Compressor Plant, Steam Raising Plant, Power Generation Plant, a Water Feedment Treatment Plant, a Ventilation Plant, Fitting Shop, Saw Mill, pithead baths, canteen, a brick works and an aerial ropeway. Proposals for 1944 included the completion of a Dirt Distribution Plant and an associated railway siding.

Nottingham Archives and the University of Nottingham Archives hold little evidence for the effect of the 1947 nationalisation of the coal industry on mines within the Selston study area. Other than the minor extension of the spoilheaps, little change was shown at Langton Colliery on the 1955 Ordnance Survey map. The sites of Portland No.1, No.2 and No.4 continued to be marked, although the shafts at No.1 had been capped in 1954. Several small buildings remained standing at No.2 and No.4. While disused, the mineral railway and the Upper Portland Sidings also remained extant in 1955. Additional spoilheaps, one of which was crossed by an aerial ropeway, were shown at Bentinck Colliery. The Coal Authority hold 21 Bentinck plans from 1956.

Two air shafts, a small spoilheap and part of the former waggonway cutting were the only mining-related features shown at the site of Mexborough Colliery on the 1955 OS map. Housing had been constructed on the site of Mexborough No.3 by that date. While part of the disused waggonway trackbed continued to be shown in the fields to the south-west, the majority of its former course was not marked on the 1955 map. Little change was shown at Portland Row, although the former school was labelled 'clinic'. Selston Miners' Welfare had been constructed on the west side of Mansfield Road by this date.

Langton Colliery had been expanded substantially by the time of the 1961 Ordnance Survey map. Several large new buildings had been constructed at the north, while tanks, ponds and railway lines had been added around the pit. The course of the colliery waggonway was labelled 'mineral railway', which indicates that the old line had been replaced by this date. None of the former Portland collieries were named on the 1961 map. 'Shafts (disused)' were shown at the site of No.1, while No.2 and No.4 were labelled 'Mine (disused)'. The former Portland No.2 mineral railway and sidings continued to be shown, while the Bentinck spoilheaps had extended into the area at the north-east. The spoilheaps were extensive features crossed by embankments and railway lines, in addition to the aerial ropeway.

The Portland No.4 shaft was not marked on the 1961 OS map, although that of the possible Portland No.5, the unidentified mine to the south, continued to be labelled. Much of the colliery spoilheaps and waggonways had been cleared by 1961. To the west, the positions of the No.6 and No.7 shafts continued to be marked, while part of the former waggonway was labelled 'Grass Road'. Little change was shown at Portland Row on the 1961 OS map, although the site of Mexborough Colliery had been cleared of all mining-related features and tennis courts, a pavilion and a putting green were shown at the Miners' Welfare. To the south-west, a short section of the former Portland waggonway cutting survived at Dove Green, although the majority of the former route was no longer evident by this date.

By this period, the majority of the output from Bentinck went to Ratcliffe on Soar power station. A 1963 plan of the power station showed extensive mineral railway lines for the direct

transportation of coal to the site, along with coal unloading and storage facilities (NA DC/BA/1/6/62).

The Coal Authority hold 15 1966 plans of Langton Colliery. The mine closed in 1968, but continued to be shown on the 1969 Ordnance Survey map as it had been 'retained as a pumping station' to control the subsurface water that flooded through former mineworkings at Pinxton and Broomhill (Awbery 1988, 14). The pumping station was also required to prevent minewaters flooding into the Bentinck workings as Langton's former workings were 'directly connected by open roadways to Bentinck Colliery' by this date (Awbery 1988, 14). Extensive opencast mining was shown at, and to the south of, the sites of Portland No.s 6 and 7 on the 1969 OS map, while Portland Row had been demolished. Several photographs of Portland Row appear to show the houses after they had been vacated, although the date at which they became derelict is unclear.

Many of the Langton Colliery buildings remained standing at the time of the 1973 Ordnance Survey map, although the spoilheap had been cleared and some of the mineral railways dismantled. A small spoilheap had been created to the south of the site of Portland No.1 by this date, while an extensive spoilheap covered the area between the sites of Portland No.2 and No.s 6 and 7.

Bentinck's workings were connected to those at Annesley Colliery in 1982 (Brown 1987, 332). Spoil from both mines was deposited on the Bentinck tips from that date, resulting in the extension of the spoilheaps. A modern coal preparation plant was subsequently constructed at Bentinck, where the screening sheds processed coal from Bentinck, Annesley and Newstead, while water from the River Erewash was used in the colliery washery.

Following the end of the 1984-'85 Miners' Strike, Nottinghamshire's pits began to be closed within months. As pumping ceased at these 'abandoned' collieries, their minewaters could no longer be discharged into the River Erewash (Awbery 1988, 10). British Coal, the renamed NCB, therefore proposed the construction of a series of subsurface roadways that would channel these minewaters to a new centralised pumping station at Bentinck Colliery (Awbery 1988, 10, 16-21). Water would then be treated in a series of settlement ponds before being discharged into the Erewash (Awbery 1988, 10). The Coal Authority hold four plans of Bentinck Colliery from 1986 and 44 from 1987.

Several buildings and settling ponds remained extant at the Langton Colliery pumping station at the time of the 1987 Ordnance Survey map. With the exception of an embankment around part of the former Portland No.1 spoilheap, no remains were shown at the sites of any of the former Portland collieries on the 1987 OS map. The area between Bentinck Colliery and the M1 to the south-west had been earmarked as the site of an extensive combined opencast mining and tipping scheme since 1984 (Brown 1987, 333-337). The scheme was underway by 1987, when the OS map showed extensive opencasting and a new spoilheap between Park Lane and the motorway. Houses had been constructed on the site of Portland Row and on part of the former Mexborough Colliery site by that date.

Film footage of a surface tour of the Annesley-Bentinck complex during 1999 is held within the archives of Industrial Archaeology Recordings (a volunteer group that records and curates film of past and present industry). The Coal Authority hold a 1989 plan of 'Bentinck South'. The colliery's No.1 shaft had been infilled and capped the previous year, with No.3 shaft following in 1990 and

No.2 shaft being filled and capped in 1992. MACE (Movie Archive for Central England) hold 1992 footage showing the infilling of No.2 shaft and the demolition of the last chimney from the colliery's former steam winders.

Annesley-Bentinck was closed by British Coal in 1994, but re-opened the following year under the control of a private company, Coal Investments. Midlands Mining acquired the colliery in 1996. At the time of its final closure in 2000, Annesley-Bentinck was the oldest working mine in the UK. Its closure brought deep mining in the Leen Valley to an end. Three half-wheels from the Bentinck headgear subsequently formed part of a colliery memorial that was erected near the site of the pit.

An aerial photograph taken in 2001 (Google Earth) shows that the majority of the Langton Colliery site and the adjacent spoilheaps had been landscaped by that date. The Coal Authority hold an undated plan of the Langton spoilheap. While the mineral railways to the south remained extant in 2001, the site of Portland No.1 and part of the Bentinck spoilheaps had also been landscaped. Bentinck Colliery itself had been demolished completely by 2001 and the site was being redeveloped as the Park Lane Business Park. Large-scale opencasting continued to the south-west, while a care home had been constructed on part of the former Mexborough Colliery site by this date.

Little substantive change was visible within the Selston study area on aerial photographs taken in 2004 and 2007 (Google Earth), with the exception of opencasting at the site of Portland No.1. The southernmost of the former mineshafts was clearly visible on this photograph. A 2010 aerial photograph (Google Earth) showed opencast mining taking place at the former Langton Colliery spoilheap. While the works at the site of Portland No.1 had been completed, the mineshaft remained open. The extensive opencast site between Park Lane and the M1 remained active in 2010. No changes were visible on an aerial photograph taken in 2012 (Bing Maps).

8.3 Assessment of heritage assets in Selston

8.3.1 Industry

The sites of the former Portland Collieries sunk by the Butterley Company lies to the east of the M1, between Park Lane (B6018) and Salmon Lane. The following heritage assets lie within this area: Portland Colliery no.1 (9, 129); Portland Colliery no.4 (10), Portland Colliery no.2 (13, 134), Portland Colliery no.6 (141), Portland Colliery no.4 (142), Portland Colliery no 7 (144) and an old shaft to the south-east (146). In recent years, this area has been subject to extensive opencast mining. Aerial images (Google Earth) show that the buildings associated with these collieries have been removed and the area has been intensively worked over. There is no public access and it was not possible to get a good view across the landscape into the site. Lorries and wagons emerging from the routes into and out of the area suggest that it is still being worked on.

The site of Mexborough Colliery is located directly to the east of Selston village and is now surrounded by modern housing developments. The site of Mexborough Colliery no. 1 and no. 2 (150) is preserved as a nature reserve known as The Hills (**Plate 10 and 11**). The colliery spoilheaps have been landscaped and there are no upstanding remains of the colliery buildings. The site of Mexborough Colliery no.3 (155) is now an open plot of ground. The area has been landscaped and is overgrown with vegetation. There are no upstanding remains. The former reservoir to the south-east of Mexborough Colliery no.2 (153) has been built over by modern

housing. The sites are in a stable condition and appear to be managed by the local council. There are no information boards identifying this area with the former coal mining industry.

Plate 10: The Hills, site of Mexborough Colliery no.1 and no.2 (Photograph DSCF0033)

Plate 11: The Hills, site of Mexborough Colliery no.1 and no 2 (Photograph DSCF0034)

Plate 12: Memorial at Bentinck Colliery (Photograph DSCF0122)

The site of Bentinck Colliery (14) lies to the north-east of the former Portland Collieries. It is situated to the east of Park Lane (B6018) and has been redeveloped as an industrial estate. A memorial incorporating three half-wheels from the colliery's former winding equipment has been erected at the entrance to the estate on Park Lane, marking the position of the former mine (**Plate 12**).

Access to the site of Langton Colliery (11) was not permitted. Aerial images (Google Earth) suggest that the former mine is now situated within an area of woodland. The area to the west of the site of Langton Colliery (to the east of the M1, south of Kirkby Lane (B6019)) also appears to be an area of opencast mining.

Possible mining remains at 30, 31, and 42, and the engine at 28, could not be identified. These assets were situated in open fields and were only viewable from the nearest public footpaths. Similarly, the site of the lime kiln (131) could not be accessed for inspection.

8.3.2 Transport

Aerial images (Google Earth) show that the route of the Mansfield & Pinxton Railway (128, 130, 132) is still in use as part of the national railway network and is in good working order. The original waggonway infrastructure has been replaced. The route of the tramway to the south-east of Portland Colliery no.1 (133) has been preserved as a private road to the north of Park Lane (B6018). The track and any associated infrastructure have been removed (**Plate 13**). There is a set of modern (20th-century) gates at the end of the track, although it is not known to what they relate (**Plate 14**). The former tramway has been partially laid with tarmac and is in a relatively good condition, having been maintained by the businesses now located in this area.

Plate 13: Former tramway to the south-east of Portland Colliery no.1 (Photograph DSCF0139)

Plate 14: Gates at the end of former tramway to the south-east of Portland Colliery no.1 (Photograph SDCF0140)

Aerial images (Google Earth) also show that the course of the former tramway (135) for Portland Colliery no.2 is now used as a private route through the area of opencast mining to the south of Park Lane (B6018). There was no access to this site. The sites of the incline plane (138) and tramway junction (139) for Portland Colliery no.6 appear to lie within the area that has been subjected to opencast mining.

The road to Annesley Wharf Yard (137) still survives at the end of Skegby Road in Kirkby Woodhouse. This is a private road that leads to what appears to be a suite of modern agricultural

buildings. It was impossible to gain access to the site of the incline plane (136). Aerial images (Google Earth) suggest that it may no longer survive.

A number of heritage assets associated with transport in Selston are identified on the route of the Portland Path Trail. The Trail was developed by a local community group to raise awareness of the network of historic railways, tramways and coal pits that ran from the Portland Collieries across Selston and down to the Wharf at Jacksdale. Waymarkers along the trail route provide information on the site and its association with coal mining. An information leaflet outlining the Portland Path Trail can be downloaded from the Jacksdale and Westwood Community and Heritage website.

The site of the tramway Engine House (140) west of Portland Colliery no. 6 is Point 10 on the Portland Path Trail. A heritage plaque explains that this is the site of a former engine house used for hauling coal waggons at the tramway incline. The engine house does not survive. The line of the tramway has been preserved as a field boundary and is in a stable condition. The site of Portland Row tramway crossing/junction (143) is Point 9 on the Trail. The heritage plaque notes that this is the point at which the Erewash and Cuttail Valleys tramways joined. The tramway crossing at Stoney Lane (148 and 149) is Point 8 on the Trail. As identified on the plaque, the route of the tramway can be seen between the hedgerows. It is marked by a part-gravel/hardcore path. The site is in a stable condition. The old tramway and crossing at Common Side (147) is an extension of this line. The former tramway also appears to have been preserved as a field boundary and is in a stable condition.

Plate 15: Portland Path Trail display at Nottingham Road (Photograph DSCF0053)

Plate 16: Portland Path Trail display at Nottingham Road (Photograph DSCF0055)

The former tramway Junction at Dove Green (154) is Point 5 on the Trail. A display mounted on a garden wall to the north of no.52 Nottingham Road provides details of the Portland Path project and identifies the route of the former tramway and the significant points along it (**Plates 15 and 16**). The line of the former tramway route at this point is preserved in the plot boundaries to the north and south of Nottingham Road. The trackbed and any associated infrastructure have been removed. The tramway junction at Ashes Farm (157) is Point 4 on the Trail. Ashes Farm is reached from a track to the south of Nottingham Road. The two lines of the tramway are preserved as field boundaries and marked as hedgerows. A plaque explains that this is the site of the junction between the Portland Collieries Tramway and the Mexborough Collieries Railway.

A short section of the former Mexborough Colliery tramway survives. Aerial images (Google Earth) show that the former tramway (156) crossed over Nottingham Road at a point to the north of the present recreation ground. The route of the tramway is preserved as the north boundary of the recreation ground and continues as a field boundary to the south-east. A short section is preserved as a field boundary to the north of Nottingham Road. The rest of the line has been built over (151 and 152) by new housing developments. The surviving components of these assets are in a stable condition.

8.3.3 Settlement

The 47 houses that comprised Portland Row (145) were constructed by the Butterley Company in the early 1820s. The terrace has been demolished and replaced by the Windsor Road housing estate on the south-east side of Mansfield Road. A Portland Path Trail information board (**Plate 17**) mounted on the north-west side of Mansfield Road, opposite Windsor Road, explains the mining heritage of the area and includes a photograph of the Portland Row houses (**Plate 18**).

Plate 17: Portland Path Trail display board opposite Windsor Road (Photograph DSCF0097)

Plate 18: Display board detail showing the former Portland Row houses (Photograph DSCF0106)

9. EASTWOOD

9.1 Location and historic context

The Eastwood study area is located on the west side of the county, approximately 12km north of Nottingham. Located on the exposed coal measures, the history of this study area is different to that of many other early mining centres in that it maintained its wider identity as a town and did not become a 'pit village'. Eastwood also gained fame as the birth place of the author, D.H. Lawrence, who was the son of a local coal miner. This association has perhaps had more impact on the perception of the culture and identity of the Nottinghamshire coal industry that any other local figure.

Figure 10 shows the location of coal industry related heritage assets in the Eastwood area.

9.2 Documentary research and history

9.2.1 Medieval

Industry

There is no direct evidence of coal mining at Eastwood during the medieval period. However, documentary evidence demonstrates that coal was being worked within the study area prior to 1490, when Beauvale Priory acquired 'divers messuages, lands, woods, coals, &c.' in 'Brynnesley and Brynnesley Asshe' (NAK E326/81). These immediately post-medieval coal mines may also have been worked in the medieval period.

9.2.2 Sixteenth to eighteenth centuries

Industry

No mining-related features were depicted on John Mackay's 1736 plan of the manor of Eastwood (NA EW 1 R). None of the plot names suggested mining associations or activity, with the exception of named 'Pit Hill', a large, open area to the south of Nottingham Road. Mackay depicted Eastwood's manorial lands and showed features such as houses, churches, roads and strip fields. In contrast, Pit Hill formed part of Eastwood's commons and so was left largely blank. It is therefore not clear if this area was the site of disused bell pits, associated with earlier mining activity, or if active mines such as gin pits were being worked at the time that the map was surveyed. If pits were being worked, they may have been omitted from the map as they were not on manorial land. The HER records a possible bell pit (Asset 40) to the south-east of Pit Hill, while Springfield Colliery (Asset 117) had been sunk in this area by the time of the 1880 Ordnance Survey map. This indicates that coal reserves remained in the area, but were not worked until the development of deep-mine technology during the 19th century.

Phillip Hutchinson's 1739 plan of 'several Veins of Coal in the counties of Derby and Nottingham' marked Brinsley Colliery at Eastwood (NA XM 75). Given the period, this may have been the 'Brinsley Gin Pit' for which the Coal Authority hold an undated plan. Gin pits were mines in which coal was 'drawn to the surface by donkeys that plodded wearily in a circle round a gin' (Lawrence 1970, 7). The Brinsley pit marked by Hutchinson was being worked 'by Messrs Barber & Walker Esq' in 1739. As Barber Walker & Co., this company remained the major coal company operating at Eastwood until the nationalisation of the coal industry in 1947.

Documentary evidence demonstrates that three pits were being worked in a field owned by the Earl of Stamford at Moorgreen, to the north-east of Eastwood, in 1745 (NA X94 208/18). The precise location of these mines is unknown. While a letter to Sir Robert Sutton from Richard Jackson of Moorgreen stated that 'Mr Barber agrees there is (further) coal there' (NA X94 208/18), Barber Walker & Co. did not sink Moorgreen Colliery until 1865. This indicates that substantial coal reserves had remained unworked, possibly due to the limits of mid-18th-century mining technology.

In addition to gin pits, 'foot-rill mines with an opening in the hillside into which the miners walked, or windlass mines, where the men were wound up one at a time, in a bucket, by a donkey' were said to have been present 'all over the countryside' around Eastwood during the 18th century (Lawrence 1970, 7). However, documentary and cartographic sources provide evidence for only two pits at Eastwood in the later part of the century. John Chapman's 1774 map of Nottinghamshire marked two 'Coal Pits' in an area bounded by Derby Road at the south and Mansfield Road at the east, while contemporary newspaper reports contains accounts of an accidental death at 'Eastwood Colliery' and the discovery of a live toad in a stratum of coal 'forty yards from the Surface' at the 'Fire Engine Pit at Eastwood colliery', both in 1775 (Watson 1811, 10). J. Smith's 1776 plan of the intended route of the Erewash Canal (NA XC 7 5) marked 'Coals' at Eastwood, but gave no indication of the extent of the local industry. Later maps do not show any mines at the location marked by Chapman in 1774.

Testimony taken during interviews for the 1842 Royal Commission report provides some evidence for the type of mines, working practices and technology that were in use in the late 18th century. James Knighton, a 70 year-old miner employed at Eastwood Colliery, stated that he began work in the area's coal mines in 1780, at the age of eight, and had 'worked with a gin, that is a horse, not an engine' and that 'it was much harder work than now as the rails' on which the coal tubs were taken from the coalface to the pit bottom 'were wood not iron' (Winstanley 1998, 42).

Transport

Following an increased demand for coal supplies to Derbyshire's developing ironworking industry, Eastwood's gin pits were 'elbowed aside by the large mines of the financiers' (Lawrence 1970, 7). Evidence for the importance of transport in the development of coal-mining in the area is demonstrated by the construction of the Erewash Canal in 1779. The canal had been 'proposed by the gentlemen and owners of the extensive coal mines of Heanor, Langley…Eastwood &c. to carry their coals to the Trent, which, for want of a water carriage, lay useless both to the owners and to the public' (Phillips 1793, 265). Canals were authorised by Act of Parliament, with coal owners typically being granted the 'Power to make Railways' (ie. waggonways) to transport coal from their pits to the canal, upon payment of wayleave fees to the affected landowners. The waggonways ran to the canal wharf at Eastwood Lock, where coal was loaded onto barges to be transported to Nottingham or shipped to markets further afield.

Due to the increases in coal sales facilitated by the opening of the Erewash Canal, coal-production in the Eastwood study area increased substantially and Barber Walker & Co. became the prime movers behind the construction of the Nottingham Canal. Moorgreen Reservoir, which was constructed to supply water to the canal, was fictionalised by D.H. Lawrence as 'Willey Water' in *Women in Love* and as 'Nethermere' in *The White Peacock* and *Sons and Lovers*.

When opened in 1796, the Nottingham Canal complemented the Erewash, the Cromford Canal and the Leicester Navigation, linked existing collieries that had previously been isolated sites scattered across the landscape to an efficient means of transporting coal to market. Additional waggonways were constructed to link Eastwood's pits with the new canal, including a line that crossed Nottingham Road in the vicinity of Wellington Place, to run via the Moon And Stars public house to Nottingham Canal.

9.2.3 Nineteenth century

Economic

Due principally to the expansion of the coal mining industry, Eastwood's population increased from 735 in 1801 to approximately 4,500 by the middle of the century. Documentary evidence records the names of some of the area's collieries in this period, such as an 1804 grant of £7,500 and an annuity of £500 per annum for 54 years from the 'revenue of Brinsley Colliery' (NA DD 1423/9). John Farey's 1811 list of collieries, which principally covered the Derbyshire coalfield, but also included pits in this part of Nottinghamshire, listed Brinsley and Eastwood collieries, but not Daykin's Pit, which was operated by S. Daykin & Co. from 1810 (Farey 1811, 118-215; Griffin 1971, 67). Farey subsequently recorded 'Old Brinsley Colliery' and a 'railway' that ran from New Brinsley Colliery to the Brinsley Wharf on the Cromford Canal and noted that the Coal-masters' Society held its meetings at Eastwood during this period (Farey 1817, 338, 398, 655).

An 1811 coal lease by Lord Viscount Melbourne to Thomas Walker, Thomas Barber and Richard Cheslyn of Langley Hall (NA DD 1423/11) demonstrates that local landowners were involved in coal mining, sometimes in partnership with the private coal companies. Joseph Priestley's 1831 reference to the 'Duke of Newcastle's collieries at Brinsley' (Priestley 1831, 483) demonstrates that large landowners were also involved in Eastwood's mining industry. The profits of coal-mining also led to coal operators themselves becoming local land owners. Built by 1814 (NA PR 15, 240), Eastwood Hall was the home of the Walker family, while the Barber family lived at Lamb Close House. The latter was fictionalised by D.H. Lawrence as 'Shortlands' in *Women In Love* and 'Highclose' in *The White Peacock*.

Despite the dominance of Barber Walker & Co., other coal companies operated in the Eastwood area during the 19th century. The Butterley Colliery Company worked Plumtre Colliery, which was situated between Eastwood Hall and Brinsley Colliery, while documentary evidence demonstrates that small-scale, independent coal-owners also operated at Eastwood until at least the middle of the century. An 1833 valuation recorded Green Dale Colliery, while Dr. A. Manson's colliery at Eastwood itself was the subject of a valuation in 1835 (NA PK 5908/6-7). Barber Walker & Co. acquired Manson's colliery in 1838, during a period in which the company 'were reputed to be buying collieries…in order to restrict their output and so reduce competition' (Griffin 1971, 67). The company pursued this policy into the 1850s, when they acquired Hill Top Colliery from Fullard and Richardson (Griffin 1971, 67).

Dr. Manson's pit was redeveloped as Barber Walker's Eastwood Colliery. This mine comprised four shafts in a small plot between the Erewash and Nottingham Canals. An 1871 plan of the mine (NA DD 999/1-2), shows the positions of the two shafts and the extent of the underground workings, superimposed onto a plan of Eastwood. An 1877 plan of the colliery is held by the Coal Authority.

Extensive evidence relating to Barber Walker & Co. mines, policies and working practices were contained in the 1842 Report of the Commissioners to the Children's Employment Commission into child labour in the coal industry. James Sisson, engineman at Brinsley Colliery, stated that Brinsley Colliery was 158 yards (145m) deep, with the coal waggons drawn by horses and winding powered by a 14hp steam engine (Winstanley 1998, 51). John Limb, aged 12, who assisted one of the coal loaders, stated that the shaft at Brinsley was 'very bad and the bricks very loose' and unmortared (Winstanley, 50, 51, 52).

William Wardle, aged 10, worked as a driver at Barber Walker's 'Hopkin's Pit', which was also located in the Brinsley area. Wardle stated that, from the age of 11, the boys at Eastwood were 'employed by drawing with the belt', ie. pushing the loaded coal waggons along the underground waggonways, where they were 'fastened to the tub with a hook and have to work double' (Winstanley 1998, 52). Hopkin's Pit also employed a six year-old child, who 'opens and shuts the door of the ventilator to let wagons pass' (Winstanley 1998, 52). James Gibson, aged nine, was employed to carry out this task at Barber Walker& Co.'s Willow Lane Pit (Winstanley 1998, 43). The latter was 190 yards (174m) deep, with the shaft being partly 'laid with lime' while '14 yards (12.8m) is lined with metal' (Winstanley 1998, 51). The waggons at Willow Lane were pulled by ponies, with the winding powered by a 20hp steam engine (Winstanley 1998, 51). Davy lamps were not available at this pit.

The 1881 OS map shows several new pits. Springfield Colliery, sunk to the south of Nottingham Road by the Springfield Colliery Company, was located in the area that had been named 'Pit Hill' on the 1736 Eastwood map. Lodge Colliery was situated at Giltbrook, immediately to the north of the Great Northern Railway's Nottingham and Erewash valley line. Known as 'Billy Hall's Pit', after its owner William Hall, this mine was shown on the 1881 OS map with two shafts, a cluster of small buildings, a brick kiln and two settling ponds. Documentary evidence shows that Hall leased the site of the colliery and brick works from the Marquess of Lothian. Nottingham Archives hold correspondence relating to the proximity of the Lodge Colliery workings and those of Barber Walker & Co. (NA DD/LM/193/7/1-70; NA DD/LM/213/6).

Several 'old pits' were marked in the Eastwood area on the 1881 Ordnance Survey map. These may have become disused due to Barber Walker's policy of gradually closing smaller mines in order to concentrate their operations at fewer, but larger collieries (Moore 1995, 32). By 1896, Barber Walker & Co. operated just three collieries within the Eastwood study area: Brinsley, High Park and Moorgreen. Two of the disused mines shown on the 1881 map were located in fields to the south-east of the canals, canal basin, waggonways and railway lines in the vicinity of Eastwood Colliery. The identity of these pits is unclear, as is that of an active pit marked simply as 'Colliery' in the fields near Greenfield Farm on the north side of Eastwood.

Between 1891 and 1902, D.H. Lawrence lived in Barber Walker housing at Walker Street, between Eastwood and Hill Top. Miners' housing was also built at Engine Lane, near Moorgreen Colliery, in this period, while Barber Walker & Co. built new offices, the present-day Durban House, on Mansfield Road in 1896. Miners' wages were paid at the offices every Friday night. This was atypical within the Nottinghamshire coalfield, where wages were usually paid in public houses on Saturday nights. Lawrence stated that, as a boy, he had often collected his father's wages from the Barber Walker offices, just as his character, Paul Morel, did in *Sons And Lovers*.

Industry

Robert Harrison, Barber Walker's general manager, modernised the company's existing pits in the 1850s and was responsible for the development of new mines, such as High Park Colliery, which was sunk in 1854 and opened in 1860 (Moore 1995, 32). 'On the Winning and Working of High Park Colliery, Notts.', an account of the sinking and operation of High Park, was published in *Chesterfield and Derbyshire Institute of Mining, Civil and Mechanical Engineers Transactions* 2 (1873-74). Documentary evidence reveals that Moorgreen Reservoir was drained during the sinking of High Park, but that water from the reservoir subsequently flooded the workings (NA DD/LM/213/10). This colliery had two shafts, with a third that provided ventilation. Correspondence relating to High Park's mineral railways survives in Nottingham Archives (NA DD/LM/213/10).

Newthorpe Colliery, sunk by the Digby Colliery Company in 1863, stood to the south-east of Eastwood, while Barber Walker's Moorgreen Colliery was sunk to the north-east of the town in 1865. Fictionalised by D.H. Lawrence as 'Minton Colliery' and described in *Sons And Lovers* as a large mine set amongst cornfields, Moorgreen was the largest of Barber Walker & Co.'s Eastwood pits.

Brinsley Colliery was shown on the 1881 Ordnance Survey map with several shafts, a spoilheap, a mineral railway siding and a branch line to a railway that led to Plumtre Colliery. Several shafts, a spoilheap and several colliery railway lines were shown at Plumtre on the 1881 map. Despite its proximity to the Walker family home at Eastwood Hall, Plumtre Colliery was operated by the Butterley Colliery Company. This pit was named after the Plumtre family, who were among the landowners who had owned Eastwood Colliery in 1739 (Griffin 1971, 22). Both the main mineral railway and the Plumtre Colliery line crossed Cockerhouse Lane and connected to the Great Northern Railway line at Langley Mill. Plumtre Colliery closed in 1912.

Transport

The Sun Inn at Derby Road, Eastwood, was the location for an 1832 meeting of coal owners which resulted in the formation of the Midland Railway. Of the £32,000 raised towards the cost of developing the railway, £10,000 was provided by Barber Walker & Co. (Griffin 1971, 68). By connecting the coal mines of Eastwood and the Erewash Valley with wider markets in Nottingham, Derby and Leicester, the creation of the Midland Railway led to a reduction in traffic along the canals from 427,670 tons of coal in 1848 to 192,902 tons in 1869 (Griffin and Griffin 1982, 127). In contrast, 1,709,161 tons of Nottinghamshire coal were moved by rail at the latter date. While the canals had been crucial in the development of the county's coalfield, their importance dwindled as that of the railways grew. Access to mass markets also saw a transformation in the way that coal was mined in the Eastwood area, from a large number of small pits, to a smaller number of larger collieries.

Eastwood Colliery had particularly good transport links, being served by the canal networks, branch lines of the Great Northern Railway and the Midland Railway, and the Derbyshire and Staffordshire Extension railway. The latter, which opened in 1878, crossed the Nottingham Canal via a swing bridge to the south-east of the pit. A further three shafts had been sunk at Eastwood Colliery by the time of the mine's closure in 1884.

Settlement

Barber Walker & Co. demonstrated 'clear evidence of…19th-century paternalism' (Moore 1995, 41), providing money and coal for Eastwood' Sunday Schools from the 1830s (Moore 1995, 34), while they fostered the ambulance brigades and the Lads' Brigade and 'encouraged various sporting activities, particularly cricket and hockey' (Moore 1995, 34-35; Griffin and Griffin 1982, 133). Barber Walker & Co. also helped to finance the construction of Eastwood's Mechanics' Institute on Mansfield Road in 1860 (Moore 1995, 35; Griffin and Griffin 1982, 127). This subsequently became the Eastwood Miners' Welfare Institute, which closed in 1981.

Despite their contributions to the area's social and recreational facilities, Barber Walker & Co. 'were nothing like as philanthropic as some colliery owners' and their actions 'were largely motivated by self interest' (Griffin and Griffin 1982, 133). This is suggested by the company's policy of fostering Methodism among the Eastwood mining community in an attempt to develop what they viewed as the 'correct' work ethic and standards of behaviour. Methodism encouraged discipline, hard work, good behaviour and the keeping of clean, tidy houses, whilst discouraging drinking and gambling. When Barber Walker & Co. were persuaded by Robert Harrison to construct miners' housing at The New Buildings, Eastwood, the development included Methodist chapels at Victoria Street, Albert Street and Wellington Street (Moore 1995, 33; Griffin and Griffin 1982, 136). Construction of the Barber Walker houses commenced with Princes Street in 1871.

Evidence as to the state of housing in Eastwood is provided by D.H. Lawrence, who was born at 8a Victoria Street, The New Buildings, later described the development as 'two great hollow squares of dwellings planked down on the rough slope of the hill, little four-room houses with the 'front' looking outward into the grim, blank street, and the 'back', with a tiny square brick yard, a low wall, and a w.c. and ash-pit, looking into the desert of the Square…with these little back yards all round, and openings at the corners. The squares were quite big, and absolutely desert, save for the posts for clothes lines, and people passing, children playing on the hard earth. And they were shut in like a barracks enclosure, very strange' (quoted in Worthen 1991, 33).

The Barber Walker & Co. houses were, however, viewed as an improvement on earlier miners' housing at Eastwood, such as Daykin Row, which stood near Wellington Place. Lawrence described these as 'two rows of…very old, black four-roomed little places, that stood on the hill again, not far from the Square' (quoted in Griffin and Griffin 1982, 136). These houses stood on either side of Daykin's Pit. Lawrence also described Hell Row, a collection of 'thatched, bulging cottages that stood by the brookside on Greenhills Lane' (quoted in Dalal 2007, 81). These may have been the cluster of buildings opposite the Greenhill Road/Mansfield Road junction which remained extant in 1961, but had been demolished by 1980.

Lawrence subsequently lived at The Breach, a further Eastwood housing development also constructed by Barber Walker & Co. This 'consisted of six blocks of rather more pretentious dwellings erected by the company in the valley below, two rows of three blocks, with an alley between' (quoted in Gill 2012, 1). The Barber Walker houses were supplied with gas lighting from the company's Eastwood Gas Works (Griffin and Griffin 1982, 139). Construction of a sewerage system commenced at Eastwood in the 1880s, but many miners' houses were not

connected to the system until the inter-war period of the 20th century (Griffin and Griffin 1982, 139).

In the 1870s, plans were undertaken to establish a 'Colliers' Hospital' at Eastwood for 'the use of every workman in the employ of Messers. B., W., & Co., who may happen to require it' (NA DDLM/193/6/19). Various sites at Hill Top were suggested (NA DDLM/193/6/10, 16-19) but, due to the depression in the mining industry, the Eastwood Colliers' Hospital was never built (Moore 1995, 34). Money already raised towards its cost was donated to Nottingham General Hospital to fund the 'The Barber Walker Employees' Memorial Bed'.

The 1881 OS map clearly depicted Eastwood Hall, the home of the Walker family, to the south-east of Plumtre Colliery. The hall was set in a landscaped parkland with fishponds, a walled garden, greenhouses, an aviary and a series paths that ran through the 'pleasure grounds'. To the east of Mansfield Road, a mineral railway ran through fields to the north of Newthorpe Grange, passed the Beggarlee Works and terminated at Moorgreen Colliery. Several lines ran on either side of the pit, which was shown with two shafts and a spoilheap. A brickyard to the east of Moorgreen was also owned by Barber Walker & Co. (Worthington 2008, 50). To the north of the pit, Lamb Close, the home of the Barber family, stood at the centre of a series of lawns, orchards and a wooded pleasure ground. The Barber family retain ownership of Lamb Close at the present day.

Landscape and society

Through his writings, D.H. Lawrence has probably provided the greatest exposure of Nottinghamshire's coal mining communities to the wider public. As previously noted, Lawrence's autobiographical works include descriptions of Eastwood and its housing, although his greatest impact has been in providing the most enduring image of the character and lives of the individuals and communities of the coalfield. The Lawrence family had a long association with the coal industry, with D.H. Lawrence's grandfather employed by Barber Walker & Co. as a company tailor, producing the workclothes that were supplied by the company to their workforce (Worthern 1992, 9). Lawrence's father, however, began work at Brinsley Colliery in 1853, aged 7, despite the 1842 Mines and Collieries Act which prohibited children under the age of 10 from working underground in coal mines (Worthen 1992, 10). The Coal Authority hold an 1855 plan of 'Brinsley Engines'. While historic photographs show Brinsley with double headstocks, these were not installed until 1872, when a second shaft was sunk at the pit.

Situated to the south of Brinsley Colliery, adjacent to the mineral railway, Vine Cottage was the home of D.H. Lawrence's aunt, Polly, and uncle, James, who was killed in an accident at Brinsley in 1880. This incident was fictionalised in his celebrated 1911 short story, 'Odour of Chrysanthemums', and a 1914 play, 'The Widdowing of Mrs. Holroyd'. An 1889-'92 plan of Brinsley Colliery survives, along with the mine's order book for the same period (NA NCB 5/11-12).

9.2.4 Modern

Economic

T.P. Barber, a Boer War hero, took control of Barber Walker & Co. in 1896, aged just 21. Barber subsequently began to modernise and reorganise the company. With the support of John Fryar, general manager, a £20,000 electricity-generating plant was installed at Moorgreen Colliery in

1905 (Moore 1995, 37, 39). This supplied electricity to all of the company's Eastwood pits (Moore 1995, 37, 39). Fryer also oversaw the introduction of new mining technology, with the installation of mechanical coal-cutters at all of Barber Walker & Co.'s Eastwood pits in 1907. However, increasing mechanisation was one of several causes of industrial action at the company's pits in this period. Roger Moore has suggested that the varying responses of Eastwood's miners to these crises shows that early 20th-century Eastwood was 'in no sense the typical mining village, socially homogenous, closed and set apart' (Moore 1995, 75). By this date, rather, the town was 'mixed in occupational composition…and subject to powerful influences exerted by the colliery owners' (Moore 1995, 75).

By 1910, 'the economic and social dominance of Barber Walker…in Eastwood was all but complete' (Moore 1995, 40). The company was Eastwood's largest employer and, within the study area, employed 300 miners at Brinsley, 700 at High Park and 800 at Moorgreen (Moore 1995, 55). While 'pragmatic, even hit and miss', Barber Walker & Co.'s 'commitment to the workforce's welfare…meant that the community was', after several decades, finally 'beginning to exhibit the hallmarks of what might be called a 'company town'' (Moore 1995, 40).

Settlement

During the early 20th century there was a diversification of social activities in the town .The Eastwood Male Voice Choir was created, this was formed as the 'Eastwood Collieries' Officials Male Voice Choir' at the new Officials' Institute on Mansfield Road in 1920 (Pope 1995).

Industry

Little change was shown at Brinsley, Plumtre, Moorgreen or High Park collieries, or along the course of their mineral railways, on the 1900 Ordnance Survey map. A single building stood at the site of Eastwood Colliery. This occupied the site of one of the former colliery buildings but was a smaller structure on a different orientation and is unlikely to have been a surviving colliery building. While the colliery waggonway had been dismantled, its trackbed survived to the south-east. The site of Lodge Colliery was labelled 'Lodge Colliery Brick Works' on the 1900 OS map. Two large clay pits, one of which was disused, had been excavated to either side of the site. It is not clear if the mine was still being worked at this date or if the site had been given over to the brick works.

Brinsley Colliery showed little in the way of change on the 1916 Ordnance Survey map. The site of Plumtre Colliery had been cleared of buildings and railway lines by that date, although the land itself had not been landscaped. Other than the extension of the spoilheap, little change was shown at Moorgreen and none at High Park in 1916. Newthorpe Colliery had been constructed to the west of Chewton Street by that date. This mine was known locally as the 'Throttleha'penny Pit'. The site of Eastwood Colliery had been cleared by 1916 and a sewage works had been constructed over part of the pit's former waggonway. The buildings and waggonways had been removed from the site of Lodge Colliery, although a chimney remained standing and the position of the shafts continued to be marked on the 1916 OS map. Trees screened the clay pits that had been shown on the 1900 map. Springfield Colliery was disused by 1916. Its site now forms part of Coronation Park.

Cartographic and photographic evidence shows several Eastwood pits in this period. The Coal Authority hold plans of High Park Colliery from 1918 and 1922, and a plan of Moorgreen Colliery

from 1919, while Nottinghamshire Archives hold a photograph showing the Brinsley Colliery double headstocks, mineral railway, coal stack and buildings (NA SO/NCB/17/2/14).

Brinsley Colliery closed during the inter-war period, when underground workings were connected between this pit and Moorgreen, although the Brinsley shafts remained open to provide ventilation for the Moorgreen workings. The Coal Authority hold four 1931 and three 1934 plans of Brinsley Colliery. Coal was no longer wound at the mine by the time of the 1938 Ordnance Survey map and several buildings and a number of the railway lines had been removed by that date. The Coal Authority also hold one 1948 and four 1949 plans of Brinsley.

Plumtre Colliery was marked 'disused' on the 1938 OS map and many of its railway lines had also been dismantled. While no substantive changes were shown at Moorgreen or High Park, Ilkeston Collieries Ltd had acquired the site of Lodge Colliery and had constructed a new mine at the site by this date. The two shafts from the 19th-century pit had been re-used, while several new buildings and mineral railways had been constructed parallel with the GNR railway line.

The Coal Authority hold four undated plans of Moorgreen Colliery, a 1944 plan of High Park and three 1944 plans of Eastwood Hall. The latter was acquired by the National Coal Board following the nationalisation of the coal industry in 1947 and became the NCB's East Midlands Region headquarters. Subsequent NCB development at the hall is shown on an undated plan (NA SO/NCB/17/10/42). Several new buildings were depicted to the north and east of the 'Old Hall', including a science block, a marketing block, a 'new block', canteen, 'dining room' and 'coal prep. block'. The National Archives hold numerous photographs, plans, reports and minutes relating to these developments (NAK COAL 80/381; COAL 80/382; COAL 78/1435; COAL 78/1871, etc). The last of the new Eastwood Hall extensions was completed in 1960-'61 (NA DDHA 1/4/8/204). A 1967 sale catalogue stated that the property included a lodge, cottages, garages, a cricket ground and the course of Cockermouth Road (NA DDHA 1/4/8/204). While the hall's electricity supply was 'provided from Moorgreen Colliery' at that date, the catalogue noted that 'this arrangement will be discontinued when the property is sold' (NA DDHA 1/4/8/204).

High Park Colliery closed in 1950, when it was merged with Moorgreen. The latter thus became the final Barber Walker & Co. colliery operating in the Eastwood area. The majority of the High Park buildings had been removed by the time of the 1955 Ordnance Survey map. Spoilheaps and a single track railway were shown at the site of Plumtre Colliery at that date, with only a single building shown at Newthorpe Colliery. No changes were shown at Lodge Colliery on the 1955 map.

No changes were shown at Brinsley Colliery on the 1962 Ordnance Survey map. The spoilheaps at the site of Plumtre Colliery had been extended substantially, however, and included two large sludge beds and a conveyor. Two large areas of opencast coal mining were marked to the west of the spoilheap. Several new buildings, railway lines and sidings, offices, settling ponds and tanks were shown at Moorgreen Colliery on the 1962 map. The Coal Authority hold 26 plans of Moorgreen Colliery for the period 1962 to 1968.

The mineral railway that had connected Moorgreen and High Park had been dismantled by 1962 and the site of the latter had been cleared of all mining-related features. A shaft, a single building and small spoilheap were shown at the site of Newthorpe Colliery in 1962. It is not clear if the pit had closed by this date. While the building continued to be shown on the 1969 Ordnance Survey

map, the shaft was no longer marked and the Newthorpe spoilheap had been landscaped. Lodge Colliery had also closed and was marked 'disused' on the 1969 map. The buildings and a number of the mineral railways remained extant, while a spoilheap was shown to the north-west of the pit.

Activity at Brinsley Colliery finally ended in 1970 and, with the exception of air shafts and a small spoilheap, its site had been landscaped by the time of the 1974 Ordnance Survey map. The colliery's headstocks had been dismantled and moved to the National Mining Museum at Lound Hall, Nottinghamshire. The spoilheap at the site of Plumtre Colliery had been extended substantially by that date and had covered the former opencast workings to the west. The majority of the 1960s sludge beds had also been removed. The mineral railway to Moorgreen Colliery remained extant, however, while a 'Coal Stockyard' had been established at the site of High Park. The site of Newthorpe Colliery had been developed for housing by 1974 while, with the exception of the spoilheap, all of the mining-related features had been cleared from the site of Lodge Colliery.

The Coal Authority hold 23 plans of Moorgreen Colliery from 1976. Moorgreen had been earmarked for closure immediately prior to the 1984-1985 Miners' Strike and was eventually closed in July 1985, thereby becoming the first of Nottinghamshire's collieries to close following the end of the strike. The Coal Authority hold 39 plans of the Moorgreen spoilheap from 1985 and 31 abandonment plans of the colliery itself from 1986.

No features remained extant at the site of Brinsley Colliery on the 1986 Ordnance Survey map. By that date, the opencast workings to the south-west were covered by the spoilheap that concealed the site of Plumtre Colliery, while 'old workings' and sludge beds were marked to the west of Eastwood Hall. Although Moorgreen had closed, the mineral railway remained extant, as did the majority of the colliery buildings and related features. The sites of High Park and Lodge collieries were shown as open land on the 1986 OS map.

Following the closure of the National Mining Museum at Lound Hall in 1989, Nottinghamshire County Council requested that the Brinsley Colliery headstocks be reassembled at the site of the mine, which by then formed part of a country park. Having been restored by British Coal and the NCC., the wooden tandem headgear were re-erected on the site of the colliery in 1991. The path that leads to the present-day picnic area follows the course of the 19th-century waggonway or 'gang line' on which coal was transported to the Brinsley Wharf on the east side of the Cromford Canal (Worthington 2008, 50, 121).

The large spoilheap had been removed from the site of Plumtre Colliery by the time of the 1990 Ordnance Survey map. The mineral railway to Moorgreen had been dismantled, as had the majority of the colliery buildings. No changes were shown at the sites of High Park and Lodge collieries at that date. The Coal Authority hold five plans of the site of Moorgreen Colliery from 1996.

Landscape and society

Jack Carter's 1960 film of D.H. Lawrence's *Sons And Lovers* used Eastwood locations, including Brinsley Colliery, where Lawrence's father had worked. Wellington Street, The Buildings, part of the same miners' housing development in which Lawrence was born, was also used in the film, along with Mansfield Road, on which the former Barber & Walker Co. offices stood.

During the 1990s, interest in the life and works of D.H. Lawrence led to the production of a series of pamphlets by Adam Martin entitled 'D.H. Lawrence's Eastwood' (East Midlands Collection). These promoted a series of walks around Eastwood, taking in various places and buildings that had historic or fictional associations with Lawrence or his work. In 2004, the walks were updated as part of Eastwood's Blue Line Trail.

By the early 21st century, Durban House, the former Barber Walker & Co. offices at Mansfield Road, housed the D.H. Lawrence Heritage Centre. The Centre was closed by Broxtowe Borough Council in 2016. Ironically, the closure of the Heritage Centre occurred only four months after Lawrence's international reputation had been instrumental in Nottingham being granted Unesco City of Literature status.

9.3 Assessment of heritage assets in Eastwood

9.3.1 Industry

Plate 19: Brinsley Headstocks (Photograph DSCF9927)

The site of Brinsley Colliery (104), located in a small village to the north of Eastwood, is now a nature reserve known as Brinsley Headstocks and Nature Reserve. According to the Brinsley Headstocks website, the Headstocks were removed from Brinsley Colliery in 1970 and taken to the National Coal Museum in Retford. They were returned to the site in 1991, when the museum closed (**Plate 19**). There is a public car park for the nature reserve to the east of Mansfield Road (A608), with an information board showing a suggested walking route to the headstocks and along the route of the former mineral railway (**Plate 20**). The mounds and contours of the nature reserve are presumably formed out of former spoilheaps. Situated in an elevated position, the headstocks are a local landmark. The nature reserve and the headstocks are well maintained by the local council. The site attracts dog-walkers and other visitors. A further information board mounted beside the headstocks explains the history of coal mining in the area.

Plate 20: Information Board (Photograph DSCF9940)

The site of Moorgreen Colliery (7), situated to the north/north-east of Eastwood, is managed as a planted woodland known as Colliers' Wood. According to the local council website, this area was awarded a Green Flag in 2008 in recognition of its high standards of maintenance, community involvement and open spaces heritage value. The footpaths have been created using shale from the former colliery. The area is well-maintained and information boards explain the connection with the mining history of the area. The site of Springfield Colliery (117), to the south of Nottingham Road in Eastwood, is also maintained as an open space known as Coronation Park and Skatepark. It is kept in a good condition and appears to be used regularly by nearby residents.

There is no surviving evidence for Dakins Colliery (115), to the north of Nottingham Road. Access could not be obtained to the site of Plumptre Colliery (16), also to the north of Nottingham Road. Aerial images (Google Earth) show an open area of disused land in the vicinity of these sites, which could correspond with the position of the former mines. No surviving evidence could be identified for bell pits (35, 40), Eastwood Colliery (120), a cluster of collieries and coal pits (122, 124, 126 and 127) identified on historic maps in the vicinity of the Erewash and Nottingham Canals or for two further collieries (8, 107) in Eastwood.

Durban House (111), built in 1896 as the offices of Barber Walker & Co., is located on Mansfield Road in Eastwood (**Plate 21**). This is an L-shaped, two-storey brick building with sandstone details. The façade has a projecting central entrance bay and a clock set into a decorated gable. The roof is hipped with deep overhanging eaves. The building is set within landscaped gardens surrounded by mature trees. Many of the original features, including the windows, appear to have been replaced. It has been adapted for public use, including the addition of a disabled access and ramp to the front entrance. A marquee has been erected at the south side for functions. Overall, the building appears to be in a good condition and the grounds are well-maintained. The recent closure of the Heritage Centre at Durban House may weaken the building's association with the mining heritage of Eastwood.

Plate 21: Durban House (Photograph DSCF9834)

9.3.2 Transport

The Erewash Canal (3, 119), which opened in 1779, is still fully operational. The canal water is clean and free of debris and is used regularly by narrow boats. The canal sides also appear to be regularly maintained; areas of coping have been replaced along the route and steel piling has been inserted where the canal banks have required more extensive intervention. The canal towpaths attract many visitors and walkers.

Plate 22: Langley Mill Basin (Photograph DSCF9827)

The Erewash Canal is on the route of the Erewash Valley Trail and information boards situated along the bank provide details of the area's mining history. At Eastwood Lock there is a weir and

a canal basin (120), although there were no signs of any associated machinery, such as an engine (26).

The watercourses, locks and bridges of the Cromford Canal (2) also appear to be well-maintained. This route is also used by narrow boats and the towpaths are frequented by walkers. At Langley Mill Basin (**Plates 22 and 23**), there is a further Erewash Valley Trail sign which explains that this is the junction of the Cromford Canal, the Nottingham Canal and the Erewash Canal.

Plate 23: Langley Mill Basin (Photograph DSCF9828)

Unlike the Erewash and Cromford Canals, the Nottingham Canal (opened in 1796) (121) is no longer navigable and is in a state of managed decline (**Plate 24**). An Erewash Valley Trail information board at Newmanleys Road explains that the Nottingham Canal has been lost to opencast mining at this point.

Plate 24: Overgrown section of the Nottingham Canal (Photograph DSCF9963)

The Nottingham Canal is now a nature reserve and some sections are open to anglers. The towpath is well-maintained (Plate 25) and frequented by walkers. The swing bridge (123) was not identified, although there are swing bridges *in situ* along the route, as shown on aerial images (Google Earth) at Newmanleys Road South. The heritage of the Erewash, Cromford and Nottingham Canals, and their connections with the mining industry, is explained very well through the Erewash Valley Trail information boards.

Plate 25: Overgrown section of the Nottingham Canal (Photograph DSCF9965)

The best-preserved and most easily-accessible section of former mineral railway is located to the east of the site of Brinsley Colliery (104). This line ran in a north/south direction and is preserved

as a public footpath through the nature reserve. Related infrastructure, such as former railway sidings (106), could not be identified. The route of the former mineral railway to the south of Plumptre Colliery (108 and 109) ran in an east-west direction and can be identified on aerial images (Google Earth) by a line of trees. Access to 108 was not possible. A public footpath to the north of Park Crescent leads down to the former railway line at 109, which is also preserved as a public footpath. The former course of the mineral railway (120) for Eastwood Colliery, between the Nottingham Canal and Erewash Canal, can also be seen on aerial images and is marked out by a line of trees, although it was not possible to gain access to this site or tramway (118) for inspection. The course of the Eastwood branch of the Midland Railway (125) is preserved as a road over the Erewash Canal at Eastwood Lock.

9.3.3 Settlement

Eastwood Hall (44) was built *c*.1810 by the Walkers as their family home. It later became the Regional Office of the National Coal Board and is listed Grade II. It is a brick stuccoed building with a hipped slate roof and ashlar dressings. It is a square-plan, two storeys and six bays wide with a Corinthian portico to the main entrance. There are a series of large extensions at the north end. The building is set within extensive grounds in a rural location to the north of Eastwood. It is now used as a luxury hotel, venue and leisure club and is kept in a very good condition. Lamb Close House (105), built prior to 1880, is the former home of the Barber family. The house is situated to the south of Willey Lane, adjacent to Moorgreen Reservoir, in similar rural and picturesque surroundings to Eastwood Hall. The house is private property and is situated at the end of a long drive. It was not inspected as part of this survey.

Plate 26: The Breach general view (Photograph DSCF9858)

The Breach (112) (**Plate 26**) is a housing development of eight short terraces set out in a grid pattern bounded by Garden Road, Greenhills Road, Greenhills Avenue and Lynncroft. It was built *c*.1880 to house miners and their families. Each terrace consists of a range of houses in parallel with the street frontage, flanked by two properties orientated gable-end onto the street. Each

house has a front and rear garden. This arrangement means that, despite being a development of terraces, the area avoids the closed feel of a continuous row of terraced houses running along a long street. The properties are in private ownership and in a mixed condition. A majority of the original windows and doors have been replaced with uPVC equivalents and several of the original slate roofs have been refitted with concrete tiles. Some of the canopies over the front doorways have been replaced with more substantial porches.

28 Garden Road (45) (**Plate 27**), known as 'The Breach House', is the best-preserved in the area. As the former home of D.H. Lawrence, this property is listed Grade II. It is a two-storey brick end-terrace cottage with a slate roof positioned gable-end on to the street. There is a dentillated brickwork band to the chimneystacks, and at first floor and at eaves level. There are dormer windows to the roof and a lean-to porch on the west side. It is currently used as a Study Centre and is open to public on set weekends. Overall, the building is in a good condition, although the pointing to the main elevations and timber surrounds to the original windows would benefit from maintenance.

Plate 27: No.28 Garden Road (Photograph DSCF9843)

'The Squares' (113) is a denser housing development at the heart of Eastwood town centre (**Plates 28 and 29**). It comprises Princes Street, Victoria Street, Albert Street, Scargill Walk and Wellington Street. It was laid out in a grid and constructed in 1871 by Barber Walker & Co. to house miners and their families. The houses are arranged as continuous rows of terraces which open out directly on to the street frontage. There are gaps at intervals to provide access to the rear. The houses to Wellington Row are two storeys, while those that back onto Princes Street at

the bottom of the street are three storeys at the rear. The houses retain their original outhouses in the yards to the rear, some of which have chimneys. The houses have plain fronts, with sandstone lintels and cills to the openings, and dentillated brick bands to the eaves. The doors and windows have been replaced with modern equivalents. The properties are generally in a good condition. The buildings at the centre of the development, including a school and a chapel (114), have been replaced by modern, late 20th-century, housing. This infill development is largely sympathetic to the original design and layout of the scheme.

Plate 28: Rows of terraces at 'The Squares', Eastwood (DSCF9892)

Plate 29: Rows of terraces at 'The Squares', Eastwood (DSCF9899)

36, 37, 38 and 39 Scargill Walk (46) (**Plate 30**) are a Grade II listed terrace of four artisans' cottages, similar in design to these on The Squares. They were built *c*.1870 and are well-preserved, retaining their original windows and doorways. The houses are brick with stone lintels and cills to the openings, and dentillated bands to the eaves. The central access to the rear of the row has a rounded head. The row now forms a set of craft workshops as part of the D.H. Lawrence Birthplace Museum.

Plate 30: Houses on Scargill Walk, The Squares (Photograph DSCF9905)

Plate 31: Victoria Street (Photograph DSCF9913)

8a Victoria Street (47) (**Plate 31**) comprises a house and adjoining workshop dated to the late 19th century. This is the birthplace of D.H. Lawrence and is listed Grade II. The building is a two-storey, three-bay brick cottage with a slate roof and dentillated eaves. There is a shop window at ground floor level and a carriage opening leading to the workshop at the rear. The building forms part of the Lawrence Birthplace Museum. This building is also in a very good condition and retains its original windows and doors.

There are no upstanding remains surviving of Dakin's Row (116).

The Cricket Ground (110), located between Devonshire Drive and Greenhills Road, is situated to the north of Eastwood, near to the site of Moorgreen Colliery. A large, two-storey early 20th-century pavilion at the south site of the site looks out across the grounds and the fields beyond. There is a veranda at ground-floor level and a covered balcony with a central scoreboard and clock at first-floor level. The ground is the home of Eastwood Town Cricket Club and is in excellent condition. The site was viewed from Devonshire Drive and the pavilion, viewed at a distance, looks to be in a very good condition.

10 HUCKNALL

10.1 Location and historic context

The Hucknall study area is located approximately 9km to the north of Nottingham, in the central part of the coalfield. The town lies on the shallow buried coal measures. In this area, the coal industry generally developed in the post-medieval period due to technological advances. As with Eastwood, Hucknall retained its wider identity as a town rather than becoming a pit village.

Figure 11 shows the location of coal industry-related heritage assets in the Hucknall area.

10.2 Documentary research and history

10.2.1 Medieval

Industry

There is no evidence of coal mining in the Hucknall study area during the medieval period. The monks of Beauvale Priory, who were heavily involved in the sale of coal leases in other parts of Nottinghamshire, were among the landowners at Hucknall during this period. This suggests either that little or no coal-mining activity took place within the study area or that the evidence for medieval coal-mining at Hucknall has not survived.

10.2.2 Sixteenth to eighteenth centuries

Economic

Documentary evidence shows that coal mining was taking place at Hucknall in the first decade of the 18th century. The sources are scant, however, and, as with the lack of evidence for earlier mining, it is not clear whether relatively little mining took place in the study area during the early post-medieval period or if the evidence for more widespread mining activity has not survived.

A 1710 lease shows that, in common with other parts of the county, control of the 'Coal Delphs' (seams, veins or beds of coal) at Hucknall was held by a small group of partners, including important landowners such as the duke of Newcastle (NA DD.3P 6/22).

Industry

Papers dating from *c.*1700 discuss coal workings at Hucknall (NA DD.3P 6/21). These appear to relate to small-scale pits typical of those found in Nottinghamshire's exposed coalfield in this period. Maps or sketch plans are not included among these papers and it is not possible to identify the locations of pits from documentary references, such as the mine that was situated in 'John Kyte's and Wm. Deane's grounds at Hucknall' (NA DD.3P 6/21).

A paper from 1700 details various objections against the sinking of a proposed pit at Hucknall, while an abstract of a 21-year coal lease from the same year indicates that the pit was in sunk despite opposition (NA DD.3P 6/22). The location of this mine is also unknown.

There is no surviving evidence for coal mining at Hucknall for several decades thereafter and it is possible that, once the area's most easily-accessible, shallow coal seams had been worked, the technical problems involved in mining deeper coal could not be surmounted until the development of new technology in the 19th century. This may be supported by a 1771 plan of Hucknall parish which did not show any pits or other mining-related features within the study area (NA HT 1L). As the 1771 plan labelled plots with numbers, rather than with names that may

have suggested former land use, the possible sites of Hucknall's early 18th-century pits cannot be inferred from this plan. A 1773 valuation of coal at Hucknall concluded that the area's reserves were 'of little value' (NA DD.4P 62/13-1-4). This further supports the suggestion that much of the easily-accessible, shallow coal within the study area had been worked in the early 18th century.

10.2.3 Nineteenth century

Economic

John Farey's 1811 list of collieries did not include any entries for the Hucknall area (Farey 1811, 118-215) and employment in Hucknall appears to have been based largely around agriculture and the town's cottage knitting industry during this period (Turner n.d., 10; Beardsmore 1909, 153).

In 1860,however, Hucknall was selected as the site of a new mining venture by a group of four Leicestershire mine-owners who sought to exploit the previously-untapped deep coals of the Leen Valley (Turner n.d., 10). Documentary and cartographic evidence demonstrate the extent to which their Hucknall Colliery Company rapidly acquired land within the study area, initially by renting numerous plots from the duke of Portland (NA PR 22, 840). Documentary evidence survives which shows that the Hucknall Colliery Company also sought to buy and lease coal rights under Hucknall's glebe land (NA NCB 1/57-59; NA NCB 5/1-3; NA DD14 69/10-12; NA DD.4P 79/94/1-3).

Industry

Hucknall No.1, known locally as the 'Top Pit', was sunk to a depth of approximately 350m in 1861. As Hucknall was not a coal mining area, miners from the Leicestershire and Derbyshire coalfields were brought in to sink and work the pit, while local men could be trained (Turner n.d., 10). Production at Hucknall No.1 commenced in 1864, but was abandoned following an extensive fire in 1867. Work did not restart at No.1 until after the completion of Hucknall No.2. Known colloquially as the 'Bottom Pit', this mine was sunk in 1866 and opened in 1868 (Beardsmore 1909, 151; NA DD/2261/3/2). The Coal Authority hold seven plans of 'Old Hucknall' from 1868.

The 1880 Ordnance Survey map showed Hucknall No.1 to the south-west of the village, near Shortwood Farm. Two shafts were marked in the pit yard, with small clusters of buildings at various points around the colliery complex. Undated historic photographs show the pit with double headstocks, which suggests that the shafts were down- and upcast shafts (www.picturethepast.org.uk). Situated on the east side of the town, Hucknall No.2 was a substantially larger and more fully-developed colliery than No.1. Two mineshafts were located in the central part of the colliery, with engine and boiler sheds to the north. A variety of smaller buildings on the west side of the pit yard were not labelled. Little substantive change was shown within the Hucknall study area on the 1886 Ordnance Survey map. The Coal Authority hold 16 plans of a colliery at Hucknall for the period 1892 to 1898. It is not clear if these show Hucknall No.1, No.2 or include plans of both pits.

Transport

While Hucknall No.1 stood immediately to the east of Watnall Road, the key role of the railways was demonstrated by the Hucknall Colliery Branch Railway line, on which coal was transported from the pit to the Midland Railway line near Forge Mill dam. Hucknall No.2 stood next to the

Midland Railway line, to which it was connected by short colliery branch lines. The decision to route the Midland line, and subsequently the Great Central Railway line, in close proximity to the colliery indicates the continued importance of the rail network to the success of the coal industry.

To the south-east of Hucknall No.1 the 1900 OS map shows a branch line left the Colliery Branch Railway to join the Grand Central railway line, while the remainder of the route continued to meet the Midland Railway. Here, new sidings had been constructed between the Midland and the adjacent Great Northern Railway Leen Valley Branch line. Both the Midland and the Great Northern served Hucknall No.2. To the south of the latter, the 1900 OS map showed new sidings located between the two main railway lines. A new access road crossed over the Great Northern line to link No.2 with Portland Road.

Settlement

Population statistics demonstrate the impact that the development of the mining industry had on Hucknall, as the town's population grew from 2,836 in 1861 to 4,257 a decade later (Stroud 1999, 8). Potential tensions between landowners and the commercial coal companies are illustrated at Hucknall in this period, with the refusal of the duke of Portland to sell agricultural land for building purposes (Stroud 1999, 17). This meant that, despite the rapid population increase, new housing for miners and their families could not be built at Hucknall as a 'single purpose colliery village' (Stroud 1999, 17).

Where the Hucknall Colliery Company were able to construct limited housing schemes, these reflected the priorities of the company, with a series of small, terraced houses being built for miners at Beardall Street in 1873, while three-storey houses with forecourts and gardens were built to house supervisory staff at Watnall Road (Turner n.d., 11; Stroud 1999, 17). The latter are now Grade II listed buildings. Extensive urban development did not take place in the Hucknall area until the duke of Portland relented and consented to the sale of much of the area's agricultural land.

Hucknall had 2000 houses at the time of the 1881 census, while only 895 houses had been listed a decade earlier (Stroud 1999, 6). The town's population had increased to 10,023 by 1881 (Stroud 1999, 8). These changes were related primarily to the continued development of the area's mining industry. New houses at Bestwood Road, General Street, Betts Street and Cavendish Street were among those constructed in this period (Turner n.d., 10). However, it is not clear to what extent the new housing was constructed by the Hucknall Colliery Company itself, as 'local freeholders' were involved in the provision of new workers' housing in areas of the town such as Butler's Hill (Stroud 1999, 17).

Hucknall's coal industry provides evidence for the different approaches taken by various colliery companies towards the welfare of their workforce. For example, while Barber Walker & Co. provided housing and sporting facilities at Eastwood, the Hucknall Colliery Company made 'no attempt' to exercise any influence 'on the public, political, philanthropic, and social life of Hucknall…in a corporate capacity' (Beardsmore 1909, 153). While the company largely lacked the paternalistic culture of some of its competitors, however, there is evidence that individuals among the partners made philanthropic contributions towards social and recreational provision

in Hucknall. This is most notable in the 1880s, when the Hucknall Colliery Company came under the control of Herbert Paget and John E. Ellis. Paget and Ellis were responsible for the building of Hucknall Free Library, now a Grade II listed building, in 1887, while Ellis financed the construction of two schools, including that at Beardall Street.

Hucknall's continued dependency on coal-mining in this period is demonstrated by the 1901 census, which showed that of the 4,847 adult males employed in the town, 3,081 worked in the mining industry (Stroud 1999, 11).

10.2.4 Modern

Industry

Evidence of further investment and expansion at Hucknall No.1 is indicated by several new buildings, open-sided sheds, railway lines and a timber yard that were shown at the mine on the 1900 Ordnance Survey map. A chimney and spoilheaps were also shown at Hucknall No.2 on the 1900 OS map.

Evidence for the successful implementation of new mining technology in this period is demonstrated by the installation of electric coal-cutting machines at Hucknall No.1 in 1904. These were the first mechanised coal-cutters to be used in the Leen Valley coalfield, while a 'Rateau exhaust steam turbo alternator' installed at Hucknall No.2 in 1905 was the first in the UK to generate electricity by re-using the 'waste steam' produced by the colliery winding engine (Beardsmore 1909, 152). The re-used steam powered the mine's rope haulage system, moving coal from the workings and up the shaft. In 1908, an 'equalising battery' was installed at the electrical plant in order to store surplus electricity (Beardsmore 1909, 152). Attempts to mechanise other aspects of the mining process were less successful,, however, and attempt to install mobile conveyor belts at both Hucknall pits failed.

Nottingham Archives hold limited early 20th-century photographic evidence for Hucknall No.1 and No.2. Two historic photographs of No.2 are undated, but show the double headstocks that were removed in 1913 (www.picturethepast.org.uk). Various colliery buildings and chimneys are also visible in and around the pit yard in these photographs. By the time of the 1915 Ordnance Survey map, spoilheaps had been extended along the south side of Hucknall No.1, including onto the site of a former quarry at the west. Extensions to the spoilheaps were the only substantive changes shown at Hucknall No.2 on the 1915 map.

The Coal Authority hold two 1930 plans of a colliery at Hucknall. It is not clear if these show Hucknall No.1 or No.2. A screening plant and washery that were built at Hucknall No.1 in 1932 are visible in a 1935 photograph, along with the colliery's railway sidings (NA DD/2261/3/2). Aerial photographs, also taken *c*.1935, show the whole of the Hucknall No.1 colliery complex from the south, with the headgear, washery, chimneys, coal preparation plant, mineral railways and spoilheap clearly visible (NA DD/2261/3/2). No substantive changes were shown at either colliery or along their transport networks on the 1938 Ordnance Survey map.

Coal-winding at Hucknall No.1 ended in 1944, although the pit's two shafts remained open in order to provide ventilation and access for both Hucknall No.2 and Babbington Colliery. Hucknall Colliery Company records for the period 1944-1947 include a report and valuation of the company's premises (NA CATC 10/142/27; NA NCB 1/103-104). These are likely to have been

produced in relation to the impending nationalisation of the coal industry, which took place in 1947. The screens and washery at Hucknall No.1 were demolished in that year (NA DD/2261/3/2). The Coal Authority hold a 1949 abandonment plan of No.1.

Nottingham Archives hold comprehensive photographic evidence for Hucknall No.1 and No.2 for the period 1957 to 1961 (NA DD/2261/3/2). The 1957 photographs show various features at Hucknall No.2, including the headgear, the steam-raising plant, the winding engine house, the lamproom, fitting shops, powder distribution store and part of the spoilheap (NA DD/2261/3/2).

Extensive spoilheaps and several new buildings were shown at Hucknall No.1 on the 1957 Ordnance Survey map, along with a chimney, tanks, a reservoir, a gantry, an explosives magazine, a sluice valve and several filter beds. As coal was no longer moved from No.1, the Hucknall Colliery Branch Railway and the pit's other mineral railways had been dismantled. The majority of the railway's former trackbed continued to be shown in the fields to the south-east.

The National Coal Board carried out an extensive 'surface and underground reconstruction scheme' at Hucknall No.2 in 1957 (Stroud 1999, 14). A new coal preparation plant was constructed at the colliery, along with sidings, stores, workshops, pit head baths and offices (Stroud 1999, 14). The 1957 OS map showed the pit with features such as an aerial ropeway, conveyor belts, gantries, a footbridge, tanks, platforms and an explosives magazine. An extensive spoilheap and several sludge beds were situated to the east of the mine. The Coal Authority hold 67 plans of 'Hucknall Colliery' for the period 1958 to 1967.

A 1959 photograph of Hucknall No.1 shows the colliery's former fan house, along with the headgear, winder house and fan (NA DD/2261/3/2). Contemporary photographs taken from the top of the Hucknall No.2 headgear show the pit's railway sidings, spoilheaps, screening plant and washery, along with the saw mill, water softening plant, conveyor belts and the ongoing construction of a dirt disposal hopper, pumping station, workshop and stores (NA DD/2261/3/2). A 1961 photograph shows the construction of new sheds at No.2, while an undated photograph shows the completed works and much of the reorganisation of the pit yard (NA DD/2261/3/2). Various buildings and features, such as the pit's extensive 'slag heaps', continued to be shown at Hucknall No.1 on the 1967 Ordnance Survey map, while several new buildings and railway lines were shown at Hucknall No.2. The Hucknall Training Centre, established by the NCB in order to train future miners, was closed in 1968. Several historic photographs show training being carried out at the centre (www.picturethepast.org.uk).

A *c*.1970 National Coal Board plan of Hucknall No.2 provides detailed evidence for the various features that were present in a modern colliery complex in this period (NA DD/2261/3/2). The headgear, shafts, winding engine houses and mineral railways were labelled, along with the colliery offices, new and old pithead baths, a fan house, compressor house and electricity substations. Also shown were a medical centre, a telephone exchange, boiler house, joinery shop, stores, locomotive garage, water tanks, workshops, a saw mill and a timber store. The *c*.1970 plan also provides evidence of the extensive treatment and processing of coal that took place at Hucknall No.2, with a rapid-loading bunker, a centrifuge house, a blending area, filter press, gas engine house, methane house, settling tanks and a coal preparation plant with a 'thickener tank' and a 'settling cone'. The Coal Authority also hold two undated surface plans of Hucknall No.2.

With the exception of several small, detached buildings and the colliery spoilheap, the site of Hucknall No.1 had been cleared by the time of the 1973 Ordnance Survey map. The Hucknall No.2 spoilheaps had been extended substantially beyond Wigwam Farm to the north-east of the pit by that date.

In 1982, the NCB constructed a £12 million coal preparation plant at Hucknall and stated that the mine would remain open 'into the 21st century' (Anon. 1986, 1). The new plant had not been completed by the time that the 1983 Ordnance Survey map had been surveyed and was not shown on that map. Little change was shown at Hucknall in 1983, although the small spoilheap to the south of Wigwam Farm had been landscaped and planted with trees by that date. A slurry lagoon was shown on the large spoilheap to the north-east of the pit.

By this period, approximately 80% of Nottinghamshire's coal was supplied to the Central Electricity Generating Board for use in power stations such as Staythorpe and Ratcliffe on Soar (Gray 2008, 139). As these required the 'availability of adequate supplies of coal of the required quality', Hucknall found itself at a disadvantage compared to other pits in the Nottinghamshire coalfield as coal mined from the pit's Blackshale seam was 'only just acceptable to power stations after blending with other coals' (NA DC/BA/1/6/62; Anon. 1986, 1). Problems with the Blackshale coal were such that, in 1986, 'the financial results of the colliery…deteriorated to such a degree' that there was 'no justification in continuing production' (Anon. 1986, 1).

Hucknall Colliery closed in 1987. The *Hucknall Dispatch* produced 'End Of An Era', a five-page report on the pit's history and the implications of its closure on the Hucknall area. The Coal Authority hold two abandonment plans, including a surface plan, for Hucknall, along with 47 plans of the colliery spoilheaps from 1989. Various photographs show the demolition of the Hucknall headstocks, which took place that same year (www.picturethepast.org.uk).

The former Hucknall No.1 spoilheaps had been cleared by the time of the 1991 Ordnance Survey map. The pit's former mineshaft continued to be marked, however, and several small, detached buildings remained at the site at that date. The course of the former mineral railway was marked as a path. In 1995, a half-wheel representing a headgear winding wheel was erected at Wigwam Lane, near the site of Hucknall No.2, as a memorial to the area's mining past.

An aerial photograph taken in 2001 showed the Ruffs Estate business park under construction on the site of Hucknall No.1 (Google Earth). The last of the colliery features had been cleared and the shaft capped or infilled by that date. The A611 had been constructed immediately to the north of the colliery site by 2001, cutting across the course of the former mineral railway to the south and south-east. New housing at Nursery Close had also impacted on part of the railway's former course. The Site of Hucknall No.2 had been cleared by 2001 (Google Earth).

The Ruffs Estate business park had been completed by 2004 (Google Earth). The sites of the former No.1 spoilheaps had been largely landscaped by that date, as had the site of Hucknall No.2 itself, which was planted with trees. A golf course occupied the site of the large spoilheap that had stood to the north-east of No.2.

Settlement

Sir Julien Cahn financed the construction of the House of Rest For Miners at Park Drive, Hucknall, in 1925. Designed by Sir Richard Blomfeld, this was intended to provide high quality accommodation for elderly former miners living in the Hucknall area and was built without input from the Hucknall Colliery Company. The House of Rest is now a Grade II listed building.

The Hucknall and Linby Miners' Welfare Centre had been constructed on Portland Road, to the west of the pit, by 1925. The continued importance placed on sporting and recreational facilities is demonstrated the bowling greens, tennis courts and pavilion that were shown immediately to the south of the Welfare.

Landscape and society

While there is little evidence for substantial activity at Hucknall No.2 during the 1970s, coal-mining's continued social, economic and cultural significance in the area is demonstrated by a 1981 survey, which found that 43% of Hucknall males of working age were employed in the coal industry (Anon. 1986, 5). Hucknall No.2 had been renamed 'Hucknall Colliery' by this period.

Statistical evidence reveals changing trends in the Hucknall coal industry. In June 1986, only 11 miners at Hucknall were under 20, while only seven were over 50 and 'only one third of the workforce actually lives in Hucknall' (Anon. 1986, 3).

In 2005, 'Miner Standing On A Lamp', a 22-ft bronze memorial statue was unveiled at Station Road, Hucknall. As a condition for permission to build a nearby superstore, the £78,000 statue was financed largely by Tesco. In 2014, a memorial comprising bronze plaques and sandstone obelisks was unveiled at Station Road, recording the names of the Hucknall colliers who had lost their lives in mining accidents. Nottinghamshire County Council retain responsibility for the maintenance of the remaining Hucknall No.1 spoilheap and Hucknall No.2's Wigwam Lane spoilheap. Responsibility for the Hucknall Colliery's New East spoilheap is in private hands.

10.3 Assessment of heritage assets in Hucknall

10.3.1 Industry

The site of Hucknall Colliery No.1 (22, 98), to the south of Hucknall, is now occupied by a business park. Development in this area was still ongoing; at the time of the walkover survey, with a suite of modern commercial buildings to the south/south-east of Aerial Way having been cleared to make way for new structures. Part of the Hucknall Colliery No.1 spoilheap (101) survives and has been landscaped and planted with woodland as part of the Farley Lane Nature Area. Machines operating on the west side of the nature reserve suggest that development is also ongoing in this area. The site of Hucknall Colliery No.2 (91, 23), situated in Hucknall town centre, is now occupied by a Tesco supermarket, business park and housing estate. The remains of the spoilheap for Hucknall No.2 straddle Wigwam Lane. The western portion (92) is overgrown with trees and vegetation. The eastern part (23) has been landscaped and now forms the golf course of the Leen Valley Golf Club.

A tall, bronze statue of a miner (103) has been erected in a highly-visible location in Hucknall town centre, on the south-east side of Station Road, near to the site of Hucknall No.2 (**Plate 32**). The lower part of the statue is a miner shovelling coal within a miners' lamp, while the upper part is a miner standing tall with a pickaxe in his hand. It is positioned in a semi-circular-shaped plot, surrounded by three sandstone obelisks.

Plate 32: Bronze statue of a miner, Station Road (Photograph DSCF0002)

The obelisks form a memorial to the 150 miners who lost their lives while working at Hucknall No.1 (**Plate 33**) and No.2 pits, and the nearby Linby Colliery. The obelisks are mounted with bronze plaques listing the names of these who died in these collieries between 1861 and 1988. The statue and memorial stones are in a good condition.

Plate 33: Memorial to the miners of Hucknall Colliery No.1 at Station Road (Photograph DSCF007)

10.3.2 Transport

The mineral railway in the immediate vicinity of Hucknall Colliery No.1 (99) was removed during the development of the business park. The embankment of the former mineral railway (100) survives to the south-east of the site. The former line, which can be accessed from a public footpath and cycle path in open parkland, has been bisected by the A611. At the northern end, the embankment has been partially landscaped and there are steps up to the top. These open parkland features are in a stable condition.

The Nottingham and Mansfield main railway line still survives to the north of Hucknall No.2 (89), although the mineral railway branch lines which ran from the colliery to the main line have been taken out. The route forms part of the national rail network and is currently managed and maintained by Network Rail. Although the route is unchanged, the railway infrastructure has been modernised. The mineral railway sidings (102) to the south of the town no longer survive. The embankment of the former mineral railway survives in an overgrown state (Plate 34).

Plate 34: Embankment for the former mineral railway (looking south), now covered in vegetation (Photograph DCF9797)

10.3.3 Settlement

Terraces of 19th-century miners' housing (94) survive at Albert Street, in the centre of Hucknall. The houses at the south end of the street (west side) (**Plate 35**) are constructed out of sandstone and situated directly on the street frontage. They are two storey and probably two-up two-down in plan. Open coal chutes to the pavements suggest that these properties have cellars. There are gardens and back additions to the rear. Each house in this row has a recessed area beside the doorway for boot scrapers, all of which have been removed.

Plate 35: Houses at the south end of Albert Street (west side) (Photograph DSCF0021)

The terraces to the north end of Albert Street (east and west sides) (**Plate 36**) are constructed out of sandstone and brick. These are also situated directly on the street frontage and are two storey with cellars. The houses at the north end (east side) are three storey. These long terraces are punctuated by alleys which lead through to the backs of the houses at intervals along each row. The houses are in a good condition. In nearly all of the examples, the windows and doors have been replaced and a number have been re-roofed. Some have also been rendered or re-clad on the front façades.

Plate 36: Houses at the north end of Albert Street (west side) (Photograph SSCF0018)

Plate 37: Deputies Row on Watnall Road in Hucknall (Photograph DSCF0029)

A row of terraced houses at Watnall Road (90) were built for the supervisory staff at the colliery and is known locally as 'Deputies Row' (**Plates 37 and 38**). These brick houses are superior to those on Albert Street and are two storeys with semi-sunken cellars and attics with dormer windows. The brickwork includes grey brick decorative details and a dentillated cornice to the eaves. The windows and doorways have pointed arched heads. The terrace is set back from the street frontage behind a boundary wall and forecourts. There are open yards/gardens and back additions to the rear. The houses are in a good condition. The original doors and windows have been replaced and some of the slate roofs have been refitted with modern concrete interlocking tiles. The pointing to the chimneystacks and brickwork to the walls is in a fair condition, although it would benefit from some maintenance.

Plate 38: Deputies Row on Watnall Road in Hucknall (Photograph DSCF0031)

The Houses of Rest for Miners in Park Drive (48) (**Plate 39**), built in 1925, comprise three linked blocks of single-storey dwellings facing out onto a large lawn. They are surrounded by a large stone wall with decorative wrought iron gates bearing the initials 'J.C.' (49). The houses are brick with ashlar dressings, rusticated quoins and string courses. Each block has a central projecting pedimented bay. There is a bell tower with a clock to the central bay. These properties were viewed from the boundary wall and appear to be in an excellent condition. The grounds and the structures are well-maintained.

Hucknall Free Library (97) is situated in the centre of the town (**Plate 40**), on the west of South Street. It is positioned next to the Church of Mary Magdalene and both face out onto an open square (now partially a car park) on South Street/Baker Street. At the time of inspection, the library was in the final stages of a major refurbishment project due to be completed at the end of summer 2016. The contractors on site identified that, as part of this project, the roof has been replaced, the chimneystacks have been rebuilt, the windows have been repaired and repainted, and the stonework has been cleaned. This repair programme highlights the fact that the fabric of the structure has deteriorated in recent years; however, this maintenance work will secure the future of the building for the medium/long term.

Plate 39: Houses of Rest for Miners (Photograph 125501)

Plate 40: Hucknall Free Library under refurbishment (Photograph DSCF0009)

The Recreation Ground (95) is located to the west of Linby Road. A leisure centre has been constructed on the south-east portion of the site, thereby reducing the available open space by approximately half. Modern playground equipment has been installed and a football pitch is marked out in the lawn. The park appears to be regularly maintained and is kept neat and orderly. The Hucknall and Linby Miners' Welfare (96) no longer survives; the site has been redeveloped as an Aldi supermarket.

11 CLIPSTONE

11.1 Location and historic context

Clipstone is located in the centre of Nottinghamshire, to the east of Mansfield, and is situated in a part of the concealed coalfield that was developed from the early 20th century onwards. Due to its location, Clipstone's development was dependent on advances in mining technology that made deep mining practical and profitable. The large investments required to develop deep pits and the absence of local experienced miners led to the development of large mines and associated pit villages on the concealed coalfield. The pit villages provided accommodation for incoming miners and their families. Clipstone is typical of such developments.

Figure 12 shows the location of coal industry related heritage assets in the Clipstone area.

11.2 Documentary research and history

11.2.1 Modern

Economic

Due to the depth of the coal seams in East Nottinghamshire, the exploitation of the 'concealed coalfield' occurred only when mining technology was sufficiently advanced to reach, drain and work mines at great depths. There is therefore no evidence of coal mining in the Clipstone study area prior to the 20th century.

Coal mining spread into the Sherwood area with the opening of Gedling Colliery in 1902, Rufford in 1911 and Welbeck in 1913-15 (Gray 2008, 130). In the 1920s, the Dukeries coalfield expanded with the opening of Blidworth and Bilsthorpe. The development of the railway network into these areas enabled the transportation of large quantities of coal and directly facilitated the viability of the new pits.

While deep-mined coal was comparatively expensive to produce, the profits were high and landowners such as the Duke of Portland, the Duke of Newcastle and Lord Savile earned substantial sums from the sale of mineral rights in the new coal-producing areas. In 1912, the Bolsover Colliery Company leased the mineral rights to 6000 acres of land owned by the Duke of Portland.

Industry

Test borings at Balker Farm, to the west of Clipstone, located the Top Hard seam approximately 585m below the surface. Work commenced on the sinking of the shaft, but was suspended during the First World War. Construction of the colliery's surface buildings appears to have continued on a limited basis, however, with the winding house being one of several blocks completed during the course of the war.

Work on the sinking of the shaft restarted after the end of the First World War, with several huts at the former Clipstone Army Camp, to the south-west, being retained as accommodation for those working on the sinking. Both of the Clipstone shafts were completed in 1922.

Clipstone Colliery went into full production in 1927. The northernmost of the colliery's headgear worked the No.1 Service Shaft, which was used to lower miners and materials, while the southern headgear moved coal skips via the No.2 Winding Shaft.

Settlement

The site of the former army camp was chosen as the location of a 'proposed new village' for the Clipstone workforce and their families. The camp's 'existing huts' were shown on a 1923 plan of what became the New Clipstone colliery village (NA DC/SW/4/8/7/1-8).

While limited construction of miners' housing had been undertaken in areas such as Hucknall and new estates had been added to existing villages such as Eastwood, the Bolsover Colliery Company have been credited as the first colliery company 'to build model villages for their workers, with sports and social facilities, in the manner of the Mill Owners of the previous century' (Woodhead 2010, 3). The majority of the Clipstone Colliery material held by Nottingham Archives relates to the colliery village, rather than to the mine itself.

The 1923 plan showed an 'existing bowling green' to the east of what became the Forest Road/First Avenue junction, while further sporting facilities were shown on subsequent Bolsover Colliery Company plans and Ordnance Survey maps. A 'proposed station' on the 1923 plan was labelled as a combined 'proposed Water Lodge' and 'Electric Distribution' building on a further 1923 plan (NA DC/SW/4/8/7/1-8). Construction of the new village continued in tandem with the development of the colliery, while the colliery company gave the land and £3,000 towards the building costs of All Saints' Church.

A 1929 plan showed the west end of the village and adjacent land that had been allocated for a sports ground (NA DC/SW/4/8/7/1-8). This was subsequently shown on Ordnance Survey maps as a cricket pitch. The proposed pumping station that had been shown on the 1923 plan had, with slight alterations to the original scheme, been constructed at the east end of Forest Road by 1930 (NA DC/SW/4/8/7/1-8). The bowling green and several of the former army huts, including a large 'Recreation Hut', remained extant at that date. An Institute had been constructed immediately to the east of the bowling green by 1930, while a disused rifle range was shown to the north. Depicted as a square feature with double embankments on three sides, the rifle range may have been a military feature associated with the former army camp. To the north of the range, the 1930 plan showed the site of a proposed cemetery.

Parts of New Clipstone were still under construction at the time of the 1938 OS map, although First Avenue was shown at the east end of the village, with Seventh Avenue at the west. This demonstrates that the numerical order of the streets commenced with those closest to the colliery. Spanning the width of the village, Forest Road and Church Road also ran east-west, while other streets were orientated north-south. During this period, the vast majority of Clipstone's miners lived in the village. Among the social and recreational facilities provided by the colliery company, two chapels, a club and a hall were shown in the centre of the village on the 1938 map.

Further housing was shown at Clipstone on the 1939 Ordnance Survey map. A school, playing field, playground, vicarage, club, clinic, bowling greens, institute, hall and allotments were also labelled at that date, as were 'All Saints' Church' and a 'Methodist Church'. The last remnants of the First World War army camp had been removed by this date, along with the bowling green and the disused rifle range to the south of the cemetery.

A 1949 plan (NA DC/SW/4/8/7/1-8) shows the houses on the north side of Mansfield Road, although Haven Close and Fairground Close had not been constructed by that date. It is

therefore not clear if the latter developments were eventually constructed by the National Coal Board or were council properties. Further housing had been built on the north side of Mansfield Road by the time of the 1955 Ordnance Survey map, although it is not clear if this work was carried out on behalf of the NCB or if these were council houses. Several housing developments had taken place in the village by 1959, with new building on the north side of Mansfield Lane, to the south of Clipstone Road East and in the area between the colliery and Baulker Farm. Tennis courts, a football ground and a pavilion were shown to the west of the village on the 1959 OS map.

Industry

Clipstone Colliery itself was shown on the 1938 Ordnance Survey map as a large complex of buildings, with several smaller outbuildings detached from the main area. Various features were labelled on the 1938 map, including the shafts, offices, engine houses, a pump house, a cooling tower, an engine shed, weighing machine, tanks and water towers. In this period, the water that was used in the Clipstone washery was pumped to the pit from Vickers Pond (Fareham 1996, 5).

Following the exhaustion of the Top Hard seam in 1945, Clipstone's shafts were deepened by 240m in order to access the Low Main seam. Following nationalisation of the coal industry in 1947, the Bolsover Colliery Company was wound up. The company's records are held by Nottingham Archives (NA NCB 6). Under the NCB, Clipstone Colliery was modernised extensively in the 1950s. The steam-powered winders, boilers and fan were replaced and the buildings that housed the machinery were demolished. When erected in 1953, the pit's new headstocks, designed by the architects, Young & Purves, were the largest headstocks in Europe. While small number of original 1920s colliery buildings survived, new heapsteads, a power house and a fan house were also constructed at the mine in this period.

A 'reservoir' had been added to the south of the colliery by 1955, while an aerial ropeway crossed the spoilheap to the south-west and coal was moved onto the railways via the 'Clipstone Colliery Junction'. Coal supply to industry had increased following the nationalisation of the coal industry and, by the late 1950s, Nottinghamshire coal was supplied predominantly to the electricity industry. Plans of Staythorpe Power Station from this period show mineral railway access directly into the site, with an extensive coal storage area adjacent to the terminus of the line (NA DC/SW/4/2/7).

Further redevelopment was shown at Clipstone Colliery on the 1959 Ordnance Survey map, with the demolition and replacement of several subsidiary buildings. However, the most substantial development was the extension of the mineral railways, which featured several new lines and sidings. The embankments of the principal mineral railways were shown in detail to the south and west of the colliery, with part of the route labelled 'Empty Wagon Branch Junction'.

The National Coal Board operated its own photographic division during this period and several photographs survive showing various aspects of Clipstone Colliery (NA SO/NCB/17/2/19). Among them the headgear, the washery, part of the pit yard, workshops, mineral railway sidings and part of the colliery village. A plan of the mine showed the No.1 Shaft on the north side of the pit yard, with No.2 Shaft to the south, and identified the offices, baths, canteen, lamp room, winding engine houses, stores, the boiler house and washery (NA SO/NCB/17/10/27). Clipstone's spoilheap had been extended to the south-west by the time of the 1966 Ordnance Survey map. Little further substantive change was shown within the study area at that date.

Clipstone was chosen by the BBC as the location for a documentary about the January-February 1972 miners' strike. 'Strike Village', broadcast in March that year, followed the course of the strike from the perspectives of the local NUM leader, the pit manager, the miners and their wives. It is not known if this footage survives in the BBC archives. An additional housing estate had been constructed on the west side of the village by the time of the 1975 OS map.

Productivity increased at Clipstone Colliery during the late 1980s but, despite always being in profit, the mine was closed in 1993. Following the privatisation of the coal industry in 1994, Clipstone was reopened by the private company, RJB Mining. The mine eventually closed in 2003.

Transport

Several mineral railways had been shown around the colliery on the 1938 O.S. map. These ran in two loops to the LMSR and LNER railway lines to the south of the pit. The main LNER line was labelled 'in course of construction' on the 1938 OS map. Further mineral railways ran to the colliery spoilheaps at the north-east and south-west of the mine. In this period, a generator at the colliery provided the electricity supply for the village (Fareham 1996, 5).

A 1982 aerial photograph showed that the majority of the colliery's mineral railways had been dismantled (NA SO NCB/17/4/6). By this date, power stations were supplied directly from Clipstone, with coal transported via the main railway lines.

Landscape and society

Having planned and constructed New Clipstone, the Bolsover Colliery Company carefully controlled the social composition of the village, with management being housed in the Villas or the Cottages and particular streets being reserved for workers in particular occupations (Fareham 1996, 4). As in other planned mining villages of the period, workers' behaviour also 'came under scrutiny' from their employer outside working hours (Fareham 1996, 4). While absenteeism and theft were grounds for dismissal from the pit, miners could also be sacked for a range of 'offences' committed away from the workplace, including adultery and even the failure to maintain a clean house and tidy garden (Fareham 1996, 4). A miner dismissed by the colliery company also lost their home.

Due to Clipstone's key role in the supply of coal to power stations, the colliery was picketed heavily during the 1984-'85 Miners' Strike with the colliery's workforce split over the strike. This led to the production of two notable pieces of literature. Alan Dawson, who continued to work at Clipstone throughout the strike, subsequently wrote a play about his experiences, entitled *Scab*. The diaries of John Lowe, chairman of the Clipstone Strike Committee, were published posthumously as *If Spirit Alone Won Battles*, in 2012.

Aerial photographs taken between 1985 and 1987 showed that the colliery's spoilheap had been extensively remodelled, including the creation of several large settlement ponds, by this period (NA SO NCB/17/4/6). Reclamation of the Clipstone spoilheaps led ultimately to the creation of Vicar Water Country Park, while the formation of the Clipstone Colliery Regeneration Group has seen attempts to redevelop the colliery's winding house as a sports and leisure facility. At the present date, Newark and District Council retain responsibility for the maintenance of the former Clipstone Colliery spoilheaps.

While the majority of the colliery buildings have been demolished and the shafts capped, the twin headstocks were granted Grade II listed building status by English Heritage. In a local referendum held in 2003, however, the overwhelming majority of people in Clipstone voted for the demolition of the complete site and Newark & Sherwood District Council sought to have the headstocks delisted and demolished. These moves were defeated and the Clipstone headstocks, the largest in the UK, were preserved and remained listed buildings.

11.3 Assessment of heritage assets in Clipstone

11.3.1 Industry

Plate 41: Clipstone Colliery (Photograph DSCF0573)

Clipstone Colliery is situated to the south of Mansfield Road, the main road between Forest Town (Mansfield) and Kings Clipstone (**Plate 4**1). It is in easy walking distance of the village centre, which is to the north-west of the site. The colliery has been closed for some time and the remaining buildings have been heavily vandalised. The Headstocks and Power House (25) of the colliery still stand, although the rest of the site has been cleared.

The structures can be viewed from Mansfield Road and the Vicar Water Country Park. Even from a distance, it is clear that (as stated in the Listed Building Description) the buildings are in a very poor, dilapidated condition. Vegetation is growing on the flat roofs of the buildings and a large number of the windows are broken or missing.

Plate 42: Clipstone Colliery (Photograph DSCF0580)

The Spoilheap (86) to the west of Clipstone Colliery has been landscaped and now forms part of the Vicar Water Country Park. Vicar's Pond is situated at the north-east of the Park. The mounds have been planted with woodland and the site has been transformed into a pleasant and appealing nature reserve which attracts visitors all year round. The site is looked after by a management team and the surviving spoil, pond and watercourses have a stable, long-term future. An information board in the car park to the nature reserve provides details about the history of the site and its connection to Clipstone Colliery. The aerial ropeway (87) has been taken down, although a photograph is included on the information board (Plate 43).

Plate 43: Photograph of Aerial Ropeway (Photograph DSCF0013)

11.3.2 Transport

A number of the former mineral railway routes are preserved within the boundary of Vicar Water Country Park (81, 82), where they are utilised as public footpaths. The tracks and other associated equipment have been removed, although the routes are preserved and managed as part of the park. Two disused bridges on this route are also in a stable condition (**Plate 44**), although there is potential for these to deteriorate if they are not maintained in the future. Access to a number of the former mineral railway sites (83-85, 88) was not permissible from either Vicar Water Country Park or Sherwood Pines Forest Park. Others, such as Asset 80, have been built over by modern housing developments. There were no upstanding remains of the mineral railway sidings (69) at the east end of Baulker Lane.

Plate 44: Photograph of bridge over former mineral railway (Photograph DSCF003)

11.3.3 Settlement

Clipstone is a planned colliery village situated on the north side of Mansfield Road, directly to the north-west of the colliery. The village is laid out in a grid pattern with a large open space at the centre. A Methodist church and Church of England church (with a vicarage), were positioned to either side of this central area. Two communal buildings: a Hall and an Institute were situated to the south of the village facing out onto Mansfield Road. The recreational facilities were located in a cluster to the west. The houses were situated in well-proportioned plots, with forecourts to the front and gardens to the rear. The houses were constructed in blocks, rather than continuous rows of terraces, giving the village an open feel. Additional outside space was provided in the form of allotments on fields to the north. Later housing, built to a less regular plan, was later constructed to the east.

The brick houses of the planned colliery village (70) are generally built as semi-detached properties or in blocks of three to an arts and crafts design typical of model villages of the 1920s (**Plate 45**). The semi-detached houses are double-fronted, and each built to a different design and orientation. The terraces are much simpler in design and appearance. Each house has a

short forecourt at the front and a garden to the rear. There are no outhouses or garages. The houses are still occupied as private dwellings and are generally in a good state of repair. Original windows and doors have been replaced with modern uPVC designs. Many properties still have their original plain tile roofs, although others have been replaced by modern concrete tiles. A number of properties have been rendered or clad on their front facades. Generally, the houses are in a good condition; the progressive erosion of original features is unfortunate, but perhaps not unexpected.

Plate 45: Clipstone village houses (Photograph DCSF0493)

Plate 46: Clipstone village allotments (Photograph DSCF0545)

To the north of the village is a large allotment site (64) (**Plate 46**). There are about 200 plots, the large majority of which appear to be occupied. The site is generally well-kept and there is an air of productivity about the place, with a range of diverse planting schemes, outhouses and buildings across the site. Some tenants also keep chickens here. Several allotments back onto the gardens of the houses on Forest Road and some residents appear to have removed their back fences to gain direct access to plots.

A number of places of worship were built as part of the planned village. Of these, only All Saints Church (71) is still in use (**Plate 47**). The Methodist Church (72) has recently been demolished and the Chapel (73) has long ceased to function as a place of worship. All Saints Church (71) is built in a Romanesque style and has a nave, north and south aisles, and chancel. It has been altered and extended since its completion in 1928 and has a new porch and extension which forms a Sanctuary to the rear. It is built of red brick with moulded eaves courses, brick buttresses and dressings, and stone details. The vicarage, accessed by a path from the church, is situated to the south-east. The exterior is in a good condition. A website for the Southwell & Nottingham Church History Project identifies that it was designed by Louis Ambler, who built a number of other churches in Nottinghamshire. There is a miners' chapel in the church, along with a large piece of coal and mining tools to remember the church's association with coal mining. The church is not listed.

Plate 47: All Saints Church at Clipstone (Photograph DSCF0448)

The Chapel (73) (**Plate 48**), situated to the west of the centre of Clipstone village, still stands although it no longer has a religious purpose. It is a single-storey rectangular-shaped building with a link to a further single-storey building on the east side. It is known as the Old Friendship Club and is in a poor state of repair. The building is unoccupied and appears to have undergone some recent redevelopment work. The building is likely to continue to decline. An internet search established that planning permission was recently granted for the development of this site with four houses, although it is not known whether this is still active. The Cemetery (62), to the north-east of the village, is accessed from a long driveway from the Forest Road/First

Avenue/Highfield Road junction. It is in a quiet and relatively sheltered position, surrounded by woodland. The cemetery is active and the grounds, burial plots, headstones and other structures are well maintained by Clipstone Parish Council. Overall, the cemetery is in excellent condition.

Plate 48: The disused Chapel at Clipstone (Photograph DSCF0475)

The main community buildings, the Village Hall (74) (**Plate 49**) and Institute (75) (**Plate 50**), are situated at the centre of the village facing out onto Mansfield Road. They were built to an arts and crafts design, with steep roofs, overhanging eaves and long banks of mullioned windows. The Hall is orientated at right-angles to Mansfield Road and appears to be the better-preserved of the two buildings. The Hall is in a good/fair condition overall and would benefit from general repairs and maintenance to the external fabric, some of which is in a fair/poor condition.

The Institute is orientated parallel to Mansfield Road and has undergone major structural and aesthetic alterations, particularly to the west elevation. A gable has been removed from the centre of this facade and the entire central section and the roof has been rebuilt. This has significantly undermined the original design of this structure. The external fabric appears to be in a good to fair condition. The two buildings have been joined together by a later addition and are in use as community buildings. The east end of the building is a domestic property. At the front of the Hall and Institute is a bowling green and pavilion (76). The bowling green is still in use and is well-maintained and in an excellent condition. The pavilion is a timber structure and, with the exception of some cosmetic repairs, is in a good condition.

Plate 49: Clipstone Hall (Photograph DSCF0408)

Plate 50: Clipstone Institute (Photograph DSCF0386)

A number of sports facilities were also built at Clipstone. A Cricket Ground and Pavilion (77), Football Ground (78) and Tennis Courts and Pavilion (79) were built as a group at the west end of the village. The cricket ground is still in use and is in a well-maintained condition, although the pavilion appears to be in a very poor state. The pavilion was viewed from the rear at Seventh Avenue, where it was evident that the roof is in a bad condition and, if not repaired, would allow water into the building. The football ground is in use by Clipstone F.C. The buildings surrounding the pitch, including the stands, appear to be mainly modern. It is unclear whether any of the original stands still survive. There are gates at the entrance to the site with C.F.C. lettering to the

top. These appear to be relatively modern. The Tennis Courts and associated Pavilion (79) have been removed and the site is now used as a car park for the football club.

A pump house for Clipstone Colliery Village (65) is situated to the north-east of the village. It has recently been sympathetically converted into a domestic dwelling and is in a stable condition. The Rifle Range (63), Miners' Institute (67), Bowling Green (66) and Recreation Hut (67) identified to the east of Clipstone no longer survive. These buildings may have been erected as part of the First World War army camp at Clipstone, prior to the construction of the village or they could have been temporary buildings that were later superseded by the institute and bowling green in the centre of the village.

12 THORESBY/EDWINSTOWE

12.1 Location and historic context

Thoresby Colliery and the associated village of Edwinstowe are located in the centre of Nottinghamshire, to the east of Mansfield. As with Clipstone Colliery, Thoresby's location meant that its development was dependent on recent advances in mining technology which had which made deep mining practical and profitable. The large investments required to develop deep pits and the lack of experienced miners in these largely agricultural areas led to the creation of planned pit villages for the new workforces and their families. Unlike Clipstone, where an entirely new settlement was constructed, the housing for Thoresby's miners formed an extension of an existing village, the previously-agricultural settlement of Edwinstowe.

Figure 13 shows the location of coal industry-related heritage assets in the Thoresby/Edwinstowe area.

12.2 Documentary research and history

12.2.1 Modern

Economic

As noted in the discussion of Clipstone's development, coal mining had spread into the Sherwood area in the early 20th century and into the Dukeries coalfield in the 1920s. Despite owning the Manvers Mining Company and the example of the high profits being made from deep-mined coal by landowners such as the Duke of Portland, Earl Manvers sought to prevent the development of coal mining in Sherwood Forest and initially resisted approaches to sink a deep mine on his lands (Gray 2008, 130; Woodhead 2010, 2). Due in part to the effects of the First World War, Manvers finally relented and sought offers from coal companies to sink a pit on his estates in 1924.

Transport

The development of the railway network into the 'concealed coalfield' enabled the transportation of large quantities of coal and had directly facilitated the viability of the new pits. Of the likely sites for the new mine, Edwinstowe may therefore have been chosen as the Lancashire Derbyshire and East Coast railway line ran to the south of the village, thereby providing an existing rail link for the mine.

Industry

Due to the Manvers Mining Company's relative lack of experience in the sinking and operation of deep pits, Earl Manvers contracted the Bolsover Colliery Company to sink Thoresby Colliery. This choice appears to have been influenced by an 1889 lease for the Bolsover Co. to mine coal on land near Edwinstowe that had never been enacted and the company's recent successful sinking of the nearby Clipstone Colliery for the Duke of Portland.

Given Earl Manvers' reluctance to extend coal mining into the Sherwood area, the Bolsover Colliery Company are also likely to have been selected due to their proposal for Thoresby to be the 'first all-electric mine', which they claimed would 'preserve the countryside and the glories of Sherwood Forest' (quoted in Woodhead 2010, 10). The electricity supply for the new mine would

be provided from the coal company's existing pits and would reach Thoresby via 'overhead power lines at a pressure of 22,000 volts' (quoted in Woodhead 2010, 10).

Thoresby Colliery was sunk in 1925 on land at Blackhills Farm, Edwinstowe, and opened on 1st September 1929. The works were documented in a short film, 'Sinking Operations at Thoresby', that was shown at the new village's Welfare Centre cinema in 1932 (Woodhead 2010, 21). It is not known if this footage survives.

Each of Thoresby's shafts was 6.4m in diameter, with the No.1 downcast shaft being 582m deep and the No.2 upcast shaft 579m deep (NCB 1984, 1). The northernmost of the colliery's headgear worked the No.1 Service Shaft, which was used to lower miners and materials, while the southern headgear moved coal skips via the No.2 Winding Shaft. Thoresby's electricity generating plant, which also supplied electricity to the new village, was fully-operational by 1931. That year's Bolsover Colliery Company annual report stated that the pit itself was finally 'fully equipped for large-scale output' (quoted in Woodhead 2010, 10).

The 1938 Ordnance Survey map showed the layout of Thoresby Colliery, with three sub-rectangular buildings set around all but the east side of the pit yard. The shafts were marked on the north and south of the yard, while further buildings stood to the north, south and east, including water towers and a building with a large chimney. The LNER Thoresby Colliery Branch railway ran to the west of the pit.

Settlement

The Bolsover Colliery Company typically provided housing for their workforces. While model villages were typically located close to their collieries, there was not enough land at Blackhills Farm to accommodate the initial scheme of 956 houses (Woodhead 2010, 5) and the site eventually chosen for the new village was approximately 1.5km from Thoresby Colliery itself.

Construction of the new village commenced in 1924, with bricks initially being provided from the colliery company's own brick works at Bolsover. The company did not build the houses themselves, but employed Anderson, a professional construction company, to carry out the work. Anderson declared bankruptcy, however, and the contract was taken over by Searson of Sutton-in-Ashfield (Woodhead 2010, 13). The new model village was laid out on a grid system, with streets being named numerically, such as First Avenue. In most cases, even numbers ran east-west and odd numbers north-south (Woodhead 2010, 13). General housing was arranged in groups of two, three or four, with different layouts. Two housing designs were used: 'Parlour', which featured upstairs bathrooms and toilets, and 'Non-parlour', in which these facilities were on the ground floor (Woodhead 2010, 11).

Mansfield Road and Rufford Avenue were the first of the new village streets to be laid out (Woodhead 2010, 11). West Lane was begun in 1925 and the first 100 houses in the village had been completed by the following year (Woodhead 2010, 13). Due to the recession of the late 1920s, the original plans for the village were scaled back and a block of three houses on Fourth Avenue were converted into an Institute (Woodhead 2010, 9, 13). Fourth Avenue was completed by 1930, with three shops built at the junction with West Lane (Woodhead 2010, 9). The 1938 Ordnance Survey map showed the majority of the new village to the west of the original Edwinstowe High Street. An institute and a hall flanked two large, rectangular open areas at the centre of the development, with a school at the new estate's south-west corner.

Landscape and Society

The Bolsover Colliery Company carefully controlled the social composition of the village, with management housed in two pairs of large, semi-detached houses with dining rooms and 'drawing rooms' on the north side of Ollerton Lane, pit deputies housed only on First Avenue and 'problem' families restricted to Fifth Avenue (Woodhead 2010, 24). Management sat on all social and sporting committees; the village policeman was employed directly by the colliery company; and workers' activity 'came under scrutiny' from their employer outside working hours (Fareham 1996, 4). Occupants of colliery housing faced eviction for 'offences' such as the failure to maintain hedges and front gardens. Proscribed behaviour could result in dismissal, with the loss of employment followed by a consequent loss of housing (Woodhead 2010, 24; Fareham 1996, 4).

The Bolsover Colliery Company took 'an active interest in the social life of their villages and provided facilities for sports and leisure' (Woodhead 2010, 18). This resulted in the purchase of Edwinstowe Hall from Earl Manvers for the site of a Welfare Centre. Situated 1.23km to the south-west of Thoresby, the hall's outbuildings were converted into dormitories, while a sports hall and cinema were constructed and the grounds were to be used for social events and competitions to be held between the Bolsover Colliery Company's various mines and villages (Woodhead 2010, 3). The new village also included an 'Institute, Drill Hall, shop, schools and places of worship' along with a 'sports ground of 11 acres, playground and open spaces and a swimming pool' (quoted in Woodhead 2010, 5).

The extent to which the colliery company's concern with social provision influenced life in the new village is demonstrated by a 1929 plan which showed land at the west end of the village that had been allocated for a sports ground (NA DC/SW/4/8/7/1-8), while a Village Hall, financed by the Miners' Welfare Fund, opened in 1933 and a sports ground containing a pavilion and cricket, football and hockey pitches was opened in 1936. Tennis courts, a bowling green, a putting green and a children's recreation ground were also constructed. Levies were taken from miners' wages in order to support these sporting activities. Social Clubs were also established and a new Institute was opened in 1939 (Woodhead 2010, 14-15). Inter-village Sports Days, Boys' Brigade and Girls' Brigade events, Employees Days, Bugle Band Contests, a Choral Society, Flower Shows and a Poultry Show also formed part of the social events fostered by the colliery company (Woodhead 2010, 18-19).

While the evidence demonstrates that the Bolsover Colliery Company actively sought to create and maintain social cohesion across their various mining villages and within their workforces and their families, the opening of Thoresby Colliery and the construction of the pit village so altered the existing way of life in Edwinstowe that 'the place was never the same again' (Woodhead 2010, 26). Evidence for the impact of the coal industry among the area's existing population is demonstrated by the 'resentment' that was felt at Edwinstowe 'among the members of this agricultural village when it was disrupted by so many' incomers (Woodhead 2010, 26). The initial antipathy towards the mining families was such that, when local competition prizes were won by any of the 'comers in', they were openly booed by the original villagers (Woodhead 2010, 26).

At Edwinstowe, the existing community felt that their 'way of life was disturbed', that extensive 'traffic and noise upset their peace' and even their social events 'were invaded' (Woodhead 2010, 26). This response was perhaps not uncommon when deep-mine collieries were sunk in

the traditional agricultural areas of the concealed coalfield. Similar reactions elsewhere are likely to have informed a report in the *Retford and Gainsborough Times* which, when the constriction of Thoresby Colliery was first announced, had speculated on 'how the villagers will welcome living next door to miners' (Woodhead 2010, 1). The extent of the social changes that took place at Edwinstowe in a period of only several years is demonstrated by the fact that, following the final phase of house-building in 1931, 45% of the Thoresby Colliery workforce lived in the new village (Woodhead 2010, 13-14).

The National Coal Board offices had been constructed to the west of Edwinstowe High Street by 1955. In the central part of the colliery village, bowling greens and tennis courts were shown between the institute and hall on the 1955 Ordnance Survey map. The extent of the social and recreational provision is indicated by a recreation ground on the south side of Sixth Avenue and a sports ground to the west of King Edwin County School. A cricket ground was marked to the north of Edwinstowe Hall on the 1960 OS map.

Industry

Following the nationalisation of the coal industry in 1947, Thoresby had been modernised extensively in the 1950s. Having opened as the UK's first all-electric mine, Thoresby also became the first British colliery with a fully-mechanised production process and was the first to achieve an annual saleable output of more than a million tons. The shafts at Thoresby were deepened by a further 109m 'as part of a major re-organisation of winding and underground transport arrangements which was completed in 1953 (NCB 1984, 1). The 1955 Ordnance Survey map showed several new buildings around the mine and further buildings had been added by the time of the 1960 Ordnance Survey map. The spoilheaps had been extended substantially and included several settlement ponds by that date.

The NCB's photographic division also recorded various buildings at Thoresby in the mid-20th-century (NA SO/NCB/17/2/47). Photographs from this period show the colliery's headgear, the washery, part of the pit yard, workshops, the coal sorting plant and the mineral railway sidings. Other photographs show various stages in the construction of new facilities at the mine, along with the aerial ropeway and the northern spoilheap (NA SO/NCB/17/2/47). Thoresby Colliery is also depicted on various NCB plans of this period. These show the location of the 'Staple Pit', the 'loco road from the coal face, a compressor house, a 'tippler', a loco repair shop and a garage. The plans also identified the spoilheaps as 'washery waste', thereby indicating that these features were formed as a by-product of modern coal treatment processes (NA SO/NCB/17/6/52).

Transport

The 1955 Ordnance Survey map showed extensive railways heading west from the pit. A branch line veered south through a substantial cutting, to run between Edwinstowe Lodge and Blackhills Farm before it joined the main LNER line. Short colliery lines also ran from the pit to cross a large spoilheap to the east, while a further spoilheap, with an aerial ropeway, had been established to the north-east of the pit in part of Avenue Plantation. By the time of the 1960 Ordnance Survey map, Thoresby's mineral railway ran beneath the new Ollerton Road before it crossed new flood defences to join the main railway. The extent of the colliery's own rail network and its direct connections to two major railway lines demonstrates the importance of rail in the transportation of coal in the mid-20th century.

Industry

During the mid-20th century, the NCB produced *Mining Review*, a series of short films or newsreels that were shown in cinemas in mining areas. *Portrait of a Miner*, a 30-minute film that followed a day in the life of a Thoresby miner, was produced in 1966. This was used as the title feature of a dvd collection of the NCB films that was released by the BFI in 2009.

Several large, irregular settlement ponds were shown at the Thoresby spoilheaps on the 1968 Ordnance Survey map, while a Smokeless Fuel Plant had been constructed to the west of the colliery railway by 1977. That year's NCB report on Thoresby reveals the various features that were present at the pit in this period, including electrically-powered winding engines at both shafts and double-deck cages at No.1 shaft that were used to transport miners and materials, while No.2 Shaft used 13-tonne skips to raise coal (NCB 1977, 1). Conveyor belts from No.2 took coal to the preparation plant, where it was cleaned and graded. Conveyors also took spoil from both shafts to a 300-tone bunker (NCB 1977, 1). The 1977 report stated that Thoresby's output was more than two million tons by that date, with the majority of the coal being supplied directly by rail to the Central Electricity Generating Board power stations and the remainder sold to industrial and domestic customers (NCB 1977, 4).

A 1984 NCB report provides evidence of the extent of coal preparation at Thoresby, with coal being transported by conveyor belt from No.2 shaft 'to the plant where it is cleaned and graded prior to dispatch' (NCB 1984, 1). The plant was designed to handle 700 tonnes of coal per hour. 'Dirt' produced during the coal-cleaning process was taken by conveyor belt to a 300-tonne capacity bunker, followed by loading onto trucks for disposal on the colliery spoilheaps (NCB 1984, 1).

Aerial photographs taken in 1985 show the southern spoilheap in the process of being landscaped, with one of the slurry ponds partially infilled with spoil (NA SO/NCB/4/25). Much of this work had been completed by the time of a 1986 aerial photograph (NA SO/NCB/4/25). Thoresby's mineral railway appeared to have been dismantled by that date and the Smokeless Fuel Plant had been demolished.

Extensive reworking of Thoresby's northern spoilheap had occurred by the time of a 1987 aerial photograph (NA SO/NCB/4/25), while the colliery's mineral railways had been reduced to a single line by the time of the 1989 Ordnance Survey map. The majority of the spoilheaps to the south of the pit had been removed by that date, while those to the north had been extended substantially. Little change was shown at Thoresby on the 1992 Ordnance Survey map.

Economic

Thoresby Colliery survived the 1984-'85 Miners' Strike and the 1994 privatisation of the coal industry and remained open into the 21st century. A £55 million contract was signed in 2007 to supply four million tonnes of Thoresby coal to EDF Energy's power stations at Cottam and West Burton. By 2015, Thoresby was the last working mine in the Nottinghamshire coalfield. Despite UK Coal's statement that the mine would remain active until at least 2018, however, Thoresby Colliery closed on 10th July 2015.

Landscape and society

The extent to which the local community and its relationship with the coal industry had changed is revealed by interviews given by several Thoresby miners to *The Independent* following the privatisation of the coal industry in 1994 (Foster 1994, 1). The *Independent* report revealed that, since the end of the Miners' Strike, Thoresby had become a 'commuter pit', as many locals had taken redundancy and had been replaced by miners from pits that had closed in other areas. This transformation in the colliery's workforce had impacted on the social, economic and cultural make up of the model village at Edwinstowe. In 1994, Andy Blaylock, a Thoresby miner who had supported the Miners' Strike throughout, stated that 'This isn't a pit community now' (Foster 1994, 1). In 2016, Edwinstowe workshop attendees confirmed this, stating that Thoresby's closure had no impact on the village or the community, as locals had not worked at the mine for several years prior to its closure and that the former pit village had become a commuter village for Nottingham.

During Thoresby's final days, a photographic record was made of the colliery by Chris Upton. 'Thoresby - The End Of The Mine', an exhibition of Upton's photographs, was held at Mansfield Museum in 2016. Chris Upton's photographic study of the same name was published in book form that same year.

12.3 Assessment of heritage assets in Thoresby/Edwinstowe

12.3.1 Industry

Plate 51: Entrance to Thoresby Colliery (Photograph DSCF015)

At the time of inspection, parts of Thoresby Colliery (20) were still standing. The main drive to the colliery is accessed from Ollerton Road. The entrance to the site (**Plate 51**) is marked by two winding wheels, which are painted red. The 'Thoresby Colliery' sign formerly mounted on the right-hand wheel has been removed and a large Harworth Estates sign has been erected (**Plate 52**). Access to the colliery buildings was not permitted, although the headstocks and other buildings could be seen from a distance. It appears as though some of the buildings are in the

process of being demolished. There are spoilheaps (61) to the north, north-west, east and south of the colliery site. Large trucks carrying heavy loads across the spoilheaps to the north-west of the colliery suggest that the mounds surrounding the site are also being consolidated.

Plate 52: Winding wheel at the entrance to Thoresby Colliery (Photograph DSCF0713)

Plate 53: Mineral railway from Thoresby Colliery (Photograph DSCF0744)

A mineral railway (53, 54) runs south from Thoresby Colliery (**Plate 53**) to meet a main railway line which runs between Kings Clipstone and Ollerton at Thoresby Junction (59) (**Plate 54**). The branch line to the colliery is best viewed from the bridge at Ollerton Road. The track is still in place, although the line is clearly disused and is becoming overgrown with vegetation. At Thoresby Junction, a signal box appears to be in a maintained condition. The main line between

Kings Clipstone and Ollerton is viable and still in use. Though in a stable condition at present, further closures may mean that this line is abandoned, causing it to fall into a state of disrepair.

Plate 54: Mineral railway from Thoresby Junction (Photograph DSCF0736)

12.3.2 Settlement

Edwinstowe model village is situated to the south of Mansfield Road, the main road that runs from Mansfield Woodhouse to Ollerton. The village is laid out in a grid pattern, with an open communal space approximately at the centre. These open spaces were originally flanked by two community buildings: an Institute and a Hall. The open spaces were laid to lawn and used for sporting activities such as bowling and tennis. The houses are situated in good-sized plots with forecourts and gardens to the rear, giving the village an open feel. This is enhanced at the centre by the fact that the houses here are orientated to face out onto the communal areas. Unlike Clipstone, places of worship were not integrated into the village plan. Instead, the existing church of St Mary's, parts of which date to the 12th century, appears to have served the new mining community.

The housing in Edwinstowe village (15) comprises blocks of two, three and four double-fronted brick dwellings with plain-tile hipped roofs and steep pitches (**Plate 55**). They are built to a similar plan as those at Clipstone. The windows and doors have largely been replaced with modern equivalents. In some examples, the original narrow canopy supported on brackets is still *in situ* above the doorways; others have been removed or replaced with larger structures. Several houses have been rendered. No evidence was observed for any original outbuildings. To the north of Ollerton Road are several surviving examples of former colliery managers' housing (60) (**Plate 56**). These dwellings are situated between Thoresby Colliery and Edwinstowe village in pleasant, leafy surroundings. The houses are semi-detached, much larger than those in the village, and situated in generously-sized plots. They are built in the arts and crafts style, and some retain original windows. These properties are in an excellent condition.

Plate 55: Houses to Edwinstowe village (Photographs DSCF0626)

Plate 56: Houses to Ollerton Road (Photograph DSCF0759)

The two key community buildings constructed as part of the model village at Edwinstowe, the Miners' Institute (56) and the Hall (58), have been demolished. The Miners' Institute has been replaced by a care home and the site of the Hall is currently an open plot of land. Several sports facilities still remain. The bowling green (57), located at the centre of the village, is in regular use and is kept in a tidy, well-maintained condition (Plate 57). The pavilion is a small, single-storey structure on the north side of the green with a hipped roof. The roof has been replaced with concrete tiles and the exterior walls have been rendered and finished with pebbledash. The bowling green is in a good, stable condition. Historic maps show that the open area to the east of the bowling green was once used for Tennis Courts. This is now a children's playground. The

cricket ground (55) is situated on the north-east edge of the village and is still in use (Plate 58). The pavilion is a relatively new structure, replacing the original pavilion in roughly the same position. The site is well-maintained and in good order.

Plate 57: Edwinstowe Bowling Green and Pavilion (DSCF0609)

Plate 58: Edwinstowe Cricket Ground (DSCF0638)

Edwinstowe Hall (52), a former country house once owned by Earl Manvers, is situated in substantial grounds to the corner of Church Street and Forest Road. An information board on Forest Road provides a potted history of the building, identifying that it was built in 1702 and bought by the Bolsover Colliery Company in the 1920s for use as a social centre. The Hall currently appears to be vacant and, at the time of the walkover survey, was advertised for sale.

The main building fronting to the east appears to be in a good state of maintenance, including a number of cosmetic repairs to the front elevation. The rear elevation, viewed from a distance, appears to be more neglected although, overall, is still in a good condition. The south range of the building, by contrast, is in a very poor state of repair. There are missing slates from the roof and the guttering is broken in places. Many of the windows have been broken and boarded up and there is graffiti to the walls, suggesting that the building has been vandalised. While the main building generally appears to be in good repair, the south building is in decline. A successful sale and appropriate new use for the complex would help to secure its future. To the rear of the site, along Forest Road, the former stables have been converted into a thriving arts and crafts centre.

13 COMMUNITY WORKSHOPS

13.1 Location and audience

The location of each of the six workshops was based on the six case study areas established at the project steering group meeting on 15th October 2015. The case study areas identified for investigation and for the hosting of workshops were:

Strelley:	Early mining
Selston:	Early mining
Eastwood:	Developed mining, influencing small towns
Hucknall:	Developed mining, influencing small towns
Clipstone:	Deep mining, planned colliery and pit village
Thoresby/Edwinstowe:	Deep mining, planned colliery and pit village

For each case study area, the workshop was held in the vicinity of an active local history/community group (many of which had been identified during Stage 1 of the project). Each group was contacted via email and telephone in order to gauge their interest in the proposed workshop and to seek support in promoting the event.

Initial contact with the local history/community groups was made by email on 17th February 2016. The following groups were contacted in relation to the study areas:

Strelley:	Wollaton Historical & Conservation Society
Selston:	Jacksdale & Westwood Community & Heritage
Eastwood:	Eastwood Historical Society
Hucknall:	Hucknall Heritage Society
Clipstone:	Clipstone Colliery Regeneration Group
Thoresby/Edwinstowe	Edwinstowe Historical Society

Each of the organisations contacted expressed support for the workshop and provided advice on where to host the event. The location for each workshop was as follows:

Strelley:	St. Leonard's Community Centre, Wollaton
Selston:	The Dale Club, Jacksdale
Eastwood:	Plumbtre Hall, Eastwood
Hucknall:	The John Godber Centre, Hucknall
Clipstone:	Village Hall, Clipstone
Thoresby/Edwinstowe:	Village Hall, Edwinstowe

13.2 Advertisement/Promotion

In order to promote the workshops, a poster was circulated in each study area. This was also displayed by each of the local history/community groups and by the host venues.

The poster (Appendix 4), along with additional information concerning the workshops, was also circulated amongst additional historical societies identified during Stage 1 of the project. Of the additional groups identified, six (Nuthall & District Local History Society; Southwell History Group; Arnold Local History Group; Thoroton Society of Nottinghamshire; Shireoaks Local History Society; and Creswell Heritage Trust) were contacted on 18th April 2016.

To further promote the workshops and to attract audiences both from and outside of heritage groups a WordPress blog page was established:

https://nottinghamshirecoalfields.wordpress.com/.

This served to promote individual workshops and provide background information on both the project and the history of the Nottinghamshire coalfield. The blog page and individual posts were shared via Facebook, Linkedin and Twitter. The WordPress site and individual posts were also advertised on the Facebook pages of the Jacksdale Area Culture & Heritage Group (565 members); National Coal Mining Museum for England (6820 likes); Nottinghamshire Local History Association (724 likes); Nottingham Industrial Museum (266 likes); and East Midlands History and Heritage (290 members). The project and site were also promoted via the ArcHeritage Twitter page.

In total, the WordPress site received 627 views and 371 visitors (as of 7th June 2016). The site was also shared through other private individual social media accounts, for which no data is available.

In addition to the poster and webpage, a radio interview with BBC Nottingham was also held in the week of 2nd May 2016. This served to outline the project and to further promote individual workshops.

Screenshot of the visitor statistics for the WordPress site

13.3 Workshop structure

Each workshop followed the same formula and consisted of four sessions between the hours of 10am and 3pm on either a Saturday or a Sunday. Each workshop was presented as a PowerPoint presentation, accompanied by targeted individual and group questionnaires (copies of the questionnaires are in Appendix 5). The structure was as follows:

Session 1 – Project Outline

Time: 1000-1030hrs

This served to introduce the aims of the project, summarising Stage 1 and explaining the aims of the workshop.

At the end of this session, a short questionnaire was handed out for participants to complete. The questions concerned the individuals' perceptions of Nottinghamshire's mining heritage.

The questionnaire was also made available for download from the website at the end of the workshop period, in order to attract individuals unable to attend the event.

Session 2 – Perceptions of Mining Heritage

Time: 1030-1200hrs

The first five minutes of this session introduced the audience to Historic England Guidance on assessing significance. This was followed by a 10-minute period, during which the local mining heritage was introduced.

For a period of 60 minutes, the audience worked as a group, discussing amongst themselves their perceptions of the area's mining heritage. The discussion was guided by a series of questions. Their answers were recorded in writing.

The questions were:

1. What is the significance of the mining heritage to you?
2. What do you think is the significance of the mining heritage to your community?
3. What is its significance nationally?
4. Is there a particular aspect of the mining heritage that is seen as being more important than others (e.g. buildings, collieries, railways, canals, housing, community identity, artefacts/memorabilia, etc)? Why?
5. What other physical remains are of importance?
6. What remains are particularly important to you?
7. Should coal industry and community remains be preserved and promoted?
8. How would you preserve and promote the mining heritage?

The final 15 minutes was used to highlight the results of the group discussion.

Session 3 – Community Project Proposals

Time: 1300-1400hrs

This session introduced individuals to the processes involved in developing a community project and began by highlighting potential types of projects and possible project outputs.

This was followed by an example of two projects that have been carried out in the past, addressing themes highlighted in the introduction. For approximately 30 minutes, the audience discussed possible project proposals.

The final 10 minutes provided an opportunity to summarise discussions.

Session 4 – Sharing Memorabilia/Memories

Time: 1400-1500hrs

The first 20 minutes of this session comprised an introduction to the benefits of preserving heritage items, such as photographs, diaries, oral history, paintings and artefacts. The introduction discussed the following:

1. Why share memorabilia/memories?
2. What to share?
3. How to share?

The remainder of the session provided the opportunity for individuals to get experience of the technical means for them to record their personal memories, photographs and memorabilia.

N.B. Due to the limited number of attendees at the workshops, the **Sharing Memorabilia/Memories** session was limited

13.4 Assessment of community interest

Despite widespread advertisement and support prior to the launch of each workshop, there was a surprisingly low turnout for each event. The Strelley workshop, held in Wollaton, had the largest turnout with seven attendees. The lowest turnout was at Hucknall, where nobody attended. The attendance register was as follows:

Table 2. Workshop: number of attendees

Workshop	Number of attendees
Clipstone 30th April	3 & 5 Drop-in
Hucknall 1st May	0
Strelley (Wollaton) 7th May	7
Selston 8th May	2
Thoresby 14th May	3
Eastwood 22nd May	2 (returning individuals)

In total, **12** individuals attended the workshops, while a further **5** individuals attended but were unable to commit to the full session.

Although there was a low turnout for each event, the workshops (with the exception of Hucknall) proved to be successful in assessing community interest in the coal mining heritage of Nottinghamshire.

13.5 Summary of individual interests

With the exception of Hucknall, those attending each workshop were invited to complete an individual questionnaire as part of Session 1 of the workshop. A total of 13 questionnaires were completed.

The results can be summarised as follows:

1. What town/village do you live in: _____

All of those who completed the question were either from the village in which the workshop was held or from its immediate area.

2. Have you an interest in your local mining history? YES/NO

All 13 individuals who completed the survey had a pre-existing interest in their local mining heritage.

3. How important is the mining heritage to you? (0 = Not Important; 5 = Very Important)

0 1 2 3 4 5

All of the surveys identified that the mining heritage was important. Eleven individuals recorded 5; one recorded 4; one recorded 3.

4. Is there a particular aspect of the mining heritage that interests you most? If yes, what? YES/NO

Table 3. Mining heritage themes of interest

Themes	Number of individuals interested
Social & Family History	5
Housing/Settlement Development	3
Early Mining Heritage	2
Technology & Engineering	2
Preservation of Industrial Heritage	2
Landscape Impact of Coal Mining	1
1900-2000 Coal Mining Industry	1
Transportation	1
Education & Promotion	1
Everything	1
No	1

Social and family histories, along with housing and the general development of their particular town/village, were of most interest to those who completed the questionnaires. As each workshop progressed, these themes began to stand out as the dominant interests of the

majority of the attendants. Attention to the early development of coal mining was limited to only two individuals. The remainder were interested mainly in 'their' more recent 20th-century and 21st-century mining heritage.

5. Have you ever been involved with the mining industry, either directly or indirectly? If yes in what capacity YES/NO

Eleven individuals stated that they had been involved in the mining industry. Of these, seven had been directly employed in the industry. The remainder held a family connection.

6. Are you interested in being involved in a community project? If yes, what type of projects would interest you (please tick the relevant box) YES/NO

	Tally
Personal Histories	6
Village Historical Research	4
Industrial Historical Research	5
Conservation	7
Building Recording	2
Landscape Survey	2
Archaeological excavation	4
Other	1
If other, what?	Wildlife Surveys

Only one individual was uninterested in being involved with a community project. The remainder expressed a clear interest in projects with themes of **Conservation** and **Personal Histories**. Less interest was expressed for projects relating to **Building Recording** and **Landscape Survey**.

7. Are there any specific sites, buildings, or features that you would like to see a community project work on?

Four individuals did not respond to this question, whereas one individual was '*Not Sure*' in their response. The remainder were particularly interested in the research and promotion of the social histories relating to their families, their town/village and the wider landscape. Of these, a project concerning a collation of historic memorabilia and literature was mentioned, as was the establishment of a heritage trail/circular walk.

Three individuals were interested in a project that would serve to investigate and promote the physical heritage. One was interested in the archaeological evidence for the early mining industrial landscape of Strelley and Wollaton, while the remainder were interested in a project relating to the investigation and preservation of the Clipstone Colliery site and headstocks.

Table 4. Project themes of interest

Project Themes	Number of individuals interested
Town/Village history	1
Preservation and exhibition of mining memorabilia/literature/histories	1
Historic connection of mining heritage with other industries	1
Heritage trails/guided tours	1
Archaeological investigation of early coalfield landscapes	1
Archaeological investigation and preservation of Clipstone Colliery site and headstocks	2

13.6 Assessment of community priorities

The following summarises the results of the group discussion held during Session 2 – perceptions of mining heritage. The group discussion was controlled by eight questions, the results of which were transcribed as the session progressed.

1. What is the significance of the mining heritage to you?

There was an overwhelming agreement between all of the groups that the mining heritage is essential and significant in the understanding of their own, as well as the wider community's, identity. It is widely regarded that the town/village/landscape in which they live would not have existed without the presence of the coal mining industry and that the industry is integral to their identity and history.

2. What do you think is the significance of the mining heritage to your community?

Each group provided the same answer to this question. On one hand, the history and identity is important to those who were employed in the mining industry and to their families. On the other hand, mining heritage is becoming increasing insignificant to younger generations and new families introduced to the community, who have no direct experience or relationship with the industry.

3. What is its significance nationally?

The coal mining industry is regarded as fundamental to the history of Britain, in particular the industrial revolution, and to industry and technological advances, in general.

However, the perception of the groups is that this significance is not being understood on a national or local scale, unless individuals were involved in/associated with the mining industry or have a particular interest in history and heritage. Where the mining heritage is recognised, it is perceived in a negative light due to the 1984-'85 Miners' Strike. In turn, this has led to social divisions in some local and regional communities.

4. Is there a particular aspect of mining heritage that is seen as more important than others? Why?

The answer to this question varied between each workshop, although the social histories and memorabilia of those who had been engaged in or associated with the coal mining industry were recognised as being of common importance. This aspect was identified as being of particularly importance as the mining generation pass-on.

Generally, physical remains were also regarded as important, such as the preservation of the Clipstone headstock, miners' associations/clubs and housing. All of these features were identified as being important for recognising mining heritage, as well as promoting local history and enhancing community identity. There was concern, however, that the continued development of towns and villages is leading to the removal of this heritage and thus the character of the settlement.

5. What other physical remains are of importance?

The groups listed the following additional heritage assets as important:

Planned settlement pattern

Colliery spoilheaps

Headstocks

Canals

Railways

Bridges

6. What remains are particularly important to you?

Memories, stories and local history were noted as being of particular importance, with recognition that physical structures 'help tell the story and act as a focus'. This was emphasised most strongly during the Clipstone and Strelley workshops.

7. Should coal industry and community remains be preserved and promoted?

Each group answered YES to this question.

8. How would you preserve and promote coal mining heritage?

Each group regarded the engagement and promotion of the mining industry to younger generations as being imperative in order to preserve and enhance knowledge about the industry, whilst building upon a sense of place and local community.

The Selston workshop was particularly interested in establishing an educational pack for the local school.

As noted in 6., attendees at the Clipstone and Strelley workshops expressed the importance of preserving physical heritage assets. At Clipstone, this centred on the headstocks and an interest in converting the site into a conference/activities centre. The group recognised that any use of the headstocks had to be sustainable.

13.7 Potential for community projects

The third session of the workshops was an introduction to the development and funding of community projects. As part of the session, each group produced a draft project proposal based upon their interests in the coal mining industry.

13.7.1 Clipstone

The Clipstone group developed a proposal for a project that would combine the collation and recording of personal memories and memorabilia, with a landscape survey centred on the recording of features relating to the planned pit village and general mining heritage. The results would be disseminated online and used to support a heritage trail within the area.

13.7.2 Selston

During the Selston workshop, the group were particularly interested in developing a project that would promote the local mining history within the local Primary School. This would be sustained through the production of an educational pack that could be utilised on an annual basis.

The educational pack, which would have a mixture of online interactive activities (including recorded personal histories/stories) and traditional outdoor orientation activities, would introduce younger generations to their mining heritage and thus bridge the gap in local knowledge and awareness of that mining heritage.

13.7.3 Strelley

A number of possible projects were discussed during the Strelley workshop. There was an interest in promoting the currently-known mining heritage of Strelley and Wollaton through the establishment of a circular walk that would connect with the wider Erewash Valley. Although walks do exist in the area, these are not widely advertised. The proposed project would serve to address this by establishing a series of display boards, highlighting the heritage of the area whilst promoting the trail.

An additional project proposal was to develop and enhance the current collection of oral history and memorabilia by creating a local exhibition. This would be achieved through the collection of additional personal histories and memorabilia. The collection would also be recorded and made available to the local record office/archive to ensure its preservation. A website would also be established to promote the exhibition and its catalogue and to allow access to the personal histories.

The final proposal was a landscape survey project focused upon the area's early coal mining industry. The project would utilise desk-based research, field survey and trial archaeological excavation to record, identify and confirm the condition of features relating to the early mining landscape. This would include the distribution of 'bell-pits', mining-related structures and the various transport routes (waggonways, canals and railways) across the region. The results would feed into the local HER and archives.

13.7.4 Eastwood

The two individuals who attended the Eastwood workshop were volunteers from the Nottingham Industrial Museum. They were particularly interested in enhancing their current mining display at the museum by means of collating personal memories (in particular, humorous

accounts) and memorabilia concerning the Nottinghamshire coal industry. This information would also be used to enhance an online presence.

As part of the proposed project, they were also interested in utilising the colliery/coal mine historic maps to produce an animation that would demonstrate the development of underground workings and changing technology over time.

13.8 Conclusion

13.8.1 Turnout

Despite the initial interest and support for the workshops that was expressed by local heritage/community groups and the wider public, there was a poor turnout on the day of each event. This was discussed amongst the project staff and attendees and a number of possible factors were suggested for this low turnout.

Formula: The five-hour workshop may have been too great a commitment for interested parties. In hindsight, it may have been more appropriate/successful had the event taken place during a morning or afternoon, over a shorter period of time. Alternatively, the event could have been held on a weekday evening, coinciding with a local heritage/community group meeting.

Interest: Alternatively, the low turnout may in itself indicate a lack of interest in the coal mining industry and its heritage. All of the workshops highlighted the general lack of knowledge/awareness towards the industry among younger generations and new arrivals to the community. It was also evident (in the case of Clipstone and Thoresby/Edwinstowe) that resentment and division as a result of the 1984-'85 Miners' Strike continues to the present day. At Clipstone, this led to a split in which the community is divided between preserving and removing the Grade II listed colliery headstocks. Of those who did attend the workshops, all were either ex-miners or from mining families and therefore already had an interest in coal mining heritage.

Weather: The weather may also have played a factor in the low turnout. By coincidence, the workshops coincided with the onset of a period of warm weather. One of the workshops also coincided with a Bank Holiday weekend.

13.8.2 Overall Result

The overall output of the workshops has been positive, providing an insight into public perceptions of the coal mining heritage of Nottinghamshire. It is clear from the workshops that all are in agreement that the physical heritage of the industry should be preserved and promoted. However, there are differing opinions on how and what should be preserved and promoted. There is less interest in the physical, structural heritage of the coal mining industry and a tendency to focus on 20th-century mining history, in particular personal histories. Only one person expressed an interest in the early development of the mining industry.

There is agreement on the importance of collating and preserving the personal histories/memories of former miners. As a result, all of the community project proposals contained an element of, or were entirely based upon, the recording of personal memories and collections, with the results being disseminated via publications, websites and exhibitions, and being stored with local museums and HERs/archives.

Individuals were also aware of, and concerned by, the apparent lack of interest among 'newcomers' and younger generations within the community. They recognised that the establishment of a mining heritage community project could address this situation and thus ensure that this heritage is recognised as an integral element of the identity of a town, village, area or landscape and their populations. Such projects may also serve to bridge the divisions in communities stemming from the 1984-1985 Miners' Strike.

14 HERITAGE ASSETS AND LANDSCAPE CHARACTER

Table 5. Heritage assets by study area

	Early		Middle		Later		
	Strelley	Selston	Eastwood	Hucknall	Clipstone	Thoresby	**Total**
Industry							
mines/collieries	4	10	12	2	1	1	30
old mine/pit/remains *	12						12
bell pit	4		2				6
possible mining remains	4	3					7
spoilheaps				3	1	1	5
headstocks			1		1		2
engine house	2	2	1				5
reservoir		1					1
offices			2				2
Transport							
canals	2		3				5
wharfs	1						1
waggonway/tramway	12	5	2				19
tramway features		7					7
rail		3	3	2	6	3	17
sidings			1	1	2		4
incline plane	2	2					4
aerial ropeway					1		1
Settlement							
planned pit village **					1	1	2
workers' housing		1	6	2			9
welfare centre/recuperation				1		1	2
owners' housing	1		2			1	4
village hall				1	1	1	3
miners' institute/welfare					2	1	3
library				1			1
shops		1					1
churches/chapels			1		3		4
cemetery					1		1
memorials/heritage sites		1	2	1			4
bowling green					2	1	3
cricket			1		1	1	3
football					1		1
other recreation				1	4		4

Notes

Where a building has multiple uses, e.g. a hall converted into offices, it will appear in both counts

* recorded on a historic map or document

** planned pit villages include a multitude of features, including housing and community facilities; not all have been given individual asset numbers

The gazetteer of heritage assets (Appendix 2) lists those assets that have been identified in the study areas, using the methodology outlined in Section 4 of the report. The gazetteer includes coal industry heritage assets recorded on the HER, along with assets identified from historic maps and documentary sources. As previously noted (Section 4.3.1), not all original buildings, structures and features in planned pit villages could be considered heritage assets – for example, it was not practical to assign asset numbers to every house in the village. For planned pit villages, a general village number has therefore been allocated, with additional asset numbers also allocated to specific coal industry features and key community features.

Table 5 tabulates the counts for different types of heritage assets within the different study areas. These have been grouped by three of the research themes: industry, transport and settlement. The six study areas are arranged in approximate chronological order for the start of coal mining each area and are distributed across the coalfield to reflect mining's eastward spread as the coal industry developed.

Table 5 demonstrates that there are identifiable differences in the numbers and types of heritage assets in the study areas and that these differences are related to the periods in which coal mining developed in each area. In broad terms, the areas that developed earlier have fewer types of coal industry heritage assets and most of which relate specifically to the industry or to transport. Later periods have a greater range of heritage asset types. In addition, with certain types of heritage assets, one type replaces an earlier type, e.g. railways and canals. The distribution of these assets therefore varies across the landscape in relation to the period in which coal mining developed in particular areas.

Figures 2 to 7 show the distribution of coal industry-related heritage assets recorded on the HER or by the Coal Authority. These demonstrate that the distribution of the assets is skewed heavily to the west of the county, on the exposed coalfield, and on the concealed coalfield to the east, the heritage assets generally occur in concentrations around major coal-extraction sites.

14.1 Industrial heritage assets

In the discussion below industrial heritage assets are those structures and remains that relate specifically to the extraction of coal, including the remains of the mines, the associated structures (mine buildings, headstocks, etc) and the waste produced by mining.

14.1.1 Early shallow mining

The Phase 1 scoping study identified that the primary industry-related heritage assets from medieval and early post-medieval, coal mining in Nottinghamshire were the remains of extractive features, including 'bell pits' and shafts. The HER records 137 'bell pits', 142 mineshafts and 41 coal mines across the county. It is often difficult to be certain of the type of practices and techniques that were employed in early mining. References to 'bell pits' or shafts are common, while maps often employ terms such as 'old mine', 'old pit' or 'mining remains' to indicate the location of past mining activity. Identifications such as these are particularly common in the Strelley study area.

In most cases, early mining is likely to have involved the excavation of a relatively shallow shaft that was expanded at its base to remove coal (a 'bell pit') or the excavation of short galleries to extract coal. Mines such as these would be relatively short-lived, with the coal seams exploited through the excavation of numerous pits or shafts wherever coal could be accessed relatively

easily. The tendency to identify the majority of early mining surface remains as 'bell pits' can be problematic (Newman *et al* 2016), however, as this makes an assumption regarding the nature of below-ground mining activity that cannot necessarily be substantiated. Ideally, the term 'bell pit' should therefore only be used when the remains are known to relate to true bell-pitting.

The HER figures contrast with those available from the Coal Authority, who record 2200 mine entrances in Nottinghamshire. While the Coal Authority do not record the dates of these mine entries, the vast majority are located on the exposed coalfield (**Figure 4**). The concentrations of numerous small mines in the west of the county indicates that these are the remains of early shallow mining sites. The disparity in the number of heritage assets recorded by the HER and the Coal Authority can be seen in more detail on the map of heritage assets for the Strelley study area (**Figure 8**). The Coal Authority mine entrances can be seen to either cluster in groups or to form lines, running approximately north-south, in order to access the relatively easily-exploited shallow coal seams. Similar, although less pronounced, distribution patterns can be seen in the Selston (**Figure 9**) and Eastwood (**Figure 10**) study areas.

As previously noted (Section 6.2), the HER record a number of possible 'bell pits' to the north- and south-west of Mansfield (**Figure 3**) in areas where mine entrances are not recorded by the Coal Authority (**Figure 4**). As these features are not located on the exposed coalfield, it likely that they may not be bell pits, as the coal seams in these areas are likely to have been too deep to have been mined through this method.

As these early mines were small, short-lived sites that have been long disused, their remains are often ephemeral. While small earthwork mounds can sometimes be identified at the shaft top, many coal leases stipulated that all mining-related features and remains were to be removed, either at the end of the lease or when the mine closed, and that the land was to be reinstated turned to its former state. A coal lease in the Strelley area even required the storage of the topsoil that was removed when a mine was sunk, so that the reinstatement used the original soil. In cases such as this, little above-ground evidence of former mines will survive.

Areas of former bell-pitting can be identified from aerial photographs. In these cases, however, it is difficult to assess the potential condition of the former mining remains – while surface remains are likely to be limited and in poor condition, more extensive subterranean remains could survive in better condition. Within the study areas, documentary sources provided evidence of late medieval or immediately post-medieval coal mining in Strelley and Selston, with mining taking place in Eastwood and Hucknall by the 18th century. Despite this, remarkably few surviving early mining heritage assets could be identified through archaeological remains during the fieldwork. Even the early 17th-century bell pits that form the Broad Oak Farm Scheduled Monument at Strelley, which are clearly visible on aerial photographs, were not visible on the ground from an adjacent path during the fieldwork.

In addition to the mines themselves, other coal industry-related heritage assets recorded on the Nottinghamshire HER include the remains or sites of 14 engines, three engine houses, one adit and seven earthwork features.

14.1.2 Later deep mining

The primary heritage assets relating to later, post *c.*1800, mining in Nottinghamshire are mines or collieries, winding gear, engine houses and pithead baths. The HER records 59 collieries, three pithead baths and one engine house. The smaller number of extraction sites in this period reflect a change in the technology of coal mining, as deeper mines with more extensive underground workings were developed. These were fewer in number and more costly to develop, if more profitable. Over time, these mines became more widely distributed as they extended into the concealed coalfield. This is reflected in the distribution of extraction sites recorded by the HER (**Figure 3**) and mine entrances recorded by the Coal Authority (**Figure 4**).

Across Nottinghamshire, the survival of remains relating to these collieries is variable. The HER describes 25 collieries, one engine and one pithead bath as 'destroyed'. The best survival is at Pleasley, where the headstocks and other colliery buildings have been preserved by a local heritage trust and are now open to the public. This site provides the best opportunity for the public to see and appreciate a coal industry extraction site within the county. The long-term survival and accessibility of this site is dependent on the heritage trust and local volunteers for its management, maintenance and public accessibility.

Within the study areas, the extent of survival of colliery structures and buildings is similar to that in the county as a whole. At Clipstone, the headstocks and power house survive, but all other pithead buildings have been demolished, thereby leaving these features isolated and de-contextualised. The late 19th-century headstocks from Brinsley Colliery, in the Eastwood study area, were removed on the closure of the pit and were moved to a Coal Mining Museum near Retford, which subsequently closed. The headstocks have now been returned to the site and re-erected near to their original position. No other remains of Brinsley Colliery survive, however, as the site was cleared and reclaimed as a nature reserve. The Brinsley headstocks are therefore also de-contextualised, sitting in a green field as a monument to, rather than the remains of, heavy industry. Thoresby Colliery, the last working mine in Nottinghamshire, closed in 2016. Access was not possible during the fieldwork as the site is now being redeveloped. Little of the original above-ground remains are likely to survive following the redevelopment.

In addition to the physical remains of the later coal industry, extensive documentary sources record the industry and its now-lost physical remains. Legal documents relating to mineral leases, colliery accounts, coal company correspondence, annual reports, minutes of the Coal Owners' Association and damage reports survive primarily in Nottinghamshire Archives. In addition to these the Coal Authority contains large numbers of plans of mines. The production and retention of these plans was the result of the Mining Acts of 1850 and 1872. The first required coal owners to produce and retain plans of mines for the inspection of mining engineers, while the second required abandonment plans to be produced for closed mines. There are thus over 200 cartographic sources available for 19th-century deep mining in Nottinghamshire, with over 5000 sources for the 20th and 21st centuries.

In addition to the plans of subterranean workings, surface plans show the buildings and layout of the collieries, while others depict the transport networks. The Coal Authority hold surface plans of 17 collieries and 10 plans of opencast sites. From the later 19th century onwards, extensive photographic archives survive. While a small number of photographs are held by the HER and Nottingham Archives, the majority are held at the Coal Authority and were produced by the

NCB's photographic division between the 1940s and the 1970s. This material covers the development of colliery complexes, individual buildings, features such as mineral railways and coal-working and processing machinery. Surface and underground photographs are available for the majority of the collieries on the county's concealed coalfield.

14.13 Waste management

The primary heritage assets relating to waste management are colliery spoilheaps. Nottinghamshire County Council inspects 80 spoilheaps, of which it currently owns 37 and holds aerial photographs, geotechnical plans and site reports for these features. The HER does not record any spoilheaps as heritage assets.

Although spoilheaps are often perceived as iconic features relating to the historic coal industry, large colliery spoilheaps are related primarily to the mechanised deep mining that took place between the late 19th and the early 21st centuries. While early mining produced spoil from the excavation of the mineshafts, very little spoil was produced from the mining of the coal seams themselves. Excavating by hand, miners sought to minimise the production of spoil and the material that was produced would be left below ground, often deposited in former workings to avoid the need to transport the waste to the surface (community workshops pers. comm.). Modern colliery plans reveal that spoilheaps were formed largely from material that was produced during the processing of coal, such as 'washery waste', rather than as the direct result of mining the coal.

Small spoilheaps would have been associated with early mines and bell pits on the exposed coalfield, although the majority of these have been lost over the years. During the fieldwork it was often difficult either to access the land where remains potentially survived, eg. private woodland, or to identify the sites of early mines where these had been landscaped and returned to farmland or had been built over.

Due to their association with more developed mechanised mining, large spoilheaps are associated primarily with the larger collieries, often on the concealed coalfield. This is borne out in the study areas ,where five spoilheaps, or complexes of spoilheaps, were identified: three at Hucknall and one each at Clipstone and Thoresby.

As perceived 'eyesores' and pollution risks, large spoilheaps have often been removed through landscaping works. The Environment Agency state that many waste facilities, including spoilheaps, were abandoned in the 19th and early 20th centuries and that these continue to be a source of pollution or have other environmental impacts (EA 2014, iii, 4). As of January 2014, the Environment Agency recorded 150 closed mining waste facilities that were deemed to be causing serious environmental impacts; none of these are located in Nottinghamshire (EA 2014, 17-24).

Of the two spoilheaps in the Hucknall study area, one is now a golf course and one a nature reserve. The former Clipstone Colliery spoilheap has been landscaped and converted into Vicar Water Country Park. The Thoresby Colliery spoilheap is likely to be redeveloped in a similar manner.

14.2 Transport heritage assets

These heritage assets include all of the transport infrastructure features that were developed to serve the coal industry. The primary transport heritage assets relating to the industry are tramways or waggonways, canals, canal wharves and mineral railways. Nottinghamshire HER record 21 tramways, 15 canals and five mineral railways across the county. The types of transport infrastructure constructed for the coal industry reflect developments in transport over time, particularly during the industrial revolution.

Through the medieval period and into the early post-medieval period, coal was transported primarily by road in carts or by river in boats, although documentary evidence for the construction of infrastructure specifically for the trade in coal is rare. A small number of documentary sources detail roads that were constructed specifically for the transportation of coal in the period prior to the proliferation of tramways. These include an agreement for the construction of a 'carriage road…for carrying coals from Blackwell Colliery and Hucknall under Huthwaite' in 1768 (NA DDE 40/1). Colliery account books, such as that for Skegby, contain payments for turnpike dues, indicating that coal continued to be moved by road into the mid-19th century. Due to the small scale of the coal industry and the short-lived nature of the mines themselves, investment in transport infrastructure is likely to have been limited.

Constructed at Strelley in 1604, Huntingdon Beaumont's waggonway is the earliest known example of this type of feature in the world. However, while Beaumont's innovation led to the adoption of waggonways in the coalfields of Shropshire, the Midlands and the North East, these features do not appear to have been in widespread use elsewhere in Nottinghamshire until the late 18th century. By the latter period, however, extensive networks of tramways carried coal from pits to canal wharves, where coal was load onto barges for shipment along the new canal networks. The distribution of these heritage assets, the majority of which are located in the exposed coalfield in the east of the county, is shown on **Figure 6**.

Cartographic sources can indicate the interrelationship between a colliery and its transport network. There are relatively few such maps or plans, however, and these tend to show the waggonways or canals as subsidiary features on plans of individual mines or on area plans showing the locations of several pits owned by the same company. Many of the plans that do include transport features show these only partially, for example, those sections that were in close proximity to the pits themselves.

Relatively few documentary sources relate specifically to waggonways. Those that do are typically leases granting permission for the construction of new lines across specified plots for a fixed period. These give the names of landowners, coal owners and the general course of the tramway and may name the route's terminus at a particular canal wharf. Incidental references in other documentary sources can include references to the payment of wayleaves for the construction and use of tramways across private land. Leases often contained clauses that required waggonways to be dismantled once mining had ceased, with the land being returned to its previous condition. A 1997 aerial photographic survey report (Cox 1997) records the possible locations of tramway features in the west of the county.

Several canal and tramway heritage assets are located in the Strelley, Selston and Eastwood study areas. While the canals survive in various states of repair, the fabric of tramway rails and infrastructure has all gone. The routes of the waggonways can still be traced in some areas,

where sections have survived as roads or footpaths. In Selston, a heritage walk with information boards identifies key features along the former tramway network. In other areas, however, the footpaths and roads that now run along the surviving sections of former tramways are not identified and are largely forgotten.

Through the latter half of the 19th century and into the early 20th century, railways replaced canals and tramways as the primary means of transporting coal. As the large collieries on the concealed coalfield provided coal primarily to power stations for the electricity industry, mines such as Clipstone and Thoresby had dedicated mineral railways that connected these collieries directly with power stations on the River Trent.

Figure 6 shows how railways spread across the county, in particular in the area to the east of Mansfield, on the concealed coalfield. Former mineral railways and colliery sidings were identified as heritage assets in the Clipstone and Thoresby study areas. While the lines and sidings have been dismantled and removed in Clipstone, the former routes can still be traced in the landscape. Due to the relatively recent closure of Thoresby, the disused mineral railway survived at the time of the fieldwork. Elements of the railway siding may also still survive, although this is likely to be removed during subsequent redevelopment.

14.3 Settlement heritage assets

Settlement							
planned pit village **					1	1	2
workers' housing		1	6	2			9
welfare centre/recuperation				1		1	2
owners' housing	1		2			1	4
village hall				1	1	1	3
miners' institute/welfare					2	1	3
library				1			1
shops		1					1
churches/chapels			1		3		4
cemetery					1		1
memorials/heritage sites		1	2	1			4
bowling green					2	1	3
cricket			1		1	1	3
football					1		1
other recreation				1	4		4

The impact of the coal industry on settlement patterns, the development of villages and towns and the heritage assets they contain, is, like the industrial remains and the transport infrastructure, dependent on the history of the industry and the period of development.

The primary heritage assets pertaining to coal industry-related settlement are the planned villages of the 19th and 20th centuries. The HER records 17 workers' villages, with some of the 32 recorded 'workers' cottages' also likely to be relevant to the coal industry. The majority of the planned sites are located in the county's concealed coalfield and relate to the development of large deep-mined pits. These features are shown on Figure 7.

In Strelley and Selston study areas, the character of the early coal industry did not lead to the development of many specific features or buildings in the villages around which the industry developed. The main coal mining-related settlement heritage assets in these areas are Portland Row, Selston – a terraced row of workers' housing that was built in the 1820s and demolished in the 1960s - and Strelley Hall, the home of successive coal owning families, including the Edges. A documentary references to miners' housing in Strelley in 1618 is atypical. The location of the miners' accommodation is unknown and it is not known if these were constructed specifically to house miners or if they were existing properties owned by the coal owner. This does not mean that the coal industry did not influence settlement development in the early mining areas, but that such influence appears to have been the result of organic growth rather than the planned development that is seen in the later classic pit villages.

Throughout the 19th century, the influence and impact of the coal industry grew in mining villages. Eastwood and Hucknall both saw the construction of miners' housing. This appears to have been small-scale on the whole, with a street or terrace constructed to provide additional accommodation when required, although some developments were larger. In both Eastwood and Hucknall, much of this housing was added to the towns' existing housing stock and was not developed as part of a grand plan. In addition to the housing constructed in Eastwood, two owners' houses were built, along with a chapel and a cricket pitch. The latter are examples of the industry building or contributing, often financially, to the development of community facilities that were deemed to be of an improving or recreational nature. In Hucknall, a village hall and a library were developed as community facilities.

It was only in the late 19th and early 20th centuries that fully planned pit villages were developed. A Masters dissertation by Norclifffe (2003) examining the planned pit villages of Gedling, Bestwood, Creswell/Bolsover, Cromford, Oakenshaw, Cinderhill, New Ollerton, Poolsbrook, Rainworth, Woodlands, Clipstone, Annesley, Warsop Vale, Edwinstowe, Blidworth, Newstead, Bilsthorpe and Calverton. The dissertation records the range of buildings present, the layouts of the villages, the dates at which they were constructed and the extent, condition, usage and ownership of surviving features at the time of writing in 2003.

Two of the study areas, Clipstone and Edwinstowe, are examples of planned pit villages from the early 20th century. In the case of Clipstone, the village was entirely new , while the latter subsumed an existing small farming village. As planned villages designed to serve new collieries on the concealed coalfield, both of these settlements had to provide all of the facilities required by the community. Miners' institutes and sports facilities were constructed in addition to housing, churches, chapels and recreational facilities. One reason for this will have been the need to attracted miners and their families to the village. The quality of the housing and facilities in both of these villages was of a high standard when compared to the general workers' housing of the period. At Clipstone, the impetus to provide improving and attractive facilities led to the construction of a church, two chapels, a village hall, two miners' institutes, two bowling greens, a football pitch, a cricket pitch and a tennis club, a range of facilities that would be attractive in a new village development today.

The housing at Clipstone and Edwinstowe includes a range of styles and sizes that were related to the status of the occupant and their job in the colliery. Some elements of the coal owners' intentions regarding social status and control of their workforce are visible within the layout of

planned villages, for example, at Edwinstowe clerical workers were housed on First Avenue and a promotion would entail moving house from, say, Third to First Avenue (Gray 2008, 136).

One social consequence of the development of deep mining on the concealed coalfield was the importation of labour. This came not only from within the historic coal-mining areas of Nottinghamshire, but from the whole county. In the community workshops, reference was made to 'Geordie pits' where almost the entire workforce came down from the North East. Such pits led to the formation around certain mines of communities with very limited ties to the area or to the wider Nottinghamshire coal industry.

The surviving workers' housing in Eastwood, Clipstone and Edwinstowe is generally in good condition, although some of the housing, particularly in Edwinstowe, that is now in private ownership has been altered by the addition of cladding, render and new windows. This has broken-up the overall appearance of some of the housing. In Clipstone and Edwinstowe, original workers' housing largely survives, although the addition of new housing is altering the overall plan and appearance of the villages.

In Clipstone and Edwinstowe, the main changes to the heritage assets in the village have been the loss of some of the community and recreational facilities that were originally built for the village. In Edwinstowe, the miners' institute and Village Hall/social welfare club have both been demolished in recent years. This appears to relate to major changes in the village population. At the Edwinstowe community workshop, it was stated that few ex-miners now lived in the village and that most of the population were commuters who worked in Nottingham and did not use the recreational or community facilities in the village. In Clipstone, some facilities survive but one chapel, one of the miners' institutes, a bowling green and the tennis club are among the community facilities that have been lost.

Due to the requirement from the late 19th-century for developers to deposit building control plans with the local authority, the documentary and cartographic record for the development of planned pit villages is generally good. There is therefore comprehensive cartographic coverage of the planned settlements that were built by the private coal companies. In addition to Clipstone and Edwinstowe, sites include Warsop Vale, Rainworth, Huthwaite, Bilsthorpe and Welbeck.

Along with the often grand houses of the coal owners, the large landed estates were also important in the development of the industry. These include pre-existing estates which leased land to coal companies or landholdings that were assembled by coal owners and companies. Examples of large estates include those owned by the Willoughbys (Middletons) and Byrons in the early post-medieval period to the baronial coal owners of the Dukeries in the early 20th century. The HER does not record these as directly coal-related features.

Surviving mining leases and related documents held by Nottinghamshire Archives and the East Midlands Collection at the University of Nottingham, record the role of these estates in the development of the county's coal industry. This material ranges from early post-medieval mining leases, correspondence between coal owners and landowners, mine accounts and documents relating to the development of new pits, the formation of coal companies and the construction of pit villages.

Within the study areas, the varying influence of large estates and their owners can be seen in the exploitation of the concealed coalfield by the dukes of Portland and the initial resistance of Earl

Manvers, who sought to prevent coal mining in Sherwood Forest until he relented after the First World War and was instrumental in the development of Thoresby.

14.4 Related industries

The primary heritage assets relating to industries relating to the coal industry are those industries that exploited the products, such as coking plants and electricity generation, and those that supplied equipment to the industry. The HER does not record these directly as coal-related features.

Documentary sources record mines such as Harworth and Silverhill that had associated coke ovens during the 19th and early 20th centuries. During the 20th century, the NCB operated five discrete coking plants in Nottinghamshire. Other developments with indirect links to the coal industry included a factory at Welbeck Colliery that produced petrol from coal, while Thorseby had a 'pulverised fuel plant' (Gray 2008, 105, 132). At New Ollerton, the Butterley Company took advantage of the potential labour force provided by the women in the village and operated a hosiery factory(Gray 2008, 136-137).

Ownership of non-coal-related features continued after the nationalisation of the industry in 1947, with the NCB's East Midlands Division owning 12 brickworks, six waterworks, two pipe works and 112 farms. While some of these features were inherited from the private coal companies at the time of nationalisation, others formed part of the expansion of the industry after 1947. The extent of the survival of these features is unknown.

The HER does not record any indirectly-related coal industry features in any of the study areas. Other than the pulverised fuel plant at Thoresby, none were identified from other sources. It is possible, however, that other coal industry-related industrial features were present but have not been identified from the archival research. No remains of such industries are known to survive.

In Nottinghamshire, the coal industry provided large quantities of coal for electricity generation. None of the power stations themselves were located in the study areas, although collieries such as Clipstone and Thoresby had dedicated mineral railways that connected the pits either directly with the power stations or via the marshalling yard at Colwick. The latter, built in stages from 1872 and closed in 1970, was owned by railway companies, rather than coal companies.

14.6 The character and development of the coalfield landscape

In the exposed coalfield in the west of the county, the landscape is characterised by the scant remains of small-scale mining operations, from shallow outcropping to clusters of bell pits. The nature and extent of this type of mining was determined by the technological limitations of the period in which the works took place. Due to problems with drainage or ventilation, deeper coal seams could not be worked easily. Rather than excavating deeper in areas that were already being mined, pits would therefore typically close once the easily-accessible reserves had been worked. New pits would then be sunk on different parts of the coal seam, again mining shallow reserves.

Only limited infrastructure was associated with this type of mining, the most visible of which were the structures at the pit head and perhaps the creation of a new road to the mine. Coal sales appear to have taken place at the pit head, with the coal itself apparently being used in areas relatively local to the mines themselves. Transportation was by mule or horse and cart,

along 'summer roads' that led through a largely rural landscape to the existing road network. This meant that little dedicated transport infrastructure was associated with coal mining in the medieval and early post-medieval periods.

Limited documentary evidence suggests some housing provision for miners in Strelley during the early 18th century. However, this appears to have been very much the exception. While some landowning coal owners providing tied cottages for miners in the manner of their agricultural estate workers, there is no evidence of planned housing developments or extensions to existing villages for the purpose of housing miners in this period.

With the exception of the pits themselves, the landscape appears to have been little affected by coal mining. Unlike in contemporary lead mining, most of the waste material produced in coal mines was left underground, rather than being brought to the surface and stacked in spoilheaps. Coal leases typically required the mines to be infilled, with any buildings and infrastructure removed and the land restored to its former condition. Within several years of a mine being closed, little evidence of its former presence therefore remained visible in the landscape. This has resulted in a paucity of surface remains associated with mining on the early part of the exposed coalfield.

During the later 18th century, advances in technology led to the development of larger pits that could work deeper seams. Drainage and ventilation were improved by pumps, 'wind soughs' and horse-drawn 'gins', thereby allowing access to coal that could not be mined previously. This led to the sinking of pits in the eastern part of the exposed coalfield. Further technological advances gradually saw the replacement of the gin pits by more fully-developed collieries which allowed coal to be worked from fewer but larger pits. During this period, the construction of road networks, waggonways and canals for the transportation of coal transformed the landscape character of the areas in which coal mining took place.

Transport developments also allowed coal production to increase substantially, with a corresponding increase in the numbers of those employed in coal mining. In addition to industrialisation around the mines themselves, this also led to changes in social and infrastructure patterns in the new mining areas, as the influx of new workers had to be housed. Housing provision by the coal companies was limited until the second half of the 19th century, when new developments began to be added to existing villages. The sale of former agricultural land for building purposes also increased urbanisation. In addition, newly-rich coal owners closely associated with a particular area sometimes constructed grand houses on the periphery of the mining areas, such as Eastwood Hall and Lamb Close House which were built by the owners of Barber Walker & Co. at Eastwood. While often set in a wider rural landscape, by the end of the 19th century, mining areas tended to be fully industrialised urban areas set at the heart of an extensive transport network, where the majority of activity was mining-related.

During the early 20th century, technological advances allowed the deep coal seams of Nottinghamshire's concealed coalfield to be worked for the first time. Due to the depth of the seams, these areas in the north-east of the county had no previous tradition of coal mining and were characterised by small farming settlements set in an extensive rural landscape. The construction of large, fully-developed modern collieries such as Clipstone and Thoresby were accompanied by planned villages featuring hundreds of new houses, along with extensive social and recreational facilities. Expansion onto the county's concealed coalfield transformed the

existing landscape in only a few short years. Dedicated mineral railways transported coal from the new pits directly to the power stations on the River Trent, thereby creating railway new connections across the county.

The scale of mining operations on the concealed coalfield and the development of screening and washery equipment to process the coal at the pithead, led to the development of large spoilheaps around the new mines. With the eventual closure of the Nottinghamshire coal industry, this led first to the opencast mining and then to the extensive landscaping of many of the spoilheaps. With the sale of the NCB's housing stock in the late 1980s, the former pit villages gradually became less homogenous and eventually developed into commuter villages for Nottingham and the surrounding districts.

15 ASSESSMENT OF THE HERITAGE ASSETS

15.1 Survival and condition

Table 6. Heritage asset survival and condition by study area

	Strelley	Selston	Eastwood	Hucknall	Clipstone	Edwinstowe	Total
Survival							
gone	15	23	15	7	9	2	71
uncertain		5					5
surviving	9	7	17	12	18	9	72
Condition							
mixed	1	1				1	3
bad	1						1
bad/poor							0
poor		2	2		2	1	7
poor/fair					1	2	3
fair				4	1	1	6
fair/good			1		2		3
good	7	4	14	8	12	4	49
							0
Trend							0
improving				1			1
stable	8	5	15	11	13	5	57
declining	1		1		2	3	7
mixed			1		3	1	5
uncertain		2					2

Table 6 summarises the survival, condition and trends in condition of heritage assets in each of the study areas. There is significant variation in the levels of loss and survival of heritage assets between the different study areas. In part, this is related to the age of the heritage assets. Less than half of the earlier coal industry heritage assets in Strelley and Selston survive, while the opposite is true for the later assets in Clipstone and Edwinstowe. Eastwood and Hucknall lie between these extremes.

Where heritage assets do survive, they are generally in good condition, although Edwinstowe has a number of assets that are in poor or fair condition. The figures are somewhat simplified and potentially misleading, as the housing in Clipstone and Edwinstowe/Thoresby make up the majority of the village, but have by necessity been assessed as a whole, rather than as hundreds of individual houses.

With regard to trends in change of condition, most assets are stable. A few are declining, however; while Edwinstowe/Thoresby again appears to be slightly worse, the same caveat regarding housing should be borne in mind.

15.2 Significance and importance

The significance and importance of the coal industry to the development of the economy and character of Nottinghamshire is clear. The assessment of significance is a process that considers the interaction of different values. The values used in this case are those set out in Historic England's 'Conservation Principles, Policies and Guidance' (HE 2008). The following categories of historical significance were considered:

- Evidential value (the potential of a place to yield evidence about past human activity);
- Historical value (the ways in which past people, events and aspects of life can be connected to a place to the present; this can be illustrative or associative);
- Communal value (the meaning of a place for people who relate to it; this can be commemorative, symbolic or social);
- Aesthetic value (ways in which people draw sensory and intellectual stimulation from a place).

In this study, consideration was given to a range of factors including:

- the context and associations of heritage assets to the coal industry and its landscape context;
- the survival of original features and appearance of surviving heritage assets;
- the condition of heritage assets;
- the possibility for the survival of buried remains of demolished structures;
- the landscape visibility of lost heritage assets, such as tramways; and
- historical associations.

As identified in Table 7, heritage assets were assigned one of five significance levels. Where insufficient information was available, the significance of a heritage asset could be assessed as unknown.

For heritage assets that could not be visited or were unidentifiable, the assessment of significance is based on the available documentary and/or cartographic sources, consideration of the potential for buried archaeological remains to be present and the surviving visibility of the route of lost linear features.

Table 8, below, shows Nottinghamshire's nationally-designated colliery assets. The significance of individual heritage assets is provided in the gazetteer (**Appendix 2**).

Table 7. Criteria for assessing significance of heritage assets

Significance	Heritage Asset (examples)	Note
Very High	World Heritage Sites (including nominated sites). Assets of acknowledged international importance. Assets that can contribute significantly to acknowledged international research objectives. Scheduled Monuments (including proposed). Undesignated assets of schedulable quality and importance. Grade I and II* Listed Buildings, Parks & Gardens Other substantial or very legible historic landscapes of note	Substantial harm to, or loss of, these assets should be wholly exceptional Any harm or loss to a heritage assets requires clear and convincing justification (NPPF para 132 & 152)
High	Assets that can contribute significantly to acknowledged national research objectives. Conservation Areas Undesignated assets of clear regional or national importance Grade II Listed Buildings, Parks & Gardens Other legible historic landscapes	Substantial harm to, or loss of, these assets should be exceptional (NPPF para 132) Any harm or loss to a heritage assets requires clear and convincing justification (NPPF para 132 &152)
Medium	Undesignated assets that contribute to regional research objectives Locally Listed buildings Legible historic landscapes	Any harm or loss to a heritage assets requires clear and convincing justification (NPPF para 132 &152)
Low	Undesignated Assets of limited value, but with potential to contribute to local research objectives. Assets compromised by poor preservation and/or poor survival of contextual associations. Historic (unlisted) buildings of modest quality in their fabric or historical association. Fragmented historic landscapes	Any harm or loss to a heritage assets requires clear and convincing justification (NPPF para 132 &152)
Negligible	Assets with very little or no surviving archaeological/heritage interest Buildings of no architectural or historical note Buildings of an intrusive character Areas of known ground disturbance	

Significance	Heritage Asset (examples)	Note
Unknown	The importance of the resource (below ground deposits, landscape, setting or historic building) has not been ascertained.	Field evaluation may be required to evaluate potential buried assets (NPPF para 128)

15.2.1 Early mining remains Strelley and Selston

The potential evidential and historical value of the early mining remains in Strelley and Selston appears high on first consideration, although their communal and aesthetic values are lower due to the number that have been lost over the years (Table 6). Additionally, while many assets have been demolished, buried remains may survive in many cases.

Industry assets include a number of early mining sites, including bell pits, although above-ground remains are absent in almost all cases. A small number of early mining sites have surface mounds that could be the remains of spoilheaps. While the nature, extent and condition of any surviving below-ground remains is currently unknown, these sites would have potential evidential and historical value if buried remains do survive.

One of the most important groups of heritage assets in Strelley and Selston are transport features, particularly canals and tramways/waggonways. Although overgrown and abandoned in some cases, substantial remnants of the canal system survive; these are significant features in the coalfield landscape. The remains of the tramways are less obvious in the landscape as the rails have all been removed. In many cases, the former routes survive as paths or roads, while in other cases they can be identified from property boundaries and aerial photographs. Colliery waggonways were fundamental to the development of the coal industry as they enabled large-scale transport of coal which greatly aided the profitability, and therefore facilitated the expansion, of the industry. While few physical remains of these features survive, their footprint is still discernible in the landscape. Many of the routes have been made accessible, for example at Selston, where a heritage trail is based around the courses of the areas former tramways. These features thus have evidential and historical value, while their communal and aesthetic value can be enhanced through the use of interpretive material.

15.2.2 Eastwood and Hucknall

Eastwood and Hucknall were villages that expanded to towns as the coal industry developed. Both areas have a greater range and number of heritage assets than the early mining areas at Strelley and Selston, and a greater proportion of these survive (Table 6).

The significance of heritage assets relating to coal extraction is similar to those in Strelley and Selston. The surface structures of former mines have been cleared but in many cases there is the potential for buried remains to survive. These heritage assets therefore have evidential and historic value, assuming buried remains survive, but limited communal and aesthetic value.

15.2.3 Late mining remains, Clipstone and Thoresby/Edwinstowe

The significance of the heritage assets in the later planned pit villages of Clipstone and Edwinstowe is heavily influenced by their group value. The overall plan and layout of these villages and their range of housing and community facilities is a key element of their significance.

The surviving industrial heritage assets at Clipstone, the headstocks and powerhouse, are of high significance despite the loss of the colliery buildings with which they were formerly associated.

At Thoresby, the site's current redevelopment has made it difficult to assess the significance of the colliery heritage assets.

The coal-related transport heritage assets are the former mineral railways. Those at Clipstone have been removed, although the routes can be traced in some cases. Due to their limited communal and aesthetic value, these are of low significance. At Thoresby, more of the mineral railway network survives infrastructure survives, such as the rails themselves. Consequently, these currently have greater significance as heritage assets.

Within the villages, the housing has generally survived in good condition and their significance is high as a group ,although individual houses are of less significance. Community facilities in both Clipstone and Edwinstowe have survived less well, with chapels, miners' institutes and recreational facilities lost as the demographic of these villages has changed during and since the decline and closure of the coal industry. Although these heritage assets are mostly of medium significance in their own right, in their context as components of the planned villages they are part of the whole and contribute to the overall heritage significance of the villages.

Table 8. Designated colliery assets in Nottinghamshire

Pit	Scheduled Monument	Listed Buildings	Conservation Area	Condition
Annesley Conservation Area	No	No	https://www.ashfield.gov.uk/media/2204/map_of_annesley_conservation_area.pdf	Colliery Buildings - Demolished post-designation as conservation area Model village – Good - extant and occupied
Coal mining remains at Broad Oak Farm, Strelley	https://historicengland.org.uk/listing/the-list/list-entry/1017654	No	https://www.broxtowe.gov.uk/media/1945/strelley-con-area-1996-1997.pdf	Good - under grass
Headstocks & powerhouse at site of former Clipstone Colliery	No	https://historicengland.org.uk/listing/the-list/list-entry/1380235	No	Deteriorating - unoccupied
Bestwood Colliery engine house & winding house & headstocks at Bestwood Colliery	https://historicengland.org.uk/listing/the-list/list-entry/1017653	https://historicengland.org.uk/listing/the-list/list-entry/1235186	https://www.gedling.gov.uk/media/gedlingboroughcouncil/documents/planningpolicy/conservationareas/Bestwood%20Conservation%20Area%20Appraisal%202005%20with%20maps.pdf	Good - in care of County Council http://www.nottinghamshire.gov.uk/planning-and-environment/country-parks/bestwood/bestwood-winding-engine-house

16 VULNERABILITY AND RISK

The vulnerability of a heritage asset is related to its perceived significance and the processes by which its significance can be lost. Risk is an assessment of the potential magnitude of any loss of significance and the likelihood of it occurring. It is through an assessment of these concepts that consideration is given to a heritage asset when assigning statutory protection or in planning considerations.

Vulnerability is therefore based on perceived significance, while risk is the potential impact of external forces that can impact on the significance of a heritage asset.

16.1 Risks through context and perception

A factor to consider is the potential impact of statutory protection, scheduling or listing, and the designation of conservation areas on public perceptions of significance and the protection afforded to heritage assets through the planning process. The very act of designating a heritage assets can lead to an increase in perceived significance, while undesignated assets can be perceived as lacking any significance.

The Monuments Protection Programme Step 1 report on the coal industry (Gould and Cranstone 1992) identified six aspects of the industry of national or international importance:

1. Early mining landscapes
2. Surviving underground features threatened by opencast mining
3. 19th-century mining complexes and important individual components
4. Large 20th-century sites
5. Coking ovens
6. 19th- and 20th-century mining landscapes, including spoilheaps, subsidence features, colliery housing, municipal structures and railways

The report noted that for aspect 6., 'Many of these features lie beyond the scope of this report' (Gould, and Cranstone 1992, 35). The separation of the mines and industrial remains from the transport and settlement features in the wider coalfield landscape can lead to under-appreciation of the historic and landscape context of heritage asset. In addition, consideration of individual assets in isolation can lead to a lack of regard for the landscape of the coalfield as a whole and a lack of appreciation of the integrated and interdependent nature of heritage assets within the coalfield landscape.

In order to counteract these problems, there is a need to understand the landscape context of the remains of the coal industry and to recognise the significance of the industry in shaping the physical and social landscape of the former coalfield. Additionally, awareness of the value of physical remains will lead to active management which, at the local level, can lead to local listing or the promotion of heritage assets, perhaps with the formation of 'friends' groups for particular features.

Impacts based on context and perception can be highly significant, as they can determine how potential physical impacts are considered and assessed.

16.2 Risks from neglect

Neglect, which can lead to long-term decay and loss, comes about through a lack of interest and understanding of the significance of heritage assets. This is related to public and expert perceptions and appreciation of the importance of the coal industry, or the lack thereof, in shaping the physical and social landscape of the former coalfield. If coal industry assets are perceived as being of low significance, this can lead to the surviving remains being neglected and allowed to decay.

The apparent ubiquity of some types of physical remains can, due to a failure of regard, lead to them not being adequately considered within the context of the whole coalfield. However, as this study has identified the remains of coal industry heritage, while spread over a wide area, varies across the landscape. The variation in the type of heritage asset present in different areas is related to developing technology, the scale of the industry and its expansion across the county. It is therefore unwise to assume that all of the coalfield landscape will have the same heritage. In addition, perceptions of ubiquity can lead to a loss through an attrition on individual heritage assets resulting in the cumulative loss of such a category of asset. Significance can be related to rarity and cumulative loss should lead to the reassessment of surviving heritage assets which may have gained greater significance. However, this can only be appreciated if the wider landscape and the distribution and survival of heritage assets is considered.

One aspect of neglect is that decay is slow and cumulative and, despite the best efforts of those attempting to counteract the problem, the 'more urgent' needs of heritage assets under active threat will invariably take priority. This can result in considerable degradation of a heritage asset or even its total loss, as it is slowly degraded and destroyed through neglect.

An example of the problems of neglect is the current condition of the Clipstone headstocks and power house. This is a listed building but is currently in a poor condition, with smashed windows and vegetation growth, while plans for its future use are under consideration. In this case, the problem is increased through diverging opinions within the village regarding whether this heritage asset should be preserved at all.

16.3 Risks from development

Risks from development relate to the potential impacts that redevelopment and construction can have on the preservation and setting of heritage assets. Potential development impacts are mitigated through the planning process. Here, perceived significance is highly important as it is the combination of heritage professionals, planners, local planning committees and public opinion that will determine how a potential heritage asset is viewed and what conservation action is taken. In assessing development proposals and their potential impact on both individual heritage assets and the wider historic environment, planning authorities must give consideration to the economic and social desirability of a development and the potential impact on heritage as part of wider environmental considerations.

Development impacts tend to lead to rapid change, either through the loss of a heritage asset or change to the setting of individual heritage assets or the wider historic environment. The perceived significance of heritage assets and the wider historic environment is therefore crucial in enabling consideration to be given to heritage in planning decisions. In former mining areas, where large numbers of jobs were lost with the closure of the mines, a desire for new jobs and

investment can lead to coal industry remains being swept away in the desire for redevelopment. While there cannot be a desire to preserve the heritage and communities of the of the mining industry in aspic, considered development can respect the heritage of the industry while enabling and even aiding new developments. The phrase 'heritage-led redevelopment' covers a multitude of different meanings but, at is best, means that heritage and historic buildings can be used to promote and enhance new developments, incorporating existing heritage assets with new construction in a sympathetic and positive way.

Development impact can therefore be positive. Developments that incorporate surviving heritage assets can consolidate and preserve an otherwise decaying building and put them to new uses. Development can also fund recording and research on heritage assets that are not deemed to be worthy of physical preservation.

Differing community perceptions of the heritage of the coal industry (Section 15.2) can include a desire to celebrate a past identity or, conversely, to move on from that past. These can both impact on how heritage is viewed and considered in the planning process.

A further complicating factor is that, as the population changes in former mining areas, people move out and others move in and there are increasingly fewer locals who feel a connection to the industry and identify with the traditional mining communities. This can have several consequences: a loss of local knowledge; a loss of identification with the industry; reduced use of industry related assets, such as miners' institutes; and a growing perception in the community at large that the heritage of the coal mining industry does not relate to them.

In the past, the situation with regard to the preservation or recording of coal industry heritage assets has been problematic. Many colliery sites were rapidly cleared for redevelopment on closure of the colliery. This has removed much of the industrial remains of the industry and its transport connections. In many cases, only limited recording was made of the industrial heritage before its removal. Little historic building recording and few archaeological surveys were undertaken prior to colliery sites being landscaped and reclaimed. For settlement-related heritage assets, less was lost as the mines closed. These are now coming under increasing threat, however, as demographic changes and economic priorities place community assets under increased pressure.

If, in future, the preservation and re-use of the coal industry's surviving heritage assets is to be improved, this will in part be dependent on raising public awareness of their value as heritage assets and their significance to the historic landscape of the former coal mining areas.

16.4 Management recommendations in view of vulnerabilities

The vulnerabilities of the heritage assets and landscape heritage of the coal industry, as outlined above, have implications for the management of the surviving remains of the industry. As noted above, with regard to vulnerability and risk, perceptions of significance are major factors in determining management approaches and decisions. The interrelated nature of the coal industry heritage assets and the influence of this interrelation on significance means that approaches to their management must consider the context and relationship of heritage assets in making management decisions. This is particularly so for planned pit villages where the interrelation of all of the heritage assets in the villages are fundamental to their significance.

With regard to the coal industry in Nottinghamshire, the main heritage assets include large numbers of standing buildings, the routes and remains of former transport infrastructure, and demolished sites with archaeological potential. It should be noted that management of coal industry assets does not mean preserving the surviving remains in aspic, but finding ways to conserve, enhance and use those remains, particularly the standing buildings.

Based on the knowledge gained in this study, it is suggested that the following points should be considered when making management decisions regarding the heritage of the coal industry:

General principles

- In order to ensure that the heritage of the coal industry is considered and managed over the long term, it is essential that local communities are engaged with the heritage of the industry.
- Archaeological recording has taken place on some colliery remains prior to their demolition. This can provide a valuable record of the physical remains of the industry and enable analysis of the structures and their development. Archaeological recording can, however, fail to engage the public. At Thoresby Colliery, a photographic study with an exhibition and a book was undertaken by Chris Upton (2015). This provides a record and impression of the last colliery in Nottinghamshire and its miners. Projects such as this can often better engage the public, as they have a more obviously human component. If the public is to engage with the remains and significance of the coal industry to the history of Nottinghamshire, recording of such remains should draw on the knowledge and memories of those who once worked and lived in mining communities.
- The significance of the industry's remains is often related to the interrelation of those remains. Protection, where desired, should therefore look to conserve and enhance groups of heritage assets, rather than individual assets. Here, the use of conservation areas could be appropriate. Possible conservation areas could be based on designed villages or complexes of transport feature routes.

Industrial structures/mines

- The rarity of survival of large modern colliery structures means that any surviving heritage assets are of potential significance and could be considered for preservation. This should be undertaken with the aim of preserving a representative sample of extraction industry buildings and structures.
- One of the major problems with preserving the remains of collieries is the limited range of uses to which former pitheads can be put. Where possible, consideration should therefore be given to preserving pithead remains as part of larger redevelopments which maximise the potential re-use of pithead buildings and structures.
- There are virtually no upstanding early mining remains, although there are hundreds of early extraction sites. Despite this, the technology of the early coal industry, dating back to the medieval period, is poorly understood and often based on supposition. Opportunities should be taken to enhance knowledge of the early coal mining industry.

Transport networks

- With the exception of canals, the transport infrastructure of the early coal industry has largely been removed. In many cases, however, former tramway routes can still be traced in the landscape and these features can be presented to the public through the use of heritage trails as has been undertaken with the *Portland Path Heritage Trail.* This is an excellent example of the way in which the mining heritage of an area, and the ephemeral survival of mining assets such as tramways, can be associated with features in the landscape and presented to the public in an informative manner.
- The transport features of the later coal mining industry were mainly railways. These have also largely been removed, although some elements have been incorporated into the modern rail network. As with the earlier tramways, some routes survive or can be traced in the landscape.
- Where former tramway and railway routes survive, these could be used as the basis for paths or cycleways. This would preserve and maintain an element of these heritage assets, while providing recreation facilities for the local communities. The development of such routes would require consideration of potential usage and maintenance costs.

Settlement

- Heritage assets relating to settlement and housing, particularly planned villages, are the most visible of the surviving heritage assets relating to the coal industry. Settlement remains therefore provide the best opportunity to engage the local community with coal industry heritage.
- The impact of the early industry on settlement was mainly through the construction of workers' housing, typically in small developments. The conservation of such assets can be considered on the basis of their individual merits as workers' housing. Some of the best examples of this type of housing are already nationally listed and the development of, or addition to, local lists could aid in enhancing the public perception of other such heritage assets, thereby promoting their conservation and understanding.
- The development of planned pit village in the later period requires an approach that considers these settlements as a whole, as the housing, community facilities and village layout, including the open spaces, were originally conceived as a whole. Currently, community facilities that are no longer used due to changes in the local populations are under specific threat. As these villages continue to grow and develop, the conservation of the planned village concept should be a key consideration in managing the future growth of these villages. Re-use of former community buildings and preservation of the village plan, including open spaces, is therefore desirable in future developments. Any developments that preserve and re-use buildings must be viable in the long term for the successful preservation and promotion of the industry's heritage.

Managed sites

- A relatively small number of managed sites preserve the heritage of the coal industry, for example, Bestwood Winding Engine in Bestwood Country Park and Pleasley Colliery in Pleasley Pit Country Park. While their locations in larger parks is likely to aid them in

attracting visitors, these sites demonstrate that the management and presentation of coal industry heritage assets can be achieved successfully.

- The development of further managed sites will be dependent on the development of projects that have both the potential to attract visitors and have viable long-term plans. Any such future developments should aim to complement existing sites and promote the heritage of the coal industry.

17 ASSESSMENT OF RESEARCH THEMES

The research potential of the material assessed in the archives and databases was reviewed as part of the scoping report. This has been updated, based on the additional work undertaken and the more in-depth investigation of the study areas.

The assessment of research potential of research themes is based on studies undertaken as part of this project. This includes studies of local archives, assessment of the physical remains in the six study areas and a review of published sources. Material for themes and topics found to have only limited information may exist elsewhere.

Table 9, below, summarises the research potential for coal industry heritage, considering both the physical remains and documentary sources identified in this study.

Table 9. Research themes and research potential (from sources investigated in the study)

Theme	Topic	Research potential	Notes
Industry	mines	high	limited upstanding physical remains extensive possible buried remains extensive documentary resources for 19th century onwards
	waste	moderate	moderate upstanding remains extensive landscaped remains moderate documentary evidence on their development
	secondary coal products	moderate	no upstanding remains in study areas limited possible buried remains in the study areas moderate documentary evidence
	power production	moderate	upstanding remains outside study areas limited potential for excavation of buried remains moderate documentary evidence
	related industries	low	no known assets in the study areas limited documentary evidence
Transport	development of transport networks	high	moderate surviving remains routes survive in the landscape potential for buried remains extensive documentary evidence particularly for later periods
	roads	low	limited documentary evidence
	canals	moderate/high	moderate surviving remains potential for buried remains variable moderate/high documentary

			evidence
	tramways	moderate/high	limited surviving remains although routes traceable in landscape potential for buried remains variable moderate/high documentary evidence
	railways	high	limited surviving remains, although routes traceable in landscape potential for buried remains high documentary evidence
Settlement	settlement patterns	high	physical evidence in the current distribution of towns is high documentary evidence for the development of settlement patterns is variable and is generally better for later periods
	planned pit villages	high	extensive physical remains of planned settlements extensive documentary evidence for planned settlements
	housing	high	for company housing extensive physical remains extensive documentary remains
	community and public buildings	high	moderate physical remains extensive documentary remains
	recreational facilities l	high	moderate physical remains extensive documentary remains
	owners' houses	moderate	moderate physical remains, some lost or repurposed moderate documentary remains (as private houses, many documents relating to these assets have not been deposited with company archives, although such documents may exist elsewhere)
Economic	the role of landowners	high	good documentary evidence on early leases and the relationship of landowners with private coal companies
	the rise of entrepreneurial capitalism	moderate	moderate documentary material on the formation and development of private coal companies; more material may be located elsewhere
	company villages and social control of communities	moderate	extensive physical remains of villages, house-types, layout few explicit documented examples

	company tokens and shops	low	no physical remains little documentary evidence
relationship to the wider world	relationship to farming and other industries, food supply, land use	moderate	documentary evidence as to the views of existing farming communities when planned pit villages were built
Landscape and society	how do local people perceive the Nottinghamshire coalfield as a lived and worked environment	variable low/moderate	there is little documented evidences for the views of local miners and their families, although some diaries do exist artistic expression relating to the coal industry dominated by Lawrence, but others do exist.

With regard to the potential for further research, aspects of this project would address research objectives in a number of research agendas and strategies.

For the *Updated East Midlands Research Agenda and Strategy for the Historic Environment* (Knight, Vyner and Allen 2012), further research would relate to the following aspects of research objectives:

8F Research the development of the industry of the East Midlands and its impact upon landscapes and settlement morphology;
9A Assess urban building types of the early 20th century;
9B Before the grid: examine the early development of utilities;
9C Investigate the development of social and religious building types;
9D Investigate the use of rivers for transport and power and their relationship to other communication networks;
9G Assess the landscape impact of the early industrialisation of agriculture.

Within these objectives, research would primarily relate to research agenda topics:

8.1 Urbanism, morphology, functions and buildings
8.4 Rural settlement patterns and building traditions
8.5 Industry and communications

The post-medieval and modern section of the archaeological research agenda and strategy within *Aggregates and Archaeology in Nottinghamshire* (Knight and Spence 2013) includes agenda topics:

8.4 How did industrialisation and transport developments impact upon the rural landscape (e.g. coal-mining, lime-burning, quarrying, railways/canals)?

In addition, further work on the Nottinghamshire coalfields would address themes within the *Thematic Research Strategy for the Historic Industrial Environment* (2010). Aspects of this project relate to all of the themes within the Research Strategy but would be particularly relevant to the following themes:

3.3 Industrial Landscapes;

3.4 Transport systems, communications and public utilities;

3.5 Understanding Industrial sites and buildings;

3.6 Achieving a better public understanding of the resource and the enhancement of HERs and other databases.

For *The Archaeology of Mining and Quarrying in England : A Research Framework* (Newman et al 2016) the heritage of the Nottinghamshire coal industry can contribute to Research Aims 39 and 40.

Research Aim 39: Improve our knowledge of the chronology, extractive techniques and social impact of the coal industry from the Roman period to the 20th century.

a. More archaeological research, focussed onto England's historic coal industry, needs to be encouraged. Although coal is one of the most important material elements in the history of the industrialisation of Britain, the coal industry lies outside the scope of many within the archaeological establishment, especially among the professional research community. The archaeological legacy of the coal industry of all periods needs to receive due consideration within the planning process, rather than being perceived as derelict industrial land, and should command a level of investigation and evaluation equal to other cultural remains before planning decisions, which may allow evidence to be destroyed, are taken. Without adequate research, there is a strong risk that the significance of coal related field remains will be overlooked. All types of coal mining remains require investigation and conservation, not just those with iconic features such as headgear.

b. Many general and regional historical accounts of British coal mining have stressed the social and economic sides of the industry, with emphasis on mining over the last 100 years or so. From an archaeological perspective, in order to better interpret today's physical remains of coal mining, more research is needed on the techniques and equipment used during all periods.

c. Archaeology has barely begun to address the origins of the early coal industry in England. Although archaeologists are confident that coal was being burned in the Roman period, the source and extraction sites of this period, and those of the Dark Ages, are as yet unknown. Similarly, little is known of the archaeological footprint resulting from medieval coal mining. There is potential for all English coalfields (except Kent) to have been worked from the earliest period that this fuel was exploited and the evidence needs to be sought.

Research Aim 40: Increase our knowledge of the various technological and chronological differences between coal extraction methods over the entire temporal range of the industry in Britain.

a. The term 'bell pit' is used, often erroneously, to describe shallow pits workings for coal, and sometimes for iron and non-ferrous metal mining, based only on the morphology of surface evidence. However, it is certain that while bell pits do exist, underground methods varied depending on the nature and depth of the deposit. Very little archaeological exploration of shallow coal workings has been undertaken to establish the true underground nature, origins and techniques used in late- and post-medieval coal workings in England. As a first step in investigating these, sites with potential to answer questions about early production including outcrop workings and pit works, need to be identified. Following this, a methodology for investigating below ground evidence safely needs to be considered, perhaps in the context of

modern opencast reworking (*see* RA 40g). There is also potential to identify regional variation in coal working techniques, based on such factors as geology, topography, date and tradition.

b. Comparison and analyses are necessary at 'early' coal workings, which were worked from multiple shafts, and those being opened and abandoned as work migrated following the seam, also later mining that was undertaken via a small number of deeper shafts and/or inclined drifts. Chronological understanding of these ways of working needs to be refined, both generally, from a regional perspective, and according to the scale and financing of specific collieries.

c. The discovery of several hundred artefacts from archaeologically dated contexts in the Lounge Opencast Site at Coleorton in Leicestershire provides an opportunity to establish a typological sequence of tools and structural timbers from Medieval and Post-Medieval coal mines in Britain. A study of this material would be the first based on the artefactual record, rather than the occasionally misleading evidence of early documents and illustrations, and would greatly increase the extent of our knowledge of coal mining in the period concerned. Similar opportunities should be sough whenever new opencasts are undertaken (*see* RA 40g).

d. Surface features are often better preserved at mines on the peripheries of, or even beyond, the main coalfields (for example, on the Pennines and the North Yorkshire Moors), so a better understanding is needed of the scale and mode of extraction at such mines, in order to judge their relevance. Are these remains of relatively low importance because they represent merely small-scale extraction, or do they represent vital examples of early mining technology, which was universally employed before the extensive development of deeper mining techniques, particularly from the 18th to 19th century? Such an assessment will require a search for vestiges of early shallow mining remains in the main coalfields, as well as for other evidence of medieval and early post-medieval use of 'deep mining' techniques, such as long drifts and soughs, in places like the Pennine foothills.

e. More data is needed to explain better the underground techniques used in coal mines – pillar and stall, long-wall, bank work etc. Using the broad sense of the term, pillar and stall coal mining was extremely common at relatively shallow mines from at least medieval into the 19th century, but as yet we have very little understanding of the variations in character of this and the adoption of alternate extraction methods and the chronology of this change at individual collieries and regionally. With shallow mines there is potential for recovery of relevant archaeological data when old workings are intersected during modern operations (*see* RA 40g). However, in the case of deep mined coal, with so little documentary record of pre-19th-century coaling techniques, this aim could only be delivered through underground exploration, which currently is not possible, or examination of exposed sections during deeper opencast operations (*see also* RA 40g).

f. Deeper collieries that were abandoned in the 18th and 19th centuries, with more infrastructure than early shallow mines, were usually demolished at surface and their shafts capped, so little can be known of their appearance or extent. However, parts may sometimes survive as earthworks or below-ground remains. Investigation through a series of analytical techniques would help retrieve such surface detail. Geophysical, remote sensing and earthwork survey might reveal the sub-surface potential of such sites, while research excavations at selected or threatened sites would be very informative on a range of issues, including pumping, hoisting and ventilation technology, sources of power, coal washing and movement of materials.

g. More advantage needs to be taken of incidental discovery of underground coal working during modern episodes of opencasting or other forms of development, such as road building, where shallow to moderate depth underground workings are exposed. These occasions represent some of the only opportunities to examine underground coal working and to advance research; every opportunity needs to be taken to capitalise on them to the maximum extent. An awareness needs to be promoted within planning authorities and county HESs (*see* RA 01b) as to the importance of these opportunities, and ensure that an appropriate level of archaeological resources and expertise is written in to planning conditions as part of developer funding when these occasions arise. Cursory watching briefs by non-specialist archaeologists are inadequate.

h. Because so little has been published, there is a need for a review of all previous watching briefs, grey-literature reports and other archaeological recording within opencast sites. There is no certainty about gaps in knowledge and what types of feature are in need of recording in detail in the future. There is also a need for developers and archaeological contractors in their employ to be less secretive about the discovery and recording of underground remains and to make the results of this work more easily available. Recent planning reforms (2012) have increased the likelihood of new opencast coal pits being worked in the north of England in the near future. It is likely that many of these operations will cover less ground but will be deeper. It is a matter of some urgency that the historic environment sector engages in dialogue with the Coal Authority, local planners and companies such as UK Coal to discuss the issues of access to heritage assets, and to allow adequate time and resources to investigate properly and provide open publication of results.

i. There is a need for clarification, from historic sources, and by archaeological investigation, about the complex relationships between coal extraction and the working of other materials from the same mines, commonly including ganister, fire clay andiron ores (including pyrite/copperas).

18 CONCLUSIONS

This project has been undertaken to identify and assess the heritage of the coal industry in Nottinghamshire. This study has identified several key points essential to the understanding of the management and promotion of the heritage of the coal industry in Nottinghamshire:

- The coal industry in Nottinghamshire was a key factor in the economic development of the county.
- Landowners and entrepreneurial mine-owners had significant roles in the development and spread of the industry.
- Early mining starts in the medieval period and expands rapidly in the post-medieval period, with numerous small bell pits and mines on the exposed coalfield; coal mining then develops into large industrial complexes with the modern expansion onto the concealed coalfield.
- Technological developments were needed for the expansion of the industry and its eastward spread on to the concealed coalfield in modern times.
- The coal industry was fundamental to the development of settlement and transport infrastructure in mining areas.
- Coal industry-related heritage assets in settlements originated in occasional workers' housing, but over time these become more extensive and varied until planned pit villages with a range of community facilities were developed in the late 19th and early 20th centuries.

The following conclusions can be drawn regarding the surviving heritage assets:

- The types and numbers of coal industry-related heritage assets varies temporally and spatially across the county.
- Heritage assets relating to early coal industry extractive sites are mainly potential buried archaeological sites.
- Few extraction-related heritage assets from the later developed industry have survived; most have been removed to enable the redevelopment of former colliery sites.
- With the exception of canals, transport-related heritage assets have mostly been removed when mines have closed, although the routes of former tramways and railways can still be identified in the landscape and some have been re-used as paths and roads.
- Settlement-related heritage assets for the earlier post-medieval period are few and those that survive are mainly workers' housing or grand houses, new or rebuilt, of the land owners or mine-owners who made fortunes from of the coal industry.
- The most significant surviving coal industry heritage assets that survive from the modern period are planned pit villages, with housing and associated community facilities.
- As pit villages develop new identities and roles, such as commuter housing, in the 21st century the housing stock is preserved but the coal industry community assets that were integral to the original village plans are coming under increasing threat and are being lost.

19 BIBLIOGRAPHY

19.1 Published sources

Amos, D. 2000. *A Brief History of Annesley Colliery, 1865-2000*. Private publication.

Amos, D. 2012. The Nottinghamshire Miners, the Union of Democratic Mineworkers and the 1984-85 Miners' Strike: Scabs or Scapegoats? PhD thesis, University of Nottingham (http://eprints.nottingham.ac.uk/14091/1/575419.pdf)

Anon. 1986. *Coal: Hucknall's Future*. Nottinghamshire County Council.

Awbery, H.H. 1988. The Protection of the Nottinghamshire Coalfield by the Bentinck Colliery Minewater Concentration Scheme. *International Journal of Mine Water* 7:1, pp.9-24.

Bloom, H .1988. D.H. Lawrence's Sons and Lovers. Chelsea House Publishers: New York.

Bloomfield, B. 1986. How The Strike Failed at Bentinck. In Samuel, R., Bloomfield, B. and Boanas, G. (eds) *The Enemy Within: Pit Villages and the Miners' Strike of 1984-5*. Routledge: London.

Brown, D.M. 1987. Combined Tipping and Opencast Coal Scheme at Bentinck Colliery. In A.K.M. Rainbow (ed.) *Reclamation, Treatment and Utilisation of Coal Mining Wastes*. Elsevier Science Publishers: Amsterdam, pp.331-342.

Bond, G. C. 1924. The History of Early Coal- and Ironstone-mining in Nottinghamshire, and Other Notes on the Iron-making Industry. *Transactions of the Institution of Mining Engineers* 67, 222-239.

Carpenter, C. 1992. *Locality and Polity: A Study of Warwickshire Landed Society, 1401-1499*. Cambridge University Press: Cambridge.

Chapman, S. 2003. Muted Paternalism: the Barber Walker Company and its Collieries in West Nottinghamshire, 1700-1900. *Transactions of the Thoroton Society* 107, 163-180.

Cox, C. 1997. *Early Coal Mining in West Nottinghamshire: Evidence from Vertical Aerial Photographs*. Unpublished Air Photo Services Ltd report no.967/21.

Cox, C. 1998. *Early Coal Mining in West Nottinghamshire: Evidence from Vertical Aerial Photographs. Supplementary Report: Quarter Sheet SK46SE*. Unpublished Air Photo Services Ltd report no.9798/14.

Crisp, G. and New, J. 2005. The Course of a Tudor Coal Mine Drainage 'Sough' at Wollaton and Lenton, Nottinghamshire. *Transactions of the Thoroton Society,* 109 75-98.

Dalal, D.S. 2007. *D.H. Lawrence's Sons and Lovers: A Critique*. Ivy: New Delhi.

English Heritage. 2010. A Thematic Research Strategy for the Historic Industrial Environment.

Environmental Agency. 2014. *Inventory of Closed Mining Waste Facilities*. Bristol: Environment Agency.

Fareham, J.C. 1996. *Clipstone Colliery Village 1922-1972*. Private publication.

Farey, J. 1811. *A General View of the Minerals of and Agriculture of Derbyshire*. Volume I. McMIllan: London.

Farey, J. 1817. *A General View of the Minerals of and Agriculture of Derbyshire*. Volume III. McMIllan: London.

Forbes, R.J. 1966. *Studies in Ancient Technology*. Vol.VI. E.J. Brill: Leiden.

Foster, J. 1994. 'Thatcher's Miners Face Final Defeat.' *The Independent*, Saturday 14th October, p.1.

Franks, A. 2000. *Nottinghamshire Collieries in Old Picture Postcards*. Yesterday Nottinghamshire Series no.29. Keyworth: Nottingham.

Fyfe, W. 1856. *Rambles Round Nottingham*. Vol.I. Simpkin Marshall and Co.: London.

Gill.P. 2012. Nottingham Mining.
http://www.petergill7.co.uk/pieces/lawrence/nottingham.shtml

Gould, S. and Ayris, I. 1995. Colliery Landscapes. London: English Heritage.

Gould, S.. and Cranstone, D. 1992. Monuments Protection Programme: The Coal Industry Step 1 Report.

Gray, A. 2008. *Sherwood Forest and the Dukeries*. Chichester: Phillimore.

Green, H. 1935. The Nottinghamshire and Derbyshire Coalfield Before 1850. *Journal of the Derbyshire Archaeological and Natural History Society* 56, 44-60.

Green, H. 1935. The Southern Portion of the Nottinghamshire and Derbyshire Coalfield and the Development of Transport Before 1850. *Journal of the Derbyshire Archaeological and Natural History Society* 56, 61-70.

Griffin, A.R. 1971. *Mining in the East Midlands 1150-1947*. London: Frank Cass and Co.

Griffin, A. R. 1981. *The Nottinghamshire Coalfield, 1881-1981: A Century of Progress. A Pictorial History of the Nottinghamshire Coalfield to Commemorate the Centenary of the Nottinghamshire Miners' Association, 1881-1981.* Ashbourne: Moorland.

Griffin, A.R. and Griffin, C.P. 1982. 'A Social and Economic History of Eastwood and the Nottimghamshire Mining Country'. In K. Sagar (ed.) *A D.H. Lawrence Handbook*. Manchester University Press: Manchester, 127-143.

Instone, E. and Cranstone, D. 1994. Monuments Protection Programme: The Coal Industry Step 3. English Heritage.

Jukes, J.B. 1839. 'A Sketch of the Geology of Derbyshire'. *The Analyst* 9, pp.1-32.

Knight, D. Vyner, B. and Allen, C. 2012. *East Midlands Heritage: An Updated Research Agenda and Strategy for the Historic Environment of the East Midlands*. Nottingham: University of Nottingham and York Archaeological Trust.

Knight, D and Spence, U. 2013. Aggregates and Archaeology in Nottinghamshire. York: York Archaeological Trust.

Lawrence, D.H. 1970. *Sons and Lovers*. Penguin: Harmondsworth.

Lewis, C. 2006. The Medieval Period (850-1500). In Cooper, N.J. (ed.) *The Archaeology of the East Midlands*. Leicester Archaeology Monographs no.13. pp.185-216. Leicester: University of Leicester.

Marples, P. 2005. *Forest Town: The Village That Grew Out of Coal.* Forest Town Heritage Group.

Martin, A. 1980-1981. D.H. Lawrence's Eastwood. Unpublished Broxtowe Borough Council pamphlet (UON Not 125 F34).

Moore, R. 1995. *Community and Conflict in Eastwood*. University of Nottingham: Nottingham.

Newman, P. (ed.). 2016. *The Archaeology of Mining and Quarrying in England. A Research Framework for the Archaeology of the Extractive Industries in England*. NAMHO: Matlock Bath.

Norcliffe, A. 2003. The Development and Conservation of Planned Colliery Villages in the Nottinghamshire Coalfield. Unpublished MA dissertation. University of Leicester.

Nix, P. 2013. Huntingdon Beaumont's Strelley to Wollaton Waggonway. https://nottinghamhiddenhistoryteam.wordpress.com/2013/07/30/huntingdon-beaumonts-wollaton-to-strelley-waggonway/

Nef, J.U. 1966. *The Rise of the British Coal Industry*. Vols I and II. Frank Cass and Co.: London.

Page, W. (ed.). 1910. *Victoria County History: Nottinghamshire*. Vol. II. Constable and Co.: London.

Palmer, M. and Neaverson, P. 1992. *Industrial Landscapes of the East Midlands*. Chichester: Phillimore.

Patterson, M. 2012. *Roman Nottinghamshire*. Five Leaves Publications: Nottingham.

Patterson, H. 2014. *Look Back in Anger: The Miners Strike in Nottinghamshire, 30 Years On*. Five Leaves Publications: Nottingham.

Phillips, J. 1793. *A General History of Inland Navigation*. I. and J. Taylor: London.

Pope, M. 1995. *Music All Powerful: Eastwood Collieries' Male Voice Choir, 1920-1995*. Private publication.

Public Record Office. 1973. *Calendar of the Patent Rolls Preserved in the Public Office: Elizabeth I (1572-1575)*. H.M. Stationery Office: London.

RCHME. 1994. Images of Industry: Coal. Swindon: RCHME.

Sheail, J. 2002. *An Environmental History of 20th-Century Britain*. Palgrave: Basingstoke.

Smith, D. 1965. *Industrial Archaeology of the East Midlands*. Dawlish: David & Charles.

Smith, R. 1957. 'Huntingdon Beaumont, Adventurer in Coal Mines.' *Renaissance and Modern Studies* I, 115-151.

Smith, R.S. 1989. *Early Coal Mining Around Nottingham 1500-1650.* University of Nottingham: Nottingham.

Stevenson, W.H. (ed.). 1911. *Report on the Manuscripts of Lord Middleton*. London: HMSO.

Stroud, G. 1999. Nottinghamshire: Extensive Urban Survey, Archaeological Assessment – Hucknall. Unpublished English Heritage report.

Swinnerton, H.H. 1910. *Nottinghamshire*. Cambridge University Press: Cambridge.

Turner, C.J. n.d. *Houses, Houses, Houses – Hucknall from Hamlet to Town*. Hucknall heritage Society: Hucknall.

Upton, C. 2015. *Thoresby – The End of the Mine*. Chris Upton Photography.

Waller, R. J. 1980. Between Two Worlds: Contemporary Reactions to the Arrival of Mining in the Dukeries, 1913-1939. *Transactions of the Thoroton Society* 84, 73-80.

Waller, R. J. 1983. *The Dukeries Transformed. The Social and Political Development of a Twentieth-Century Coalfield.* Oxford: Clarendon.

Watson, W. 1811. *A Delineation of the Strata of Derbyshire*. W. Todd: Sheffield.

Weston, W. 1873-'74. On the Winning and Working of High Park Colliery, Notts. *Chesterfield and Derbyshire Institute of Mining, Civil and Mechanical Engineers. Transactions* 2, pp.96-106.

Willies, L. 1997. Derbyshire and Nottinghamshire Pits in 1842. *Mining History* 13:4, pp.55-73.

Winstanley, I. (ed.) 1998. *Children's Employment Commission 1842*. Picks Publishing: Wigan.

Woodhead, M. 2010. *Edwinstowe: The Coming of Coal.* Edwinstowe Historical Society: Edwinstowe.

Worthen. J. 1991. *D.H. Lawrence: The Early Years, 1885-1912*. Cambridge University Press: Cambridge.

Worthington, R. 2008. *Collieries, Canals, Tramways, Railways, Rivers and Revolution in the Selston District of the Nottinghmshire and Derbyshire Coalfield*. Ashridge Press: Bakewell.

19.2 Documents

1489-1490 coal pits operated at selston by beauvale priory (NA 157/DD/CD/13, 186)

1490 exchange of lands, including coal mine at Selston (NA DD/P/CD/13)

1490 grant of coals in Selston, Brynnsley and Brynnesley Asshe (NAK E326/81)

1515 indenture of land and coal mines in Selston (NAK E329/333)

1558 pleading regarding coal mines in Selston (NAK C3/145/41)

1571 lease of a coal mine in Selston (NA DD/LM/187/3/3)

1573 assignment of lease in coal mine at Selston (NA DD/LM/33/1/2)

1573 assignment of interest in coal mines at Selston (DD/LM/187/2/5)

1573-1753 manors of Beauvale and Selston (NA DDLM 208/2)

1583 load of coal as part of rental, Selston (NA DD 138/42)

1590-1619 misclellaneous correspondence regarding the transport of coal from Wollaton and Strelley to Nottingham and then by water to Hull and London (UON Mi X3/1-46)

1601-1611 correspondence of Sir Percival Willoughby re. Strelley and Wollaton pits (UON Mi X3/47-61)

1601-1611 Huntingdon Beaumont accounts for Strelley and Wollaton pits (UON Mi X3/62-80)

1616-1617 coal accounts for Strelley pits (UON Mi Ac 11)

1651 deposition re. felling of 24 oak trees in Strelley Park for use in mines (NA DDE 5/8)

1654 agreement to sink pit at Strelley (NA DDE 46/80)

1654 deposition regarding seizure of mine in Strelley Park (NA DDE 5/210)

1657-1659 coal accounts, Strelley (NA DDE 46/66)

1664 agreement to sink a hard coal pit in Strelley Park (NA DDE 46/80)

1670-1671 agreement to carry coal through Strelley Park (NA DDE 5/76)

1684 agreement to sink pit at Strelley (NA DDE 46/80)

c.1700 objections against colliery at Hucknall (NA DD3P 6/21)

1700 abstract of coal lease, Hucknall (NA DD3P 6/22)

1710 lease of a delph of coal at Hucknall Torkard (NA DD4P/21/20-21)

1732 aggreement for the construction of a road to carry coal from Chilwell Dams Farm (NA DD/E 46/68)

1738 lease of coal in Strelley and Bilborough, except pit under Gorsy Close (NA DDE 14/45)

1739 bill for the destruction of collieries, Selston (NA DDE 42/11)

1768 road to colliery, Kirkby in Ashfield (NA DDE 40/1)

1773 valutation of coal at Hucknall Torkard (NA DD4P 62/13/1-4)

1777 Half-yearly report on coal at Hucknall Torkard (NA DD4P 59/44)

1794 mineral surveyor's report on coal boring at Strelley (NA DDE 28/24)

1804 grant and annuity re. Brinsley Colliery (NA DD 1423/9)

1808-1811 deaths in coal pit at Selston (NA DDE 8/25)

n.d. account of Portland Row and cottages at pits in Selston (NA DD4P 70/64)

1816-1831 coal accounts, Strelley (NA DDE 30/6)

1833-1835 valuations of Dr. Manson'sColliery Eastwood (NA PK 5908/6-7)

1835 J.A. Twigg mineral survey and valuation of mines in Strelley(NA DDE 14/79)

1837 agreement to lease pit at Strelley (NA DDE 62/19)

1837 agreement re. road to colliery, Strelley (NA DDE 62/17)

1838 lease for coal mines at Strelley (NA DDE 14/81)

1851-1852 John Boot mining survey notebooks, Turkey Field Pit (NA DDE/28/30)

n.d. abstract of coal at Strelley and Bilborough (NA DDE/28/32)

1856 agreement for lease of land in Cossall for railway to Strelley (UON Mi 4E 121)

1864 notes relating to the getting of coal between Bramcote and Catsone Hill Field, Strelley (UON Mi 4E 124/14)

1871-1875 sale of glebe coal at Hucknall Torkard (NA DD1469/10-12)

1874 correspondence regarding coal under glebe land at Hucknall Torkard (NA DD4P 72/94-1-3)

1874-1876 correspondence relating to proposed Colliers' Hospital, Hill Top, Eastwod (NA DDLM/193/6/1-105)

1877-1896 correspondence regarding lease of Mexborough Colliery, Selston (NA DDLM 215/4)

c.1880s survey of the duke of Portland's coal at Hucknall (NA DD/P6/14/2/5)

1889-1892 Brinsley Colliery order book (NA SO/NCB/5/11-12)

1894-1897 correspondence regarding closure of mine at Selston (NA DDLM 214/6)

1894-1897 correspondence regarding closure of Mexborough Colliery, Selston (NA DDLM 214/6)

1935 New Hucknall Colliery Company report on Bentinck Colliery (NA NCB 1/125)

1943 New Hucknall Colliery Company report on Bentinck Colliery (NA NCB 1/125)

1944-1947 Hucknall Colliery Company reports (NA CATC 10/142/27)

1946 report and valuation of colliery properties, Hucknall (NA DD4P 59/44)

1965. H. Elliott. 'I remember…'. Unpublished Nottinghamshire Old People's Welfare Committee memoir (NA DD 306/13/1).

1966. A.E. Davies and W.R. Serjeant. Coal Mines at Strelley 1650-1850. Unpublished Nottinghamshire County Council Records Committee exhibition notes.

1967 Eastwood Hall sale catalogue (NA DDHA 1/4/8/204)

1967 Industrial Monuments Survey cards, Strelley (NA DD 262)

1977 NCB report on Thoresby Colliery (UON Not 129 046 NAT)

1984 NCB report on Thoresby Colliery (UON Not 129)

1985 NCB report on Clipstone Colliery (UON Not 88 046 NAT)

1980. Broxtowe Countryside Plan: Report of Survey. Unpublished Broxtowe Boroughh Council report

1996 Coalfield Community Landmarks. Unpublished Nottinghamshire County Council application to the Millenium Commission (UON Em L54 Coa)

2013. Davies, G.. The Physical Landscape Legacy: an Assessment of the Nottinghamshire Coalfields. Unpublished ArcHeritage project design.

2014. Davies, G., Stenton, M. and Smith, M. The Physical Landscape Legacy: an Assessment of the Nottinghamshire Coalfield. Unpublished ArcHeritage/Historic England report.

19.3 Historic maps and plans

n.d. map demonstrating the charges to set on a coal mine in the Hare Close, Strelley (NA DDE/46/67)

1736 John Mackay plan of the manor of Eastwood (NA EW 1R)

1739 Philip Hutchinson map of the Derbyshire and Nottimnghsamshire coalfields (NA XM 75)

1771 plan of Hucknall Torkard parish (NA HT 1L)

1776 J. Smith plan of the Erewash Canal (NA XC 75)

1802 plan of Mr. Walker's pit roads at Strelley (NA DDE 35/11)

1810 J. Green map of present and existing Coventry roads through Bilborough and Strelley (NA XH 3L)

1811/1879 plans of Selston Colliery (NA 1423/11-13)

1814 'rough plan' of Eastwood Hall (NA PR 15, 240)

1821 map of the duke of Portland's lands at Edwinstowe (NA ED 2L)

1824 Strelley enclosure map (NA SY 1L)

1838 plan for coal mines at Strelley (NA DDE 14/81)

1841 plan of coal workings and mines in Kirkby in Ashfield (NA MP/XM/1/S)

1845 plan of the parish of Selston (NA SE 1L)

1858 plan and index of coal mining in Strelley (NA DDE 14/90)

1864 sketch plan relating to the getting of coal between Bramcote and Catsone Hill Field, Strelley (UON Mi 4E 124/14)

1867 plan of Strelley Colliery (NA XM55)

1870-1871 plans of Eastwood Colliery (NA DD 999/1-3)

1874-1876 plans of proposed Colliers' Hospital, Hill Top, Eastwod (NA DDLM/193/6/1-105)

1877 John Boot plan of Strelley Colliery (NA XM2L)

1883 plan of the duke of Portland's land at Edwinstowe (NA ED 1L)

1891 plan of proposed water pipe from Mexborough Colliery to Codnor Iron Works (NA DDLM 215/5)

1913-1949 maps and plans of Edwinstowe (NA DC/SW 4/8/9/1-22; DC 4/9/3/R)

1923 plan of proposed water lodge and electricity distribution station, Clipstone (NA DC/SW/4/8/7/1)

1923-1949 maps and plans of Clipstone (NA DC/SW/4/8/7/1-8)

1948 plan of proposed miners' hostel, Kirkby in Ashfield (NA S/BX 462/1/1)

c.1950-1970 plan of Eastwood Hall (NA SO/NCB/17/10/42)

1952-1967 plans of Thoresby Colliery (NA SO/NCB/17/2/47)

1954 plan of Staythorpe B power station (NA DC/SW/4/2/7)

1960-1972 plans of Radcliffe on Soar power station (NA DC/BA/1/6/62)

c.1970 plan of Hucknall Colliery (NA DD/2261/3/2)

1993-1994 Robinetts opencast coal site (NA Pac 89/6/5)

19.4 Historic photographs

c.1913 Brinsley Colliery (NA SO/NCB/17/2/14)

c.1950-1960 Clipstone Colliery (NA SO/NCB/17/2/19)

c.1950-1960 Thoresby Colliery (NA SO/NCB/17/2/47)

c.1950-1960 Thoresby Colliery (NA SO/NCB/17/6/52)

c.1950-1970 Clipstone Colliery (NA SO/NCB/17/10/27)

1952-1963 Huicknall Colliery No.2 (NA SO/NCB/17/1/12)

1963 Clipstone Colliery (NA SO/NCB/17/2/19)

1973 reclamation of Thoresby Colliery south tip (NA CC/6/3/30/16)

The North East Midlands Photographic Record (Picture the Past)
http://www.picturethepast.org.uk/

19.5 Aerial photographs

1950-1970 Thoresby Colliery (NA SO/NCB/4/25)

1967-1987 Clipstone Colliery (NA SO/NCB/17/4/6)

Bing Maps

Britiain from Above

Google Earth

20 ACKNOWLEDGEMENTS

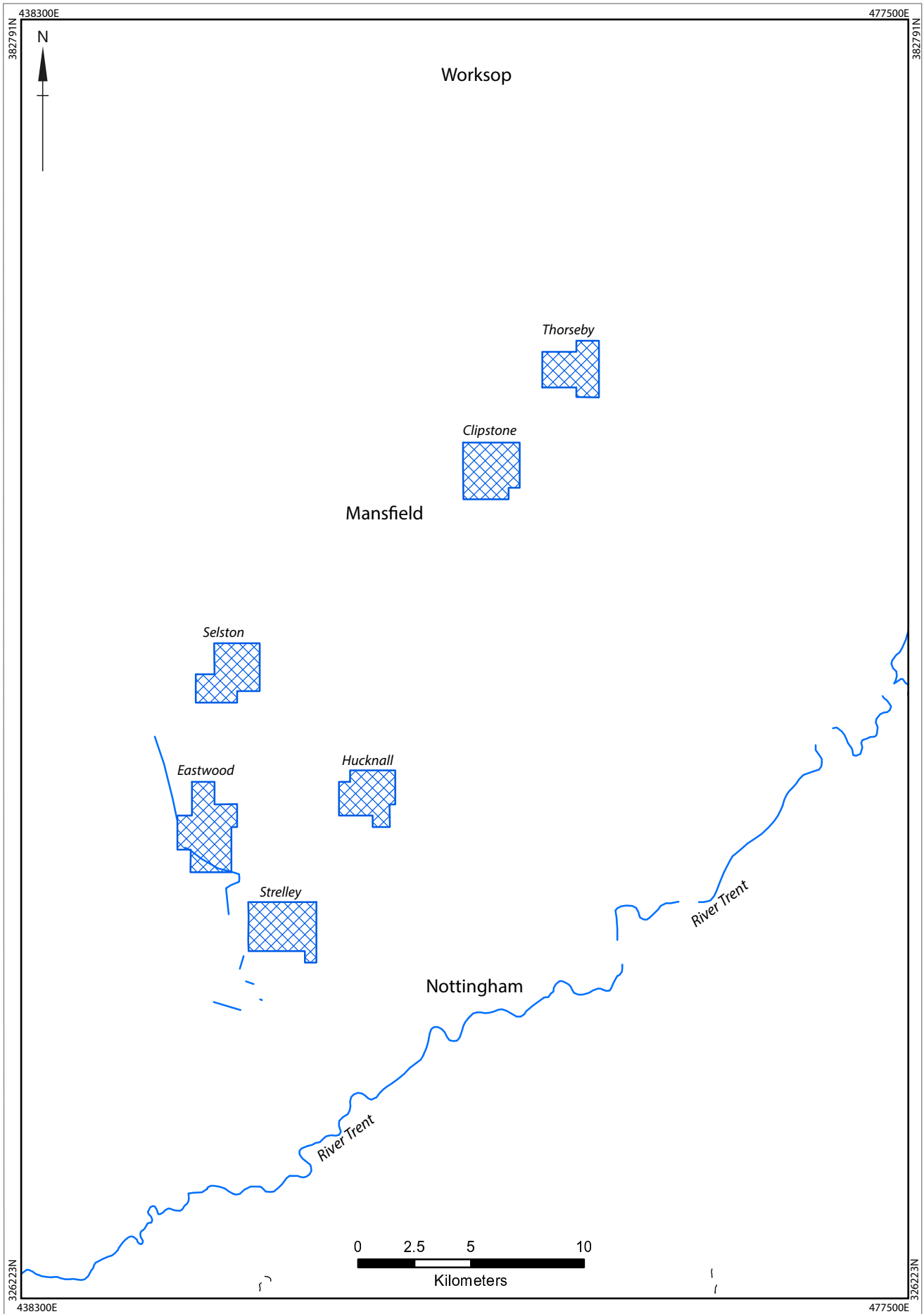
The research and drafting of the project report was undertaken by Glyn Davies, Mark Stenton, Jayne Rimmer and Christopher Atkinson.

The authors would like to thank Ursilla Spence and Virginia Baddeley of Nottinghamshire HER, Zoe Abbate of the Coal Authority; Debbie Crookes and Amy Bowler of the University of Nottingham; Derek Hair of Landscape & Reclamation at Nottinghamshire County Council; Anisha Chistison of the National Coal Mining Museum for England for assistance with data gathering and guidance through their collections.

The Project Assurance Officer for the project was Pete Wilson/Helen Keeley and the Steering Group for the project comprised Tim Allen of Historic England, Ursilla Spence and Jason Mordan of Nottinghamshire County Council and David Knight of Trent and Peak Archaeology in addition to the research team.

The report was commissioned and funded by Historic England.

FIGURES



ArcHeritage

Figure 1: Study area

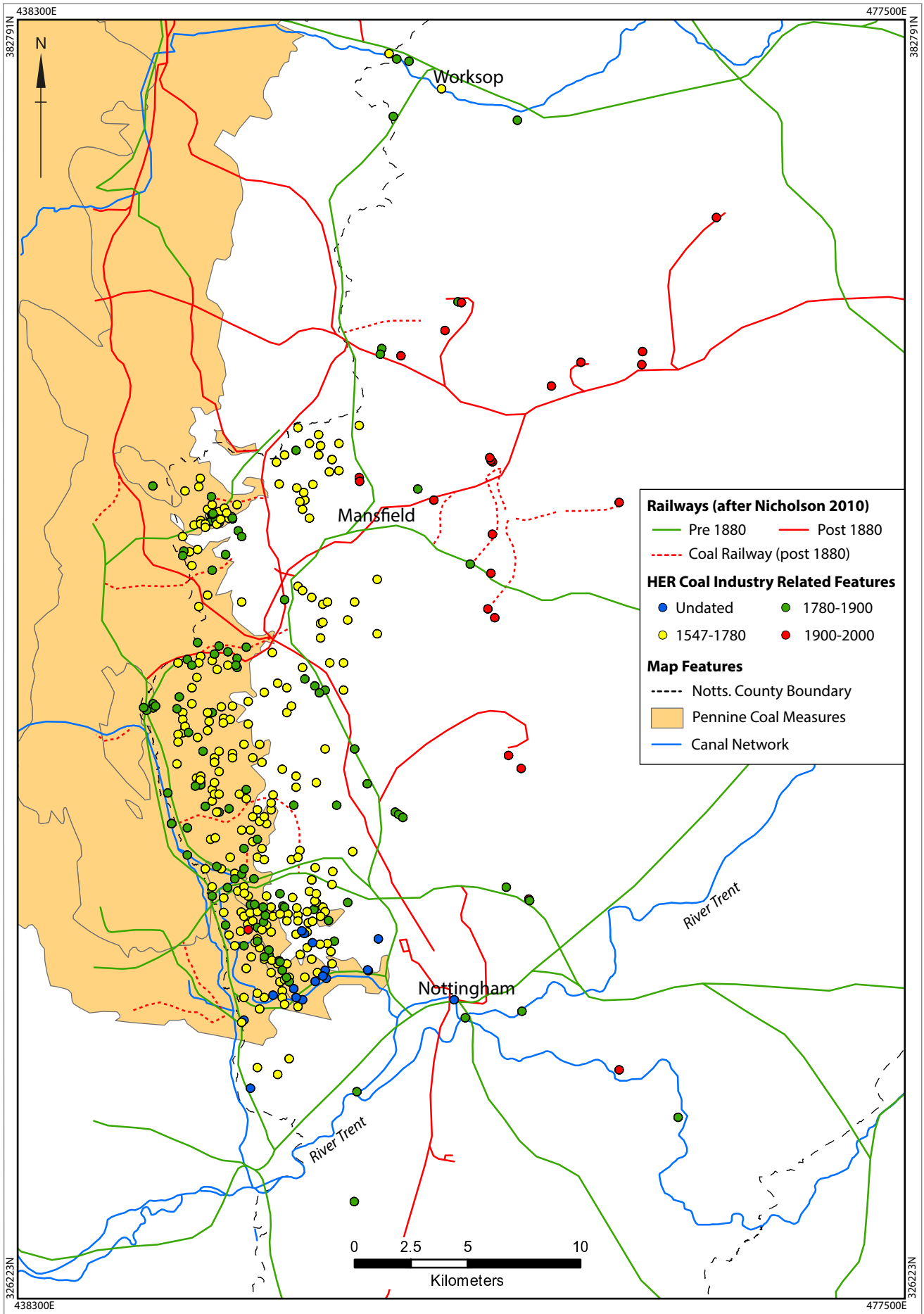
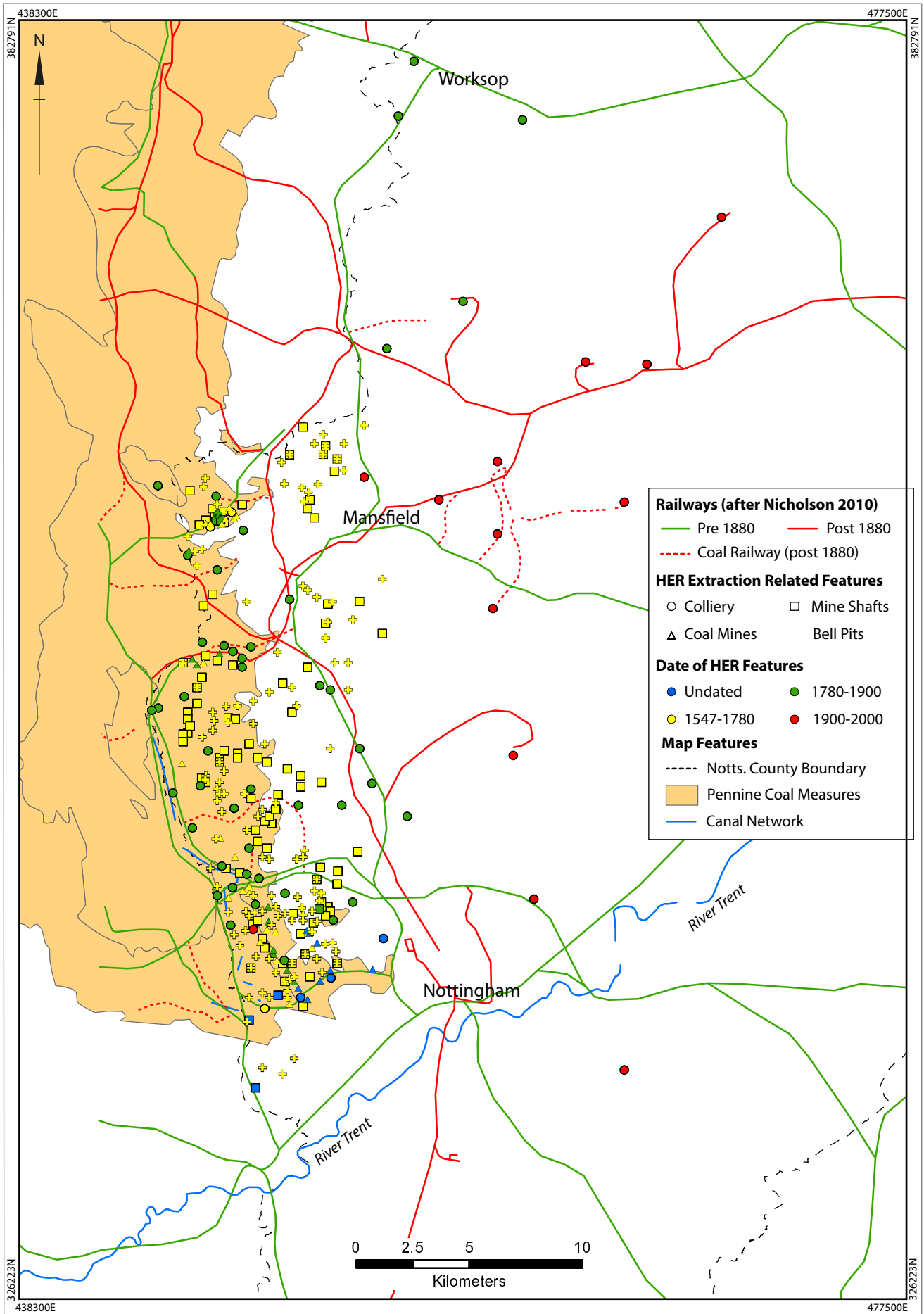


Figure 2: Coal industry features



ArcHeritage

Figure 3 Extraction related features

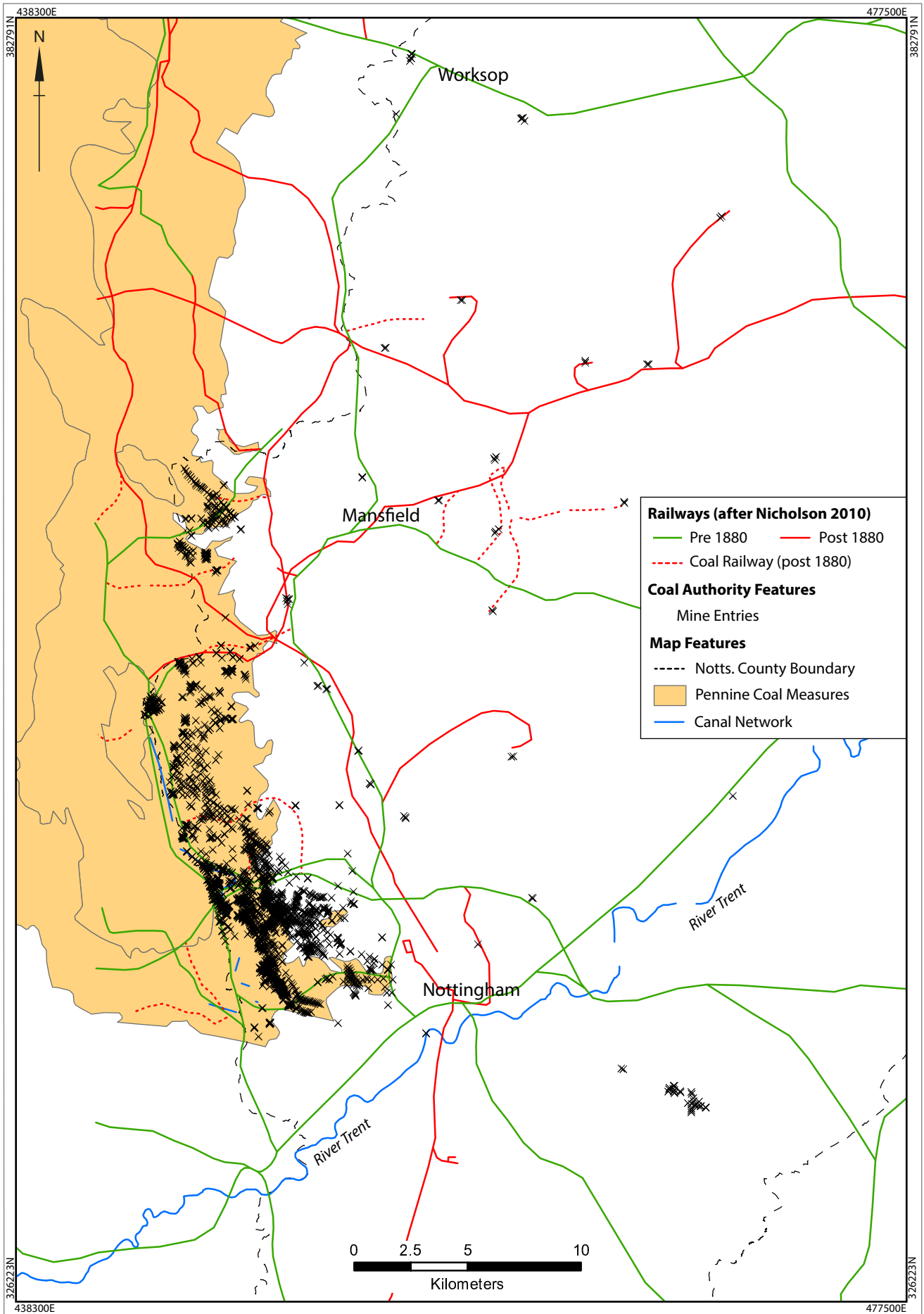
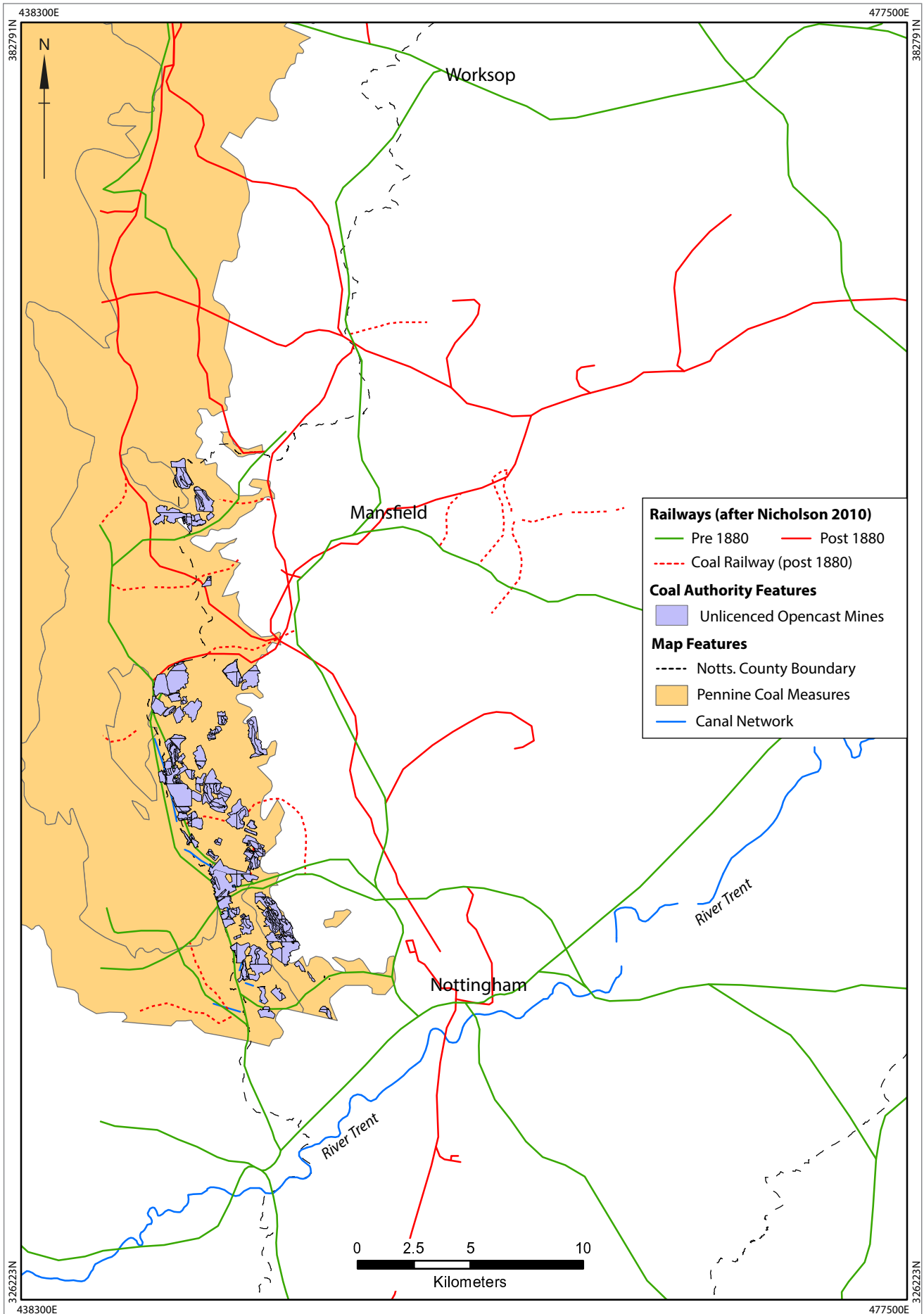


Figure 4: Coal Authority mine entrances



ArcHeritage

Figure 5 Coal Authority opencast mines

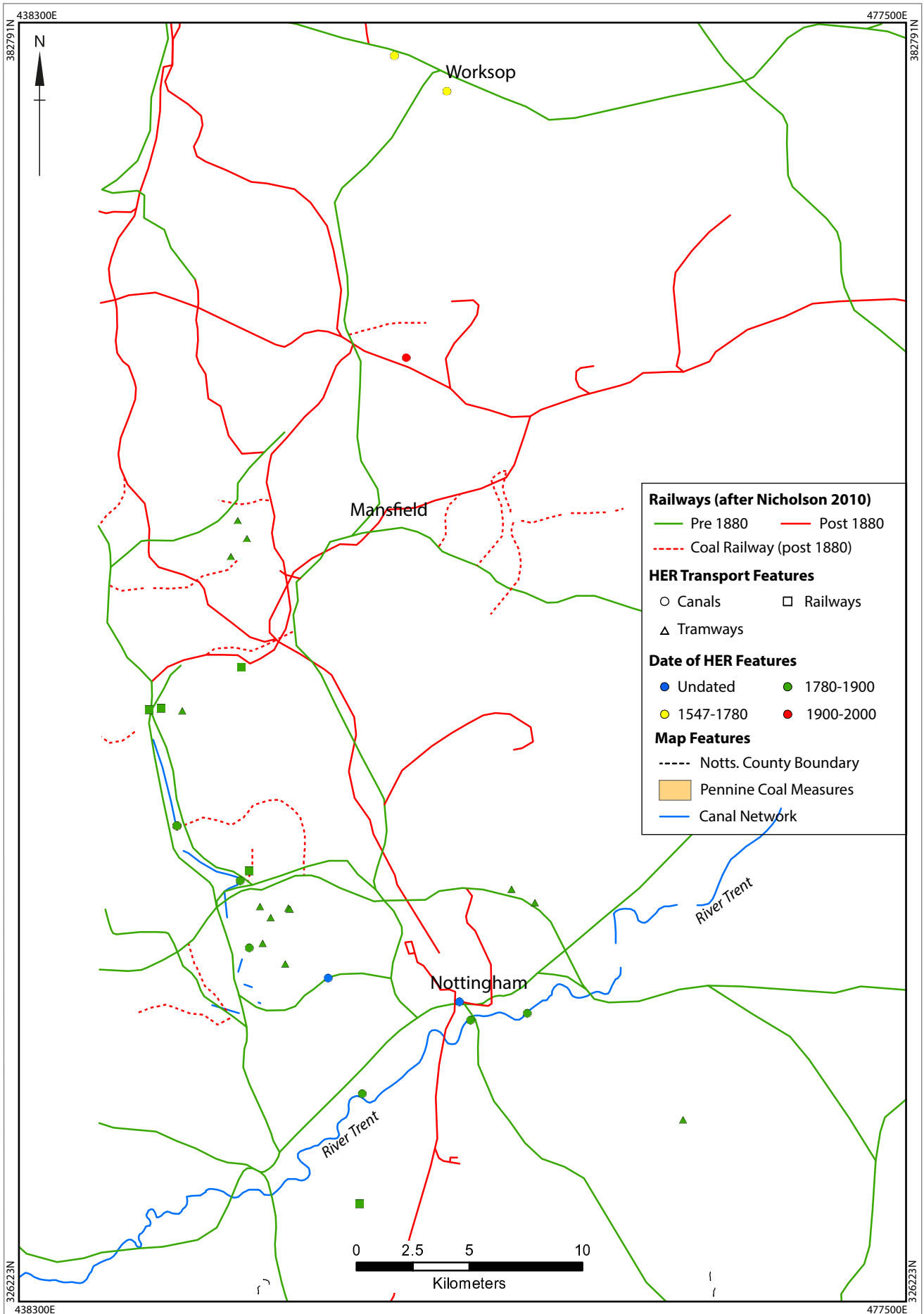


Figure 6: Transport Features

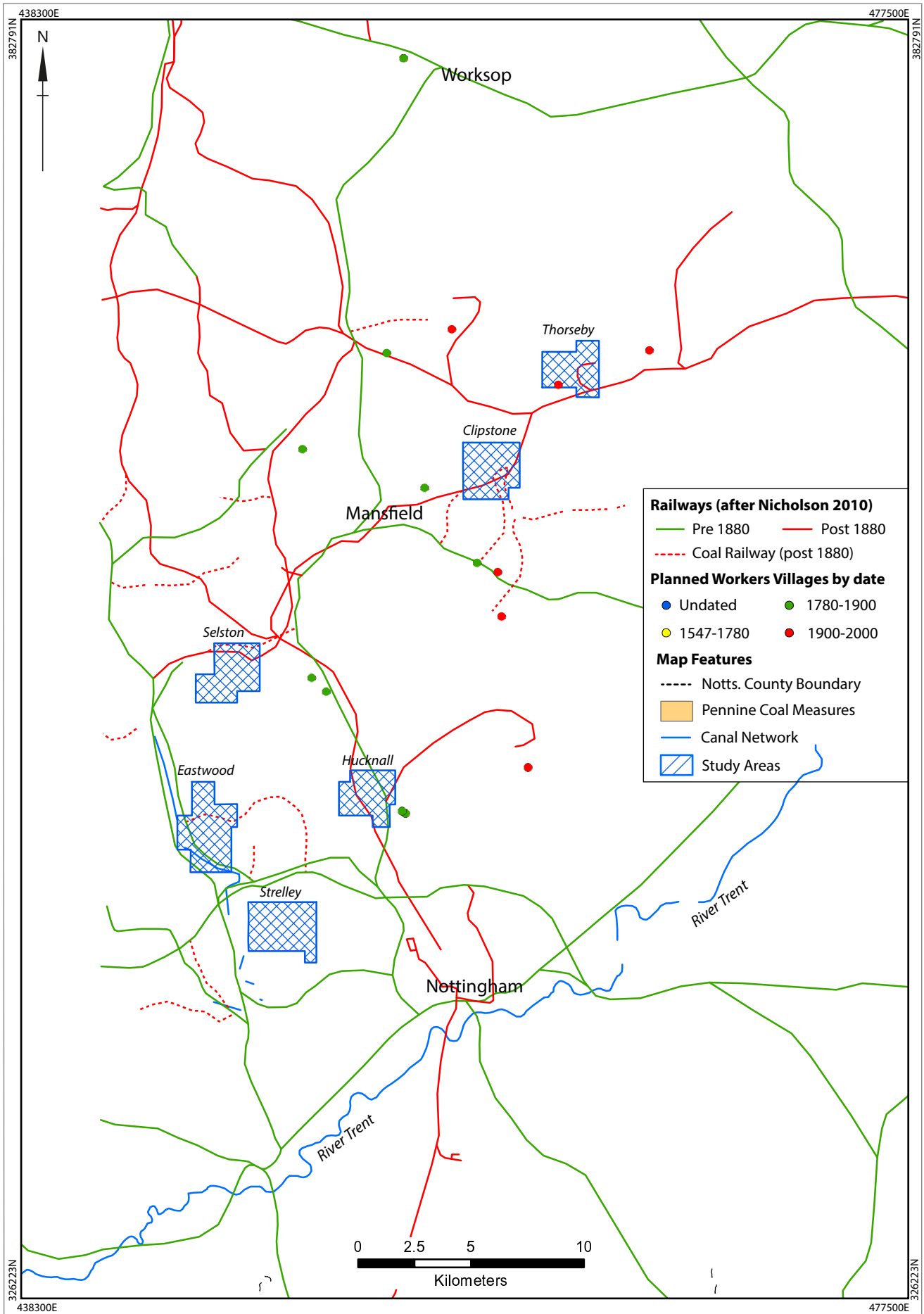


Figure 7: Settlement features, workers housing and study areas

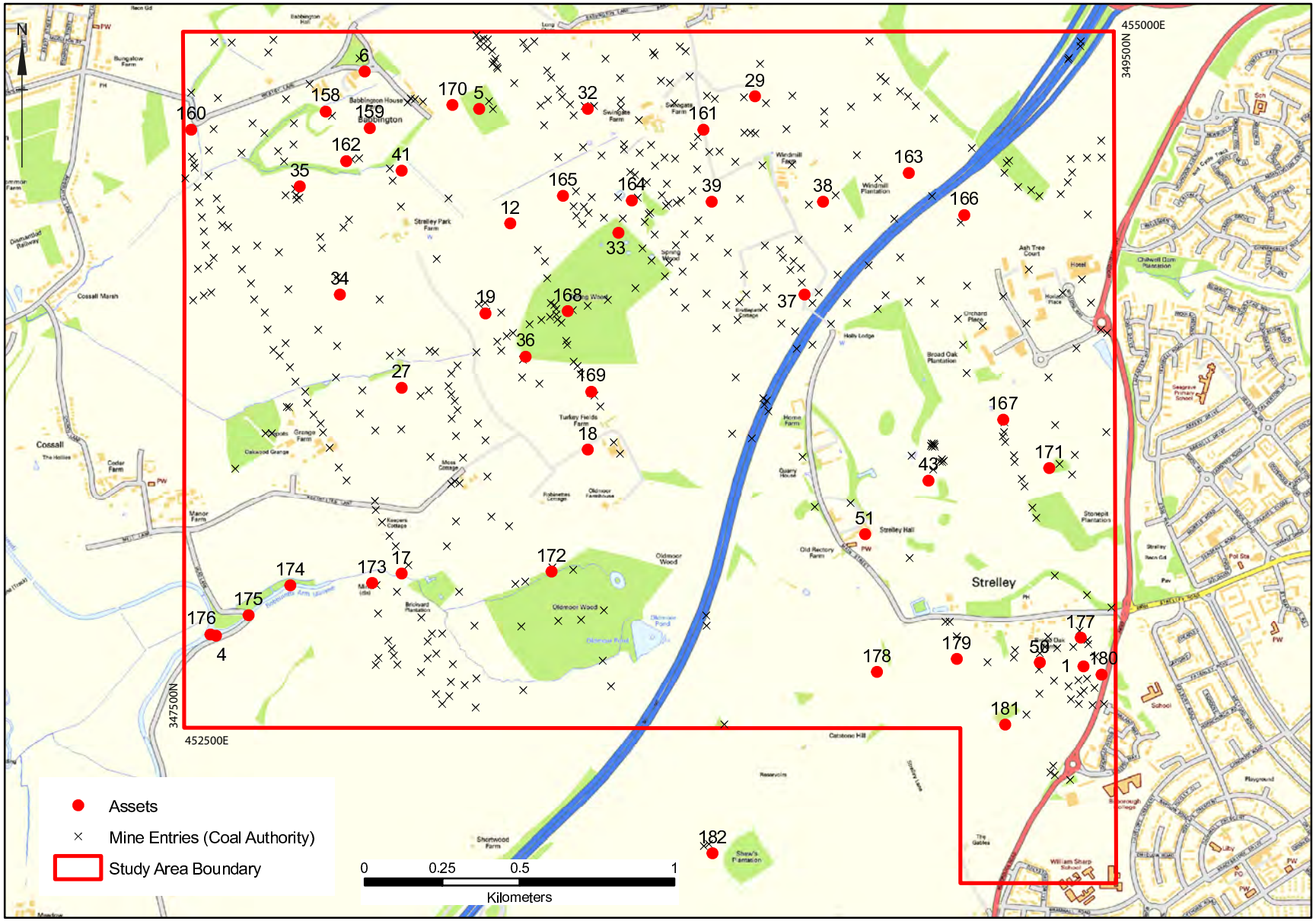


Figure 8: Strelley Study Area

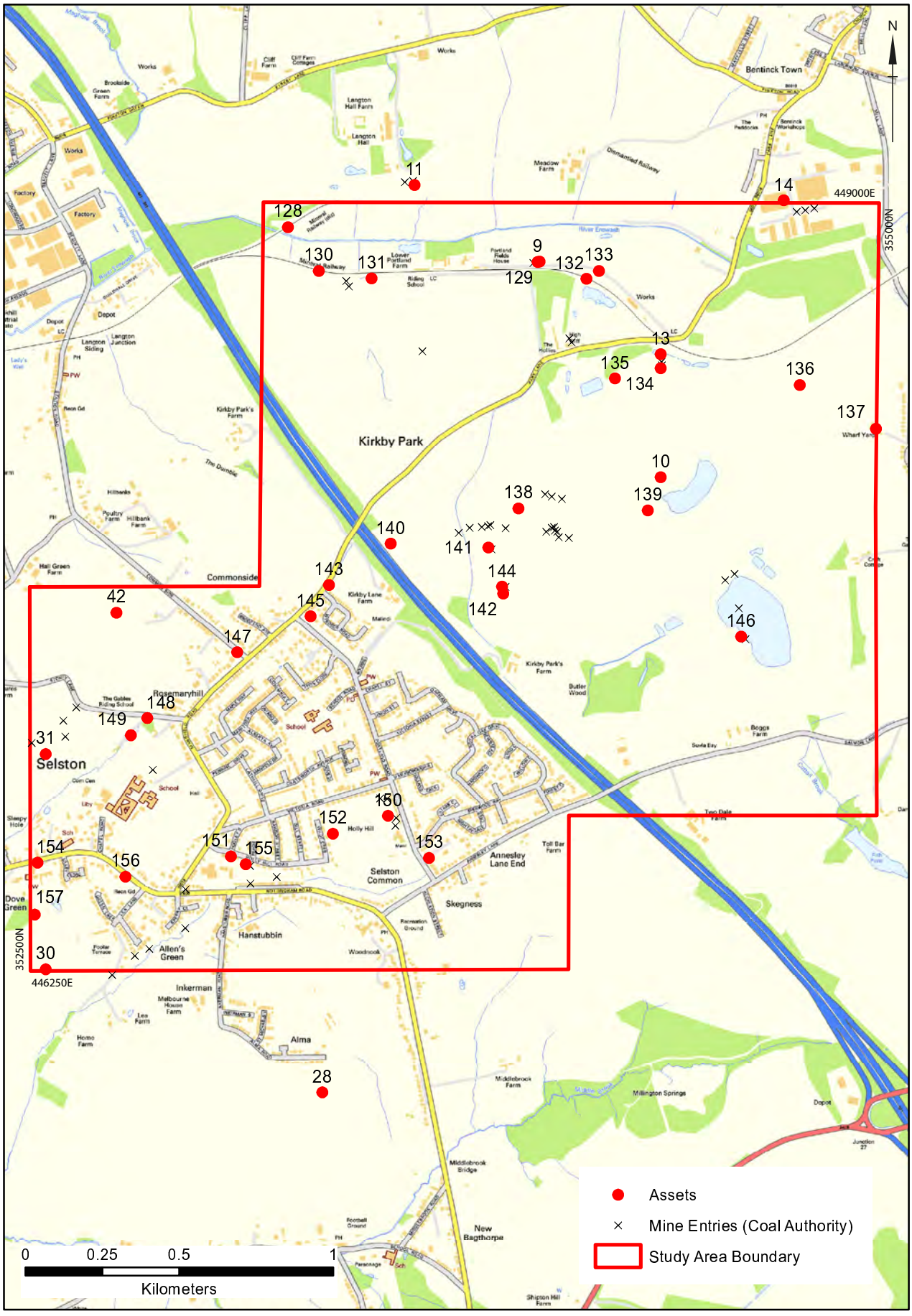


Figure 9: Selston Study Area

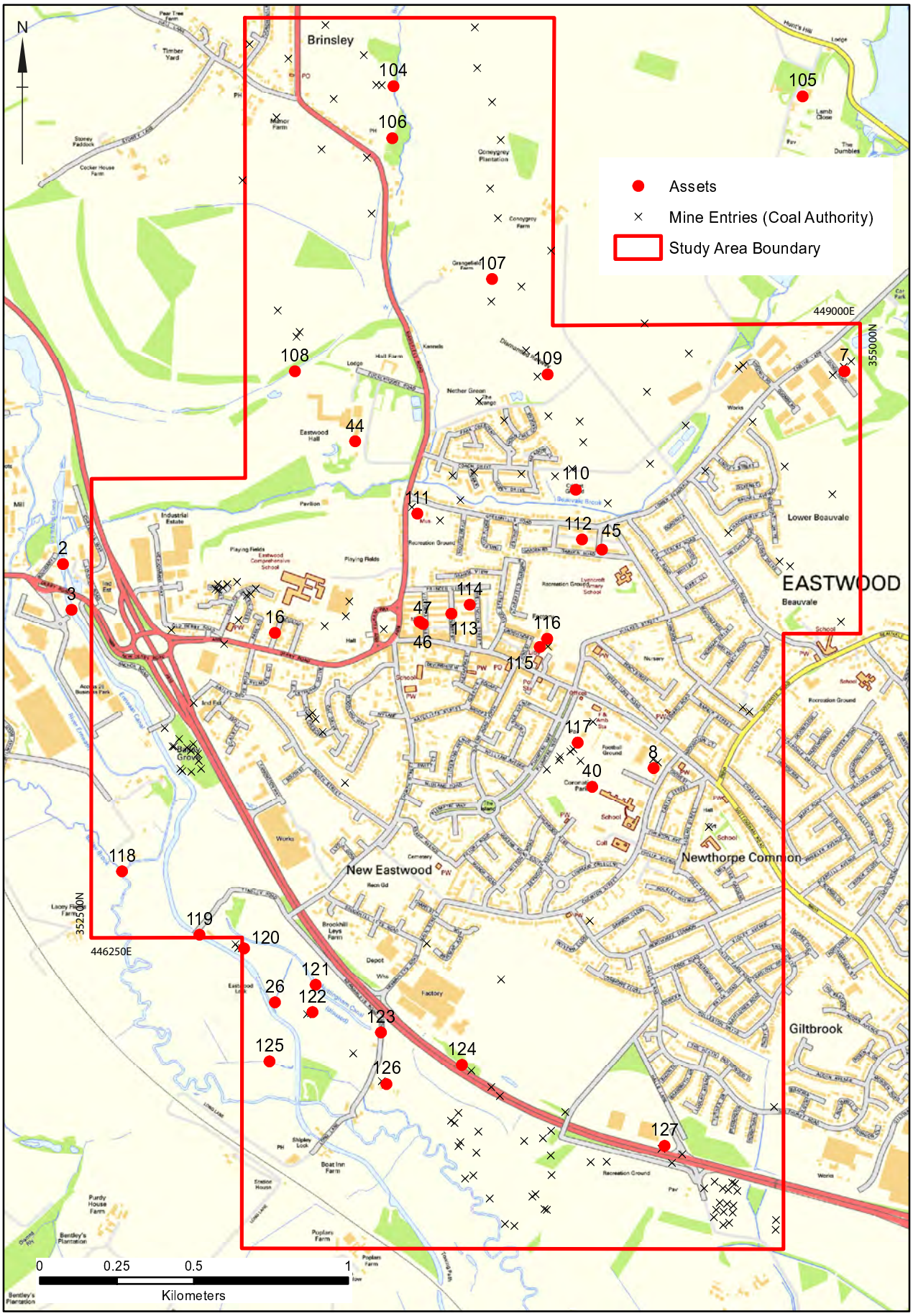
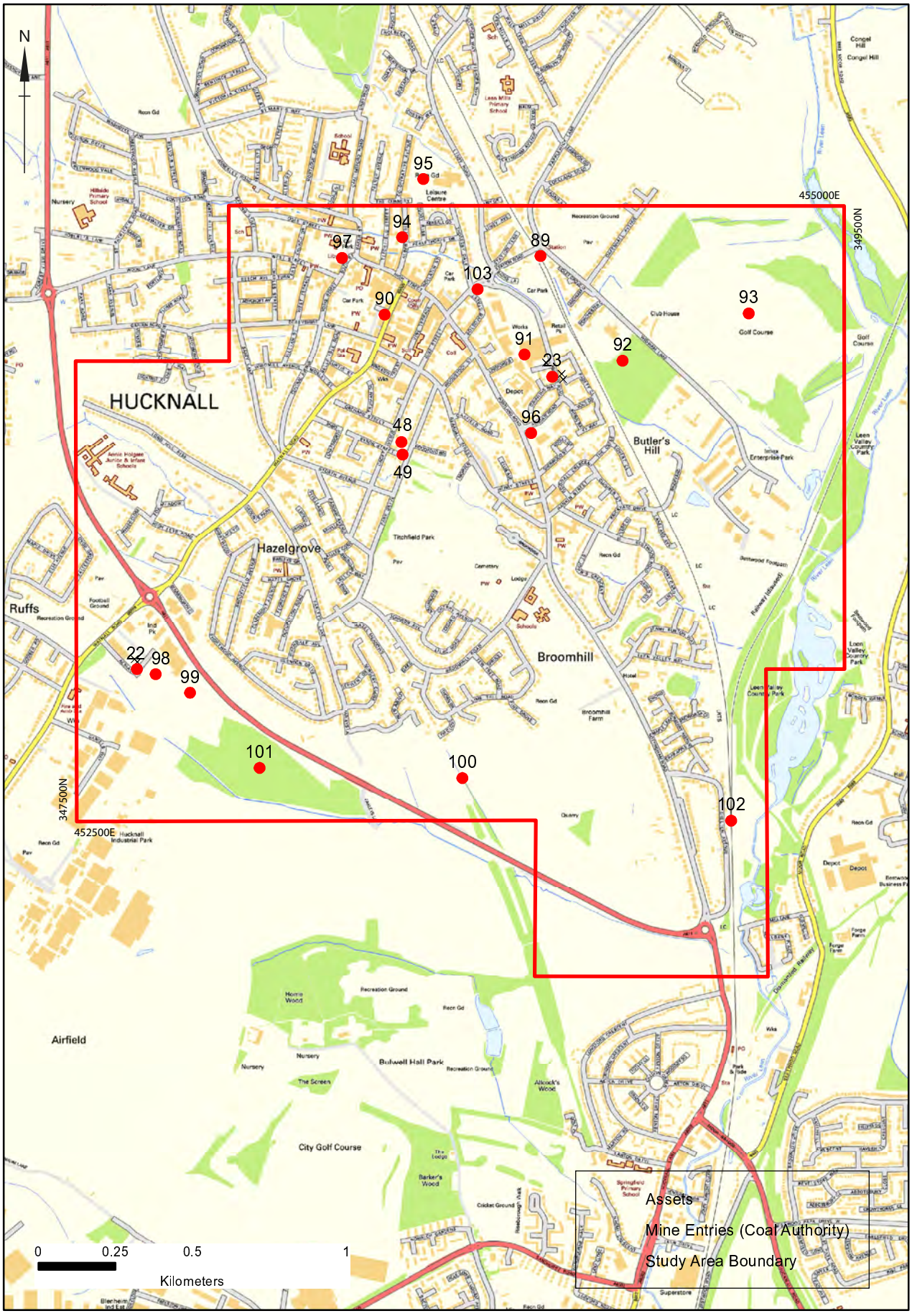


Figure 10: Eastwood Study Area



ArcHeritage

Figure 11: Hucknall Study Area

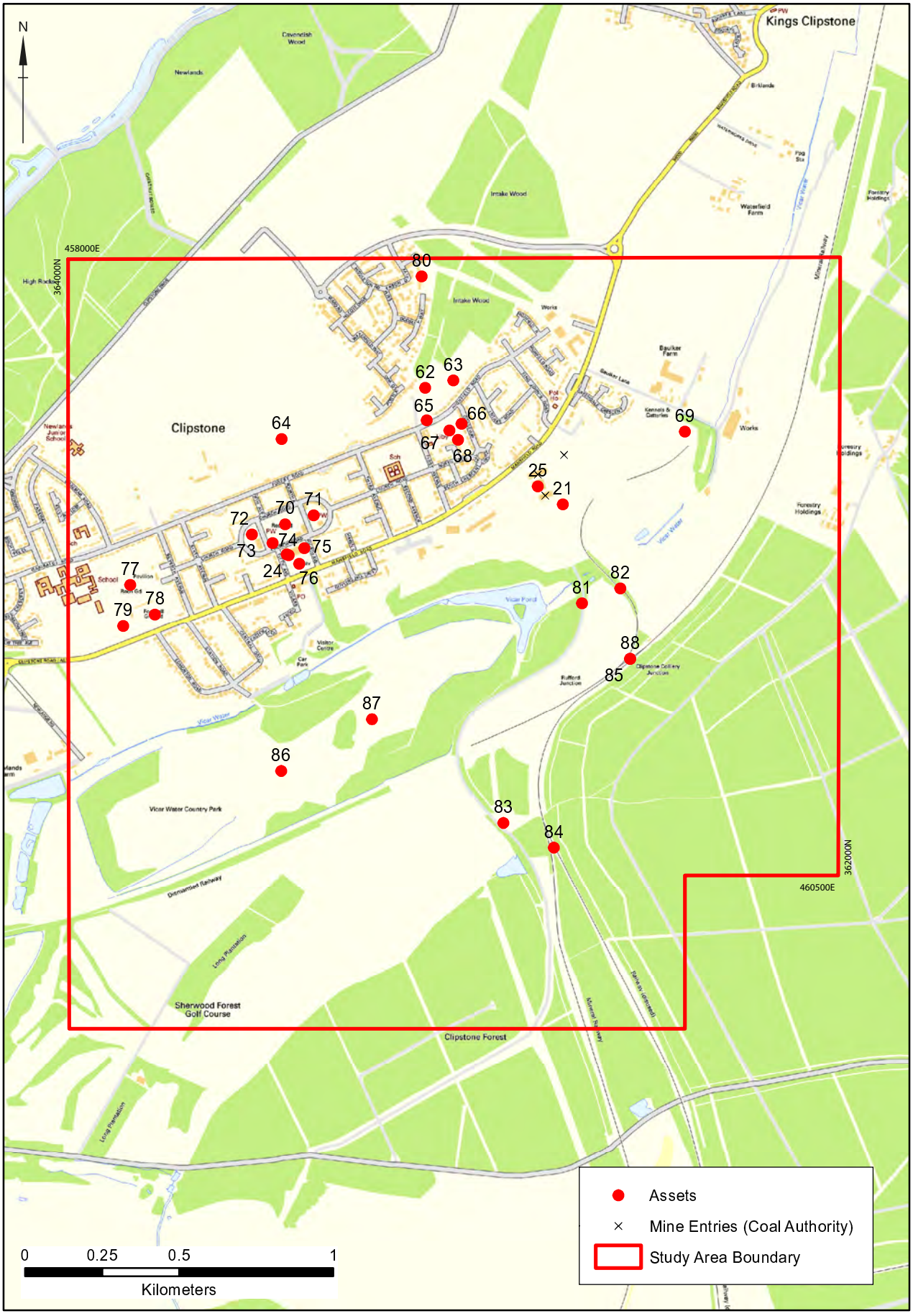


Figure 12: Clipstone Study Area

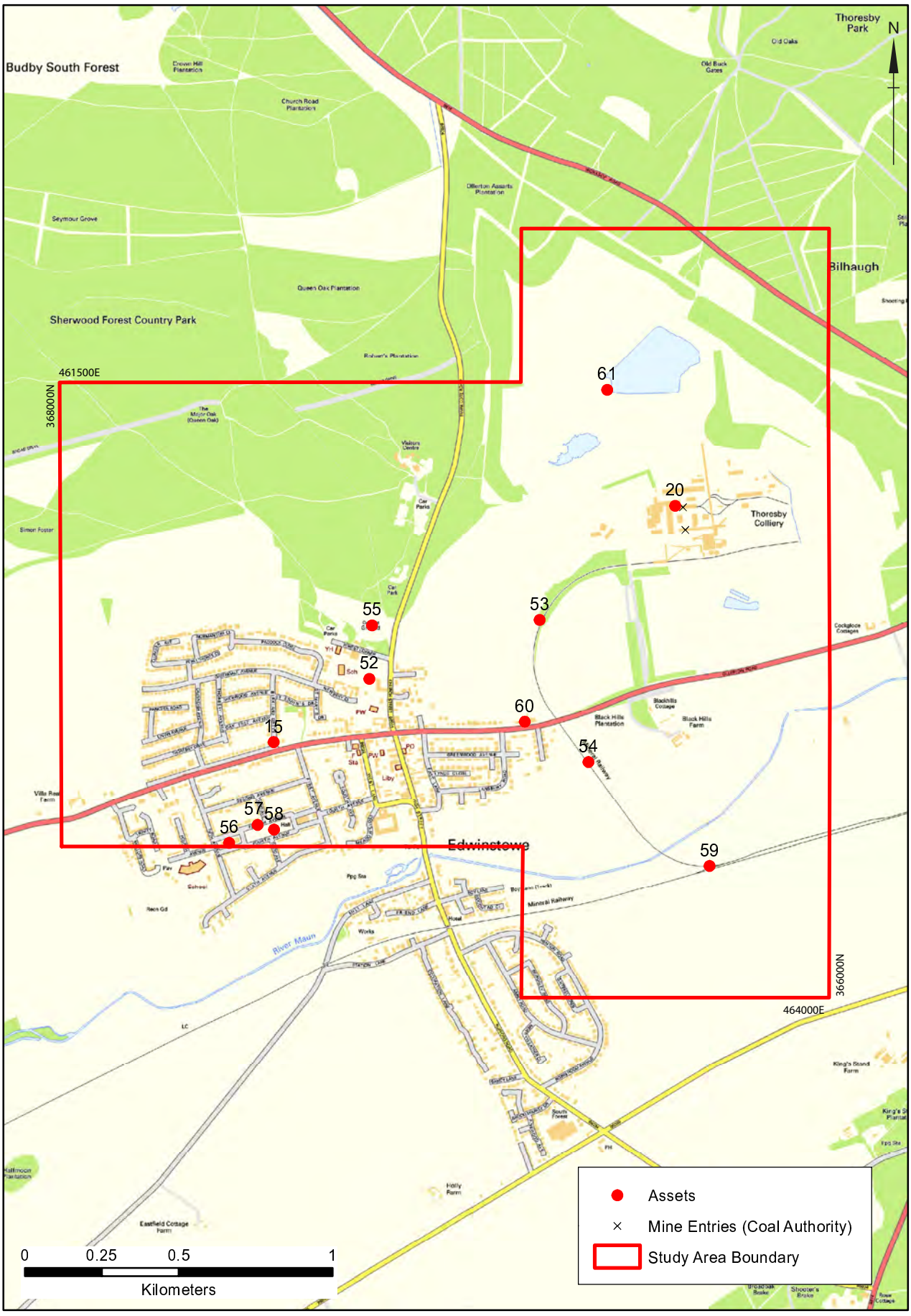


Figure 13: Thorseby Study Area

Historic England

ArcHeritage
54 Campo Lane, Sheffield, S1 2EG

tel: +44 (0)114 2728884
email: archeritage@yorkat.co.uk

www.archeritage.co.uk