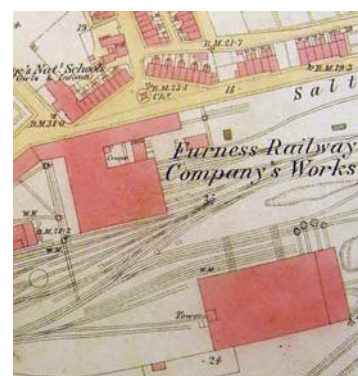


# DAVEY'S YARD, SALTHOUSE ROAD, BARROW-IN-FURNESS, CUMBRIA

## Archaeological Building Recording



Client:  
Barrow Borough Council

NGR: 320432 468751

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November 2015



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## Contents

Illustrations.....	2
Figures.....	2
Plates.....	2
Non-Technical Summary.....	4
Acknowledgements.....	4
1. Introduction.....	5
1.1 Circumstances of the Project.....	5
1.2 Location, Geology, and Topography.....	5
2. Methodology.....	7
2.1 Introduction.....	7
2.2 Desk-Based Assessment.....	7
2.3 Archaeological Building Recording.....	7
2.4 Archive.....	7
3. Desk-Based Assessment Results.....	9
3.1 Map and Image Regression.....	9
3.2 Background History.....	15
3.3 Conclusion.....	16
4. Building Recording.....	17
4.1 Arrangement and Fabric.....	17
4.2 External Detail.....	17
4.3 Internal Detail.....	25
5. Discussion.....	37
5.1 Introduction.....	37
5.2 Phasing.....	37
5.3 Conclusion.....	38
6. Bibliography.....	40
6.1 Primary and Cartographic Sources.....	40
6.2 Secondary Sources.....	40
6.3 Planning Applications.....	41
Appendix 1: Contemporary Descriptions of the Furness Railway Company Engineering Works.....	42

## Illustrations

### Figures

Figure 1: Site location .....	6
Figure 2: Ground floor plan .....	23
Figure 3: Cross-section A-A1 .....	24
Figure 4: Overall ground floor site plan .....	35
Figure 5: Cross-section B-B1 .....	36
Figure 6: Phase plan for whole site .....	39

### Plates

Plate 1: Ordnance Survey map 1851 .....	9
Plate 2 (left): Ordnance Survey 1: 10,560 map c1873 .....	10
Plate 3 (right): Ordnance Survey 1: 2,500 map c1873 .....	10
Plate 4: Ordnance Survey map 1891 .....	10
Plate 5 (left): Iron and Steel Institute, Barrow Meeting, map 1903 (after Andrews 2003, 75).....	11
Plate 6 (right): Ordnance Survey map 1911 .....	11
Plate 7: The Furness Railway Company Engineering Works, c1920 (after Andrews 2003, 35).....	11
Plate 8: Ordnance Survey map 1933 .....	12
Plate 9: Barrow Air Raid Precautions (A.R.P.) map, 1939 .....	12
Plate 10: Internal divisions of the buildings, 1940 .....	13
Plate 11: Workshops on the site, 1947 .....	13
Plate 12 (left): Plan of the site, c1950.....	14
Plate 13 (right): Plan of the workshops, 1953.....	14
Plate 14: Plan dated 1953 submitted on behalf Roberts, Davy & Co.....	14
Plate 15: Plan associated with a planning application submitted in 1997 .....	15
Plate 16 (left): West end of the north external elevation .....	17
Plate 17 (right): The north external elevation continuing to the east.....	17
Plate 18 (left): Blocked doorways in the east end of the north external elevation.....	18
Plate 19 (right): East end of the north external elevation .....	18
Plate 20: West external elevation .....	18
Plate 21: South end of the west external elevation .....	19
Plate 22: South end of the east external elevation .....	19
Plate 23 (left): North end of the east external elevation .....	20
Plate 24 (right): Detail of blocked doorways towards the north end of the east external elevation.....	20
Plate 25: Truncated wall finished with concrete block at the east end of the south external elevation.....	20
Plate 26: East end of the external south elevation .....	21
Plate 27 (left): East sliding door.....	21
Plate 28 (right): Central sliding door .....	21
Plate 29 (left): Typical window in the south external elevation.....	22

Plate 30 (right): Column to the south at the east end of the south elevation .....	22
Plate 31: West end of the south external elevation .....	22
Plate 32 (left): Large east/west beam and joists on the south side of Room G1 .....	25
Plate 33 (right): Iron columns and corrugated sheet roof in the north-east corner of Room G1 .....	25
Plate 34: North elevation of Room G1 .....	26
Plate 35 (left): North end of the east elevation of Room G1 .....	26
Plate 36 (right): Small blocked doorway towards the north end of the east elevation of Room G1 .....	26
Plate 37 (left): Iron bearing box and blocked feature in the east end of the south elevation of Room G1 .....	27
Plate 38 (right): Truncated section of the south elevation of Room G1 .....	27
Plate 39 (left): South end of the east elevation of Room G1 .....	28
Plate 40 (right): South-east corner of Room G1 .....	28
Plate 41 (left): Remains of partition wall against the south end of the east elevation of Room G1 .....	28
Plate 42 (right): Traces of paint on the partition wall at the south end of Room G1 .....	28
Plate 43 (left): West end of the south elevation of Room G1 .....	29
Plate 44 (right): Flue in the south-west corner of Room G1 .....	29
Plate 45 (left): South end of the west elevation of Room G1 .....	29
Plate 46 (right): North end of the west elevation of Room G1 .....	29
Plate 47 (left): Corrugated sheet roof of Room G2 .....	30
Plate 48 (right): South end of Room G2 .....	30
Plate 49 (left): Spiral staircase against the west elevation of Room G2 .....	30
Plate 50 (right): North elevation of Room G2 showing blocked doorway .....	30
Plate 51 (left): The east elevation of Room G2 .....	31
Plate 52 (right): The west elevation of Room G2 .....	31
Plate 53 (left): Trusses in Room G3 .....	31
Plate 54 (right): West end of the north elevation of Room G3 .....	31
Plate 55 (left): West end of the north elevation of Room G3 after the return .....	32
Plate 56 (right): East elevation of Room G3 .....	32
Plate 57 (left): East end of the south elevation of Room G3 .....	32
Plate 58 (right): West end of the south elevation of Room G3 .....	32
Plate 59 (left): North end of the west elevation of Room G3 .....	33
Plate 60 (right): Threshold stone in the south elevation of Room G3 .....	33
Plate 61 (left): Truss in Room G4 .....	33
Plate 62 (right): North elevation of Room G4 .....	33
Plate 63 (left): East elevation of Room G4 .....	34
Plate 64 (right): Projecting flue in Room G4 .....	34
Plate 65 (left): South elevation of Room G4 .....	34
Plate 66 (right): West elevation of Room G4 .....	34

## Non-Technical Summary

Prior to the demolition of a group of buildings at Davey's Yard, Salthouse Road, Barrow-in-Furness, Cumbria, a request was made for an archaeological building recording to be carried out. The initial phase of the recording was carried out by Greenlane Archaeology in December 2009 and recorded buildings to the north and east of the current site as well as what remained of a boundary to the west side. Following demolition of these buildings Greenlane Archaeology was commissioned to carry out recording of the remaining elements of the site. The onsite recording was undertaken on 21<sup>st</sup> October 2015.

The site is situated on the edge of the hamlet of Salthouse and the original village of Barrow, both of which have at least medieval origins and were associated with Furness Abbey. The area around Davey's Yard however was not developed until the middle of the 19<sup>th</sup> century, when it became the site of the Barrow terminus railway station in 1846, which was accompanied by the construction of an engine shed, smith's shop, and workers cottages.

These buildings subsequently grew to form the extensive Furness Railway Company's Engineering Works with elements including the buildings recorded designed and constructed between 1855 and 1864, probably to the designs of Edward Paley. The Engineering Works were situated in an area that saw rapid development as the town grew in the 1860s and 1870s, and the railway and its associated infrastructure were a key part of its early development. The original railway station was rebuilt nearby in the early 1860s, also to the designs of Edward Paley, and the general area, known as 'The Strand', contained many locally important commercial buildings.

The building recording undertaken in 2009 revealed six phases of development at the site. By examining the existing cartographic evidence and photographs taken of the site many of the phases of construction could be dated to within a few years. The recording of the remaining structures in 2015 revealed only three phases relating to these buildings, but allowed a phase plan for the entire building to be produced, again with six phases evident.

The significance of the site as part of the Furness Railway Engineering Works and its historical importance to the growth of Barrow-in-Furness is also discussed, as is the need to consider the presence of below-ground remains of archaeological interest relating to earlier buildings on the site but also industrial processes that might have taken place on site. Further archaeological work at the site or on adjoining areas that formed part of the overall Furness Railway Company's Works would also allow a better understanding of the whole site, which was originally very extensive.

## Acknowledgements

Greenlane Archaeology would like to thank Barrow Borough Council for commissioning the project, particularly Steve Solsby, Assistant Director (Regeneration and Built Environment), and special thanks are due to John McNally for his help with access to the buildings and information about them.

The building recording was carried out Dan Elsworth and Tom Mace both of whom compiled this report. The illustrations were produced by Tom Mace, the project was managed by Dan Elsworth, and the report was edited by Jo Dawson.

# 1. Introduction

## 1.1 Circumstances of the Project

1.1.1 Prior to the demolition of a group of buildings at Davey's Yard, Salthouse Road, Barrow-in-Furness, Cumbria (NGR 320432 468751) as part of redevelopment of the area being carried out by Barrow Borough Council (hereafter 'the client') a request was made by Barrow Borough Council for an archaeological building recording to be carried out.

1.1.2 Following discussions with Brian Vickers, Building Surveyor at Barrow Borough Council, it was concluded that the archaeological work was to comprise a building recording equivalent to an English Heritage Level 2-type survey (English Heritage 2006). This investigation was intended to provide a record of the site, some understanding of its development, and place it in its local and historical context.

1.1.3 In response to this requirement Greenlane Archaeology produced a project design. The initial phase of recording work was carried out onsite between the 30<sup>th</sup> November and 4<sup>th</sup> of December 2009 and reported on at the time (Greenlane Archaeology 2010), although this did not examine the full extent of the building as access could not be arranged to the southern end at that time. This section was left standing following the initial phase of demolition and this report records the results of the latest phase of the recording of this remaining section, which was carried out on the 21<sup>st</sup> October 2015 following further discussion with Steve Solsby, Assistant Director (Regeneration and Built Environment) at Barrow Borough Council.

## 1.2 Location, Geology, and Topography

1.2.1 Salthouse is situated approximately 1km south-west of Barrow-in-Furness town centre on the north side of Cavendish Docks on the edge of Walney Channel (Figure 1). Barrow-in-Furness is largely situated on an area of red Sherwood sandstone of St Bees type, but there is a large area of Carboniferous limestone to the north-east (Moseley 1978, plate 1). The overlying drift deposits comprise glacial material such as boulder clay, which forms a hummocky rolling landscape outside the urban area (Countryside Commission 1998, 27).

1.2.2 The site is situated at approximately 9m above sea level (Ordnance Survey 2005), within the urban area of Barrow-in-Furness.

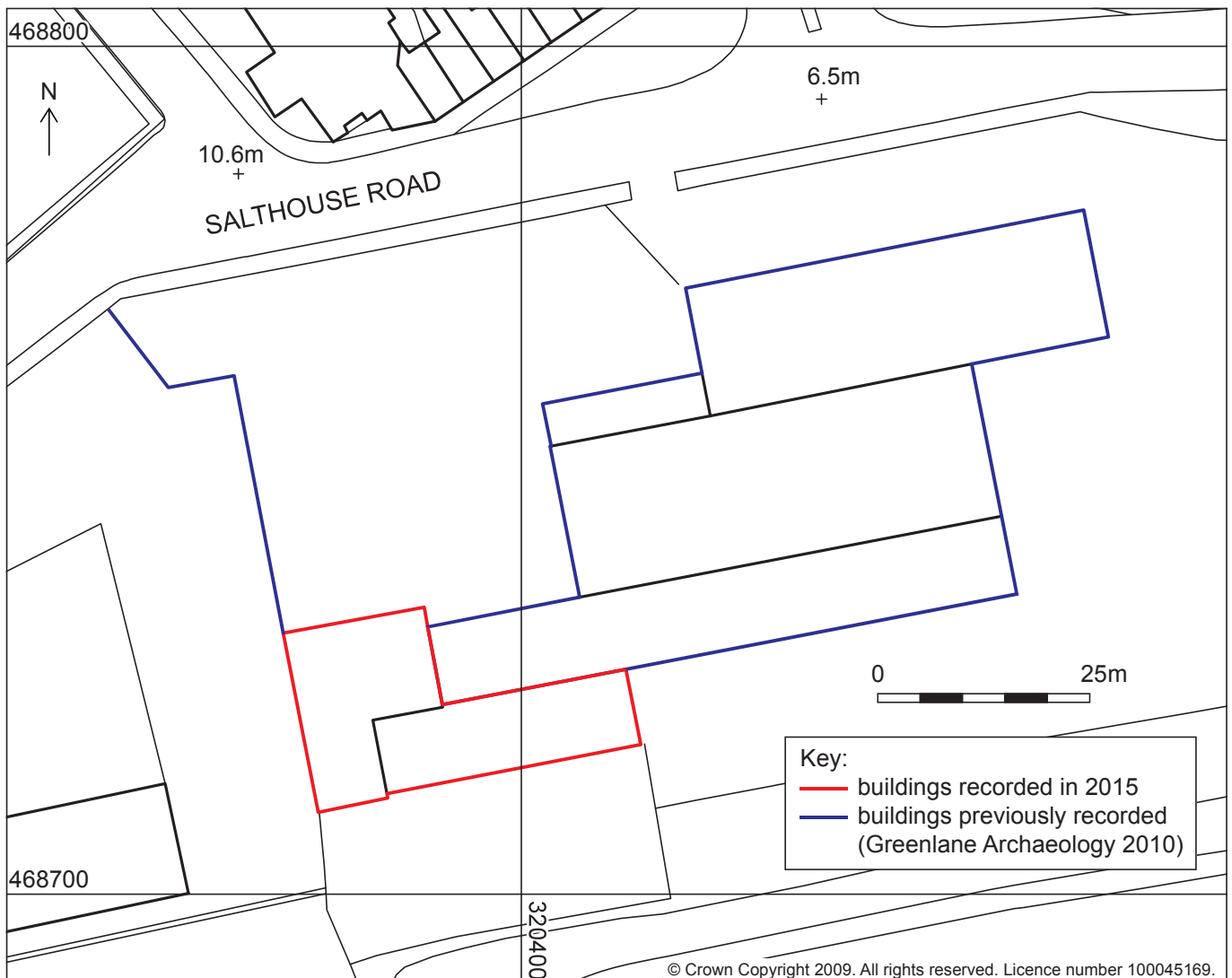
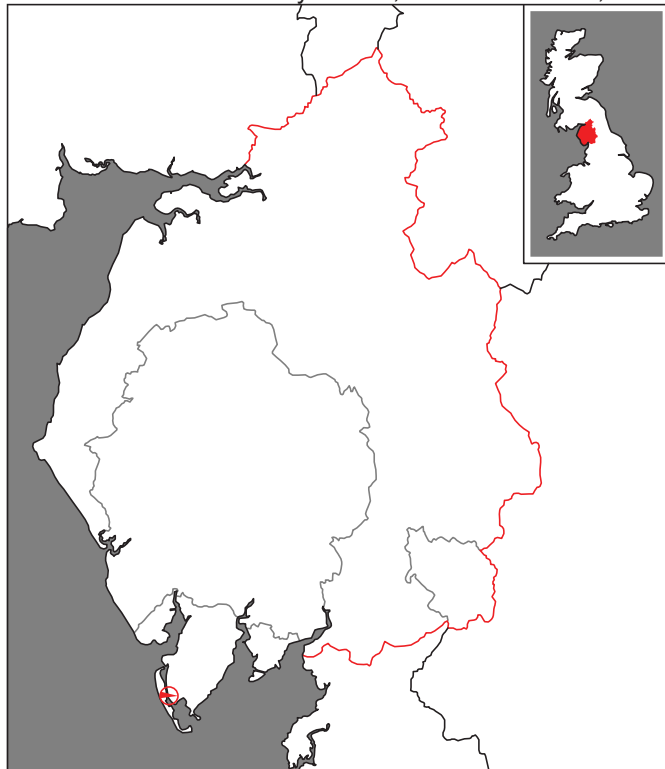


Figure 1: Site location

Client: Barrow Borough Council

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## 2. Methodology

### 2.1 Introduction

2.1.1 The building investigation comprised three separate elements intended to provide a suitable record of the structures in line with English Heritage standards (English Heritage 2006) and according to the standards and guidance of the Chartered Institute for Archaeologists (CIfA 2014). A desk-based assessment was carried out as part of the previous phase of work (Greenlane Archaeology 2010) but the relevant elements of the methodology used are outlined below for completeness (see *Section 2.2*). In addition, a suitable archive was compiled to provide a permanent paper record of the project and its results in accordance with CIfA and English Heritage guidelines (English Heritage 1991; Brown 2007).

### 2.2 Desk-Based Assessment

2.2.1 A desk-based assessment was carried out as part of the previous phase of work. This was done in accordance with the standards and guidance of the then Institute for Archaeologists (IfA 2008), which has since become the Chartered Institute for Archaeologists. This principally comprised an examination of early maps of the site and published secondary sources. A number of sources of information were used:

- **Cumbria Archive Centre, Barrow-in-Furness (CAC(B))**: this was visited in order to examine early maps and plans of the site, original documents relating to properties on the site, and local and regional histories and directories;
- **Barrow Borough Council**: details of previous planning applications relating to the site were obtained from Barrow Borough Council;
- **Greenlane Archaeology library**: additional secondary sources were used to provide information for the site background.

### 2.3 Archaeological Building Recording

2.3.1 The building recording was carried out to English Heritage Level-2 type standards (English Heritage 2006), which provides a relatively detailed record of the building, but discusses its development in terms of its historical context to only a limited extent. The recording comprised the following elements:

- **Written record**: descriptive records of all parts of the building were made using Greenlane Archaeology *pro forma* record sheets;
- **Photographs**: photographs in both 35mm colour print and colour digital format were taken of the main features of the building, its general surroundings, and any features of architectural or archaeological interest. A selection of the colour digital photographs is included in this report, and the remaining photographs are in the project archive;
- **Drawings**: the principal parts of the buildings were surveyed as part of previous phase of work using a reflectorless total station coupled to a portable computer running TheoLT and AutoCAD LT, which enables survey data to be captured and viewed on site digitally at a scale of 1:1. The results of this survey were then plotted at a scale of 1:100 and hand annotated with additional detail for the latest phase of recording. In addition, a cross-section was produced by hand. The drawings produced ultimately comprised:
  - i. ground floor plan at a scale of 1:100;
  - ii. cross-section at a scale of 1:50.

### 2.4 Archive

2.4.1 A comprehensive archive of the project has been produced in accordance with the project design, and current CIfA and English Heritage guidelines (Brown 2007; English Heritage 1991). The paper and digital archive and a copy of this report will be deposited in the Cumbria Archive Centre in Barrow-in-Furness after the completion of the project. Within one month of the completion of the

fieldwork/data collection a copy of this report will be provided for the client and a copy will be retained by Greenlane Archaeology. In addition a digital copy will be provided to the Historic Environment Record at Cumbria County Council, and a record of the project will be made on the *Online Access to Index of Archaeological Investigations* (OASIS) scheme.

### 3. Desk-Based Assessment Results

#### 3.1 Map and Image Regression

3.1.1 **Introduction:** although there are early, typically county-wide, maps that include the area, they are generally very small scale and so the first useful maps of the area do not appear until the mid-19<sup>th</sup> century. As a result, it is only maps from that date onwards that are discussed below. In addition, images including an early sketch of the site and an aerial photo have also been utilised, as have details from early planning applications relating to the site. The outline of the building as it survived has been overlain on the available maps; the blue areas denote elements of the site recorded in 2009, the red areas those elements covered by this report.

3.1.2 **Ordnance Survey 1851:** this map (Plate 1) shows the location of the engine house near Barrow Station, prior to the construction of Salthouse Road. None of the buildings surveyed as part of this report had been built.

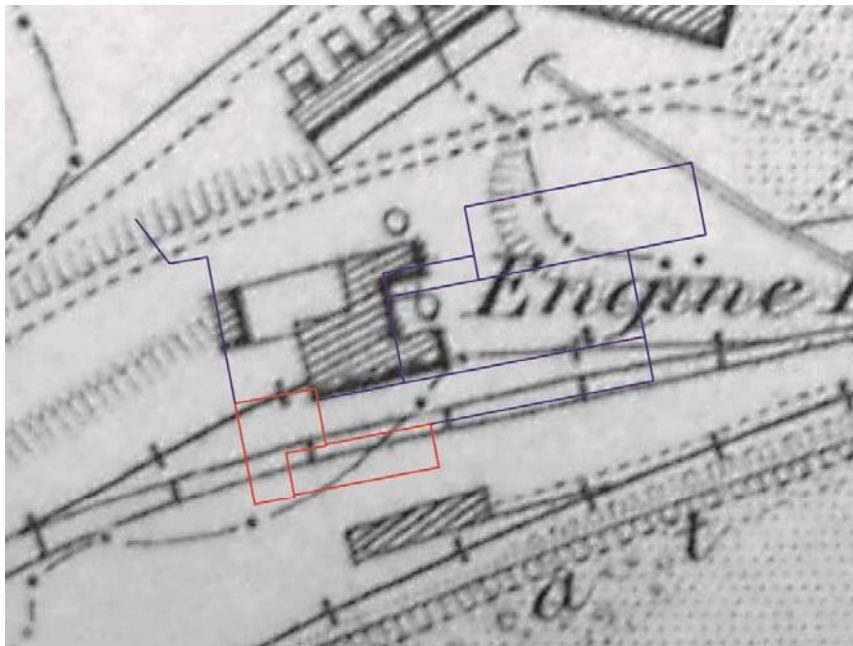


Plate 1: Ordnance Survey map 1851

3.1.3 **Ordnance Survey c1873:** the main road (Salthouse Road) is now shown to the north of the buildings on site, which form a square block (Plate 2). The current survey records structures marked at the south-west corner of the block in red, the previous phase of survey recorded those marked in blue. Individual buildings are demarcated on the 1:2,500 map (Plate 3) but there is some discrepancy between the two versions. The 1:2,500 map shows the western edge of the square block of buildings further to the east (along the western edge of Room G2), whereas the 1:10,560 map shows the western edge to include the footprint of Room G1 as well. The buildings form part of a much larger site labelled 'Furness Railway Company's Works', which extends to the west and south-east.



Plate 2 (left): Ordnance Survey 1:10,560 map c1873

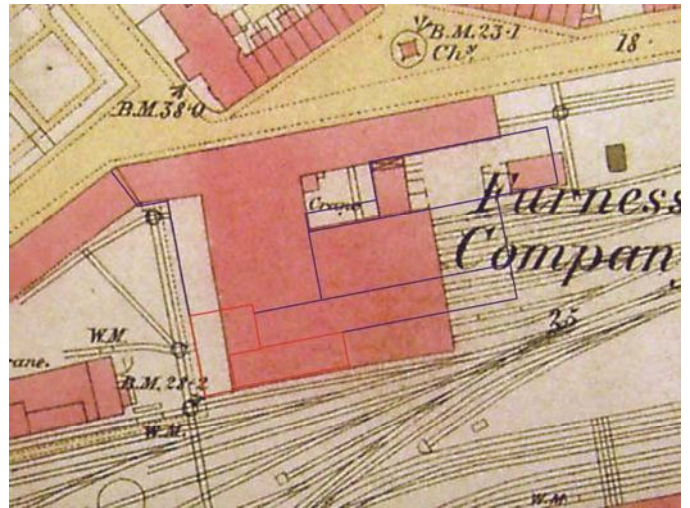


Plate 3 (right): Ordnance Survey 1:2,500 map c1873

3.1.4 **Ordnance Survey 1891**: the site occupies the south-west corner of the block of buildings (Plate 4). The slight return in the south elevation is apparent.

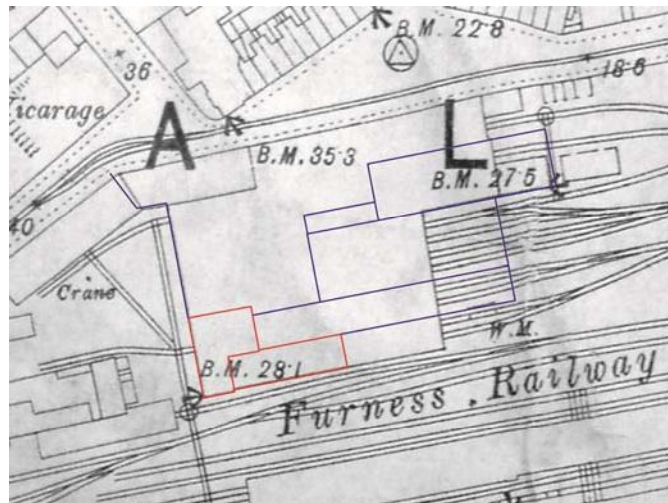


Plate 4: Ordnance Survey map 1891

3.1.5 **Map from the Iron and Steel Institute, Barrow Meeting, September 1903**: this map identifies some of the individual buildings within the block; the current buildings occupy parts of what were a machine shop and a paint shop, with the division between the two lining up with the south end of Room G1 (Plate 5).

3.1.6 **Ordnance Survey 1911**: this map (Plate 6) has the same outline as the Iron and Steel Institute's map of 1903 but does not show the individual shops.



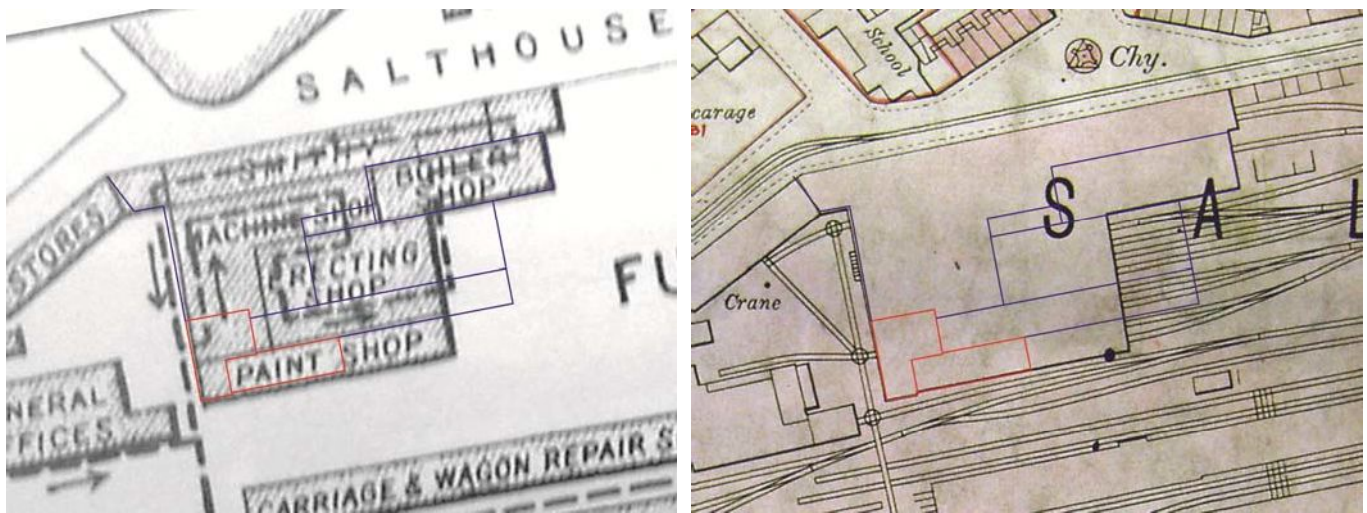


Plate 5 (left): Iron and Steel Institute, Barrow Meeting, map 1903 (after Andrews 2003, 75)

Plate 6 (right): Ordnance Survey map 1911

3.1.7 **Photograph of the Furness Railway Company Engineering Works c1920:** the current survey records what remains of the near corner of the block of buildings shown in this photograph (Plate 7). The white lines on the photograph indicate elements which are recorded as part of the current survey and the earlier building recording carried out in 2009 (Greenlane Archaeology 2010). The dashed lines indicate where features had been demolished prior to the building recording taking place (i.e. before 2009). The photograph demonstrates that several of the larger sheds on the east side of the site had been enlarged to their current (as of 2009) size between 1911 and this date.

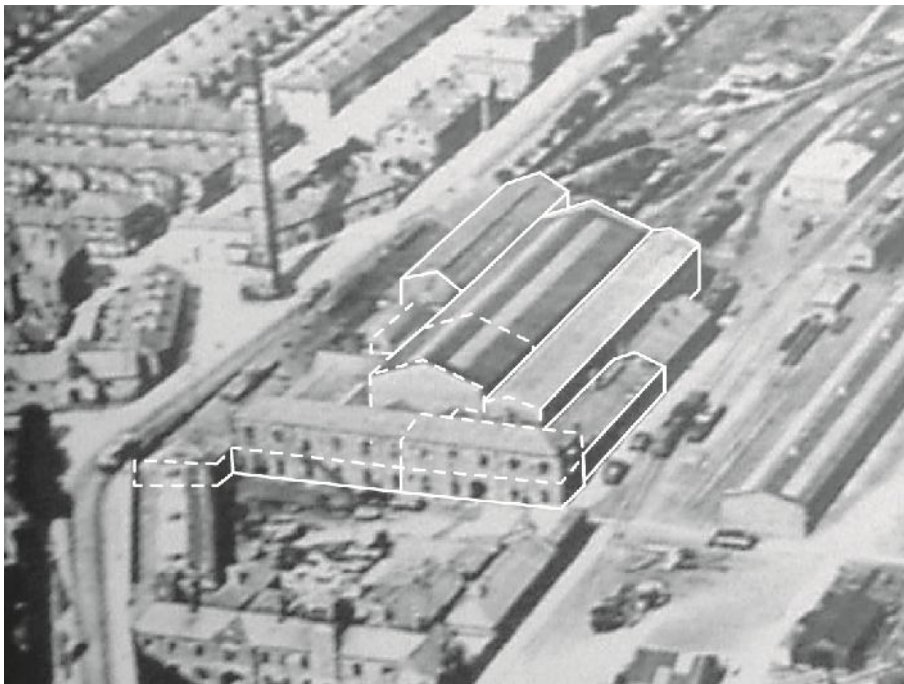


Plate 7: The Furness Railway Company Engineering Works, c1920 (after Andrews 2003, 35)

3.1.8 **Ordnance Survey 1933:** this map records the layout of buildings which can be seen in the above photograph (Plate 7) but no detail is provided of the various workshops, stores and office buildings which make up the block.

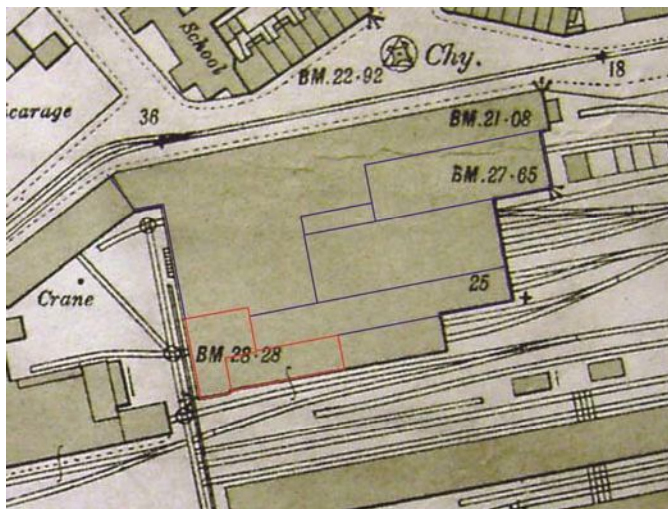


Plate 8: Ordnance Survey map 1933

3.1.9 **Barrow Air Raid Precautions (A.R.P.) plan 1939 (BT/BR 1/8 Bundle 5 BW 12/39 1939)**: this plan shows that all of the buildings had fallen out of use by 1939 (Plate 9). The current site occupies offices and stores to the south (at the west end of what was formerly labelled 'paint shop', although the east end is unlabelled) and the south side of the fitting shop (formerly the 'machine shop') (Plate 9; cf. Plate 5).

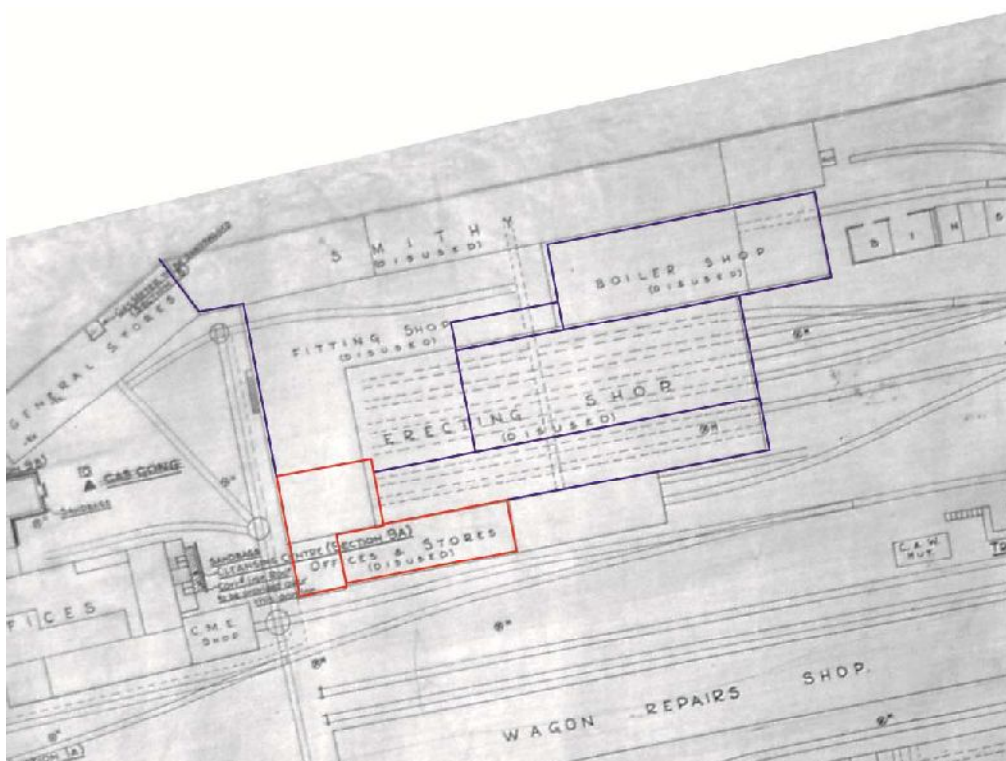


Plate 9: Barrow Air Raid Precautions (A.R.P.) map, 1939

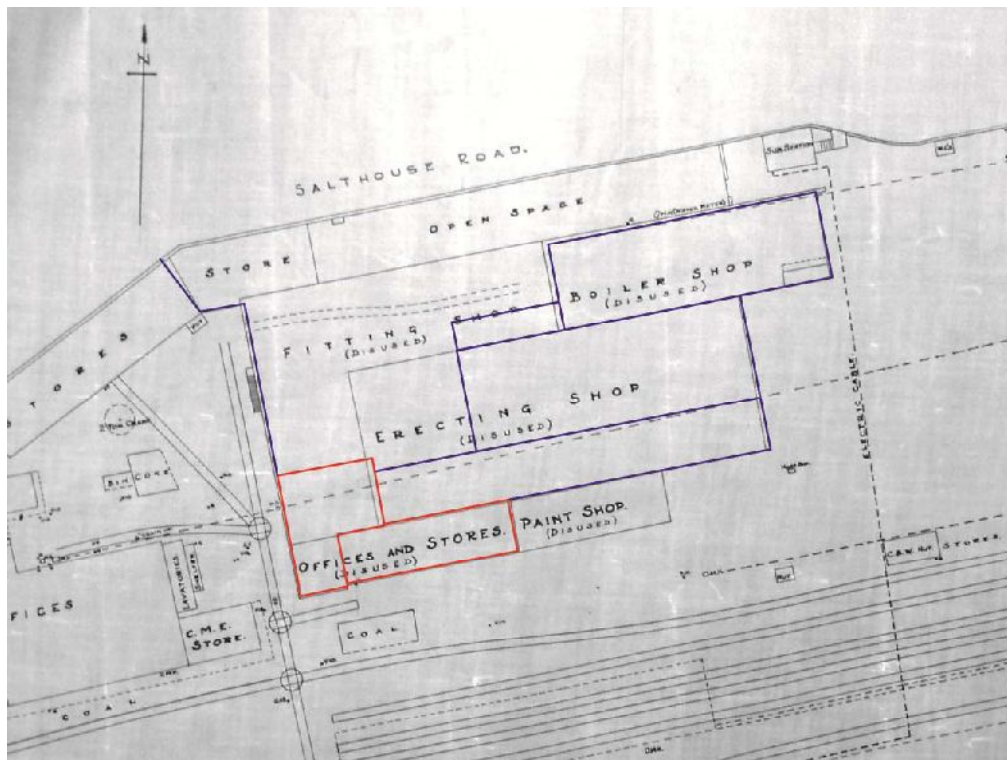
3.1.10 **Plan of Buildings – 1940 (BTBR/Bundle 10/BW 44-40 1940)**: the internal divisions of the offices and stores are shown on this plan of 1940 (Plate 10).





**Plate 10: Internal divisions of the buildings, 1940**

3.1.11 **Plan of Buildings – Low Yard, Barrow 1947 (BTBR/Bundle 4/BW 115/47 1947)**: this plan shows the same information about the current buildings being surveyed as the Barrow Air Raid Precautions (A.R.P.) plan of 1939 (Plate 11; cf. Plate 9). The east end of the paint shop is again referred to as such, albeit disused. All of the buildings remained disused.



**Plate 11: Workshops on the site, 1947**

3.1.12 **Undated and untitled plan of the Barrow works c1950 (BT/BR/Bundle 1/16-38 c1950)**: in c1950 the whole block is identified as occupied by 'Messrs. Roberts, Davy & Co' (Plate 12).

3.1.13 **Proposed District Engineer's Workshops and Stores 1953 (BTBR/Bundle 4/BW 47/53 1953)**: this plan (Plate 13) shows a similar level of detail to the 1947 plan of the workshops. It is worth noting that both the fitting shop and the erecting shop have now been sold to 'Messrs Davey' ('Davey' is presumably a misspelling of 'Davy' from Messrs. Roberts, Davy & Co).

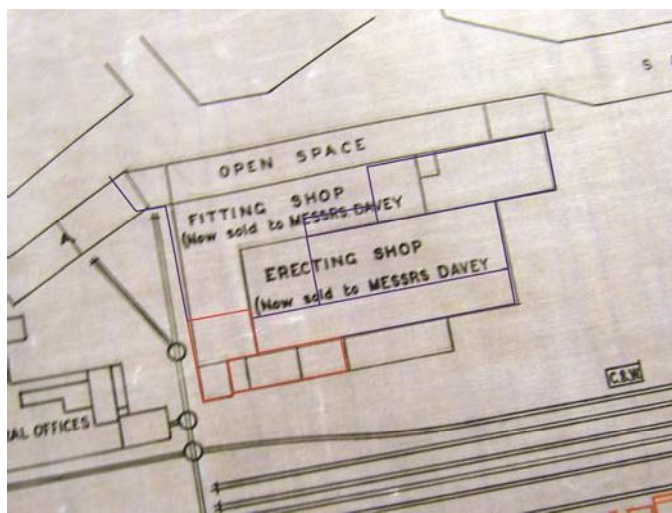


Plate 12 (left): Plan of the site, c1950

Plate 13 (right): Plan of the workshops, 1953

3.1.14 **Planning application no. 583 submitted by Roberts, Davy & Co, 1953:** plans were submitted on behalf of Roberts, Davy & Co on the 10 October 1949 which proposed to partly reinstate buildings destroyed by fire at their warehouse and factory at Salthouse Road. The plan for the proposed building (which is dated 1953) appears to foreshorten the disused erecting shop and occupies much of the area which the fitting shop occupied previously, so presumably affected the north end of Room G1. The erecting shop is shown to extend to the boundary wall but this might be misleading.

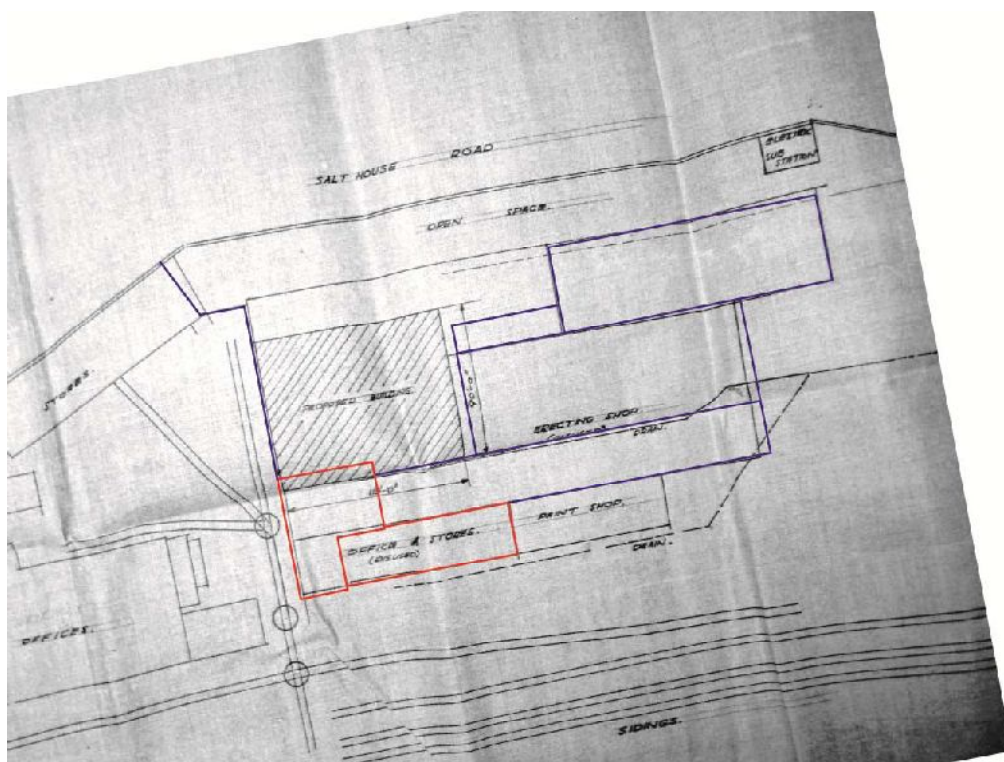


Plate 14: Plan dated 1953 submitted on behalf Roberts, Davy & Co

3.1.15 **Planning application no. 6/97/9001/094, 1997:** the erecting shop had clearly been foreshortened by this time. 'McNally' occupied the offices and stores and what remains of the fitting shop to the south-east corner of the block.



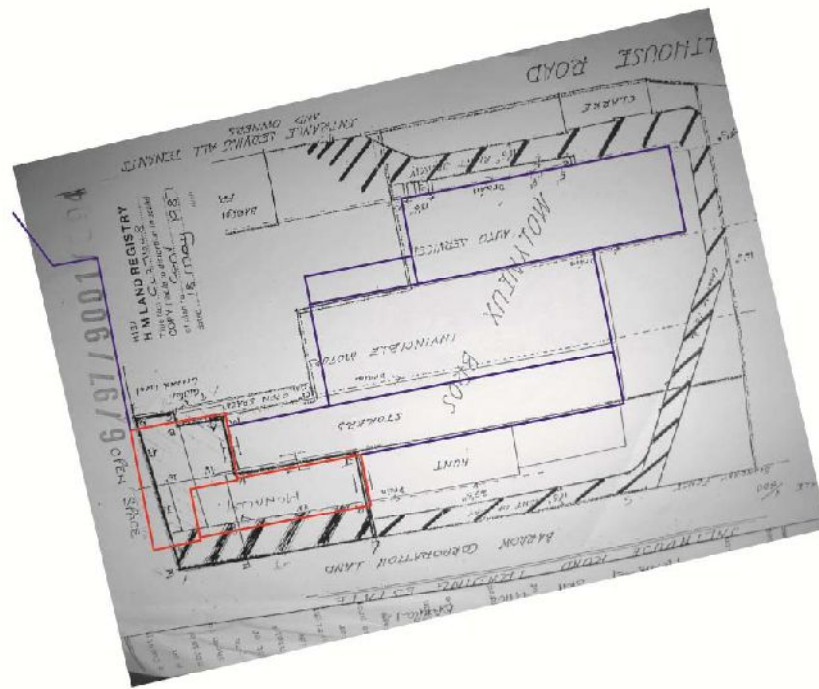


Plate 15: Plan associated with a planning application submitted in 1997

## 3.2 Background History

3.2.1 Davey's Yard is situated to the south-west of the hamlet of Salthouse, south of the original village of Barrow. Until the middle of the 19<sup>th</sup> century the area occupied by Davey's Yard was entirely undeveloped agricultural land on the edge of what was to become Barrow-in-Furness but this changed in 1846 with the coming of the railway linking the iron mines of Dalton and the slate quarries at Kirkby-in-Furness with the port at Barrow (Battye and Peascod 1996, 41). Crucially for Salthouse, and the site that became Davey's Yard, on January 16<sup>th</sup> 1846 the directors of the railway company '*decided upon the erection of a small colony of cottages at Salthouse... Ten small cottages were to be built "as cheaply as possible"*' for the accommodation of the railway employees and labourers (*op cit*, 182; although Pollard and Marshall (1953, 115) state that the railway colony was established in 1849). At around the same time they also decided to build an engine shed and smith's shop nearby at a cost of £1,000 (*ibid*). This building is shown on the first Ordnance Survey map and marked 'Engine House' (Plate 1).

3.2.2 The cartographic evidence (see *Section 3.1* above) shows that the site saw considerable development from the mid to late 19<sup>th</sup> century which continued into the 20<sup>th</sup> century. There is little detailed information about the development of the Davey's Yard site, although it is clear that it remained the site of the Furness Railway Company's Engineering Works (OA North 2003). This is the only surviving part of what was originally a very large complex of buildings, elements of which were encountered during recent evaluation work (OA North 2005), which was situated in an area that saw rapid development as the town grew in the 1860s and 1870s. Some detailed contemporary descriptions of the engineering works are presented in full in *Appendix 1*.

3.2.3 After the completion of the original terminus station, associated engine shed, and workers' cottages in 1846-1847 it was not until the 1850s that the site was remodelled. There is conflicting information about the development at this stage, although the most recent and comprehensive survey of the Furness Railway states that its general offices, which stood in front the engineering works to the west facing onto the Strand, were built to the designs of Edward G Paley, more famously later part of Sharpe, Paley and Austin of Lancaster in stages between 1855 and 1857 (Andrews 2012, 23). This corresponds with a plan of Barrow produced in 1856 (reproduced in Marshall 1958, 230) which shows the completed complex, broadly matching that on the Ordnance Survey plans of 1873 (Plate 2 and Plate 3), and it is also shown on another plan of 1866; *ibid*, 231). It is not clear whether Paley also designed the original

engineering works buildings Price states that he did, but with plans dated 1862, although no specific source is given (Price 1998, 103), however, these buildings are not included in a more recent survey of the work of Sharpe, Paley and Austin and there is clearly considerable difficulty in locating documentary evidence (Brandwood 2012, 122). It has also been stated that the engineering works were constructed and opened in 1864 (Battye and Peascod 1996, 41), and while this again seems to clash with some of the other evidence it is possible that completion took a considerable length of time from beginning in 1855. The associated area, known as 'The Strand', contained a number of notable commercial and architecturally important buildings (CCC and EH c2002, 9) including those associated with the railway and known to have been constructed in the early 1860s to the designs of Paley and Austin (Brandwood 2012, 220), on which their development had depended.

3.2.4 Some previous investigation has been carried out specifically into the buildings at Davey's Yard, initially by Grosse (1981, 8) and subsequently expanded upon by Wignall (1982, 16) and Andrews (1983, 14), and elements of the site have been discussed in more general publications relating to the railway. The original engine shed was apparently enlarged and a wagon repair shop built on reclaimed land next to the main line (Andrews 2003, 35). A 'running shed' was constructed in 1875 (Wignall 1982, 16). According to Andrews *'William Gradwell obtained the contract for constructing this shed at a cost of £8,476 and it was built in the local sandstone, one of the last to be so built in the town other than prestige buildings such as the new Town Hall'* (Andrews 1983, 14). Wignall states that this later became the machine shop and turnery (Wignall 1982, 16). Further locomotive sheds were also built in 1900 and 1906 (*ibid*) but these were perhaps located elsewhere within the engineering works.

3.2.5 The site clearly retained much of its original form in the early part of the 20<sup>th</sup> century but the amalgamation of the Furness Railway Company into the London Midland and Scottish Railway Company in 1923 may have led to the closure of the works as such activities were centralised at four main sites, which did not include Barrow (Norman 1994). However, by 1939 the buildings are shown as being disused and by the 1950s elements had been demolished. It was acquired by Messrs Roberts, Davy and Co by c1950, a company of coke and coal dealers, who carried out several modifications, but by the later 20<sup>th</sup> century the site was largely being utilised as a car repair workshop, hire car depot, and other small businesses.

### 3.3 Conclusion

3.3.1 The site did not begin to develop until the mid-19<sup>th</sup> century, at which time it became the headquarters of the Furness Railway Company, the growth of which was closely tied to the establishment of the modern town of Barrow-in-Furness.

3.3.2 It is evident from the cartographic sources that the area now comprising Davey's Yard saw extensive development in the mid-19<sup>th</sup> century and the site was closely associated with the rapid expansion of Barrow that followed. The buildings formed part of the Furness Railway Company's Engineering Works and were situated in an area that saw extensive development during the 1860s and 1870s. An engine house is shown on the Ordnance Survey map of 1851, prior to the construction of Salthouse Road, but it is difficult to identify which, if any, of the current buildings are represented on the earliest maps of the site since the block of buildings shown on the site is not subdivided to show individual structures. It is therefore unclear from the cartographic evidence how much (if any) of the earlier structures on site were incorporated into later buildings. The surviving buildings at Davey's Yard seem to relate to a period of building carried out at the site towards the end of the 19<sup>th</sup> century and during the early 20<sup>th</sup> century. The documentary and cartographic sources give some information about the uses to which the buildings were put, although only with any certainty from the beginning of the 20<sup>th</sup> century, but it is evident that at least some new building took place in this period. By at least the 1930s much of the site had gone out of use and parts were soon demolished. A number of new structures were built during the 20<sup>th</sup> century, but many of these were small scale and temporary in nature leaving the main elements of the current buildings largely intact.

## 4. Building Recording

### 4.1 Arrangement and Fabric

4.1.1 The building forms a single block aligned essentially east/west with a return to the north at the west end making it L-shaped. The roof is missing off this section but the rest is roofed with corrugated sheet metal. The walls are mainly dressed sandstone in irregular courses but red brick is used throughout. Internally, the timber is machine cut and iron columns and beams are used.

### 4.2 External Detail

4.2.1 **North elevation:** the west end is a very rough inserted brick wall, butting the stone wall to the west, which has a concrete scar for a lean-to roof on it. The brick wall is a mixture of headers and stretchers, with pillars on the north face, topped with corrugated metal sheeting (Plate 16). The elevation returns to the south at the east end of this section and continues in brick, much higher than to the west, in English garden bond in a ratio of 3:1 (Plate 17). The ends of two sawn-off trusses are visible on timber pads and there is a hole for a third. There are two doorways on the ground floor with brick pointed arches, blocked with brick, and a patch of concrete high on the west side with battens attached. The west door has a second door cut through, which is also blocked (Plate 18). The wall is topped with concrete slabs except at the east end. There is a possible butt joint at the east end but high up. The elevation returns to the south again and continues as a single wall, providing essentially an internal view of the south elevation at this point. A blocked round-headed window is visible and the wall is truncated at the east end and finished with concrete blocks (Plate 19). The lower part is whitewashed on the west side and there is a single course of brick on top.



Plate 16 (left): West end of the north external elevation



Plate 17 (right): The north external elevation continuing to the east





**Plate 18 (left): Blocked doorways in the east end of the north external elevation**

**Plate 19 (right): East end of the north external elevation**

4.2.2 **West elevation:** the north end is truncated but was recorded as part of the earlier building recording (Greenlane Archaeology 2010). The remaining section has a row of four windows similar to those on the south elevation, with ashlar round heads, a large doorway, also with a round head, and a smaller doorway to the south sharing a jamb with one of the windows. The windows and large door to the north are blocked with stone. The windows to the south have nine-light casements (or the remains of) and the smaller door has remains of the frame and over-light but no door. The wall is constructed from relatively regular dressed courses but truncated at the top.



**Plate 20: West external elevation**





**Plate 21: South end of the west external elevation**

4.2.3 **East elevation:** the south end of the east external elevation is a brick constructed gable end, finished with concrete render (Plate 22). It incorporates a projecting flue/chimney and has a slight step along the top. There are two purlins projecting through the gable end and a gutter on the north side to the north of which the wall is raised by bricks. The doorway to the south has been blocked leaving an alcove. The north section of the elevation used to be an internal wall so has already been recorded (Greenlane Archaeology 2010). It comprises the stone gable and is raised with brick on either side and originally ran to the north with brick running east from this point (Plate 23). There are two large doorways with round heads blocked with stone, the south one of which has an alcove with a stone shelf at the bottom (Plate 24). This also has a brick-blocked opening at the top and two projecting timbers. There is a further doorway to the south, the arch of which has gone and which has been blocked with brick and timber. Large timber battens have been bolted to the wall, scarf-jointed together, with uprights below.



**Plate 22: South end of the east external elevation**



**Plate 23 (left): North end of the east external elevation**

**Plate 24 (right): Detail of blocked doorways towards the north end of the east external elevation**

4.2.4 **South elevation:** the east end of the south external elevation is truncated and finished with concrete block (Plate 25). This long elevation has seven tall windows, three of which are blocked, and three large doorways with sliding doors (Plate 26). The east and central doors are timber plank and batten constructions with corrugated metal (Plate 27 and Plate 28). The windows all have round heads and ashlar quoins with projecting stone sills. The east window is blocked with stone and truncated on the east side (Plate 25), the two west ones are blocked with red brick (one is visible to the left hand side in Plate 26, the other is visible to the right of the sliding door in), and the rest have intact multi-light iron casements in timber frames (e.g. Plate 29). A short distance to the south at the east end of the elevation is a large iron column, which is possibly *in situ*, with a flanged top (Plate 30). There is a small door and blocked feature at the end of the elevation before it steps out slightly to the west. The sliding door is inserted and a window is visible on the east side of it, blocked with brick (Plate 31). There is a scar of an outshut roof running above the door and a projecting slab on scrolled corbels at the top of what remains of the wall but the upper part of the wall is truncated.



**Plate 25: Truncated wall finished with concrete block at the east end of the south external elevation**





**Plate 26: East end of the external south elevation**



**Plate 27 (left): East sliding door**



**Plate 28 (right): Central sliding door**



**Plate 29 (left): Typical window in the south external elevation**

**Plate 30 (right): Column to the south at the east end of the south elevation**



**Plate 31: West end of the south external elevation**



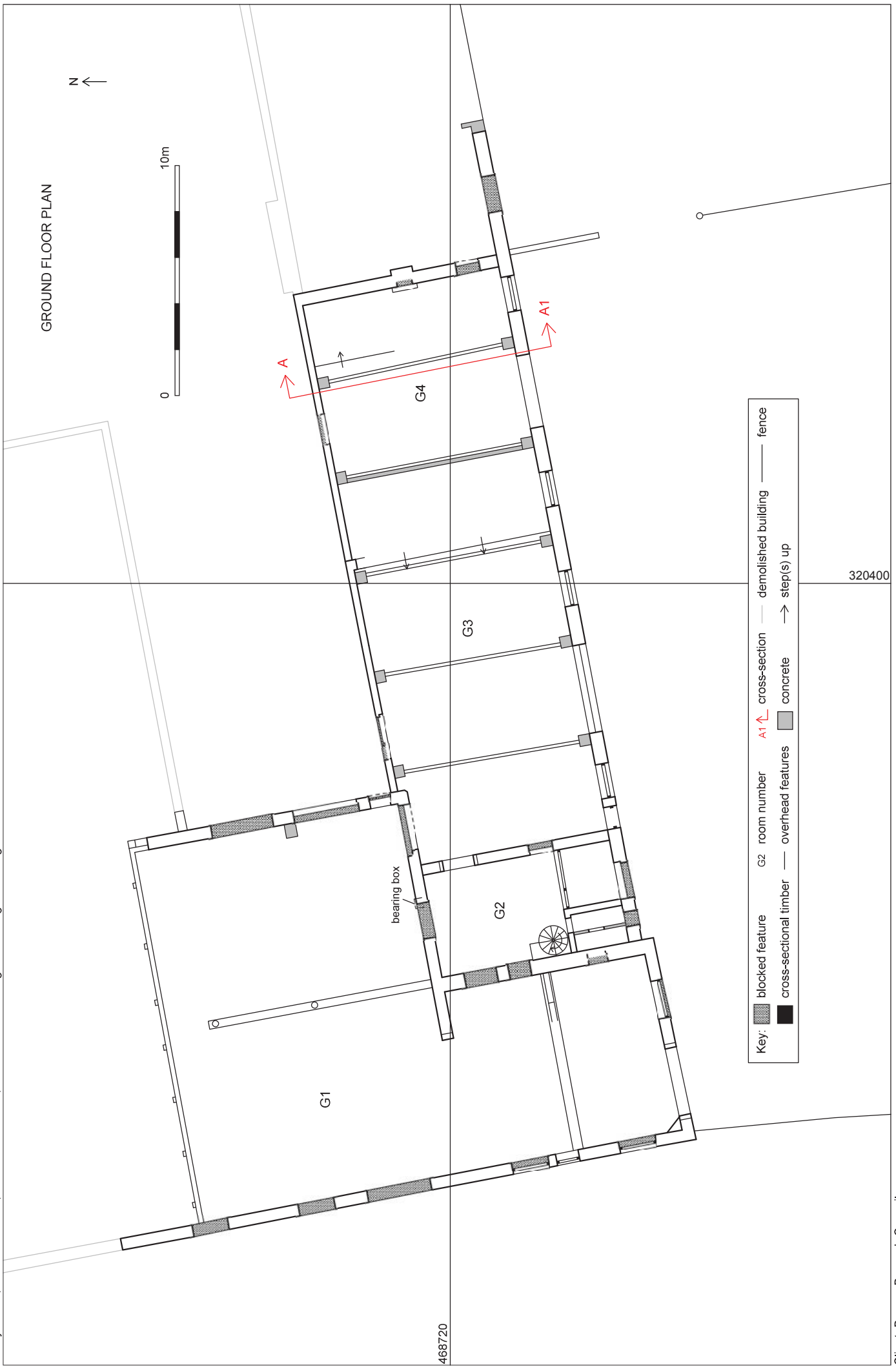
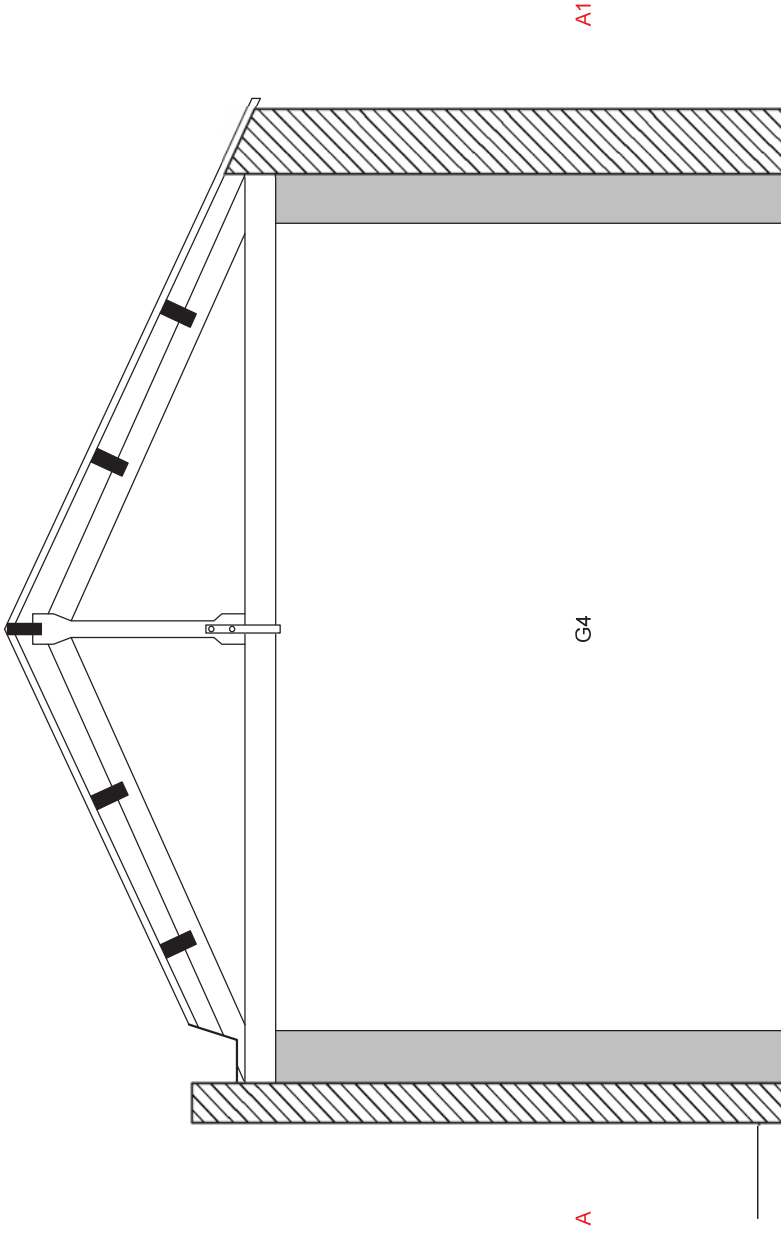


Figure 2: Ground floor plan

CROSS-SECTION A-A1



Key: ■ cross-sectional timber ▨ cross-sectional wall ■ concrete — edge uncertain G4 room number

Figure 3: Cross-section A-A1

## 4.3 Internal Detail

4.3.1 **Ground floor Room 1:** this room, at the west end, is not really a room as such but comprises a number of internal and external spaces enclosed by walls. The floor is concrete slab and there is no roof or ceiling. There is a large east/west beam on the south side and some joists indicate an upper floor (Plate 32). Two columns and a heavy iron north/south I-beam with reinforcing braces in the north-east corner indicate that there was also an upper floor over this section. The columns are relatively plain, with flanged tops supporting an *ad hoc* iron framework and corrugated sheeting (Plate 33). The walls are mostly stone but the north elevation is brick topped with corrugated metal sheets (Plate 34). The brickwork is much neater on this side than the north side, and mostly stretcher bond with occasional rows of headers. The north end of the east elevation forms the gable end, raised with brick on either side (Plate 35 and Plate 36). There are two large doorways with rounded tops blocked with stone and another smaller doorway on the south side.



Plate 32 (left): Large east/west beam and joists on the south side of Room G1

Plate 33 (right): Iron columns and corrugated sheet roof in the north-east corner of Room G1





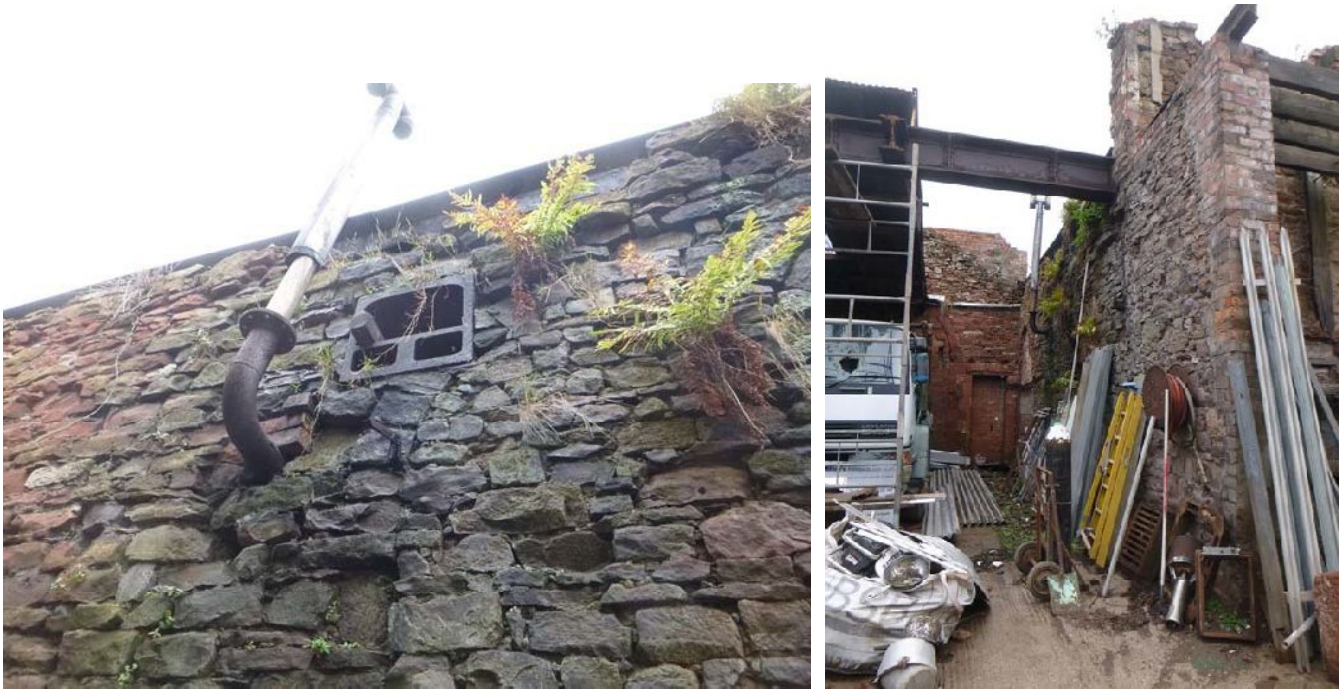
**Plate 34: North elevation of Room G1**



**Plate 35 (left): North end of the east elevation of Room G1**

**Plate 36 (right): Small blocked doorway towards the north end of the east elevation of Room G1**

4.3.2 The smaller doorway is inserted, with brick in the jambs and a timber lintel, and blocked with brick leaving an alcove (Plate 36). There is a block of masonry forming a buttress between the large doors. The wall returns to the west at this point, forming part of the south elevation (Plate 36). This section is stone in very rough courses. There are two round-headed windows in the east side, both of which are blocked. The east one is blocked with brick leaving a small alcove (Plate 36); the west one is blocked with stone (Plate 37). An iron bearing box cuts through the arch of the one to the west (Plate 37).



**Plate 37 (left): Iron bearing box and blocked feature in the east end of the south elevation of Room G1**

**Plate 38 (right): Truncated section of the south elevation of Room G1**

4.3.3 The remainder of this section of wall is truncated at the west end and finished with brick (Plate 38). Here it returns to the south and continues as the south end of the east elevation (Plate 39 and Plate 40). There are two rough doorways on the north side which are blocked with a mix of concrete block and brick, with timber lintels (just visible behind the pallets and bricks in Plate 39). There are truncated remains of a wall to the south (Plate 41) then a further door blocked with brick (Plate 40). The stub of the partition wall in this section has remains of plaster, including cornice and skirting (Plate 41), both moulded, and wall paint (Plate 42). The wall top has lots of brick and possibly two remnants of windows.





**Plate 39 (left): South end of the east elevation of Room G1**

**Plate 40 (right): South-east corner of Room G1**



**Plate 41 (left): Remains of partition wall against the south end of the east elevation of Room G1**



**Plate 42 (right): Traces of paint on the partition wall at the south end of Room G1**

4.3.4 The west end of the south elevation forms the inside of the long, south external elevation. The east side has a window, with a round stone arch on top, which is blocked externally but has a nine-light casement internally (Plate 43). One light in the top is bottom hung. Again, there is a row of joist holes above for an upper floor (Plate 43). The wide doorway to the west is inserted, or has at least been



widened on the west side, and has iron I-beam lintels (Plate 43). The angled masonry in the south-west corner with a wider base formed a flue (Plate 44).



**Plate 43 (left): West end of the south elevation of Room G1**

**Plate 44 (right): Flue in the south-west corner of Room G1**

4.3.5 The two round-headed windows at the south end of the west elevation are blocked with buff brick (Plate 45) and built more roughly internally than outside. The doorway between also has a round head and, although the jambs are damaged, the door might still be *in situ* just behind the board covering it. The large opening to the north of these is blocked with stone and there are another two blocked windows to the north of that also blocked with stone (Plate 46).



**Plate 45 (left): South end of the west elevation of Room G1**

**Plate 46 (right): North end of the west elevation of Room G1**

4.3.6 **Ground floor Room 2:** this room has a concrete floor and is open to the modern corrugated metal sheets of the roof on two purlins per pitch with a ridge purlin (Plate 47). The joists from the first floor remain on the south side where it still forms the ceiling over the two small rooms below. The east side of the south elevation is timber stud wall and the west side is brick with a doorway with a chamfered surround (Plate 48). The south-east room also has a doorway with a plain surround and rough window and there is a spiral iron staircase against the west elevation leading to a small surviving section of the



first floor (Plate 49 and Plate 52). The stairs have a decorative post but are otherwise fairly plain. Inside the south-east room the floor is finished with vinyl and the walls are plastered. There is an alcove in the south elevation which was probably a former window. The south-west room is divided in two by concrete blocks into a room with a toilet and a room with sink, both of which are attached to the south wall. The wall of the floor above is stone.



**Plate 47 (left): Corrugated sheet roof of Room G2**

**Plate 48 (right): South end of Room G2**



**Plate 49 (left): Spiral staircase against the west elevation of Room G2**

**Plate 50 (right): North elevation of Room G2 showing blocked doorway**

4.3.7 The north elevation is dominated by a large doorway with a round head and ashlar quoins with an iron pipe passing through on the east side forming a flue from the stove below (Plate 50). The east wall butts the north. The east elevation has a rough plaster finish throughout, with joist holes denoting the first floor level and attached metal shelving at first floor level above. The doorway on the north side is



inserted and has an iron I-beam lintel and brick in the jambs. There is a further doorway to the south, which is possibly also inserted, which is blocked with brick to leave an alcove (Plate 51). The west elevation has joist holes at first floor level and is plain above (Plate 52). There is some plaster below and the remnants of the original paint scheme. There are two blocked openings filled with concrete block or brick to the north.



Plate 51 (left): The east elevation of Room G2



Plate 52 (right): The west elevation of Room G2

4.3.8 **Ground floor Room 3:** this room has a brick floor with some concrete at the east end stepping down. It is open to the roof, which is supported by three trusses, each a king post truss with angled braces (Plate 53). The king posts are strapped to the tie beam with an extra bracket below the north end of the central truss and pillars of concrete blocks support both ends of all three. There are two purlins per pitch and a ridge plank and a large timber gutter along the north side.



Plate 53 (left): Trusses in Room G3



Plate 54 (right): West end of the north elevation of Room G3

4.3.9 The walls are mostly whitewashed stone. The north elevation is stone at the west end with a wide doorway, which is probably inserted, with an iron lintel and brick blocking leaving an alcove (Plate 54). The return is chamfered and the wall to the east is brick in English garden bond at 3:1 with three concrete pillars below the trusses and a doorway at the west end with a pointed brick arch cut for another door, both of which are blocked (Plate 55). There must be a second door to the east, which is visible from the north side, but it is obscured by shelving internally (see *Section 4.2.1*). There is a truncated returning/cross wall at the east end (see Figure 2). The lower part of the east elevation is concrete block, the upper section is plywood, and there are concrete block pillars at either end (Plate 56).



**Plate 55 (left): West end of the north elevation of Room G3 after the return**

**Plate 56 (right): East elevation of Room G3**

4.3.10 The south elevation has two windows on the east side, with round heads, covered by corrugated metal sheeting and with a concrete block pillar in between (Plate 57). The wide doorway to the west of centre has sliding timber plank and batten double doors and is presumably inserted and there is a further window to the west, which is the same as those to the east (Plate 58).



**Plate 57 (left): East end of the south elevation of Room G3**

**Plate 58 (right): West end of the south elevation of Room G3**

4.3.11 The west elevation is mostly plain, with a blocked doorway on the south side and patchy plaster and an inserted door to the north with an iron I-beam lintel (Plate 59). There is a large threshold stone in the centre of the large door to the west in the south elevation, which is presumably original but not for this door (Plate 60).





**Plate 59 (left): North end of the west elevation of Room G3**



**Plate 60 (right): Threshold stone in the south elevation of Room G3**

4.3.12 **Ground floor Room 4:** the concrete floor is stepped up in the north-east corner with vinyl tiles and the room is open to the roof. The trusses are the same as those in Room G3 as this is a continuation of what was originally one larger room. There are two trusses, one against the west wall and one near the centre. Both are king post trusses, with angled braces, two purlins per pitch and a ridge plank, supported on concrete block pillars at either end (Plate 61) and there are additional timber supports under the west one on the north end, and an iron brace strapped between each tie beam and king post. The north elevation is brick laid in English garden bond in a ratio of 3:1 with concrete block columns set against it and, as in Room G3, there is a timber gutter along the top (Plate 62). The east elevation is also brick laid in English garden bond in a ratio of 3:1 (Plate 63) with a projecting flue in the centre raised off the ground (Plate 64). The base of the projecting flue is corbelled (Plate 64) and there is a step in the wall near the top.



**Plate 61 (left): Truss in Room G4**



**Plate 62 (right): North elevation of Room G4**

4.3.13 The east elevation butts the south elevation, which is stone. The south elevation has a window on the east side (Plate 65) with a round arch top and covered by corrugated metal sheets. There is a wide doorway to the west, with a timber lintel and very ragged jambs and masonry missing above (Plate 65). The lower part of the west elevation is concrete block and there is plywood on top and against the truss (Plate 66).





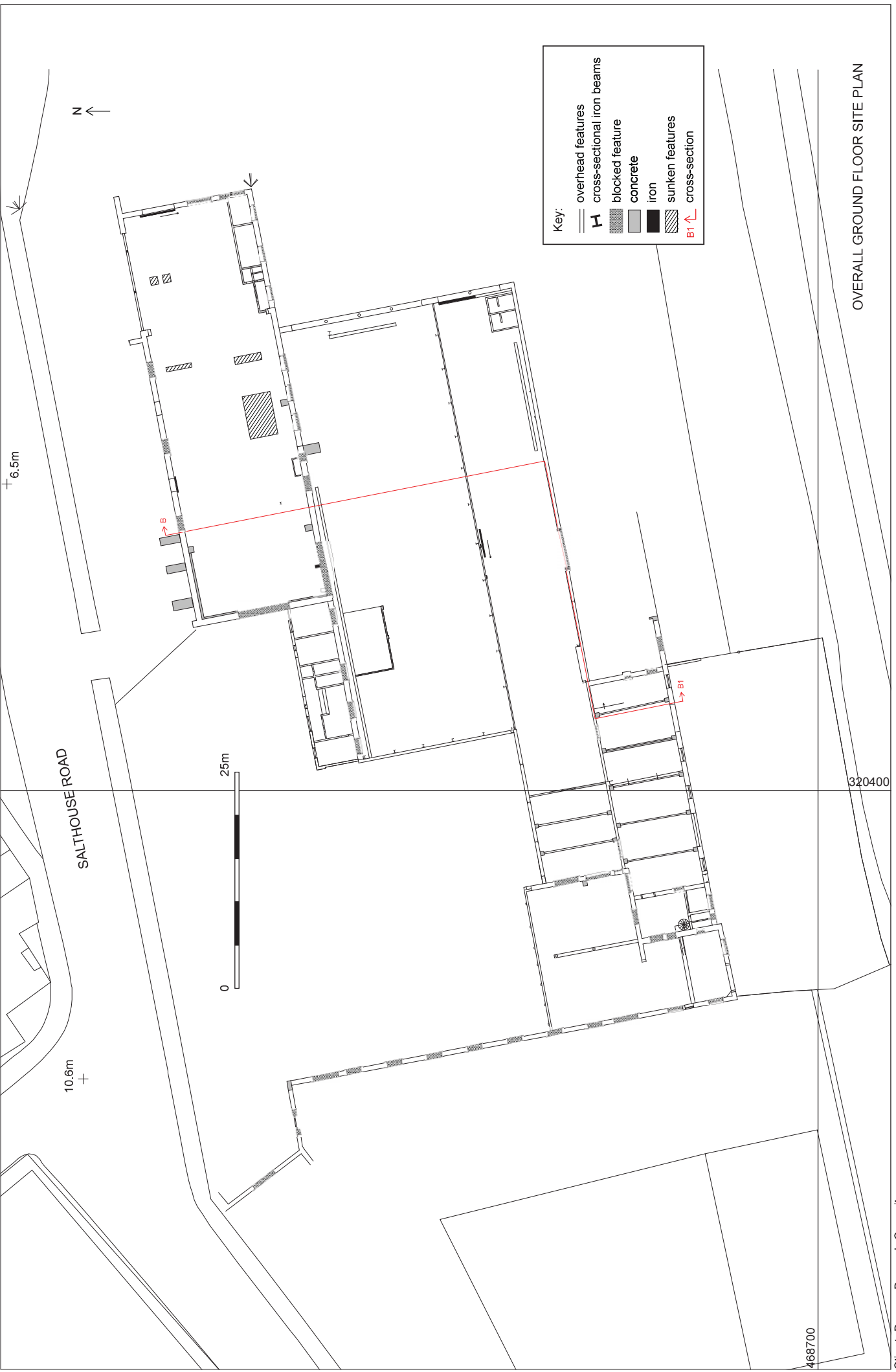
**Plate 63 (left): East elevation of Room G4**

**Plate 64 (right): Projecting flue in Room G4**



**Plate 65 (left): South elevation of Room G4**

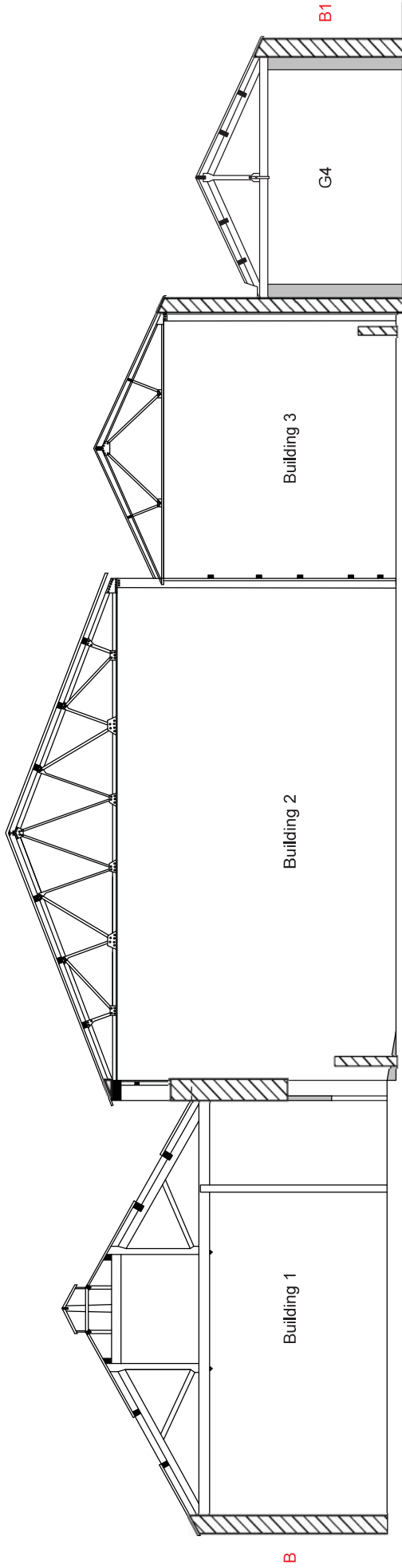
**Plate 66 (right): West elevation of Room G4**



OVERALL GROUND FLOOR SITE PLAN

Figure 4: Overall ground floor site plan

CROSS-SECTION B-B1



buildings previously recorded (Greenlane Archaeology 2010)

building recorded in 2015



Key: cross-sectional timber cross-sectional wall concrete edge uncertain G4 room number

Figure 5: Cross-section B-B1

## 5. Discussion

### 5.1 Introduction

5.1.1 The Furness Railway Company developed the site in the mid-19<sup>th</sup> century, and while it is difficult to reconcile elements of the building to the standing structures, there are some clear phases of development that can be discerned. In total, three phases can be identified. In addition, while there are clear phases of development within the buildings recorded at this time, the recording of them also allows a more comprehensive phasing of the whole complex, something that was not possible during the work carried out in 2009-2010. The discussion of these different interpretations of the phasing is presented in *Section 5.2 and 5.3* below; it is also able to take into consideration more recent published research into Edward Paley and the Furness Railway to revise some of the dates of these phases.

### 5.2 Phasing of Current Building Recording

5.2.1 **Phase 1 – 1855-1864:** it is apparent that the earliest element of the surviving structure is the that forming Room G1, in particular the stone wall, which originally formed part of a much larger structure running along the whole of the west side of the building, on a north/south orientation. It is apparent from the available sources, in particularly the photograph of c1920 (Plate 7) that this formed part of the original offices, which were designed by Edward Paley, originally two stories tall, and constructed in 1864. The presence of wall plaster with a decorative cornice, skirting, and a paint scheme all suggest that the southern part of Room G1, initially at least, formed an office. However, the presence of iron columns supporting the upper floor on the north side, which corresponds with a large doorway in the west elevation and two further large doorways to the east, indicates that the northern part had a more industrial function. Indeed, the map evidence shows a railway turntable connecting to the west doorway, suggesting that it was possible to drive railway engines through the 'office' building at this point. The plan of 1903 suggests that this section formed part of the 'Machine Shop' (Plate 5).

5.2.2 **Phase 2 – pre-1873:** the Phase 1 structure is clearly butted by the walls forming Rooms G2-G4, although the block occupied by the current buildings is apparent on the Ordnance Survey map of 1873. It therefore perhaps also belongs to the phase of construction carried out in 1855-1864, albeit evidently later. The available documentary evidence suggests that this too was originally part of the offices and stores or the paint shop. The form of Room G2 suggests that it is indeed likely to have been offices, clearly extending over two floors, while Rooms G3 and G4 originally formed a single large space, now sub-divided. The east wall (of Room G4) evidently originally housed some form of fireplace or hearth, which might indicate that some blacksmithing took place in this room, and it is also apparent that the building was originally much longer and extended to the east. The wall line is now truncated just beyond the east end of Room G4, but it is also apparent that this space, within Room G3, had originally been sub-divided. The construction of this element probably also led to the blocking of the doorway between Room G1 and Room G2, following which a bearing box was inserted into the wall, through the arch of the doorway. This too indicates that some industrial process was taking place in this part of the building as this would have been to support line shafting powered by a steam engine.

5.2.3 **Phase 3 – late 20<sup>th</sup> century:** the closure of the railway offices in 1923 led to an initial period of disuse and decline in the site (Greenlane Archaeology 2010), followed by it developing a range of new uses. In general, however, this primarily led to internal spaces being altered through the blocking of some doorways and insertion of others. In addition the upper floors of the machine shop along the west side of the building were removed, leaving the open space now over Room G1, and the paint shop was truncated at its east end. More recently a dividing wall of concrete block and timber was added within the former paint shop to form Room G4. All of the original, presumably slate, roofing was removed in this period and replaced with modern sheeting, although the trusses were kept in Rooms G3 and G4, albeit with additional support in the form of pillars of concrete blocks.

### 5.3 General Site Phasing

5.3.1 **Introduction:** a consideration of the documentary sources, primarily the maps, and the evidence from the building recording allows a general consideration of the phasing of all of the surviving structures

to be presented below and in Figure 6. This would also potentially enable, as a future piece of research, a consideration of the development of the whole of the Furness Railway Company's Works to be produced at a future date, especially following any further archaeological work and a more detailed consideration of the documentary sources.

**5.3.2 Phase 1 – 1855-1864:** the earliest surviving elements of the building seem to comprise the stone wall forming the outer west elevation but also the area forming Room G1 of the most recent survey, which evidently represents the two-storey machine shop with offices designed by Edward Paley in the 1850s or early 1860s. Only a small part of this structure now survives, mostly just a single wall forming the boundary of the site, but it is clear that it contains a number of distinct architectural elements relate to this element, primarily the use of dressed red sandstone and presence of round-headed arches over doorways and windows.

**5.3.3 Phase 2 – pre-1873:** this phase is likely to comprise elements of the site that effectively belong with Phase 1, but were clearly constructed at a slightly later date. The only part of the structure that certainly belongs with this phase is that comprising Rooms G2-G4 of the more recent survey, which the documentary sources describe as the paint shop and stores in 1903, but which may have had a slightly different purpose when first built. In addition, the small section of the west end of the north wall of Building 2 recorded during the preceding survey may also belong to this period, on architectural grounds, although it appears to butt the slightly later structure to the east.

**5.3.4 Phase 3 – 1873-1890:** the map evidence demonstrates that Building 1 recorded during the previous survey was constructed during this period. Later sources indicate that this formed the boiler shop.

**5.3.5 Phase 4 – 1891-1903:** again the map evidence shows that Building 1, the boiler shop, was extended to the east to its most recent length during this period.

**5.3.6 Phase 5 – 1903-c1920:** the building recording and map evidence show that the bulk of the central part of the site was comprehensively rebuilt in this period with the reconstruction and enlargement of the central two large sheds (labelled 'erecting shop' on the plan of 1903), replacing buildings that were clearly on the site from as early as Phase 1. What is particularly significant about this development is, given how extensive it is and the expenditure that must have been involved, how close it was to the final closure of the site in 1924.

**5.3.7 Phase 6 – late 20<sup>th</sup> century:** structurally the alterations carried out in this period were relatively minimal and mainly involved reorganising the internal access by blocking some doors and inserting others. Otherwise the only additions were internal walls for the creation of toilets and office space.

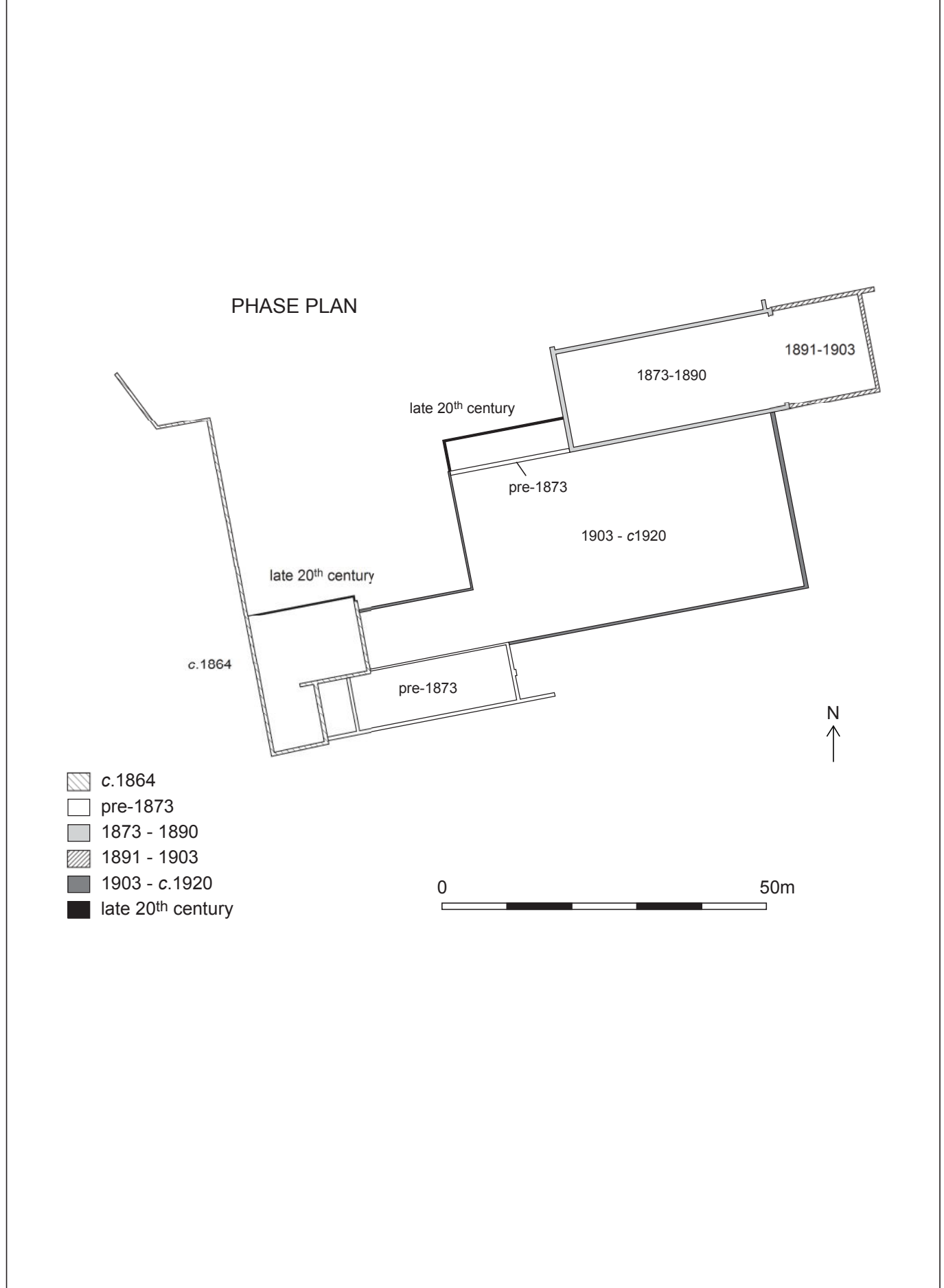
## 5.4 Conclusion and Recommendations

**5.4.1** The recording of the remaining section of the building has allowed a more detailed understanding of the complex to be developed, although it is clear that more research would help to elucidate some of the details and that these buildings only formed part of a much larger site. The surviving structure, although damaged, altered, and truncated, still retained a considerable amount of original fabric, some of which was probably designed by the well-known architect Edward Paley.

**5.4.3** It is also worth considering, in view of the historical significance of the site in relation to Barrow-in-Furness, the presence of below-ground remains of archaeological interest on the site, relating to both earlier phases of use and a number of industrial processes, for which no above ground remains are present. The investigation of these would further add to the understanding of the site and allow a more detailed understanding of its significance to be made.

**5.4.4** In addition, should further archaeological work be carried out on this site or on adjoining but associated parts, this would present an opportunity to more fully explore and understand the whole of the complex making up the Furness Railway Company's Works, which originally covered a very large area.





**Figure 6: Phase plan for whole site**

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### 6.3 Planning Applications

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## Appendix 1: Contemporary Descriptions of the Furness Railway Company Engineering Works

### Leach 1872, 47-50

Furness Railway Company's Offices and Works... The head quarters and general offices of the Railway Company are at the east end of the Strand, and occupy a large and commodious structure built of red sandstone and pleasantly situated in a court yard, on one side of which there is a beautiful green lawn running from the level of the yard to the roadway, which is considerably higher, and on the other side is a verandah extending from the time-keeper's office at the entrance gates to the company's works. The offices, which have a frontage of 260 feet, present an imposing appearance. The entrance hall is situated almost in the centre of building, and is surmounted by a large clock, which is illuminated every evening. To the right of the entrance on the ground floor is the audit office, in which there is accommodation for thirty clerks. Immediately behind this are the stationary store, and further back still are the general stores for all classes of small articles used by the company in the several mechanical departments. This store is 80 feet by 50 feet. To the left of the entrance hall is the secretary's and traffic manager's department, the permanent way inspector's office, and the men's pay office. On the first floor in the offices over the audit department are the managing director's room and the board room; above the stationary and general stores are the accountant's and pay clerk's offices; the room above the secretary's offices and permanent way stores is occupied by the managing director's correspondent, lavatories, offices, safes, and storing rooms, and at the extreme end are the resident engineer's office and drawing offices. Every preparation is made in the case of fire – rows of buckets are kept under the principal entrance to the works, and new patent fire extinguishers are placed in different parts of the premises. The offices and stores are heated by hot water apparatus. Behind the offices is a large yard, extending to the fitting shops, which is used for locomotive stores, wheels, axles, &c. Commencing at the north-west corner of the works, there are store for keys, spikes, bolts, &c., beyond these are the stables, and still further on the permanent way stores for signals, lamps, and other appliances for the main line. Then there is the blacksmiths' shop, a spacious floor 310 feet long by 40 feet wide, and of more than ordinary height. This is fitted up with twenty fires blown by a steam fan. Each fire communicates with a large iron flue which is connected with the lofty chimney-shaft in the square in Salthouse-road. Here there is also a large steam hammer and a shearing and punching machine. To the right of the blacksmiths' shop is the braziers' department, in which there is a small furnace, together with the usual appliances for this particular kind of work. Almost immediately adjoining is the fitting shop, which is replete with the most modern machinery, and presents a scene of activity not often witnessed. This shop is 170 feet long by 50 feet broad. There are four lathes for "turning up" wheels, six boring machines, ten ordinary lathes, two machines for planing railway points, &c. &c. Lines of rails are laid into the shop by which the locomotives can be brought in for repairs. Every facility is here provided for doing repairs with expedition and with permanency. Hydraulic machinery is used to lift the locomotives from their wheels when undergoing repairs. Over the fitting shop are the locomotive superintendent's office and the drawing office, with a spacious room occupied by the pattern-makers. To the left of the fitting shop is the locomotive shed, which is 170 feet by 120 feet, and which accommodates fifty engines. This shed is fitted up on the most approved principle with smoke troughs, ash pits, &c. The timber and heavy stores yard is a very extensive one, measuring 500 yards by 200 yards. Here are situated the buildings for providing the engines with their daily consumption of coke and water. The waggon building and renewal shop occupies a large building at the opposite end of the yard, and is 300 feet long by 160 feet wide. There are six lines of rails across it, each holding seven waggons, which are brought in by two side entrances by Dumb's patent traversers. Overlooking the shop is the foreman's office. There are the usual lathes and other wood machinery in this place, which are driven by a horizontal engine of fourteen horse power. One corner of the room is set apart for the repairing of signals &c. At the east end of the shed there is a room specially used for the erection of passenger carriages, and which will accommodate six at one time. Behind this again is the paint shop, which is of equal size. This part of the building is two stories high, and the floor is occupied at one end by the upholstering department, and at the other by the joiners' shop. To the west of the waggon shop is the blacksmith's shop for this department, in which there are six fires, together with store rooms for the requirements of waggon building. In connection with the works

there is an extensive library, and commodious reading room, billiard room, &c., and there is also a sick and funeral society, of which every employé is a member. There are upwards of 300 men employed at these works.

### **Anon 1906, 72-75**

#### **FURNESS RAILWAY LOCOMOTIVE, CARRIAGE AND WAGON WORKS.**

These works, founded in 1864, are situated in Barrow, and have the same entrance at the general offices of the Company, with a frontage in St. George's Square. They occupy an area of about thirty acres. The first locomotive shop and running shed is now the machine shop and turnery, in which are the wheel lathers, planing, slotting, drilling and other machines. The power for driving this shop is obtained from two small horizontal steam-engines, the various cross-shafts being driven by means of bevelled gearing with the exception of one driving the cross-shop, this being driven by means of cross belts. Adjoining this is the smith's shop, with fifteen smiths' hearths, and with a furnace for heating the tyres for locomotives, carriages and wagons. All the smoke from the plate and forge furnaces, stationary boilers, and smiths' fires leads through an underground flue into a large chimney shaft, which stands outside the works in the middle of Salthouse Road. The boiler shop contains a 15-ton overhead travelling crane, steam punching machine, bending rolls etc. Adjoining this is the boiler house containing three Galloway boilers working at a pressure of 50 lbs. per square inch for supplying steam for the shop engines, steam hammers and other appliances.

The second running shed is now the erecting shop, which, owing to its low roof, has no overhead crane, the engines having the wheels taken from them and replaced by means of dropping pits. The shop consists of three bays each 30 feet span by 160 feet in length. It contains six roads, with engine pits accommodating four engines on each road. Adjoining this shop are the spare gear stores. Beyond this is the Locomotive Superintendent's office, running department, and drawing offices, the latter being on the upper storey on the same floor as the pattern and joiners' shop. The present running shed is a stone building 310 feet in length by 150 feet in width, and capable of holding sixty engines. Close to the engine shed is the new shed for coaling engines on the high level system. There are two platforms, the coal wagons being in the centre, and the incoming roads being at each side, enabling four engines to be coaled at one time. Beyond the sheds and between the roads is the ashbin, with pits at each side for the driver to examine his engine whilst he fire is being withdrawn.

The carriage and wagon shops have recently been enlarged. The wagon shop is 300 feet in length by 160 feet in width, and consists of a carriage body shop, carriage underframe, wagon building, smiths', wheelwrights', and machine shops, and saw mill. The carriage paint shop is 195 feet in length by 40 feet in width, but a new and larger shop has been constructed, capable of holding twenty carriages. There is also a wagon repairing shop and a timber drying shed.