

**Abbeydale Industrial Hamlet Mill Pond,  
Abbeydale Road South, Sheffield –  
Desk-Based Assessment  
Sheffield City Council**

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**November 2013**

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Report to: **Sheffield City Council**

Report Title: Abbeydale Industrial Hamlet Mill Pond, Abbeydale Road South,  
Sheffield – Desk-Based Assessment

Revision: **Final**  
Issue Date: **November 2013**  
Report Ref: **4763\_AbbeydaleIH\_DBA\_v1**

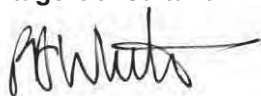
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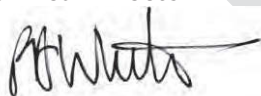
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## Executive Summary

*Ecus Ltd. were commissioned by Sheffield City Council to prepare an Archaeological Desk-Based Assessment for the Scheduled mill pond at Abbeydale Industrial Hamlet, Abbeydale Road South, Sheffield, located at SK 32562 81953. The site visit and research for the project was undertaken in October 2013. The proposed work is to undertake remedial work to the mill pond to repair a longstanding leak at the rear of the listed tilt hammer shop. The leak has been the subject of several major projects in 2001 and 2004. The proposed work comprises the construction of a coffin dam involving the draining of the dam and excavation sufficient to install a lining system. All works will need to be subject to Scheduled Monument Consent, approved by English Heritage, on behalf of DCMS.*

*The mill pond likely dates to the late 18<sup>th</sup> century, when it was expanded from an earlier head-goit with origins in the late 17<sup>th</sup> century. It is likely that the fabric of the dam walls surrounding the pond were maintained and possibly rebuilt as required over its 150 years of use, although the majority of fabric appears to be of at least 19th century date. Due to the Scheduled status of the site, any potential archaeological remains that contribute to the understanding of the special historic interest of the site are considered to be of high significance.*

*There is potential for buried archaeological remains of significant evidential value to be encountered within the mill pond. The highest potential is considered to comprise archaeological material within the silts of the pond including architectural fragments, grinding stones, as well as industrial and domestic refuse accumulated during the operation of the works. Geophysical survey and probing whilst the dam was drained in 2001-4 indicated there is potential for remains of former structures to be present within the mill pond. The structures, and any associated features and deposits, are of particular significance in understanding the early development of the works, likely predating the expansion of the pond in 1777.*

*The proposed works, will comprise a temporary significant impact to the setting of the listed buildings and scheduled monument, and will impact the historical integrity of the original construction of the dam. In addition the development will result in a limited impact to the southern, northern and eastern dam walls, as well as to the pen-stocks, mill pond steps and overspill, where the lining is going to be tied into the dam walls.*

*It is considered that the impact from the proposed management to the historic integrity of the mill pond is offset by the long term benefit to the conservation of the Scheduled site as a whole by preventing further leaks through the dam wall into the adjacent designated buildings. The design of the proposed scheme should also seek to preserve, and where relevant enhance, the historic fabric and minimise the visibility of the finished work.*

*The impact to the evidential value of potential buried remains within the dam can be mitigated by a programme of archaeological mitigation, securing preservation by record. The impact on archaeological remains can however never be fully mitigated, as the process of excavation results in the destruction of the asset. Consequently the proposed work should, where possible, seek to minimise the extent of groundworks required. Where groundworks are required, a programme of archaeological monitoring and recording will be required. All archaeological recording should be undertaken in line with a Written Scheme of Investigation as part of Scheduled Monument Consent (SMC), approved by English Heritage.*

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# 1. Introduction

## 1.1 Project Background

- 1.1.1 Ecus Ltd were commissioned by Sheffield City Council (hereafter 'SCC') to prepare an Archaeological Desk-Based Assessment for the mill pond at Abbeydale Industrial Hamlet, Abbeydale Road South, Sheffield (hereafter 'the site'), located at SK 32562 81953 (**Figure 1**). The site is located within the Scheduled Monument of the Abbeydale Works (NHLE: 1004822). The site visit and research for the project was undertaken in October 2013.
- 1.1.2 The proposed work is to undertake remedial management work to the mill pond at Abbeydale Industrial Hamlet including the repair of a longstanding leak at the rear of the tilt hammer shop. The leak has been the subject of several major projects in 2001 and 2004. The proposed work comprises the construction of a coffin dam involving the draining of the dam and excavation sufficient to install a lining system.
- 1.1.3 This report presents an assessment of the significance and potential of the historic environment within the site, and a strategy for further investigation.
- 1.1.4 In line with best practice, a copy of this report will be made available through the Online Access to Index of Archaeological Investigations (OASIS) Project (<http://ads.ahds.ac.uk/project/oasis/>), reference no. ecusltd1-163017. A copy of the OASIS form is reproduced in Appendix 3.

## 1.2 Site Location

- 1.2.1 Abbeydale Industrial Hamlet lies in the historic parish of Ecclesall-Bierlow 7 km southwest of the centre of Sheffield, on the western bank of the River Sheaf. Situated to the south of the hamlet, the mill pond comprises an elongated body of water of approximately 4 acres, contained by a dam that runs along its eastern and northern sides. The depth of the mill pond varies from less than 1 m to the south to over 6.5 m at the point of the overspill on the southern corner of the works.
- 1.2.2 The mill pond is bounded to the east by the Midland Mainline railway between Sheffield and Chesterfield, to the west by Abbeydale Road South (the A621), and the south by Beauchief Gardens.
- 1.2.3 The bedrock geology of the site comprise mudstone and siltstone of the Pennine Lower Coal Measures Formation, with overlying superficial alluvial deposits forming the western terrace of the River Sheaf (Geology of Britain Viewer 2013).

# 2. Methodology

## 2.1 Scope

- 2.1.1 The purpose of this desk-based assessment is to determine, as far as is reasonably possible from existing records, an understanding of the historic environment resource in order to formulate:
  - An assessment of the potential for heritage assets to survive within the site;



- An assessment of the significance of the known or predicted heritage assets considering their archaeological, historic, architectural and artistic interests;
- Strategies for further evaluation, intrusive or non-intrusive, where the nature, extent or significance of the resource is not sufficiently well defined;
- An assessment of the impact of proposed management works on the significance of the heritage assets and their settings; and
- Proposals for further archaeological investigation within a programme of research.

2.1.2 This assessment is undertaken in accordance with the Institute for Archaeologists' *Standard and Guidance for desk based assessment* (IfA 1994, revised November 2012) and guidance presented in English Heritage (2010) *PPS5: Planning for the Historic Environment Practice Guide* which remains a valid and Government endorsed document pending the results of a review of guidance supporting national planning policy.

## 2.2 Spatial Scope and Sources

### *Historical and Archaeological Baseline*

2.2.1 Baseline conditions are established through consideration of recorded heritage assets within the site and desk-based review of existing sources of publicly accessible sources of primary and synthesised information, comprising:

- National heritage datasets including The National Heritage List for England (NHLE), Images of England, PastScape, Viewfinder, NMR Excavation Index, and Parks and Gardens UK.
- Historic manuscripts and maps held at Sheffield City Archives and Local Studies Library.
- Sheffield Industrial Museums Trust were consulted regarding archives relating to the site.
- Sheffield City Council were consulted regarding archives produced during previous phases of work at the site.
- Relevant primary and secondary sources including published and unpublished archaeological reports relating to excavations and observations in the area around the site were studied.

2.2.2 A bibliography of documentary, archive, and cartographic sources consulted is included in the References section of this report.

### *Setting Assessment*

2.2.3 An assessment of heritage assets within the wider area surrounding the scheme has been undertaken in order to assess the potential for significant impacts arising from changes to their setting. All known heritage assets up to 500 m from the site boundary were assessed.

### *Site Visit*

2.2.4 A site visit was undertaken on 28<sup>th</sup> October 2013 in order to assess the general character of the site, identify visible historic features and assess

possible factors which may affect the survival or condition of known or potential assets

- 2.2.5 In addition, heritage assets identified within the study area as potential sensitive receptors to the scheme were also visited. This was in order to assess the attributes of their setting that contribute to their significance and to establish whether intervisibility with the site could be established.

### ***Assumptions and Limitations***

- 2.2.6 This report is compiled using secondary information derived from a variety of sources, only some have been directly examined. The assumption is made that this data, as well as that derived from other secondary sources, is reasonably accurate.

## **2.3 Assessment Methodology**

- 2.3.1 Local planning authorities require an applicant to provide an assessment of the significance of any heritage assets affected by a proposal, including any contribution made by their setting.
- 2.3.2 The significance of some heritage assets are formally recognised through designation. Where assets have not been statutorily designated, they have been considered using professional judgment with reference to national published guidance (including DCMS 2010 and EH's Designation Listing Selection Guides). National guidance provided by English Heritage (2008) introduced the weighing of significance in reference to the following value criteria:
- **Evidential (Archaeological) value.** Deriving from the potential of a place to yield evidence about past human activity.
  - **Historical value.** Deriving from the ways in which past people, events and aspects of life can be connected through a place to the present. It tends to be illustrative or associative.
  - **Aesthetic (Architectural or Artistic) value.** Deriving from the ways in which people draw sensory and intellectual stimulation from a place.
  - **Communal value.** Deriving from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory. Communal values are closely bound up with historical (particularly associative) and aesthetic values, but tend to have additional and specific aspects.
- 2.3.3 The overall significance of heritage assets is expressed on a 5-point scale of: Very High, High, Medium, Low and Negligible using the criteria presented in **Table 1**.

Heritage Significance	Criteria
<b>Very High</b>	Heritage assets of international importance. World Heritage Sites and the individual attributes that convey their Outstanding Universal Value. Areas associated with intangible cultural heritage activities as evidenced by the register and areas with associations with particular innovations, scientific developments, movements or individuals of global importance.
<b>High</b>	Heritage assets of national importance. Scheduled



Heritage Significance	Criteria
	Monuments, Listed Buildings (Grade I, II*), Registered Historic Parks and Gardens (Grade I, II*). Also includes unscheduled sites and monuments of schedulable quality and/or importance discovered through the course of evaluation or mitigation.
<b>Medium</b>	Heritage assets of regional importance. Conservation Areas, Grade II Listed Buildings and Registered Historic Parks and Gardens Historic townscapes and landscapes with reasonable coherence, time-depth and other critical factor(s). Unlisted assets that can be shown to have exceptional qualities or historic association.
<b>Low</b>	Heritage Assets with importance to local interest groups or that contributes to local research objectives. Locally Listed Buildings and Sites of Importance within a district level. Robust undesignated assets compromised by poor preservation and/or poor contextual associations.
<b>Negligible</b>	Assets with little or no archaeological or historical interest due to poor preservation or survival.
<b>Unknown</b>	The importance of asset has not been ascertained from available evidence.

**Table 1: Summary of factors for determining the significance of known and potential heritage assets**

- 2.3.4 In determining the sensitivity of any heritage assets affected, NPPF and planning guidance requires the contribution made by their setting to be assessed (**Table 2**). Elements of a setting may make a positive or negative contribution to the value of a heritage asset, may affect the ability to appreciate that value, or may be neutral. The key attributes of setting that contribute to the significance of the heritage asset comprise the asset's physical surroundings, the experience of the asset and the asset's associative attributes.

Contribution of Setting to Heritage Significance	Criteria
<b>High Contribution</b>	A setting which possesses key attributes that make a strong positive contribution to the understanding and/or appreciation of the values that embodies its importance.
<b>Medium Contribution</b>	A setting which possesses key attributes that make some positive contribution to the understanding and/or appreciation of the values that embodies its importance.
<b>Low Contribution</b>	A setting which possesses key attributes that make little positive contribution to the understanding and/or appreciation of the values that embodies its importance.

**Table 2: Criteria for Grading the Contribution of Setting to Sensitivity of Heritage Assets**

### 3. Regulatory and Policy Context

- 3.1.1 There is national legislation and guidance relating to the protection of, and development on, or near, important archaeological sites or historical buildings within planning regulations as defined under the provisions of the Town and Country Planning Act 1990. In addition, local authorities are responsible for

the protection of the historic environment within the planning system.

### **3.2 Historic Buildings and Ancient Monuments Act 1953**

- 3.2.1 English Heritage is enabled by the Historic Buildings and Ancient Monuments Act 1953 (as Amended) to maintain a register of parks, gardens and battlefield sites which appear to English Heritage to be of special historic interest. Registration in this way makes the effect of proposed development on the sites and their settings a material consideration. English Heritage are a statutory consultee in relation to works affecting Grade I/II\* Registered Parks and Gardens.

### **3.3 Ancient Monuments and Archaeological Areas Act 1979**

- 3.3.1 Scheduled Monuments and Areas of Archaeological Interest are afforded statutory protection under the Ancient Monuments and Archaeological Areas Act 1979 (as Amended) and the consent of the Secretary of State (Department of Culture, Media and Sport), as advised by English Heritage, is required for any works.

### **3.4 Planning (Listed Buildings and Conservation Areas) Act 1990**

- 3.4.1 Works affecting Listed Buildings or structures and Conservation Areas are subject to additional planning controls administered by LPAs under the Planning (Listed Buildings and Conservation Areas) Act 1990. English Heritage is a statutory consultee in relation to works affecting Grade I/II\* Listed Buildings. In considering development which affects a listed building or its setting, the LPA shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses (Section 66).

- Grade I Buildings of exceptional interest;
- Grade II\* Particularly important buildings of more than special interest;
- Grade II Buildings of special interest which warrant every effort being made to preserve them.

- 3.4.2 Furthermore LPAs are required to consider Planning Applications giving special attention to the desirability of preserving or enhancing the character or appearance of that area (Section 72).

### **3.5 Sheffield Local Plan**

- 3.5.1 The Sheffield Local Plan sets out the Sheffield City Council's current planning policy including management of the historic environment, presented in two parts comprising the Core Strategy and the saved policies of the Unitary Development Plan. Those policies relevant to the site are outlined below.

#### ***Sheffield Unitary Development Plan***

- 3.5.2 The Sheffield Unitary Development Plan (UDP; adopted March 1998) provides policies which govern and control development including planning policies and guidance relating to both designated and undesignated heritage assets.

- Policy BE19: Development Affecting a Listed Building
- Policy BE20: Other Historic Buildings
- Policy BE22: Archaeological Sites and Monuments

3.5.3 These policies require that developers submit an evaluation where a development may affect listed buildings or archaeological remains. Before granting planning permission, the authority must be satisfied that the developer has made appropriate and satisfactory provision for:

- an evaluation of the impact of the development on the character and detailed features of a Listed Building; and
- the preservation in their present position or for mitigation of any impact on remains; or
- a watching brief by the South Yorkshire Archaeology Service or other approved body; or
- an archaeological excavation and recording by an archaeological body approved by the Local Authority.

#### ***City Policies and Sites***

3.5.4 The City Policies and Sites document is currently under preparation and consultation but when complete will form the statutory planning policy document for all future developments.

3.5.5 Policy G7 (Development and Heritage Assets), states: Heritage assets, including the conservation areas, nationally and locally important historic buildings and landscapes and other heritage features that contribute to the distinct identity of Sheffield, will be conserved by the developer through:

- a) Protection and, where appropriate, restoration and repair of features of heritage significance, using designs, materials, techniques and detailing traditional to Sheffield, consistent with the asset's age and significance; and
- b) Protection and, where appropriate, recording and interpretation of archaeological evidence and retention of remains that help an understanding of how the city has developed or, in the exceptional circumstances that any harm to the remains could be justified, investigation and publication of the resulting evidence; and
- c) Protection of the character and setting of heritage assets, and ensuring that development affecting them respects, enhances or better reveals their significance

### **3.6 National Planning Policy Framework**

3.6.1 Section 12 of the National Planning Policy Framework (NPPF) sets out the Government's current planning policy in relation to conserving and enhancing the historic environment. The key requirements are summarised below.

3.6.2 Applicants are required to provide proportionate information on the significance of designated and non-designated heritage assets affected by the proposals and an impact assessment of the proposed development on that significance. This should be in the form of a desk-based assessment and, where necessary, a field evaluation (NPPF, 128).

- 3.6.3 LPAs are required to take into account the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation; the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring; the desirability of new development making a positive contribution to local character and distinctiveness; and opportunities to draw on the contribution made by the historic environment to the character of a place (NPPF, 126/131).
- 3.6.4 In determining planning applications, great weight should be given to the conservation of designated heritage assets - World Heritage Sites, Scheduled Monuments, Listed Buildings, Protected Wreck Sites, Registered Parks and Gardens, Registered Battlefields or Conservation Areas designated under the relevant legislation (NPPF, 132).
- 3.6.5 In weighing applications that affect directly or indirectly the significance of a non-designated heritage asset, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset (NPPF, 135).
- 3.6.6 LPAs should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence publicly accessible and any archives deposited with a local museum or other public depository (NPPF, 141).

## **4. Abbeydale Industrial Hamlet Mill Pond**

### **4.1 Introduction**

- 4.1.1 The following section provides a brief summary of the archaeological and historical development of the site and its environs, compiled from sources listed in section 2 and the results of previous studies identified below. The aim is to establish the known and potential resource which could be affected by the development.

### **4.2 Statutory and Local Heritage Designations**

- 4.2.1 The site is situated within the Scheduled Monument of the Abbeydale Works (NHLE: 1004822), which also contains two Listed Buildings, comprising:
- Grade I Listed Abbeydale Works Museum (NHLE: 1246418); and
  - Grade II\* Former Counting House and Workmen's Cottages (NHLE: 1271385)
- 4.2.2 These designations are illustrated on **Figure 1**.

### **4.3 Components**

- 4.3.1 The site visit and assessment of the development and previous work undertaken at the mill pond has identified the following significant components, as illustrated on **Figure 2**:

- **Northern Dam** – comprises stone walling retaining an earthen embankment that slopes down towards the buildings of Abbeydale Industrial Hamlet (**Plates 1-3**). The walling is generally of narrow rubble slabs laid to courses and coped in places with used grinding wheels. Around the pen-stocks and over-spill the wall is constructed of large ashlar blocks. This likely comprises the earliest structure within the dam.
- **Pen-stock** – situated within the Northern Dam are sluices and pen-stocks for two water wheels powering the grinding hull and tilt-hammers (**Plate 2**).
- **Over-spill and Low-level Drain** – situated at the eastern end of the Northern Dam, the overspill comprises an ashlar stone structure with sluice leading into a channel towards the Sheaf (**Plate 3**).
- **Mill Pond Steps** – removed during the 2001 works and reconstructed, comprising steps from the northern dam down into the mill pond constructed from stone including dressed grinding stones treads (**Plate 2**).
- **Eastern Dam** – comprises two phases of stone walling comprising a continuation of the curing coursed rubble walls south of the over-spill, interrupted in the centre by a straight section of walling bounding the railway (**Plates 4-5**).
- **Western and Southern Dam** – coursed rubble walls of similar fabric to parts of the northern dam line much of the western and southern edges of the Mill Pond. Walls appear to have been lost along much of the western edge (**Plates 6-7**).
- **Head-goit** – the present head-goit enters the mill pond at its southern end through an opening in the Southern Dam that has evidently been cut through. The former route of the head-goit is visible along the western edge of the pond as a dry channel to the point indicated on modern Ordnance Survey maps as joining the pond. A hollow is visible beyond this point preserving the route the head-goit depicted on historic Ordnance Survey maps. Where the route meets the pond there is the remains of a stone wall (**Plate 8**).

#### 4.4 Archaeological and Historical Context

##### *Early Industrial Activity*

- 4.4.1 Evidence for early industrial activity within the vicinity of Abbeydale Industrial Hamlet is presented in documents relating to the nearby Beauchief Abbey. The Abbey, consecrated in 1183, held in its gift three corn mills, a fulling mill, and an iron working smithy since at least the 13<sup>th</sup> century (DBA Consulting 2010b, 4). Whilst the location of the smithy is unknown, it is not thought to have lain within the site, with discussion on the subject suggesting several possible locations around the area based on interpretations of various 15<sup>th</sup> to 18<sup>th</sup> century documents (*ibid*).
- 4.4.2 There is circumstantial evidence for the establishment of a lead smelting furnace with water-powered bellows close to the Abbeydale mill pond by 1570, although again the exact location of the works is unknown (Ball *et al.* 2006, 159). Evidence for it is based on John Gelley's map of 1725 (**Figure 3**) which annotates the field within the area of the present mill pond as 'Sinders Hills', which is thought to have derived its name from the presence of



industrial slag heaps. These were subsequently excavated in 1747 recovering £41.18s.0d of lead which may have derived from the lead smithy (DBA Consulting 2010b, 5).

### ***The Development of Abbeydale Works***

- 4.4.3 In 1676 John Bright had a Cutlers' Wheel built at the site of Abbeydale Industrial Hamlet, and a receipt survives recording £30 paid for 'the tail goit bridge shuttles and slate' (DBA Consulting 2010b, 5). The wheel, which was known initially as New Wheel and as Sythe Wheel by the 1730s, was tenanted to several cutlers during the 17<sup>th</sup> century and early 18<sup>th</sup> century, before a long tenantry between 1738 and 1802 by the Goddard family. During their occupation the works was gradually expanded, including in 1777 the construction of a new mill pond.
- 4.4.4 The works was under the ownership of the Earls Fitzwilliam between 1782 and 1933, who oversaw the subsequent tenantry of the works by several parties between 1802 and 1848. During this period many buildings were added to the site, establishing the essential structure of the site as it appears today (DBA Consulting 2010b, 9).
- 4.4.5 A map produced in 1810 of estates in Ecclesall Bierlow belonging to Earl Fitzwilliam illustrates the site during the tenantry of Vickers and Carr, showing the extent of expansion by this period but also the later addition of the Sheffield to Baslow turnpike road (ArchHeritage 2011, Figure 4: original not consulted as currently not located by Barnsley Archives). The turnpike, now Abbeydale Road South, was constructed between 1813 and 1818 and circumnavigated the western side of the mill pond.
- 4.4.6 From 1847 to 1935 Abbeydale was leased by Tyzacks, under whom the works continued to expand, including the addition of a steam engine in 1855, until 1900 when work at Abbeydale diminished in favour of Little London Wheel downstream (Ball *et al.* 162).

### ***The History of Mill Pond***

- 4.4.7 John Gelley's 1725 map (**Figure 3**) depicts the works as it had likely been constructed in 1676, illustrating two buildings with one, likely the New Wheel situated on a long goit diverting water from further up stream of the River Sheaf. The goit is illustrated to widen at the head of the wheel forming a narrow mill pond, with the tail goit to the east crossed by the road from Sheffield before re-joining the Sheaf. Thomas Jeffery's map of 1771 illustrates a wheel at the site of Abbeydale Works (**Figure 4**). Whilst other mills on the map are illustrated as possessing mill ponds, the Abbeydale mill is shown as fed by a goit off the sheaf.
- 4.4.8 In 1777, during the tenantry of Martin Goddard, the mill pond was enlarged, taking advantage of a hollow formed by the earlier excavation of Sindes Hill. This increased the size of the mill pond to between 2-3 acres, with a depth from 3 feet to 21 feet immediately behind the overspill (DBA Consulting 2010b, 7). The dam was enlarged again in 1785 to approximately 5 acres (ArchHeritage 2012, 2); taking in some of what is now Beauchief Gardens to the south of the site.
- 4.4.9 The extent of the new mill pond is illustrated on a map by William Fairbank in 1795 (**Figure 5**), which shows it to have been extended northwest to the edge



of Ecclesall Woods, and southeast towards the Sheffield road. The mill pond was created by establishing a long dam parallel with the River Sheaf, effectively impounding it on a terrace.

- 4.4.10 Observations made whilst the dam was drained for repairs during 2001-4 revealed the possible remains of two stone built structures within the dam, indicating that the expansion of the dam may have involved the demolition of existing buildings (Evans 2004, 6). Whilst the exact location of these remains and the results of a geophysical survey undertaken have been lost, Peter Gribben (manages the pond for Abbeydale Industrial Hamlet and originally located the structures in 2001-4) has indicated their approximate location to lie outside of the proposed work (**Figure 2**).
- 4.4.11 The arrangement of the goits that fed the mill pond appears to have changed during the use of the works. The 1795 drawing of the mill pond, whilst possibly simplified, illustrated the head-goit as joining the pond at its southern end. The subsequent 1810 Ecclesall Bierlow estate plan (ArcHeritage 2011, Figure 4) shows a slightly different arrangement, with a continuation of the head-goit forming a long narrow island along the northwest side of the mill pond, joining with the pond at the north and south suggesting it was obsolete. By the production of the 1854 Ordnance Survey (OS; **Figure 6**) the extended head-goit is shown as complete and as the principal inlet into the mill pond.
- 4.4.12 Described by Francis Evans as the 'old head goit', he theorises that the extension was associated with the earliest mills at Abbeydale. This is based on the assumption that there would have been no reason why the designers would choose to extend the length of the head goit when they could feed it directly into the southern end of the mill pond. Evans suggested alternative functions, that either it related to an earlier smaller mill pond, or that the goit was unrelated to that from the Sheaf and may have brought water from an alternative source in Eccelsall Woods, possibly even from Limb Brook (Evans 2004, 2).
- 4.4.13 The 1810 plan illustrates that water was taken directly from beyond the dam to the wheel situated in the adjacent larger building. The tail-goit from the wheel pit was culverted beneath the works, emerging to the north. Although no by-goit is illustrated in 1810, there would certainly have been one to take water from an overspill to the Sheaf likely in the location of the present sluice which was illustrated on the 1894 OS (**Figure 7**). At the location of the sluice is a low-level drain situated at the deepest point of the pond, and allowing it to be emptied for maintenance.
- 4.4.14 There were relatively few changes to the form of the mill pond on the OS maps proceeding 1854. The mill pond itself appears to have begun to have fallen out of use in the 1920s, with the 1923 OS (**Figure 8**) depicting wet grassland in the southern end of the pond which was shown across the western side of the pond by 1935 (**Figure 9**). The condition of the mill pond appears to have improved in the later 20<sup>th</sup> century, possibly following maintenance, with the 1952 OS (not reproduced) depicting a shortened head-goit and no longer indicated it was wet grassland.

## 4.5 History of Conservation and Previous Work

- 4.5.1 The Abbeydale Works went out of use in 1934, and subsequently bought by J.G. Graves who gifted it to the council for the benefit of the public. Following

discussions on the future use of the works, and in respect of a long standing desire to establish a museum to Sheffield's industrial history, it was proposed that the site be restored as an industrial museum (DBA Consulting 2010c, 7).

- 4.5.2 Work restoring the site began in 1939 but was interrupted by urgent civil defence work during the run up to the Second World War. During the war the site was reoccupied, with the crucible furnaces put back into use, whilst buildings were used to store Air Raid Precautions materials and the cottages later tenanted to people rendered homeless during the Blitz (*ibid.* 9).
- 4.5.3 Whilst there was reluctance in the council to recommence the restoration of the site as a museum following the war, pressure from local interest groups resulting in the listing of the works and counting house in 1952 afforded the site statutory protection as a heritage asset of national importance. In 1964 the Council for the Conservation of Sheffield Antiquities (CCSA) were granted a lease by the City Council allowing them to restore the site (*ibid.* 11). In 1970 the site was opened to the public as the Abbeydale Industrial Hamlet under the auspices of the City of Sheffield Museums Department (*ibid.* 14) who passed on management to the Sheffield Industrial Museums Trust in 1998.
- 4.5.4 Restoration work at the works has been an on-going process, with repairs to the buildings and machines continuing on the site since it opened as a museum. There were various repairs undertaken to the periphery wall of the mill pond in the late 1990s and early 2000s due to damage from car collisions and a falling tree (*ibid.* 28).

#### **2001**

- 4.5.5 In 2001, Sheffield City Council undertook to repair the substantial leak from the northern dam into the grinding hull caused following earlier work to remove a tree growing in the clay of the dam (Sheffield County Council 2004c).
- 4.5.6 The repair of the leak was a significant project involving the emptying of the mill pond, excavation of the dam next to the grinding hull (**Figure 2**). The wall of the northern dam was lined with bentonite matting, and built up with imported clay. In addition to this, repairs to the grinding hull wall which had been affected by the leak were undertaken (DBA Consulting 2010c, 30).
- 4.5.7 A series of archaeological watching briefs were undertaken during the work, recording the foundations of the wall and the remains of the adjacent grinding hull (ARCUS 2001a, 2001b, and 2002). Whilst no evidence of activity predating the post-medieval works was identified the events did make significant observations and records of the fabric and construction of the dam and works buildings.
- 4.5.8 During the course of the works a series of other archaeological works were undertaken for which little information has been located. This involved a series of observations made by Frances Evans, a summary of which is published in the South Yorkshire Industrial History Society Journal, with unpublished work including a geophysical survey by the University of Sheffield, and chemical analysis by Salford University. The results of these latter studies currently can not be traced.

## **2004**

- 4.5.9 Unfortunately problems were encountered with the standard of the remedial work, resulting in substantial elements of work having to be redone, and in the end the leak was not halted (DBA Consulting 2010c, 30).
- 4.5.10 Following investigation by specialist geo-technical engineers, it was determined that the original remedial work had been inadequate due to the inconsistent quality of the clay used in plugging the leak (Sheffield County Council 2004a). Subsidence had also been discovered in the new dam. Although the engineers had also concluded that the source of the leak could also relate to old mine workings and fissured sandstone at shallow depth, the possibility of these causing the issues was thought to be low (Sheffield County Council 2004c).
- 4.5.11 After several failed attempts to solve the leak by grouting, a decision was taken in 2004 to re-excavate the dam and re-do the repair (Sheffield County Council 2004a). The mill pond was again drained and the dam excavated to the depth of the previous excavation. The dam was built up with puddling clay, worked in the traditional manner.
- 4.5.12 During the course of the work it was also found that the original contractors had inadequately removed a considerable amount of rubble in the mill pond which they had imported onto site in order to construct the haul road and working platform which had to be removed (DBA Consulting 2010c, 30).
- 4.5.13 At the completion of the work, it was stated that:
- 'The re-doing of the work demonstrated conclusively the defective workmanship that had allowed water to leak through the dam. The high quality of the new work has been closely supervised such that the leak is totally sealed. Lessons have been learned from this whole process both in terms of ancient dam construction and procurement issues. A procedure of feedback has already commenced in order that the valuable experience is not lost.'* Sheffield City Council 2003b
- 4.5.14 Regrettably further leaks in the wall have since appeared, and the present scheme has been requested to find an alternative solution to the problem.

## **4.6 Historic Environment Character**

- 4.6.1 The character of the landscape within the site has been assessed as part of the South Yorkshire Historic Environment Characterisation project (Lines *et al.*). The site lies within the Abbeydale Works character area, comprising a present character of Water Powered Site 1676-2005, and previous character of Valley Floor Meadows 1066-1675. The area comprises part of the Sub Rural Fringe zone.
- 4.6.2 The site forms part of linear urban development and transport corridor between Abbeydale Road South and the River Sheaf between larger urban areas at Abbeydale to the north and Dore to the south. The area is dominated by woodland with Ecclesall Woods to the west and woods surrounding Beauchief Hall rising to the east.

## **4.7 Assessment of Setting**

- 4.7.1 The mill pond lies within the Scheduled area of the Abbeydale Works, and

forms a key feature of its outstanding historical significance. Within the works are two Listed Buildings of Grade I and II\* designation for which the greater Scheduled area represents their principal setting and are therefore particularly sensitive to the proposed scheme.

- 4.7.2 There are several designated assets within the wider area, including listed buildings in Dore, Abbeydale, and Beauchief, the scheduled site of Beauchief Abbey, and Beauchief Hall Registered Park and Garden. The site is situated within a self-contained complex beside a main aerial road in a relatively enclosed valley.
- 4.7.3 Whilst there is no intervisibility between the site and other designated assets, the historic and aesthetic qualities of the works, and the high visibility of the mill pond in particular, is considered to at most make a low contribution to their setting through contributing to the historical interpretability of the area as a whole.
- 4.7.4 The site is not considered to contribute to the setting of any non-designated assets within the area.

## **5. Summary of Heritage Constraints**

### **5.1 Introduction**

- 5.1.1 In line with current planning policy (NPPF Ch.12 Para.128), a description of heritage assets directly affected by the proposed work, based on the current level of available information, is presented below and an assessment of their importance/ sensitivity is presented in Table 6 below.

### **5.2 Designated Heritage Assets**

- 5.2.1 There is potential for the development to impact designated heritage assets.
- 5.2.2 The proposed work comprises alterations to the Abbeydale Industrial Hamlet mill pond and dam which is a Scheduled Monument. The mill pond and dam also form a key feature to the setting of two listed buildings within the hamlet, making a high contribution to the significance of their significance.
- 5.2.3 Due to the significance and visibility of the site, it is considered to make a low contribution to the setting of other designated heritage assets within the Abbeydale and Beauchief area. However, since the proposed works will not result in a long term alteration to the visual contribution of the site, it is not considered to result in a significant impact to the setting of these assets.

### **5.3 Non-designated Heritage Assets**

- 5.3.1 There is potential for the proposed work to impact known heritage assets within the site, comprising
- Buried remains of medieval to post-medieval structures within the mill pond.
- 5.3.2 Furthermore, there is considered to be potential for as yet unknown heritage assets to be encountered within the site in the form of:

- A high potential for archaeological material within the silts inside the pond, including architectural fragments, grinding stones, as well as industrial and domestic refuse;
- A low potential for remains of medieval structures and deposits relating to early industrial or agricultural activity; and
- A residual unknown potential for pre-medieval remains.

5.3.3 There is not considered to be an impact to the setting of any non-designated heritage assets.

## **5.4 Previous Impacts**

5.4.1 There is an existing impact to the dam resulting from previous remedial work in 2001-4. This work involved the reduction of the north-western dam wall, and the reconstruction of the stone walls.

5.4.2 There is considered to be a degree of existing impact to known and potential buried remains within the site, comprising:

- The documented historic excavation of slag heaps on the site in the 18<sup>th</sup> century;
- Ground works associated with the construction of the mill pond which is likely to have involved excavation to deepen the dam and acquire material for the erection of the embankment; and
- Disturbance caused by the construction of a haulage road and working platform within the dam during the 2001 remedial work.

## **6. Impacts**

### **6.1 Introduction**

6.1.1 The management and mitigation of change to the historic environment is based on the recognition within planning policy that heritage assets are an “irreplaceable resource” (NPPF para. 126).

6.1.2 In line with national and local planning policies, development proposals which have the potential to affect designated and non-designated heritage assets and their settings should give weight to the conservation and enhancement of the assets consistent with their level of importance. For designated assets significant weight is given to conservation and for non-designated it is taken into account in a balanced judgement.

### **6.2 Effects during Construction**

6.2.1 The potential for impacts to the historic environment to arise during the construction phase relates primarily to the potential for excavations and groundworks to affect any below ground archaeological remains that may be present within the footprint of the works. All works will need to be subject to Scheduled Monument Consent, approved by English Heritage, on behalf of DCMS. The proposed work within the site will comprise:

- The creation of access points for construction plant;
- Groundworks associated with the reduction of levels within the dam to install lining system;



- Removal of existing waterproofing membrane and concrete facing to the walls of the mill pond; and
- Impact to the walls of the mill pond to allow the geomembrane and geotextile lining to be tied in.

6.2.2 The draining of the dam, erection of compounds and movement of plant will have a temporary impact on the setting of the Abbeydale Works Scheduled Monument and Listed Buildings. Since this enabling work will be temporary and the dam refilled following construction there is not considered to be any permanent impact to the setting of these assets.

### **6.3 Effects during Operation**

6.3.1 The majority of the effects on the historic environment would occur during the construction phase of the scheme. Since the proposed works comprises the refilling of the dam there is not considered to be any impact during the operation of the mill pond following the completion of the proposed works.

## **7. Conclusion**

### **7.1 Statement of Potential and Significance**

7.1.1 The mill pond at Abbeydale Industrial Hamlet likely dates to the late 18<sup>th</sup> century, when it was expanded from an earlier head-goit with origins in the late 17<sup>th</sup> century. The earliest recorded reference to the mill pond indicates it was extended in 1777, although whether this was from an earlier pond completed shortly before, or from the head-goit is not known. It is likely that the fabric of the dam walls surrounding the pond were maintained and possibly rebuilt as required over its 150 years of use, although the majority of fabric appears to be of at least 19<sup>th</sup> century date.

7.1.2 Due to the Scheduled status of the site, any potential archaeological remains that contribute to the understanding of the special historic interest of the site are considered to be of high significance.

7.1.3 The highest potential is considered to comprise archaeological material within the silts of the pond including architectural fragments, grinding stones, as well as industrial and domestic refuse accumulated during the operation of the works. This material could potentially illustrate the changing use and production within the site, especially where sequenced deposits are located.

7.1.4 Geophysical survey and probing whilst the dam was drained in 2001-4 indicated there is potential for remains of former structures to be present within the mill pond. Whilst the results of the surveys have not been located, the structures have been indicated to lie just beyond the area proposed for lining (Peter Gribben, *pers. com.*). Due to the absence of accurate location for these structures, there is a risk that they may extend into the area of the proposed works. The structures, and any associated features and deposits, are of particular significance in understanding the early development of the works, likely predating the expansion of the pond in 1777. Consequently there is also considered to be a low potential for remains relating to medieval structures and deposits of early industrial or agricultural activity that predate the works.



- 7.1.5 In addition there is considered to be a residual potential for as yet unknown pre-medieval remains to survive within the site, particularly within areas where truncation of the original ground level caused by the construction of the mill pond is found to be limited. These remains would be of evidential value in enhancing knowledge of a poorly understood area in the wider development of settlement and activity within the region.

## **7.2 Statement of Impact**

- 7.2.1 The site comprises part of a Scheduled Monument and comprises a key element within the setting of the designated heritage assets of the listed buildings of Abbeydale Industrial Hamlet.
- 7.2.2 The proposed works, whilst largely invisible upon completion, will comprise an impact to the historical integrity of the Scheduled Monument through altering the structure and form of the mill pond. The tying in of the lining will comprise a limited impact to the southern, northern and eastern dam walls, as well as to the pen-stocks, mill pond steps and overspill.
- 7.2.3 There is also the potential for buried archaeological remains of significant evidential value to be encountered within the mill pond during groundwork associated with the proposed work.
- 7.2.4 Whilst the construction phase of the proposed works will comprise a temporary significant impact to the setting of the listed buildings and scheduled monument, there is not considered to be any permanent effects to the setting of these assets following the completion of work.
- 7.2.5 A summary of the potential, significance, and impact to heritage assets identified within the site is summarised in **Tables 3-4** below.

## **7.3 Recommendations**

- 7.3.1 This assessment indicates that the proposed scheme could have the potential to impact upon the historic integrity and evidential value of the nationally significant Scheduled Abbeydale Industrial Hamlet.
- 7.3.2 It is considered that the impact from the proposed scheme to the historic integrity of the mill pond is offset by the long term benefit to the conservation of the Scheduled site as a whole by preventing further leaks through the dam wall into the works. The impact should be further reduced through the design of the proposed scheme which should also seek to preserve, and where relevant enhance, the historic fabric and minimise the visibility of the finished work.
- 7.3.3 The impact to the evidential value of potential buried remains within the dam can be mitigated by a programme of archaeological mitigation, securing preservation by record. The impact on archaeological remains can however never be fully mitigated, as the process of excavation results in the destruction of the asset. Consequently the proposed work should, where possible, seek to minimise the extent of groundworks required. Where groundworks are required, a programme of archaeological monitoring and recording will be required. All archaeological recording should be undertaken in line with a Written Scheme of Investigation, as part of a Scheduled Monument Consent, approved by English Heritage on behalf of DCMS.

**Table 3: Risk of encountering heritage assets within the proposed work**

Risk	Asset	Significance	Summary of Asset	Impact of the Scheme	Proposed Mitigation
<b>High</b>	Abbeydale Industrial Hamlet Mill Pond	High	The mill pond is surrounded by walls of roughly coursed rubble, with areas of ashlar stonework associated with pen-stocks and overspill. This masonry ranges in depth according to the profile of the pond, between 1' to 21' at its deepest. The mill pond steps are situated within the area of the development, although they were removed and reconstructed during the works in 2001-4. The fabric of the walls may retain evidence of the phased construction and expansion of the mill pond, and evidence of any former structures or alterations to existing structure.	The proposed work involves the removal of existing waterproofing membrane and concrete facing where present and the tying in of the geomembrane into the historic fabric of the dam. This will have a low impact to the fabric, and obscure areas of the fabric	Minimise impact to historic fabric by design, and a programme of mitigation to allow preservation by record.
<b>High</b>	Post-medieval to Modern Deposits	High	Archaeological material is highly likely to be present within the silts of the pond including architectural fragments, grinding stones, as well as industrial and domestic refuse accumulated during the operation of the works. This material could potentially illustrate the changing use and production within the site, especially where sequenced deposits are located.	High (if encountered)	Programme of mitigation to allow preservation by record
<b>Moderate</b>	Post-medieval Buried Remains	High	Geophysical survey and probing in 2001-4 indicated there is potential for remains of former structures to be present within the mill pond. Due to the absence of accurate location for these structures, there is a risk that they may extend into the proposed works. The structures, and any associated features and deposits, are of particular significance in understanding the early development of the works, likely predating the expansion of the pond in 1777.	High (if encountered)	Programme of mitigation to allow preservation by record
<b>Low</b>	Medieval Buried Remains	High	There is considered to be potential for remains relating to medieval structures and deposits of early industrial or agricultural activity that predate the works. These remains would be of evidential value in enhancing knowledge of a poorly understood area in the development of the works.	High (if encountered)	Programme of mitigation to allow preservation by record
<b>Unknown</b>	Pre-medieval Buried Remains	High	There is considered to be a residual potential for as yet unknown pre-medieval remains to survive within the site, particularly within areas where truncation of the original ground level caused by the construction of the mill pond is found to be limited. These remains would be of evidential value in enhancing knowledge of a poorly understood area in the wider development of settlement and activity within the region.	High (if encountered)	Programme of mitigation to allow preservation by record

**Table 4: Contribution of the settings to the significance of heritage assets potentially affected by the proposed works**

Contribution to Importance	Asset or Group	Significance	Summary of Asset/s and Setting	Impact of the Scheme	Proposed Mitigation
<b>Moderate</b>	Abbeydale Industrial Hamlet	High	The mill pond lies within the Scheduled area of the Abbeydale Works, and forms a key feature of the two Listed Buildings of Grade I to II* within the Scheduled area.	High impact during the construction works, with negligible impact during operation.	Minimise visual impact of development by design

## 8. References

### 8.1 Bibliography

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- Sheffield City Council 2004b. *Development Environment and Leisure Scrutiny Board 20<sup>th</sup> May 2004*. Accessed 21.10.13; Available: <http://meetings.sheffield.gov.uk/>.
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### 8.2 Historic Maps

- 1725 John Gelley map of Ecclesall Bierlow (Sheffield Archives ref. WWm/(Add)Map 18)
- 1771 Thomas Jefferys map of Yorkshire
- 1795 William Fairbank map of Sheffield
- 1807 Map of land at Ecclesall Bierlow (Sheffield Archives ref. Bag C301)

1810 William Bingley map of estates in Ecclesall Bierlow belonging to Earl Fitzwilliam (Sheffield Archives ref. NBC 411)

1854 Ordnance Survey map sheet 298

1894 Ordnance Survey map sheet 298

1906 Ordnance Survey map sheet 298

1923 Ordnance Survey map sheet 298

1935 Ordnance Survey map sheet 298

1952 Ordnance Survey map sheet 298

DRAFT

## Appendix 1: OASIS Form

**OASIS ID:** ecusltd1-163017

### Project details

**Project name** Abbeydale Industrial Hamlet Mill Pond  
Ecus Ltd. were commissioned by Sheffield City Council in October 2013 to prepare an Archaeological Desk-Based Assessment for the mill pond at Abbeydale Industrial Hamlet, Abbeydale Road South, Sheffield, located at SK 32562 81953.. The site visit and research for the project was undertaken in October 2013. The mill pond likely dates to the late 18th century, when it was expanded from an earlier head-goit with origins in the late 17th century. It is likely that the fabric of the dam walls surrounding the pond were maintained and possibly rebuilt as required over its 150 years of use, although the majority of fabric appears to be of at least 19th century date. There potential for buried archaeological remains of significant evidential value to be encountered within the mill pond. The highest potential is considered to comprise archaeological material within the silts of the pond including architectural fragments, grinding stones, as well as industrial and domestic refuse accumulated during the operation of the works. Geophysical survey and probing whilst the dam was drained in 2001-4 indicated there is potential for remains of former structures to be present within the mill pond. The structures, and any associated features and deposits, are of particular significance in understanding the early development of the works, likely predating the expansion of the pond in 1777. Consequently there is also considered to be a low potential for remains relating to medieval structures and deposits of early industrial or agricultural activity that predate the works.

**Project dates** Start: 10-10-2013 End: 01-11-2013

**Previous/future work** Yes / Yes

**Any associated project reference codes** 1004822 - NHLE No.

**Any associated project reference codes** 4763 - Contracting Unit No.

**Type of project** Desk based assessment

**Site status** Scheduled Monument (SM)

**Monument type** MILL POND Post Medieval

**Monument type** SLUICE Post Medieval

**Monument type** PENSTOCK Post Medieval

**Monument type** MILL DAM Post Medieval

**Monument type** HEAD RACE Post Medieval

**Significant Finds** GRINDING WHEEL Post Medieval

**Methods & techniques** "Documentary Search","Visual Inspection"

**Development type** Estate management (i.e. maintenance of existing structures and landscape by capital works and on-going maintenance)

**Prompt** Scheduled Monument Consent

### Project location

**Country** England

**Site location** SOUTH YORKSHIRE SHEFFIELD  
SHEFFIELD Abbeydale Industrial Hamlet Mill Pond

**Study area** 0.18 Hectares

**Site coordinates** SK 32562 81953 53 -1 53 19 59 N 001 30 39 W Point

### Project creators

**Name of Organisation** ECUS ltd

**Project brief originator** Self (i.e. landowner, developer, etc.)

**Project design originator** ECUS ltd

**Project director/manager** Chris John

**Project supervisor** James Thomson

**Type of sponsor/funding body** County Council



#### Project archives

Physical Archive Exists?	No
Digital Archive recipient	Ecus Ltd
Digital Contents	"none"
Digital Media available	"GIS","Images raster / digital photography","Text"
Paper Archive Exists?	No

#### Project bibliography

Publication type	Grey literature (unpublished document/manuscript)
Title	Abbeydale Industrial Hamlet Mill Pond - Desk-based Assessment
Author(s)/Editor(s)	Thomson, J.
Other bibliographic details	4763
Date	2013
Issuer or publisher	Ecus Ltd
Place of issue or publication	Sheffield
Description	A4 colour PDF

## Plates



Plate 1: General view of the Northern Dam



Plate 2: Detail of the sluice/penstock with mill pond steps at the bottom of the frame





**Plate 3:Detail of overspill structure looking along the northern dam**



**Plate 4:General view of the eastern dam**



**Plate 5: View along section of eastern dam rebuilt during construction of the Midland Mainline**



**Plate 6: View of the northwest section of the west dam**





**Plate 7: View of the southern section of the west dam**



**Plate 8: Detail of the remnants of stone walling associated with the former head-goit**

## Figures

DRAFT



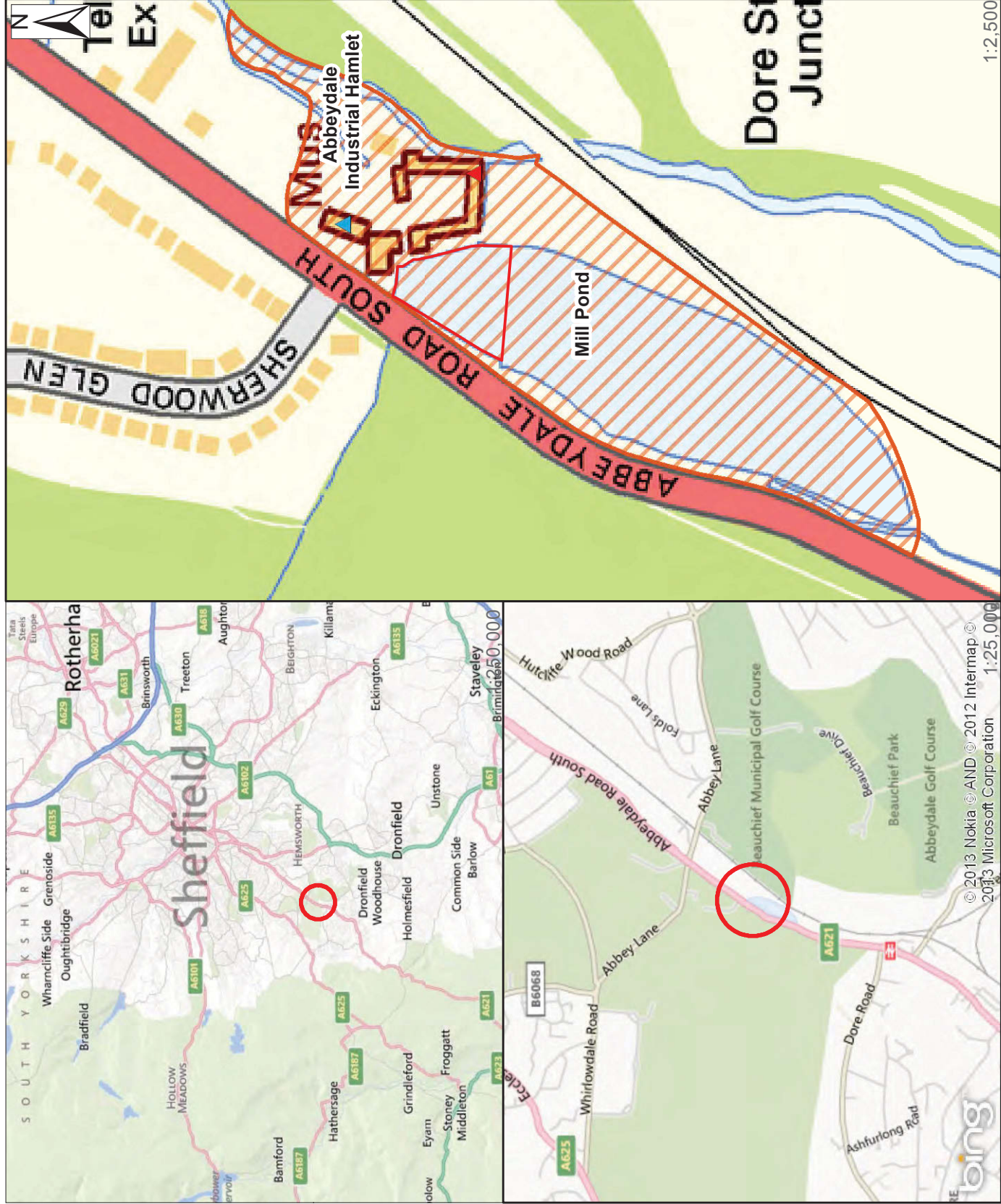
**Legend**

-  The Site
- Designations**
  -  Grade I Listed Building
  -  Grade II\* Listed Building
  -  Scheduled Monument

4763 Abbeydale Industrial Hamlet  
Sheffield City Council

**Site Location Plan**

Brook Holt 3 Blackburn Road Sheffield S61 2DW  
T: 0114 2669292 [www.ecusltd.co.uk](http://www.ecusltd.co.uk)



## Legend

The Site

## Components

North Dam

Pen-stock

Overspill

Mill pond stairs

East Dam

South and West Dam

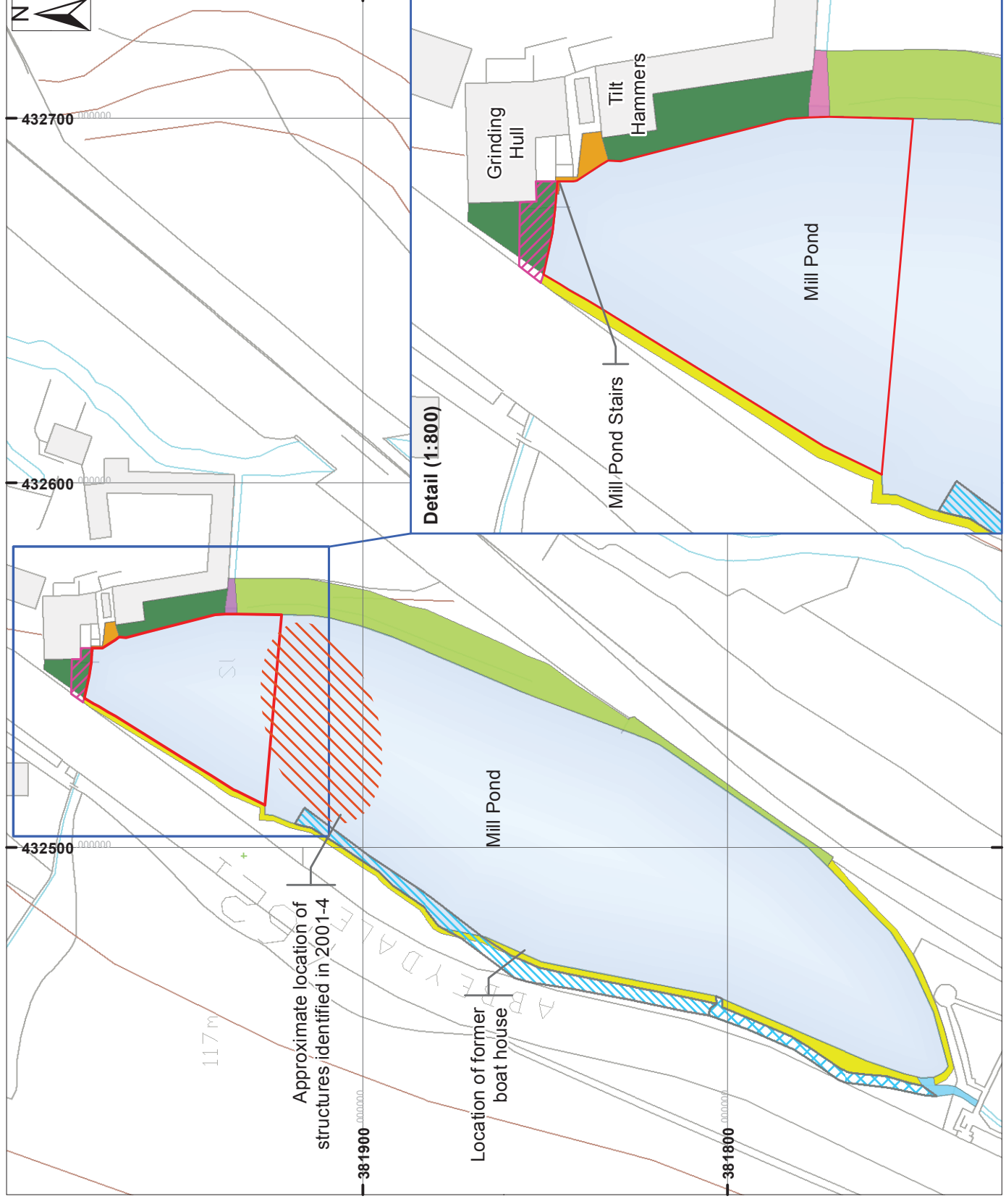
Head-goit (current route)

Head-goit (route on modern OS)

Head-goit (route from historic OS)

## Events

2001 Excavation





## Legend

Approximate Site Location



4763 Abbeydale Industrial Hamlet  
Sheffield City Council

1725 John Gellie's map


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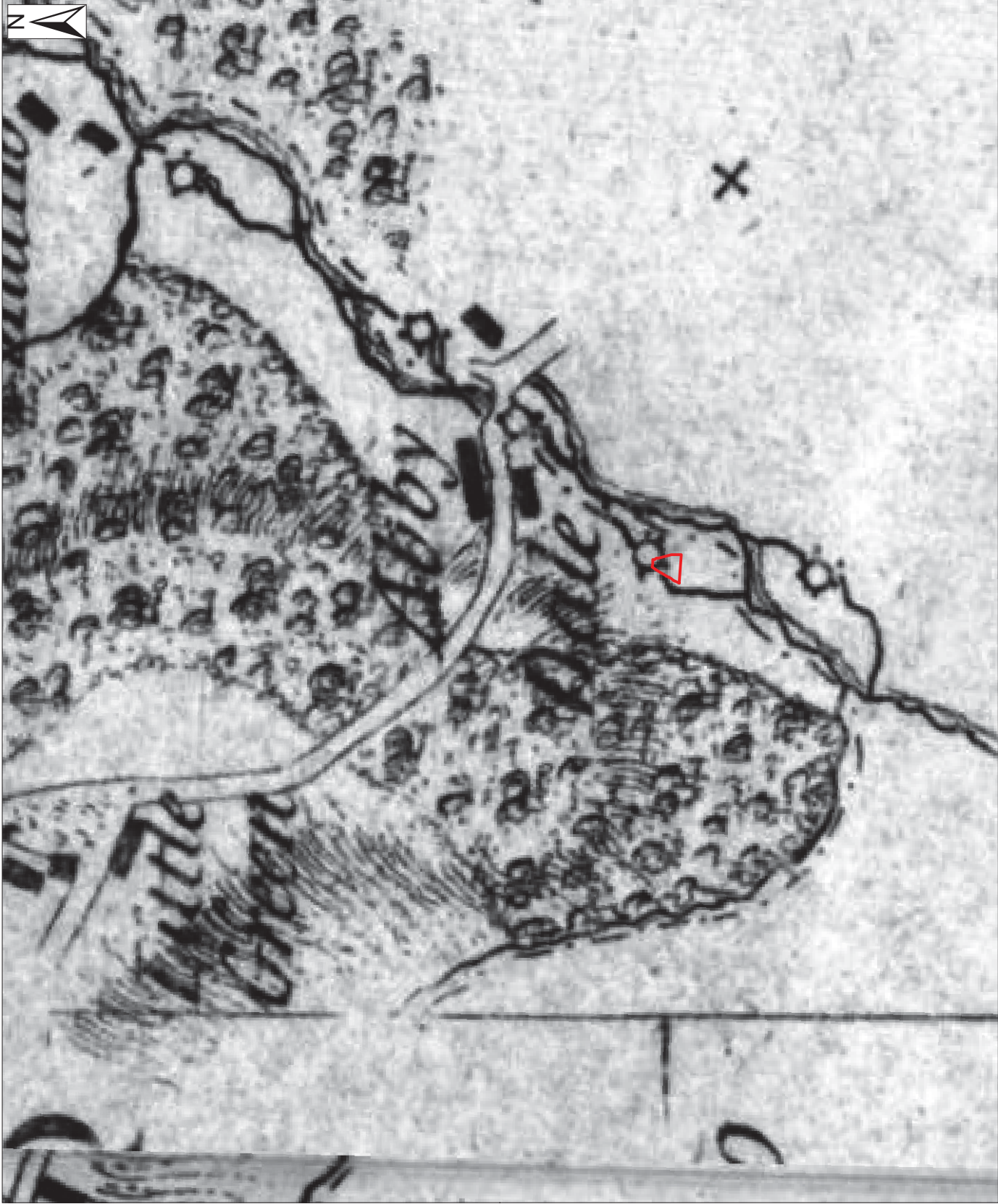




**ecus**  
ENVIRONMENTAL CONSULTANTS

Legend

 Approximate Site Location



4763 Abbeydale Industrial Hamlet  
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1771 Thomas Jefferys map


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## Legend

 Approximate Site Location

4763 Abbeydale Industrial Hamlet  
Sheffield City Council

1795 William Fairbank's map

Brook Holt 3 Blackburn Road Sheffield S61 2DW  
T: 0114 2669292 [www.ecuslid.co.uk](http://www.ecuslid.co.uk)



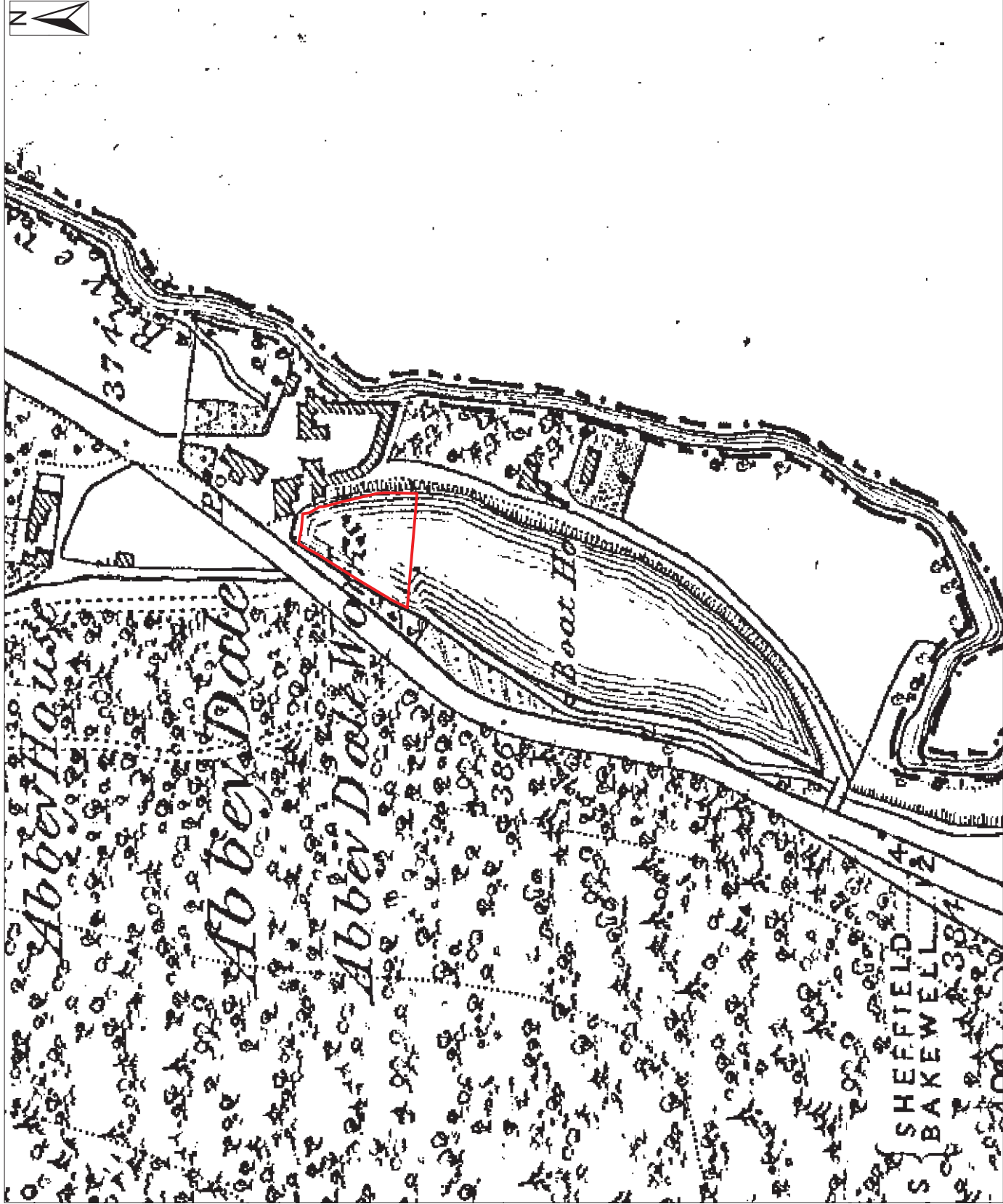


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### Legend

Approximate Site Location



4763 Abbeydale Industrial Hamlet  
Sheffield City Council

1854 Ordnance Survey map

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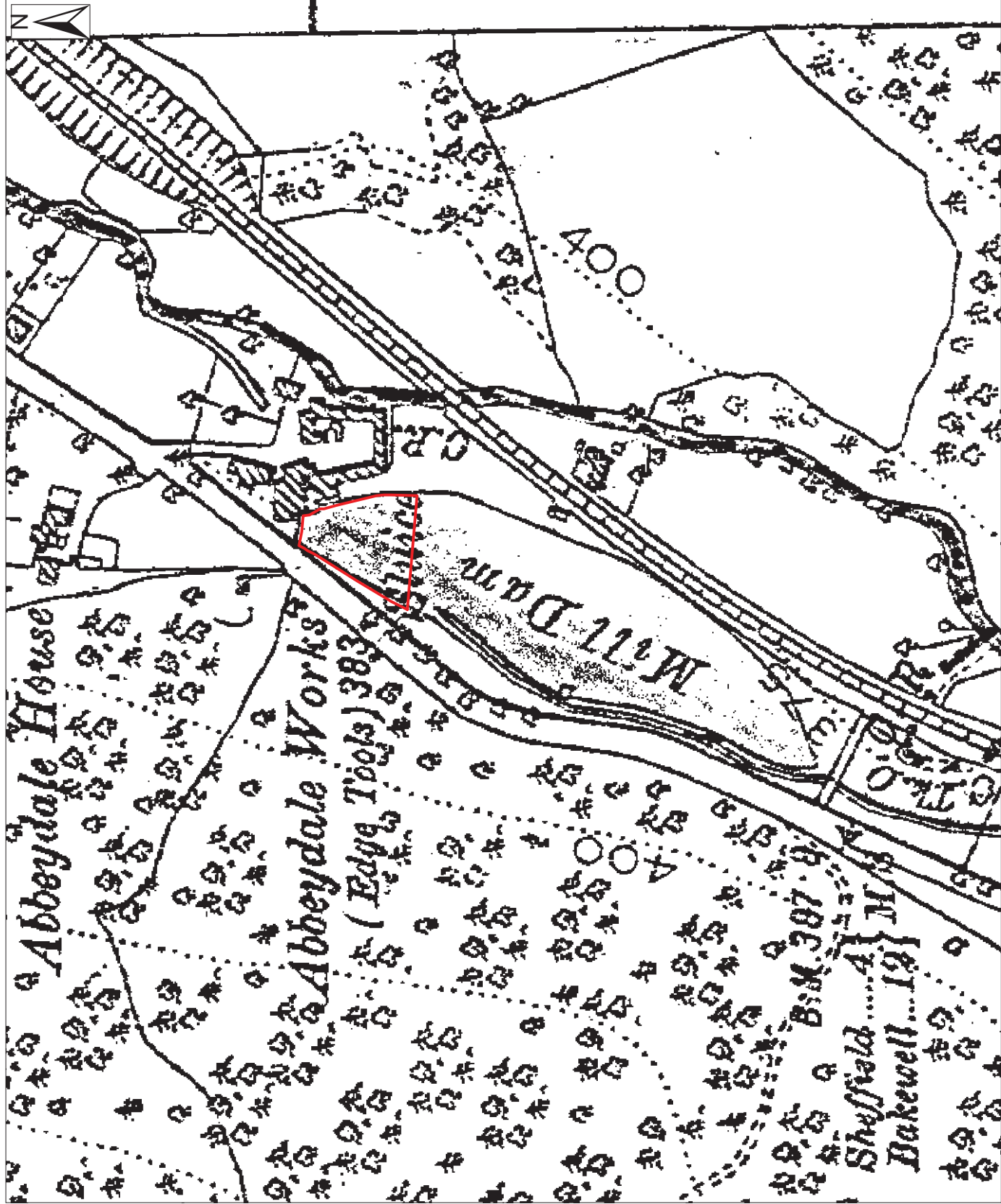


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Legend

Approximate Site Location



4763 Abbeydale Industrial Hamlet  
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1894 Ordnance Survey map


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**Legend**

 Approximate Site Location



4763 Abbeydale Industrial Hamlet  
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1906 Ordnance Survey map

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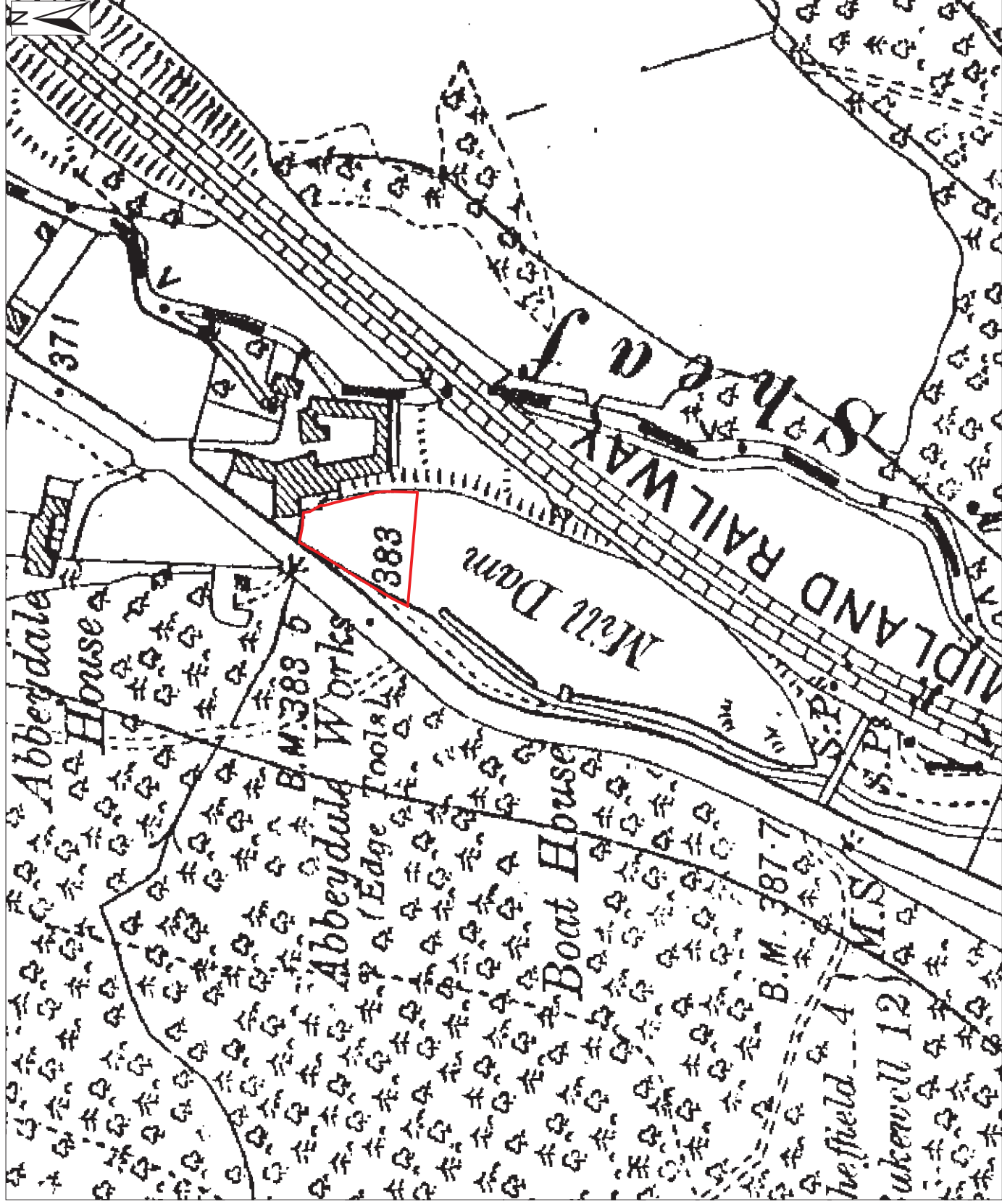


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### Legend

Approximate Site Location



4763 Abbeydale Industrial Hamlet  
Sheffield City Council

1924 Ordnance Survey map

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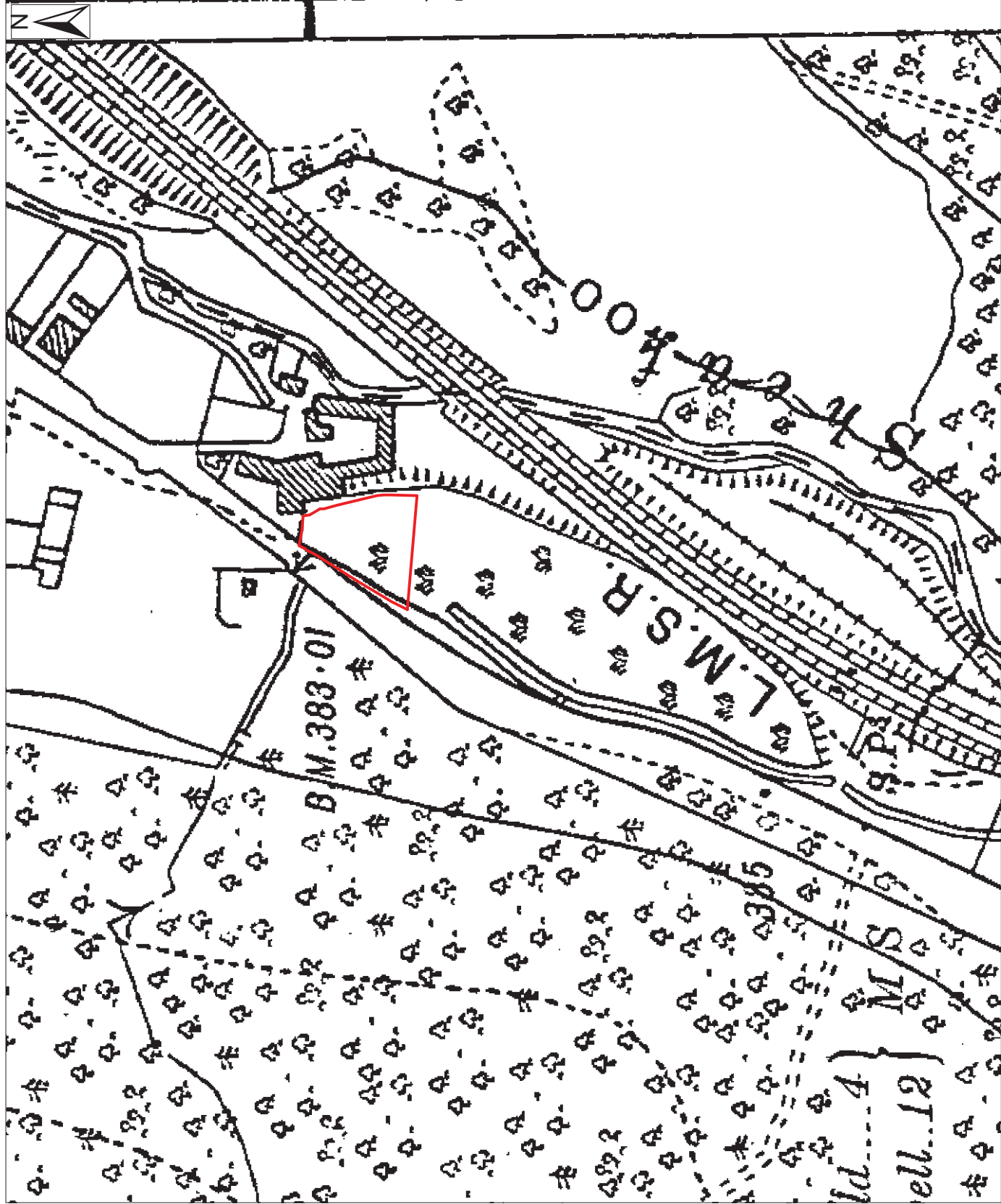




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Legend

 Approximate Site Location



4763 Abbeydale Industrial Hamlet  
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1935 Ordnance Survey map

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