

# **birmingham archaeology**

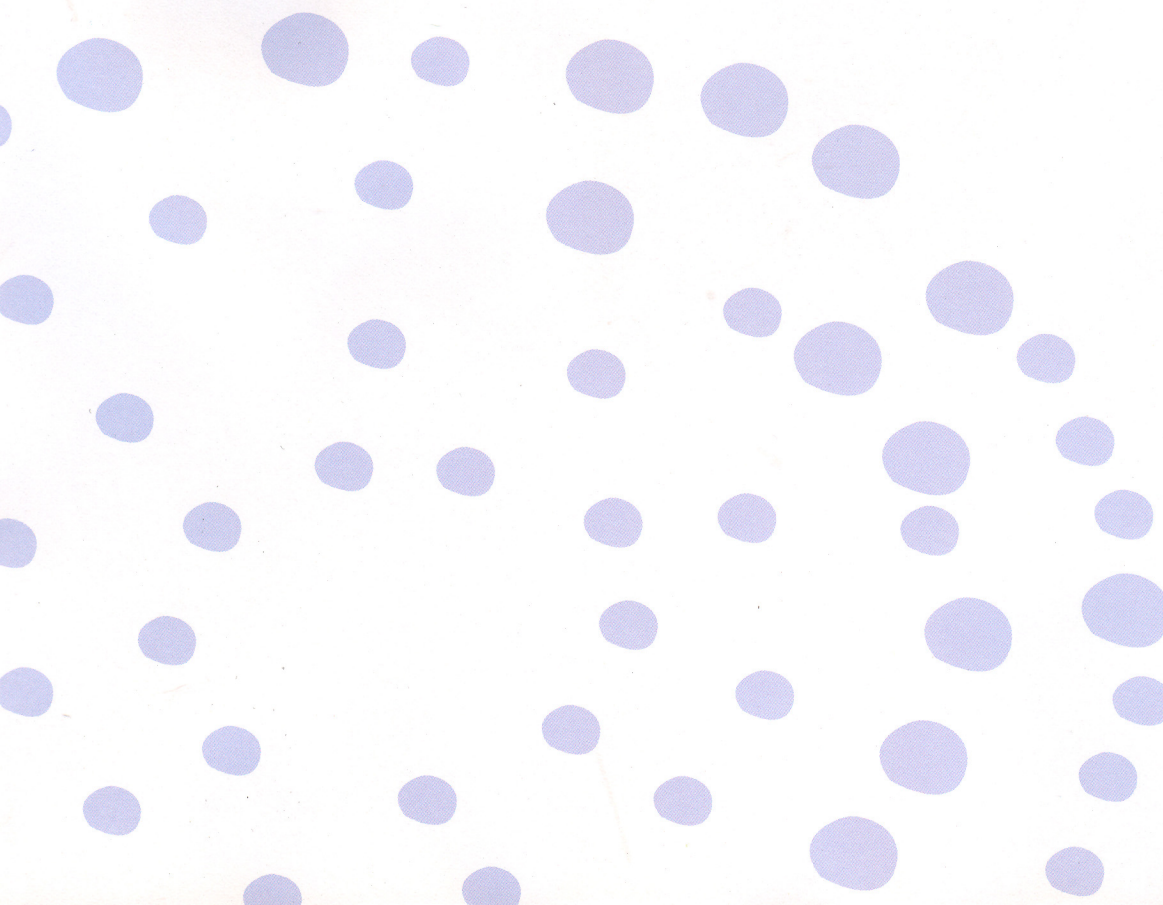


PN 1381

**UNIVERSITY OF  
BIRMINGHAM**

**Fort and Tower Works,  
Wolverhampton**

**An Archaeological Desk-Based  
Assessment , 2006**



**Project No. 1381**  
January 2006

**Fort and Tower Works, Wolverhampton**

**An Archaeological Desk-Based Assessment, 2006**

By Eleanor Ramsey  
With a contribution by Malcolm Hislop

*For further information please contact:*

Alex Jones (Director)  
Birmingham Archaeology  
The University of Birmingham  
Edgbaston  
Birmingham B15 2TT  
Tel: 0121 414 5513  
Fax: 0121 414 5516  
E-Mail: [bham-arch@bham.ac.uk](mailto:bham-arch@bham.ac.uk)  
Web Address: <http://www.barch.bham.ac.uk/bufau>

**FORT AND TOWER WORKS, WOLVERHAMPTON:  
AN ARCHAEOLOGICAL DESK-BASED ASSESSMENT, 2006**

**CONTENTS**

SUMMARY ..... 3

1 INTRODUCTION ..... 4

2 LOCATION AND GEOLOGY ..... 4

3 AIMS AND OBJECTIVES ..... 4

4 METHODOLOGY..... 4

5 ARCHAEOLOGICAL AND HISTORICAL CONTEXT ..... 5

6 HISTORICAL DEVELOPMENT OF THE STUDY AREA..... 6

7 BUILDING SURVEY AND ASSESSMENT Malcolm Hislop .....12

8 CONCLUSIONS AND RECOMMENDATIONS.....15

9 ACKNOWLEDGEMENTS .....16

10 SOURCES.....16

**Figures**

- 1 Site Location
- 2 Study Area Location
- 3 1842 Wolverhampton Tithe Map
- 4 1871 Map of Wolverhampton
- 5 1889 Ordnance Survey 1<sup>st</sup> Edition
- 6 1903 Ordnance Survey 2<sup>nd</sup> Edition
- 7 1919 Ordnance Survey 3<sup>rd</sup> Edition
- 8 1938 Ordnance Survey 4<sup>th</sup> Edition
- 9 Building Plan of Fort Works
- 10 Building Plan of Tower Works

**Plates**

- 1 Fort Works from the NW
- 2 Fort Works from the NE
- 3 Fort Works from the NW
- 4 Fort Works interior from the S
- 5 Fort Works interior from the E
- 6 Tower Works Building 1 from the SE
- 7 Tower Works Building 2 blocked corridor from the N
- 8 Tower Works Building 3 from the SW
- 9 Tower Works Building 3 from the SE
- 10 Tower Works Building 3 from the NE

- 11 Tower Works Building 3 vehicular entrance from the S
- 12 Tower Works Building 4 south elevation from the SW
- 13 Tower Works Building 4 west elevation from the SW
- 14 Tower Works Building 5 north elevation from the NE
- 15 Tower Works Building 5 and attached house from the NW
- 16 Tower Works Building 5 east elevation from the NE

**Appendix 1 Brief for building assessment of Fort and Tower Works,  
Wolverhampton**

**FORT AND TOWER WORKS, WOLVERHAMPTON:  
AN ARCHAEOLOGICAL DESK-BASED ASSESSMENT, 2006**

**SUMMARY**

*An archaeological desk-based assessment and building survey was carried out at the Fort and Tower Works, Wolverhampton (BCSMR 13254 and 13587, centred on NGR SO 904980) on behalf of Wolverhampton City Council. The work was requested in order to help to inform future decisions on the sites. The two works comprise the major part of two street blocks within the western suburbs of Wolverhampton, and the Fort Works is included in the Council's Local List of Buildings, Gardens, Parks and Archaeological Sites of Special Historic Interest. The assessment concluded that two nationally renowned and locally important companies, involved in three of Wolverhampton's key industries, had occupied the sites. The original buildings known as the Ashes Works, on the Tower Works site, belonged to Joseph Brazier, gunlock maker, and are likely to date from the early 19<sup>th</sup> century. At the end of the 19<sup>th</sup> century the sites were then occupied by cycle manufacturers, including the Clyno Company, which was first involved in motorcycle manufacturing, and was later a successful car manufacturer in the early 20<sup>th</sup> century. Though the buildings underwent many additions and alterations over time, the assessment identified that a substantial amount of earlier building fabric had been incorporated into the present standing buildings. It is concluded that the buildings are of sufficient historic and architectural interest to merit further investigation, including some detailed recording ahead of development. The assessment has also highlighted the potential for earlier below-ground archaeological deposits relating to the early gunlock makers to survive beneath the Tower Works.*

## **FORT AND TOWER WORKS, WOLVERHAMPTON: AN ARCHAEOLOGICAL DESK-BASED ASSESSMENT, 2006**

### **1 INTRODUCTION**

In December 2005 and January 2006 Birmingham Archaeology carried out an archaeological desk-based assessment of the Fort Works and the Tower Works, Wolverhampton (hereafter referred to as the study area). The work was commissioned by the Property Services Department of Wolverhampton City Council, to help inform future decisions on the sites.

This report outlines the results of the assessment which was prepared in accordance with the Institute of Field Archaeologists Standard and Guidance for Archaeological Desk-Based Assessment (IFA 2001).

The assessment conformed to a brief produced by Wolverhampton City Council (Appendix 1), in accordance with guidelines laid down in Planning Policy Guidance Note 16 (DoE 1990).

### **2 LOCATION AND GEOLOGY**

The two works comprise the major part of two street blocks within the western suburbs of Wolverhampton, bounded by Great Brickkiln Street, Ashland Street, Merridale Street West and Kimberley Street, and separated by Pelham Street, and are centred on NGR SO 904980 (Figs. 1 and 2).

The present character of the site is industrial complexes. The buildings within these complexes, however are in a structurally poor condition. Fort Works is included in the Council's Local List of Buildings, Gardens, Parks and Archaeological Sites of Special Historic Interest.

### **3 AIMS AND OBJECTIVES**

The principle aim of the project was to assess the survival and potential significance of any archaeology within the study area by collating existing archaeological and historical information for the site and its immediate environs and placing it in its local, regional and national context.

This information will be used to inform a mitigation strategy for future archaeological work on the site (see Section 7 below).

### **4 METHODOLOGY**

A search of all relevant and readily available published and non-published documentary sources, including historic maps and photographs, was carried out in the Wolverhampton Record Office and the Library of the University of Birmingham. The Black Country Sites and Monuments Record, the main source of archaeological

information for Wolverhampton was also consulted (Fig. 2), and a search made of the National Monuments Record held at Swindon.

In addition, a walkover survey and assessment was undertaken of the standing buildings.

## **5 ARCHAEOLOGICAL AND HISTORICAL CONTEXT**

It has been speculated (Hooke and Slater 1986, 29) that Wolverhampton (BCSMR 13165 not illustrated) may have taken on an urban character early in the evolution of the town, perhaps even by the time of the Domesday survey in 1066. However, it was not until the second half of the thirteenth century that Wolverhampton became a borough. Slater suggests that it is the situation of Wolverhampton at the meeting point of several ancient route ways that informs the topographical development as a town. Slater has also suggested that there may have been an earlier road linking the main east-west routes to the south of Wolverhampton centre that had been closed to divert traffic through the town centre (Hooke and Slater 1986, fig. 2.1, 36).

By the medieval period the settlement was divided into a royal manor and an ecclesiastical one, and the settlement gradually took on urban functions (BCSMR 13165 not illustrated). A Sunday market is recorded as being in existence by around 1180. Sunday markets were not uncommon at this time, arising out of informal trading taking place after church services. Giles de Erdington, the Dean of Wolverhampton, obtained a market charter for a Wednesday market (perhaps to replace the Sunday market which would have been frowned upon by this time) and an annual fair in 1258 and granted burgage tenure to the Deanery manor tenants in 1263. Thus he would seem to have been pursuing a policy of actively encouraging urban growth at this time. There is no evidence of animosity with the royal manor and their tenants also probably benefited from the urban growth of this period. The six prebendal priests of the collegiate church also held much land in the town in the medieval period, sufficient for it to be regarded as forming almost a third manor (BCSMR 13165 not illustrated).

The original town may have been centred around St Peter's Church, with the market in the churchyard. The market on High Green was perhaps created in the mid-thirteenth century when the market charter was obtained. Town growth was presumably encouraged by the settlement's role as a market centre, and it was also an important centre for the woollen industry. Many of the leading families in the town were trading in wool, including the Leveson family, resident at the moated Hall to the east of the study area. Raw wool was brought in from Wales and the borders, and spun into yarn and woven into cloth in the town (Mander and Tildesley 1960, 35).

The extent of the medieval town has been plotted by Shaw (Shaw 2000, 29-32) who suggests that Bell Street ran along the southern edge of the town's extent (BCSMR 9944 not illustrated). However, it is possible that the extent of the medieval town lay beyond these limits (*ibid*) with more extensive suburbs spreading along the major roads out of the town (BCSMR 13165 not illustrated).

The industrial development of Wolverhampton began fairly early, and by the mid-seventeenth century many of the trades that later became important features of industry in the town in the nineteenth century, such as buckle and lock manufacture,

were being carried out (White and Wade 1997, 4). By the close of the seventeenth century, Wolverhampton was also starting to play an important role in the distribution of raw materials required by industry, such as iron, (White and Wade 1997, 4). Analysis of plot boundaries visible on early maps of Wolverhampton shows that the town had grown outside the extent of the medieval settlement only on its southeastern side by the mid-eighteenth century (Conway 2002).

The development of Wolverhampton gained momentum in the eighteenth century, largely due to its central location within the coal fields of south Staffordshire, and its position within the developing layout of what was to become the Birmingham Canal navigation system from the 1770s onwards (Brennan 1948, 19).

Wolverhampton became increasingly industrialised from the later eighteenth century and throughout the nineteenth century. Large industries, such as iron production, became established on the outskirts of the town. To the west of the study area is the site of an iron foundry (BCSMR 6974, Fig. 2), which were shown on the 1842 Tithe map (Fig. 3). Many smaller-scale industrial processes, such as lock making and japanning, became established within the town itself. Growing industrialisation in the nineteenth century led to the infilling of open areas in the town with small works and shoppings to accommodate these trades and with back-to-back housing to house workers and families. This increasingly dense building and occupation led to the degeneration of many areas of the town into slums by the middle of the nineteenth century (Conway 2002). The high rise flats to the east of the study area (BCSMR 13244, not illustrated) are the first high rise flats built in Wolverhampton following slum clearance. Also in this area is the Former Royal Oak Public House (BCSMR 13192, Fig. 2), a 1920s purpose built public house that is now converted.

Within the vicinity of the study area is a sewer ventilation pipe (BCSMR 13252, Fig. 2). The buildings that are now Wolverhampton Glass (BCSMR 13253, Fig. 2) are wrongly described on the Sites and Monuments Record as the original Clyno motorcycle works, but are still an attractive landmark building of historic importance.

## **6 HISTORICAL DEVELOPMENT OF THE STUDY AREA**

The website at <http://www.wolverhampton-gunlocks.fslife.co.uk/> records Benjamin Brazier (gunlock maker and gun maker) as the first Brazier involved in this industry, from 1787. Though Joseph Brazier is the most renowned gunlock maker, many members of the family are recorded as being involved in the trade throughout the nineteenth century.

The Commercial Directory of 1816-17 lists Benjamin Brazier as a locksmith (gun) at Brick-kiln Street. The Commercial Directory of 1818-20 also lists Benjamin Brazier as a locksmith (gun) at Brick-kiln Street, and James Brazier is listed in the same industry at St James's Square.

The History, Gazetteer and Directory of Staffordshire 1834 lists Joseph Brazier at the Ashes on Brick Kiln Street as a gun lock and implement maker. The Ashes is on the site of the present Tower Works building (BCSMR 13587, Fig. 2).

The Wolverhampton Directory of 1839 also lists J. Brazier as a Gun Lock Smith at The Ashes on Brick kiln Street.



The Tithe Map of Wolverhampton (Fig. 3) depicts The Ashes building complex, and the award records Joseph Brazier at Fields 1219, 1221 and 1222. Enclosure 1221 is owned by 'The Perpetual Curate of Wolverhampton' and 1219 and 1222 are owned by the Duke of Sutherland. The information on the map is unusual for a number of reasons. Firstly, the division of the land immediately west of The Ashes is very regular. Much of the land to the east of the site (to the west of Wolverhampton centre) is depicted as being divided up into plot divisions, however these are longer and thinner than the plots to the west of the Ashes. Actual development this side of Wolverhampton had only reached as far as Zoar Street and Meredale Street, though buildings are shown further to the west on the site of a later iron foundry (BCSMR 6974). Also, the land immediately to the west of the Ashes had not been developed by 1871 (Fig. 4), nearly 30 years on. The divisions may also represent some form of market garden, which was not unusual for the period (Litherland pers. comm.).

Secondly, the location of The Ashes is unusual, as it is outside the centre of Wolverhampton. Lockmaking was one of the most important industries in Wolverhampton at the time, and Wolverhampton was nationally renowned for the quality of this industry. There is, however, no obvious reason why the location of The Ashes works was so isolated. The Tithe Map (Fig. 3) and the map of 1871 (Fig. 4) both depict a large building accessed by a path from Brickkiln Street (Brickkiln Lane) with smaller buildings and workshops at the rear of the property. It may be that the larger building was the residence of Joseph Brazier, and it was deliberately located in nicer surroundings than the industrial centre. There are parallels with this type of arrangement along Colmore Row in Birmingham, with high status residential buildings fronting the road, with lower status industrial buildings behind them (Litherland pers. comm.). It may also be that Joseph Brazier was still making guns at the time, and that the isolated location was due to the need for firing ranges to test the products.

The location may also indicate a confidence in the security of the contracts won by Joseph Brazier. The Post Office Directory of Birmingham, Staffordshire and Worcestershire 1850 lists Joseph Brazier and Son, gun lock makers to the hon. Board of Ordnance and the hon. East India Company. While further research would be needed to confirm exactly when these contracts had been awarded, Joseph Brazier is acknowledged to be one of the premier lock makers of the period, with Brazier locks being found on almost all high quality guns produced ([http://www.muzzleloaders-etcetera.com/overview\\_of\\_locks.htm](http://www.muzzleloaders-etcetera.com/overview_of_locks.htm)).

The Board of Ordnance was a British government body created in the 15<sup>th</sup> century, and was responsible for the design, testing and production of armaments and munitions for the British Army, as well as producing maps for military purposes. The British East India Company was a joint-stock company of investors, which was granted a Royal Charter by Elizabeth I with the intent to favour trade privileges in India. The Company transformed from a commercial trading venture to one which virtually ruled India as it acquired auxiliary governmental and military functions. ([http://en.wikipedia.org/wiki/Board\\_of\\_Ordnance](http://en.wikipedia.org/wiki/Board_of_Ordnance) [http://en.wikipedia.org/wiki/British East India Company](http://en.wikipedia.org/wiki/British_East_India_Company)).

During the Crimean War in 1855, the Board of Ordnance was incorporated into the War Office as the Department of the Master-General of the Ordnance, and in 1858 the British East India Company was dissolved (ibid.). However, the Wolverhampton Directory of 1858 still lists Joseph Brazier as a gun lock maker at Brick kiln Street, as

does Jones's Mercantile Directory of South Staffordshire and East Worcestershire 1865.

British armaments were also being exported during the American Civil War (1861-1865). One company that exported rifles during this period was the Whitworth Rifle Company of Manchester, who in 1864 was using locks marked 'Joseph Brazier, Ashes' (<http://www.americancivilwar.org.uk/articles/whitworth.htm>).

The map of Wolverhampton 1871 (Fig. 4) shows that development to the west of Wolverhampton centre was still piecemeal. The regular plot divisions to the west of The Ashes are undeveloped, though two new streets, Ash Street and Oak Street, had been laid out and developed with small terraced housing. The large possible house is still depicted, with several small buildings adjacent (annotated GH on a larger plan of the same year not illustrated), and two long rectangular buildings (annotated workshops) at the rear.

The decline of the Brazier gunlock making industry at The Ashes gave way to another of Wolverhampton's nationally renowned industries, that of cycle making. By the time of the First Edition Ordnance Survey Map of 1889 (Fig. 5) the Ashes building complex, was now annotated as Bicycle and Tricycle Works. Kelly's Directory of Staffordshire 1896 lists Humber and Co. Limited, bicycle and tricycle manufacturers at The Ashes with Henry Belcher as manager.

The Second Edition Ordnance Survey Map of 1902-3 (Fig. 6) depicts the Ashes Works to the north of Victor Street (later Pelham Street, Tower Works), and Cycle Works (vicinity of Fort Works) to the south (BCSMR 13253). There is no mention of The Ashes in Kelly's Directory of Staffordshire 1904.

Both the Cycle Works to the south of Pelham Street, and, later, The Ashes, were taken over by the Clyno Engineering Company. Like the Brazier gunlock making industry before it, Clyno became an important and nationally renowned company, and Clyno motorcycles were also used by the military, this time in World War One.

The following is mostly taken from the website (<http://www.localhistory.scit.wlv.ac.uk/Museum/Transport/Motorcycles/Clyno.htm>) and is a history of the company by the late Ailwyn Smith, one of the company's founders.

1909, A.P. Smith and F.W.A. Smith founded The Clyno Engineering Co., for the purpose of marketing an adjustable belt pulley for motor cycles. They were initially based in Thrapston, Northamptonshire. In 1910 the company began manufacturing complete motor cycles, and a prototype was built using Chater Lea frame fittings and Stevens engines, made by the Stevens Motor Manufacturing Co. Ltd, Wolverhampton. Successful participation in Motor Cycle Trials was felt to be the best method of advertising, and this first machine was entered and ridden by Frank Smith in the A.C.U. quarterly non-stop trials with repeated success. Later in 1910 a more powerful machine was built utilising the 5/6h.p. 'V' twin Stevens Engine. This machine was also run in the quarterly trials, and also in the M.C.C. London-Edinburgh and London-Exeter trials. It was the forerunner of the very successful sidecar machine of later years. The Stevens Motor Manufacturing Company went into voluntary liquidation, and Clyno Engineering completed the purchase of the company on 15<sup>th</sup> October 1910. The business was transferred from Thrapston to

Wolverhampton, and for a time carried on under the names of The Clyno Engineering Co. and The Stevens Manufacturing Co, but the latter name was soon dropped. The firm exhibited for the first time at the 1910 Motor Cycle Show at Olympia. The limitation of a single fixed gear and belt drive were apparent in 1910, and with the increased manufacturing facilities at Wolverhampton, a two speed, chain driven machine was evolved and is thought to be the first to enclose chains in pressed aluminium cases. It was this machine that Frank Smith drove so successfully in all the important trials in 1911, and he also embarked on a programme of attacking hitherto unclimbed and what were considered unclimbable hills, all with the 5/6h.p. chain driven motor cycle and side car. The design for the sidecar frame remained virtually unaltered for many years and was imitated by others. The success of the 1911 trials policy had its effect in 1912 which was a very busy year, orders in excess of the manufacturing capacity being received. During this year the Clyno motor Cycle Detachable and Interchangeable wheel was introduced and fitted, this invention first fitted to Clyno machines, was one of the most important developments in Motor cycling history.

The Ashes Works opposite the Clyno Engineering Co. had been the old Wolverhampton Humber Cycle factory, and had long been unoccupied. The Clyno Engineering Company took over these works and laid out for the manufacture of frames and the assembly of completed motor cycles and sidecars, the engine and gear box manufacture being continued in the original factory in Pelham Street. The factory was considerably extended and the whole of the available ground space occupied by work shops. The policy of running in all important trials, not only in Britain, but also abroad, was persisted in, with marked success (*ibid.*).

Kelly's Directory of Staffordshire 1912 lists Steven's Motor Manufacturing Co. Ltd, as motor cycle manufacturers, at Pelham Street.

In 1913 Mr. W. Comery joined the firm a Chief Designer and immediately set about redesigning the machine using basically the same 5/6h.p. engine but substituting a 3 speed gear box and an entirely new frame. This machine was very successful and easily held its own against increasing competition. Development was rapid and inclined to outstrip the financial resources of the company, which was still a private partnership. Later in 1913 the company decided to fill an obvious need for a light, simple and cheap solo Motor Cycle, and a 250c.c single cylinder, 2 stroke machine was designed. This machine had a 2 speed gear and belt drive, and was novel in that the engine and gear box were of unit construction, chains being entirely absent. It was one of the first machines to be sold completely equipped with lamps, horn and number plates, ready for the road at an all in price. This was exhibited at the 1913 Motor Cycle show, being very successful and sold in large numbers (*ibid.*).

The advent of the First World War in 1914 was a blow to the company, but the issuing of War Contracts in 1915 alleviated the situation, and the manufacture of a motor cycle combination with machine gun attached was developed in conjunction with Messrs. Vickers Ltd. It was known as the Vickers-Clyno machine gun motor cycle outfit, and together with the ancillary motor cycle machine gun ammunition carriers, were manufactured in large numbers (*ibid.*).

By 1915 four complete batteries of the Motor Machine Gun service had been equipped with Clynos. Every weekend for several months a convoy of 20-25 Clyno outfits were driven from the works to Kempton Park. The Royal Marines also used

Clyno outfits, and the company also supplied motorcycles to Russia ([http://www.wolverhamptonarchives.dial.pipex.com/local\\_ww1\\_factory.htm#](http://www.wolverhamptonarchives.dial.pipex.com/local_ww1_factory.htm#)).

The Ministry of Munitions issued an order on 3<sup>rd</sup> November 1916 prohibiting the manufacture of motorcycles except for those required for war duty. However, due to a decision made earlier involving the Russian army, the local Wolverhampton motorcycle manufacturers AJS, Clyno and Sunbeam were not short of business. In 1917, Clyno shipped 1144 8h.p. with sidecars between February and June to Russia (*ibid.*).

The partnership between the two founders of the company was officially dissolved as from 30<sup>th</sup> September 1916 and by and Indenture dated 4<sup>th</sup> October 1917 (*ibid.*). After this the company concentrated on the production of motor cars.

The rise of the motor car industry had been occurring over the previous two decades. Initially the development had been carried out by the Germans and the French, with British industry being severely hampered by Acts of Parliament. Parliament was eventually persuaded to change the law and the Locomotives on Highways Act, 1896, distinguished between vehicles of less than 3 tons unladen weight and those over that weight, and it permitted the lighter vehicles to travel on the highway at a speed set by the Local Government Board up to 14 mph. The Motor Car Act, 1903, increased the speed limit to 20 mph and in 1904 an Order under that Act introduced provision for 'heavy motor cars' which were, in effect, lorries and commercial vehicles. The private car and commercial vehicle industry in Britain flourished, and by the end of 1910 there were 124,860 'light motor cars' on UK roads (<http://www.localhistory.scit.wlv.ac.uk/Museum/Transport/Cars/Aboutcars.htm>).

Wolverhampton became world famous for its motor cars, and all kinds were produced from the luxurious Sunbeam's and Star's to the mass produced Clyno's. Car manufacture developed slowly in Wolverhampton during the 1900s, and was never on the same scale as that of its large neighbours (Birmingham and Coventry), during the 1910s only four firms started making cars there for the first time. However, in the West Midlands during the 1920s, it was Wolverhampton's motor industry that showed the greatest increase, although by the end of the decade the town had all but lost its car manufacturers. Four new firms came and went during this period, of which Clyno was the most substantial (Collins and Stratton 1993, p 232).

Clyno, like many companies in Coventry, Birmingham and Wolverhampton was involved originally with the production of cycles and motor cycles, and developed into a car manufacturer. Changes to the Ashes (Tower) Works and Cycle (Fort) Works are depicted on the Second Edition Ordnance Survey map of 1903 (Fig. 6) and Third Edition Ordnance Survey map of 1919 (Fig. 7).

In 1918 Clyno began to experiment with the manufacture of a light car. These trials continued for four years, and The Clyno car was finally introduced at the 1922 Motor Show and priced at the same level as the Morris Cowley (Collins and Stratton 1993, p234). This was the car that was to challenge Morris and sell some 50,000 in the next six years (Lord Montague 1960). The Clyno Car Instruction Booklet (1922) lists additional suppliers to the firm, including Cox Atmos Carburetters Ltd, Birmingham, S. Smith and Sons Ltd (clock and speedometer), London, Joseph Lucas Ltd

(magnetos, windscreen wipers, lamps and electrical equipment) and Dunlop Rubber Co. Ltd. for tyres.

According to the records held at the National Archives, (<http://www.nationalarchives.gov.uk/catalogue/default.asp>), Clyno Engineering Co. Ltd made a claim against the Ministry of Munitions in 1922 (NA Ref (Petitions of Right) HO 45/11086/433164). Also in the same year the firm was in liquidation (NA Ref (Firms) MUN 4/6425). In 1919 the name and number of the company was Clyno Engineering Co. Ltd, No. 158733 (NA Ref BT 31/25008/158733). In 1922, presumably after the liquidation of the original company, it was known as Clyno Engineering Company (1922) Ltd, No. 182945 (NA Ref BT 31/27323/182945).

Sales were so good that by August 1923 motorcycle production had to be suspended to create more space for car manufacture. Both the Pelham works (Fort Works), which was also by now producing gearboxes, and the Brickkiln Street Works (Tower Works) were extended as much as their sites allowed (Collins and Stratton 1993, p 234). The Fourth Edition Ordnance Survey map of 1938 (Fig. 8) depicts these changes, with two very large buildings (Tower Works and Fort Works) now illustrated.

However, there was still a lack of space at these works, and the company bought a site in Bushbury on which to build a modern new factory. After this came on line in November 1927 the Pelham Street works became wholly devoted to machining work (*ibid.*). Had the directors of Clyno been content to make a small quality car, it is likely they would have stayed in business. As it was, they had set their sights on beating W.R. Morris, and the consequence was inevitable (Lord Montague 1960, p 175). The company collapsed in 1929 after its main distribution agents, the Rootes Organisation, switched to marketing Hillman cars following that company's takeover by Humber in 1928 (Collins and Stratton 1993, 232).

Although short lived, Clyno were to become the 3<sup>rd</sup> largest car manufacturer in the UK (<http://www.localhistory.scit.wlv.ac.uk/Museum/Transport/Cars/Aboutcars.htm>). The motor industry was developing at a time when production methods and factory design was changing, indeed the industry was at the forefront of such changes. This history of factory design can be followed in Wolverhampton, especially the change from multi-floored factories and courtyard, side lit layouts to single storey, top lit, layouts. The present Clyno motor cycle and car works are a good example of vehicle factories of this period (*ibid.*).

It is likely that the buildings that were present on the Third Edition Ordnance Survey map of 1919 (Fig. 7) were completely demolished to make way for the buildings depicted on the Fourth Edition of 1938 (Fig. 8). However, construction techniques of factories of this period involved the early use of piling, and in such a case, it is possible that the foundations of the earlier buildings survive intact beneath the factory floor.

Title Deeds of the properties at Great Brickkiln Street record that the Tower Works were sold by Alfred Herbert Limited to the Midland Metal Spinning Company on the 22<sup>nd</sup> January 1931. Title Deeds relating to the Pelham Street Works record that they were sold by Alfred Herbert Limited to the Midland Metal Diecastings Limited on the 10<sup>th</sup> November 1934. The Wolverhampton Red Book and Directory of 1934-5 records the Midland Metal Spinning Co. Ltd at Great Brickkiln Street. This company is listed

in the trade directories at both the Great Brickkiln Street and Pelham Street works (Tower Works and Fort Works) for the next 20 years, though it was only in 1950 that both properties were brought by M.M. Purchases Limited, which then changed its name to Midland Metal Spinning Company Ltd. This second Midland Metal Spinning Company Ltd sold both works and other properties in the area, to Wolverhampton Council in 1963. Kelly's Directory of Wolverhampton 1965 lists Taylair Control Ltd (pneumatic equipment) at Great Brickkiln Street (Tower Works) and Thermair Domestic Appliances (electrical goods manufacturers) at Pelham Street (Fort Works). Presumably these companies rented the premises off the Council.

## **7 BUILDING SURVEY AND ASSESSMENT** *Malcolm Hislop*

### **Fort Works (Fig. 9)**

#### Description

The former cycle works largely dates from the first quarter of the 20<sup>th</sup>-century and comprises more than one structural phase. It is a single-storey steel-framed structure, the outer walls of which are constructed of red brick laid in English bond. The building, which faces north, comprises three structural bays aligned north-south with a two-storey front (north) range aligned east-west, the whole being covered by a series of eight east-west aligned roofs.

The north elevation (Plates 1 and 2) provides evidence for the structural evolution of the building in that there is a contrast between the earlier monochrome brickwork of the three-bay centre block, and the variation given to the two end blocks, which have darker headers. The character of the centre block is not incompatible with it being identified as part of the building that was in existence in 1904 (Fig. 6). The three two-light windows at ground level have plain sills, painted stone surrounds, plate glass sashes under segmental arches, and segmental hood moulds. Above is a fascia, defined top and bottom by concave quarter circle terracotta strings, bearing the painted name 'Fort Works'. At first-floor level are three 16-pane sashes with plain sills and chamfered lintels.

The details of the end blocks are of a uniform character, and the two components must be close in date. Each has a segmental arched vehicular entrance (right hand one converted) and plate glass sash windows with plain sills, segmental arches at ground level, and chamfered lintels at first-floor level. The map evidence suggests that the right-hand (west) block may have been in existence in 1919 (Fig. 7), but the left-hand (east) block cannot be far behind, and a date of c. 1920 would not be unlikely. Apart from the discrepancies between the centre block and the two end blocks, the whole range is unified at the uppermost level by a continuous dentilled eaves band and slate roof with crested ridge tiles.

An examination of the west elevation suggests that this part of the building post-dates the north range, which it abuts. It is built of slightly lighter bricks with blue brick quoins. The defining characteristic of this elevation, which is largely blind, is a series of asymmetrically pitched gables, the northern sides of which are glazed to admit light to the workshops below (Plate 3). Each gable contains an oculus and is finished with blue coping tiles. A date in the 1920s or 1930s would seem appropriate.

The offices were housed in the north range, with the workshops to the rear. The western bay of the latter is still in use as an engineering works, and retains large areas of the original brick floor, now much patched with concrete (Plate 4). The roof comprises a series of steel trusses (Plate 5) supported at the longitudinal bay divisions by brick partitions carried on steel frames, which have been infilled during the later 20<sup>th</sup> century with concrete blocks. The other bays are now used for storage.

### Assessment

The buildings that comprise the Fort Works represent the factory as it was configured in the 1920s. The building itself has survived well, and the arrangement of offices at the front towards Pelham Street, and workshops to the rear, can be readily discerned, although no industrial fittings pertaining to its original use remain. The building has additional interest to its 1920s manifestation in that earlier fabric survives in the Pelham Street front illustrative of the history of the works. The building has a good deal of architectural character, not only in its public face towards Pelham Street, but in the towering skyline created by the asymmetrical gables along Kimberley Street.

## **Tower Works (Fig. 10)**

### Description

The former Tower Works incorporate several phases of construction, now much altered and obscured by later cladding and internal divisions, and not easy to define without a more detailed archaeological survey. Provisionally, however, a rapid site inspection, coupled with an examination of the historic maps, has allowed the identification of at least five construction periods (Fig. 10).

#### *Building 1*

Depicted on the 1871 map (Fig. 4), and dating from the mid-19<sup>th</sup> century, Building 1 is situated at the southern end of the site, aligned north-south facing east towards a courtyard open towards Pelham Street to the south (Plate 6). A red brick building, now painted with plain tile roof, it has three storeys and 16 bays of segmental arched windows, now containing steel framed windows, probably dating from the 1930s. Most of the ground storey openings have been replaced by 20<sup>th</sup>-century insertions. The right-hand (north) end is partially obscured by a late 20<sup>th</sup>-century single-storey flat-roofed extension. The interior retains no significant features.

#### *Building 2*

A building depicted on the 1871 map (Fig. 4) in the position of Building 2 may be the same structure. Building 2 is now obscured by later additions, which have encapsulated all but the western gable end, which stands out as a separate entity from the adjacent gabled structures on this side. It stands three storeys high, at right angles to Building 1. On the uppermost floor, the west end of the south elevation contains a series of blocked oculi (Plate 7), but the roof has been replaced in the early 20<sup>th</sup>-century with steel trusses.

#### *Building 3*

Building 3, which occupies the southeast corner of the site is treated here as an entity, but it seems to incorporate more than one phase. The earliest of these is a former range on the west side of the block, on the opposite side of the courtyard to Building 1 (Plate 8), identifiable from its narrow buttresses. It is a brick-built structure, now painted, and there are few features from which to pinpoint a date. However, its interest lies in its position, which corresponds with that of one of the buildings of the Ashes Works depicted on early maps. The remainder of the block probably dates from around the 1920s when this area appears to have been remodelled by the incorporation of the older range into new build. Difficulties of interpretation arise from the subsequent, late 20<sup>th</sup>-century, refurbishment when the walls were rendered and the upper parts of the structure clad in corrugated steel. However, the 1920s work created a roughly rectangular block divided into three separately roofed east-west aligned bays (Plates 9 and 10). Ground-storey windows to the Pelham and Ashland Street elevations are steel framed with stepped blue brick sills, probably of 1920s date. Vehicular entrance to the Pelham Street front retains its stone sets, but is now closed by a late 20<sup>th</sup>-century sliding door (Plate 11).

#### *Building 4*

Situated at the southwest corner of the factory site, Building 4 may incorporate late 19<sup>th</sup>/early 20<sup>th</sup>-century material but in its present form is essentially a creation of c. 1920, and has been refurbished in the later 20<sup>th</sup> century. Built of red brick, it is now largely obscured by 20<sup>th</sup>-century rendering. A single-storey building, it comprises four east-west aligned bays. The Pelham Street (south) front has seven wooden-framed windows with stepped brick sills, and plain parapet to a flat roof (Plate 12). The west elevation has three asymmetrically pitched, half-glazed gables, like those of the Fort Works, with the flat roofed bay to the right (south), apparently a later alteration (Plate 13).

#### *Building 5*

Building 5 occupies the northern half of the site. It first appears in the cartographic record in 1938, and a date in the early 1930s would accord with the architectural character. Constructed of red and yellow brick laid in English bond with corrugated asbestos roof coverings, Building 6 comprises five east-west aligned bays, each with a separate pitched roof. The main front, which faces Brickkiln Street to the north, has a high central recessed fascia, now blind, and plain parapet stepped over the centre (Plate 14). High vehicular entrance to right (west) of centre, and smaller vehicular entrances to left and right. Plain steel-framed windows at ground level only. Attached to the right-hand (west) end of the front is a house of c. 1900 built of red brick laid in Flemish bond with a slate roof (Plate 15). Entrance to the left (east) and canted bay window to the right (west) containing sashes with decorative small panes in the heads. Small-pane sash window above with terracotta sill and cornice strings. The Kimberley Street (west) elevation consists of a series of five brick and corrugated iron clad gables (Plate 15). The Ashland Road elevation (east) has been obscured by later 20<sup>th</sup>-century rendering and corrugated steel cladding (Plate 16). The interior has been divided into a series of smaller units by later 20<sup>th</sup>-century breeze block partitions, but the bays of the factory appear to have been divided by steel frames which also supported the roof. The effect would have been of one large open manufacturing space. The early 20<sup>th</sup>-century steel roof trusses survive but no other original details are apparent.



### Assessment

The principal significance of the Tower Works is as an illustration of an early industrial site's transformation into a major motor vehicle manufacturer. Not only is this of interest in historical terms, but some of the surviving industrial buildings (Buildings 1,2 and part of 3) appear to predate the late 19<sup>th</sup>-century bicycle and tricycle works. These must, presumably, be workshops connected with the Ashes gun lock manufactory. Detailed survey and structural analysis is likely to provide further information about the extent of survival and the character of the Ashes work complex. Aesthetically, the most important parts of the former works are the historical and geographical extremities: Building 1 to the south, and the Brickkiln Street front to the north. Both are comparatively plain but are the most visible and least altered parts of the site and provide chronological benchmarks on which interpretation of the complex can be based.

## **8 CONCLUSIONS AND RECOMMENDATIONS**

The two sites at the Fort and Tower Works have an important history that dates back two centuries and involves the fortunes of two companies that were locally important and nationally famous.

The site to the north of Pelham Street (formerly the Ashes Works, now the Tower Works) was originally occupied by Joseph Brazier, whose family were key players in the gun lock making industry in Wolverhampton throughout the 19<sup>th</sup> century. Wolverhampton was famous for its lock making, and Brazier gun locks were exported all over the world and would have been used in the Crimean War, the Boer War and the American Civil War. The stamp 'Joseph Brazier, Ashes' on a gun lock is seen as a sign of quality on rifles of this date in the collectables market today. Cartographic evidence shows how the Ashes Works expanded and changed throughout the 19<sup>th</sup> century.

At the end of the 19<sup>th</sup> century, the site was given over to another important industry within Wolverhampton was nationally known for, that of cycle making. The Clyno Engineering Co. Ltd was originally situated at the Fort Works to the south of Pelham Street, but as the company expanded they also took over the Ashes Works to the north. Like Joseph Brazier previously, the Clyno firm was awarded government contracts and became involved in the production of munitions during WWI, specifically with the production of Vickers/Clyno motorcycle machine guns. These were used by both the British and the Russians.

As the cycle and motor cycle industry in Wolverhampton, Birmingham and Coventry, evolved into car manufacturing, the Clyno company followed suit. Though this element of the company was short lived, they were at one time the 3<sup>rd</sup> largest car manufacturer in the UK. Part of this success was due to new factories and the rationalisation of large scale production methods introduced in the early 20<sup>th</sup> century throughout many forms of industry, not only in car manufacturing.

The present Fort and Tower Works buildings originally date from the 1920s and in themselves, have some historical and archaeological merit. The incorporation of the older, smaller workshops into larger building complexes to facilitate the

rationalisation of production on a large scale in the car industry and throughout other industrial production lines, is an important development in the industrial history of Wolverhampton and Britain as a whole, and the present standing buildings are an example of this type of early innovation.

There are also important implications for the below-ground survival of earlier structures associated with the Ashes Works beneath the floor level of the Tower Works. If such deposits have been preserved, the site as a whole has the potential to chart the structural and industrial development of the site through three of Wolverhampton's most important industries, by two nationally renowned companies.

As such, the above-ground standing buildings should be considered as locally important, and merit retention or recording ahead of redevelopment. The potential below-ground archaeology and older building fabric present on the site associated with the original gun lock makers should further be considered as locally, regionally and nationally important. Future development of the site might involve mitigation measures, including full building recording, to ensure the preservation, at least by record, of the surviving archaeology.

The final decision concerning further archaeological mitigation measures rests with Mike Shaw, the Black Country Archaeologist.

## **9 ACKNOWLEDGEMENTS**

The project was commissioned by the Property Services Department of Wolverhampton City Council. Thanks are due to Mike Shaw, the Black Country Archaeologist, who monitored the project on behalf of Wolverhampton City Council. Thanks are also due to Steve Litherland for his help and advice, and to the staff at Wolverhampton Archives and Local Studies Library. The assessment was undertaken by Eleanor Ramsey, and the walkover and building survey by Malcolm Hislop. Eleanor Ramsey produced the written report which was illustrated by Bryony Ryder, and edited by Dr Malcolm Hislop who also monitored the project for Birmingham Archaeology.

## **10 SOURCES**

### **9.1 Primary Sources**

1816-17 The Commercial Directory

1818-20 The Commercial Directory

1834 The History, Gazetteer and Directory of Staffordshire

1839 The Wolverhampton Directory

1850 The Post Office Directory of Birmingham, Staffordshire and Worcestershire

1858 Wolvehampton Directory

1865 Jones's Mercantile Directory of South Staffordshire and East Worcestershire

1896 Kelly's Directory of Staffordshire

1904 Kelly's Directory of Staffordshire

1912 Kelly's Directory of Staffordshire

1934 Wolverhampton Red Book and Directory

1951 Wolverhampton Red Book and Directory

1955 Wolverhampton Red Book and Directory

1957 County Borough Directory

1961 Kelly's Directory of Wolverhampton

Deeds 1963/223 Packet 1 (Wolverhampton City Council):

1963 (September 16<sup>th</sup>) The Midland Metal Spinning Co. Ltd. To The Wolverhampton Corporation: Requisitions on Title Re: Properties in Pelham Street, Kimberley Street, Ashland Street and Great Brickkiln Street, Wolverhampton

1963 (October 3<sup>rd</sup>) Midland Metal Spinning Company to Wolverhampton Corporation: Schedule of Deeds relating to factories and premises at Pelham Street, Kimberley Street, Ashland Street and Brickkiln Street, Wolverhampton in the County of Staffordshire

1963 (October 3<sup>rd</sup>) The Midland Metal Spinning Company Limited to The Wolverhampton Corporation: Conveyance of offices factories and premises at Pelham Street, Kimberley Street, Ashland Street and Great Brickkiln Street and Numbers 273-287 Great Brickkiln Street Wolverhampton in the County of Staffordshire

1964 Kelly's Directory of Wolverhampton

1965 Kelly's Directory of Wolverhampton

## **9.2 Secondary Sources**

Brennan, T. 1948 *Midland City-Wolverhampton Social and Industrial Survey*

Brown, E. T. 1928 *The Book of the Clyno Car*

Collins, P. and Stratton, M. 1993 *British Car Factories from 1896: A Complete Historical, Geographical, Architectural and Tecnological Survey*

Conway, M. 2002 *The New IT Centre, Inner Courtyard, University of Wolverhampton: An Archaeological Desk-Based Assessment* BUFAU Report No. 984

Department of the Environment (DoE) 1990 *Planning Policy Guidance Note 16: Archaeology and Planning*

Hooke, D. & Slater, T. 1986 *Anglo-Saxon Wolverhampton and its Monastery*

Wolverhampton Borough Council

Institute of Field Archaeologists (IFA) 2001 *Standard and Guidance for Archaeological Desk-Based Assessment*, rev. edn.

Lord Montague of Beaulieu 1960 *Lost Causes of Motoring*

Mander G. P. ed. Tildesley, N. W. 1960 *A History of Wolverhampton to the early nineteenth century*.

Shaw, M. 2000 *Mapping the town: Medieval Wolverhampton and Walsall* West Midlands Archaeology 43, 29-32

The Clyno Engineering Co. 1922 *Clyno Cars*

White, H. and Wade, P. 1997 *Wolverhampton Town Centre Action Plan: Archaeology, Phase 1* West Midlands Joint Data Team

Wolverhampton City Council 2005 *Brief for Building Assessment of Fort and Tower Works, Wolverhampton*

<http://www.wolverhampton-gunlocks.fslife.co.uk/>

[http://www.muzzleloaders-etcetera.com/overview\\_of\\_locks.htm](http://www.muzzleloaders-etcetera.com/overview_of_locks.htm)

[http://en.wikipedia.org/wiki/Board\\_of\\_Ordnance](http://en.wikipedia.org/wiki/Board_of_Ordnance)

[http://en.wikipedia.org/wiki/British\\_East\\_India\\_Company](http://en.wikipedia.org/wiki/British_East_India_Company)

<http://www.americancivilwar.org.uk/articles/whitworth.htm>

<http://www.localhistory.scit.wlv.ac.uk/Museum/Transport/Motorcycles/Clyno.htm>

[http://www.wolverhamptonarchives.dial.pipex.com/local\\_ww1\\_factory.htm#](http://www.wolverhamptonarchives.dial.pipex.com/local_ww1_factory.htm#)

<http://www.localhistory.scit.wlv.ac.uk/Museum/Transport/Cars/Aboutcars.htm>

<http://www.historicaldirectories.org/>

<http://www.nationalarchives.gov.uk/catalogue/default.asp>

### **9.3 Cartographic Sources**

1842 The Tithe Map of Wolverhampton

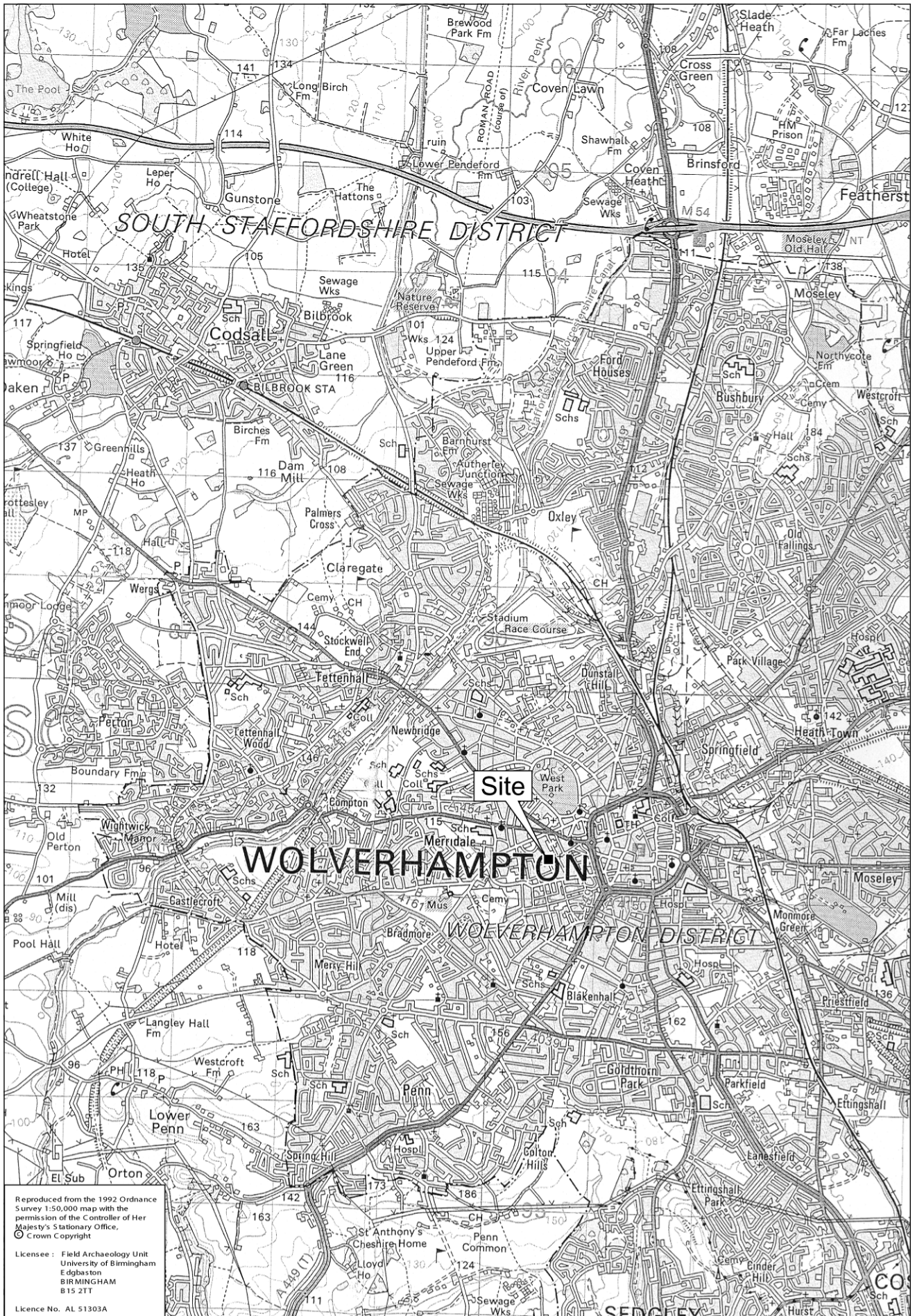
1871 Map of Wolverhampton

1889 Ordnance Survey First Edition 1:2500

1903 Ordnance Survey Second Edition 1:2500

1919 Ordnance Survey Third Edition 1:2500

1938 Ordnance Survey Fourth Edition 1:2500



Reproduced from the 1992 Ordnance Survey 1:50,000 map with the permission of the Controller of Her Majesty's Stationary Office.  
 © Crown Copyright  
 Licensee: Field Archaeology Unit  
 University of Birmingham  
 Edgbaston  
 BIRMINGHAM  
 B15 2TT  
 Licence No. AL 51303A

Fig.1

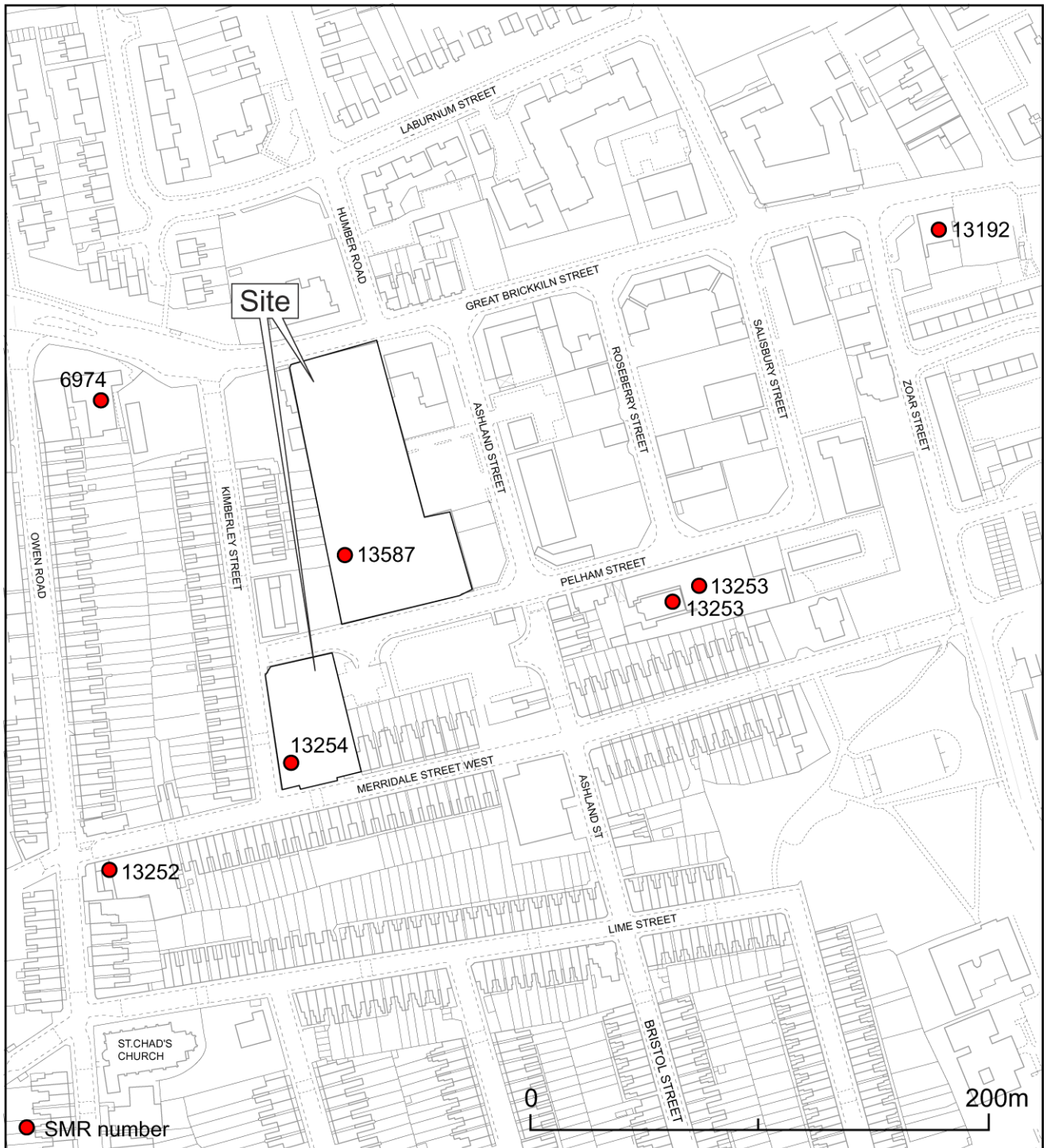


Fig.2

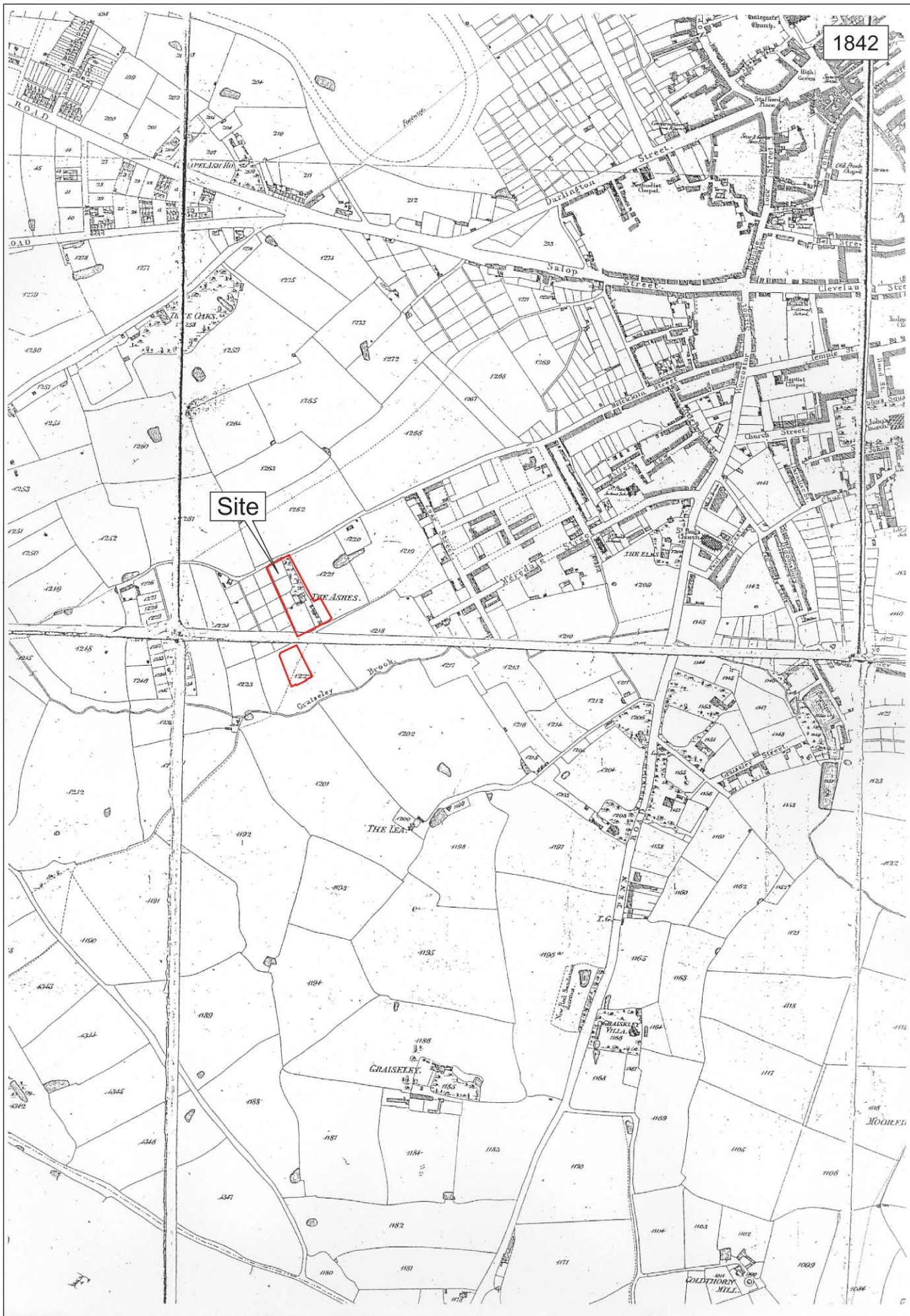


Fig.3





Fig.4

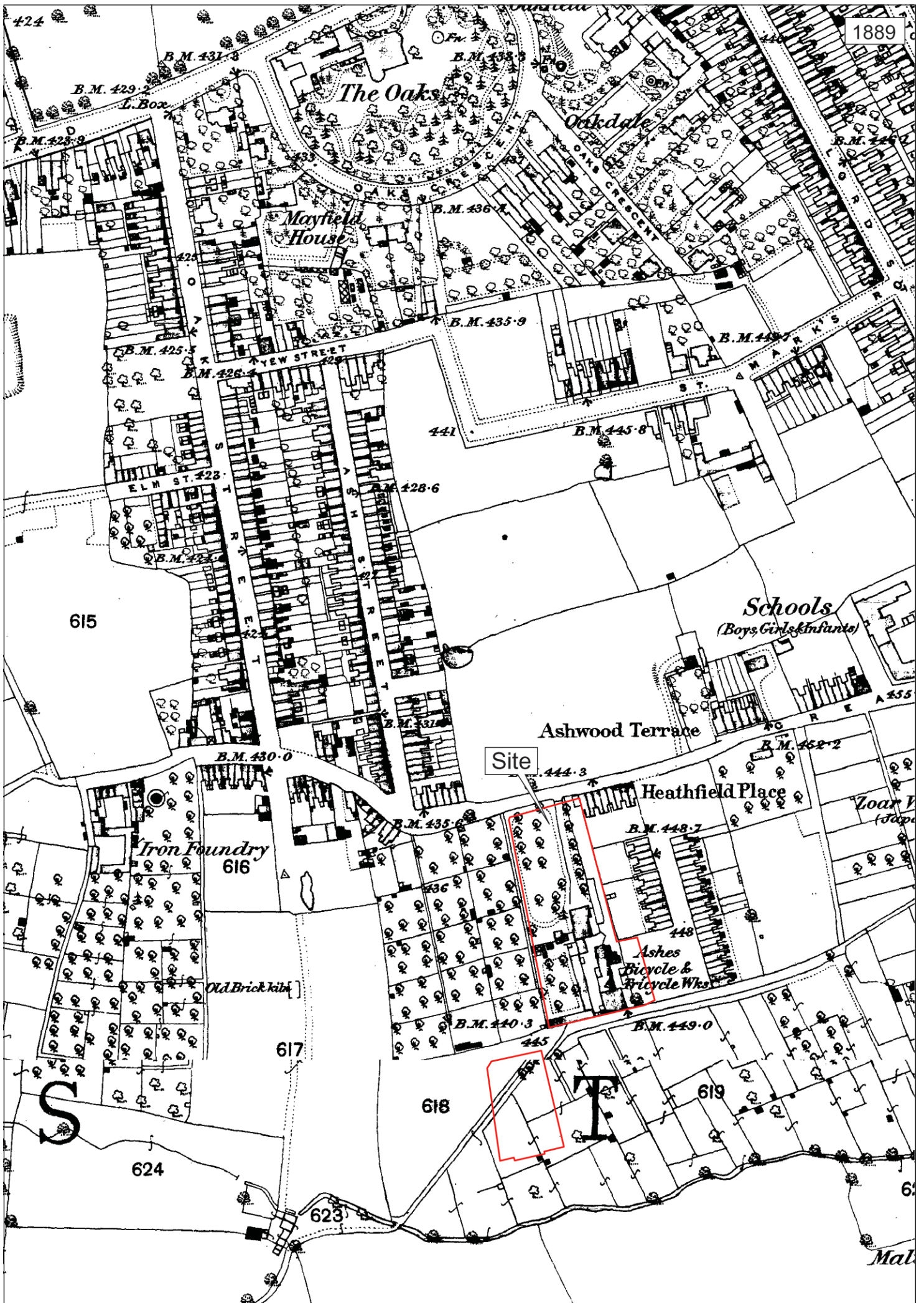


Fig.5

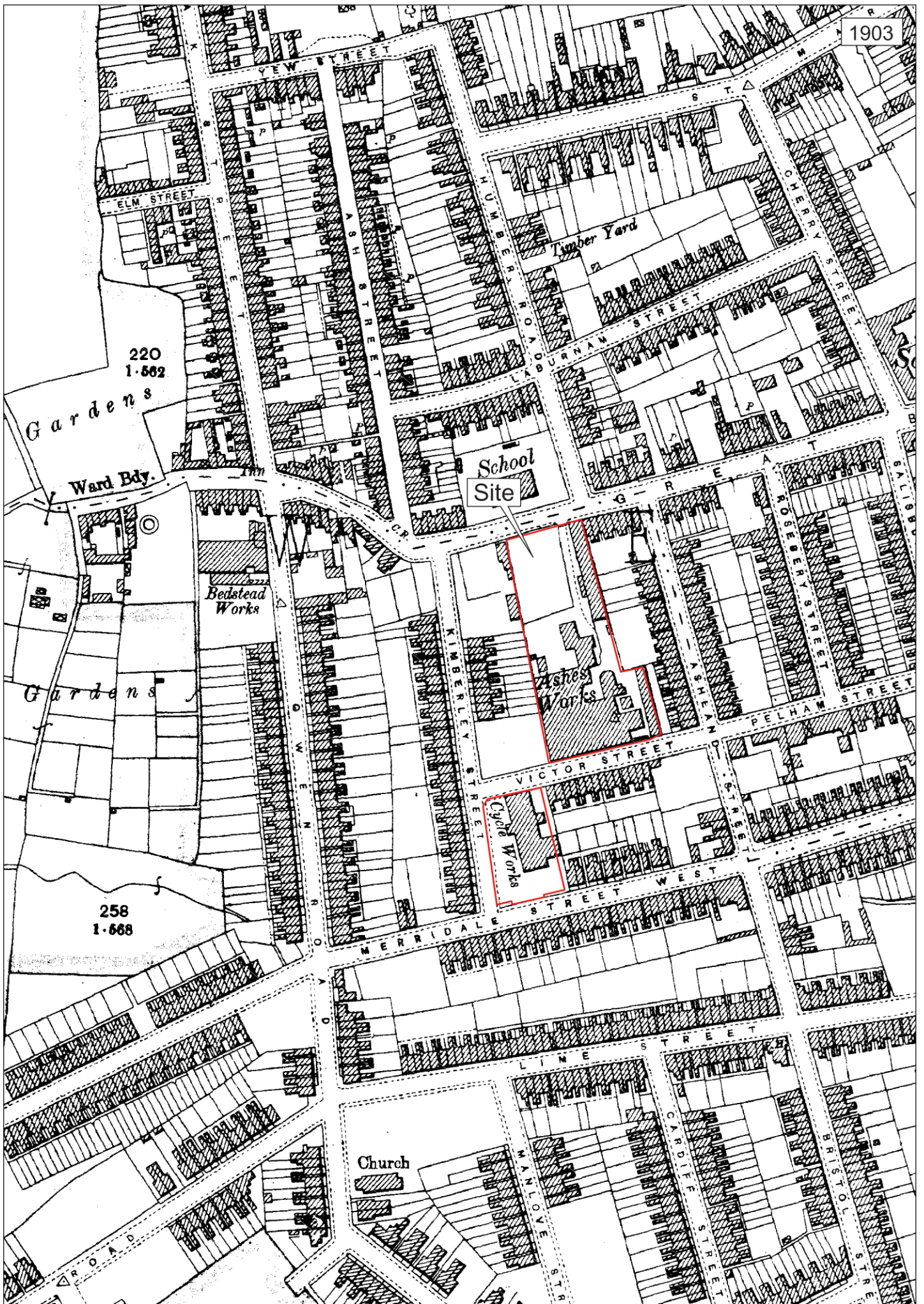


Fig.6

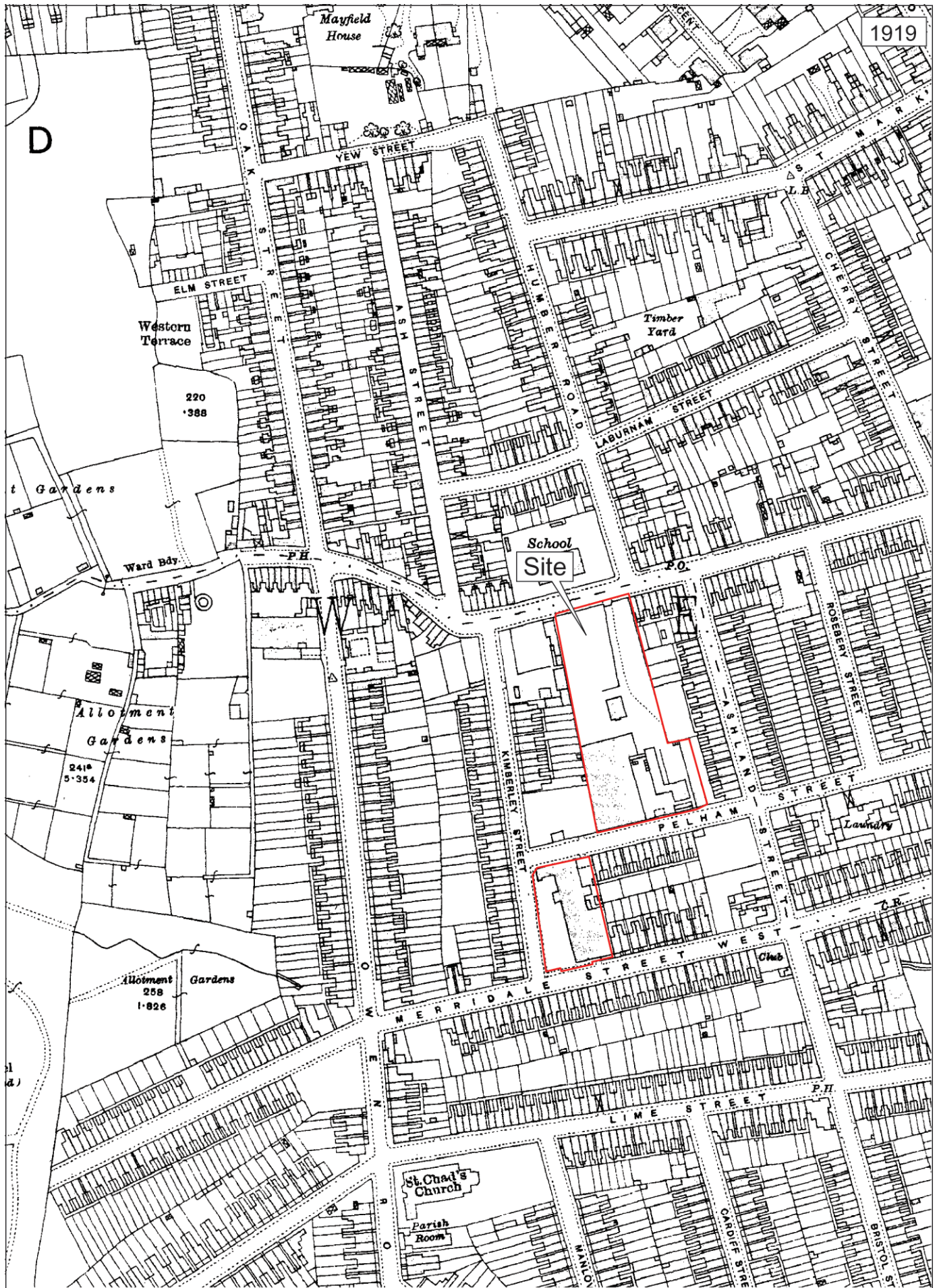


Fig.7

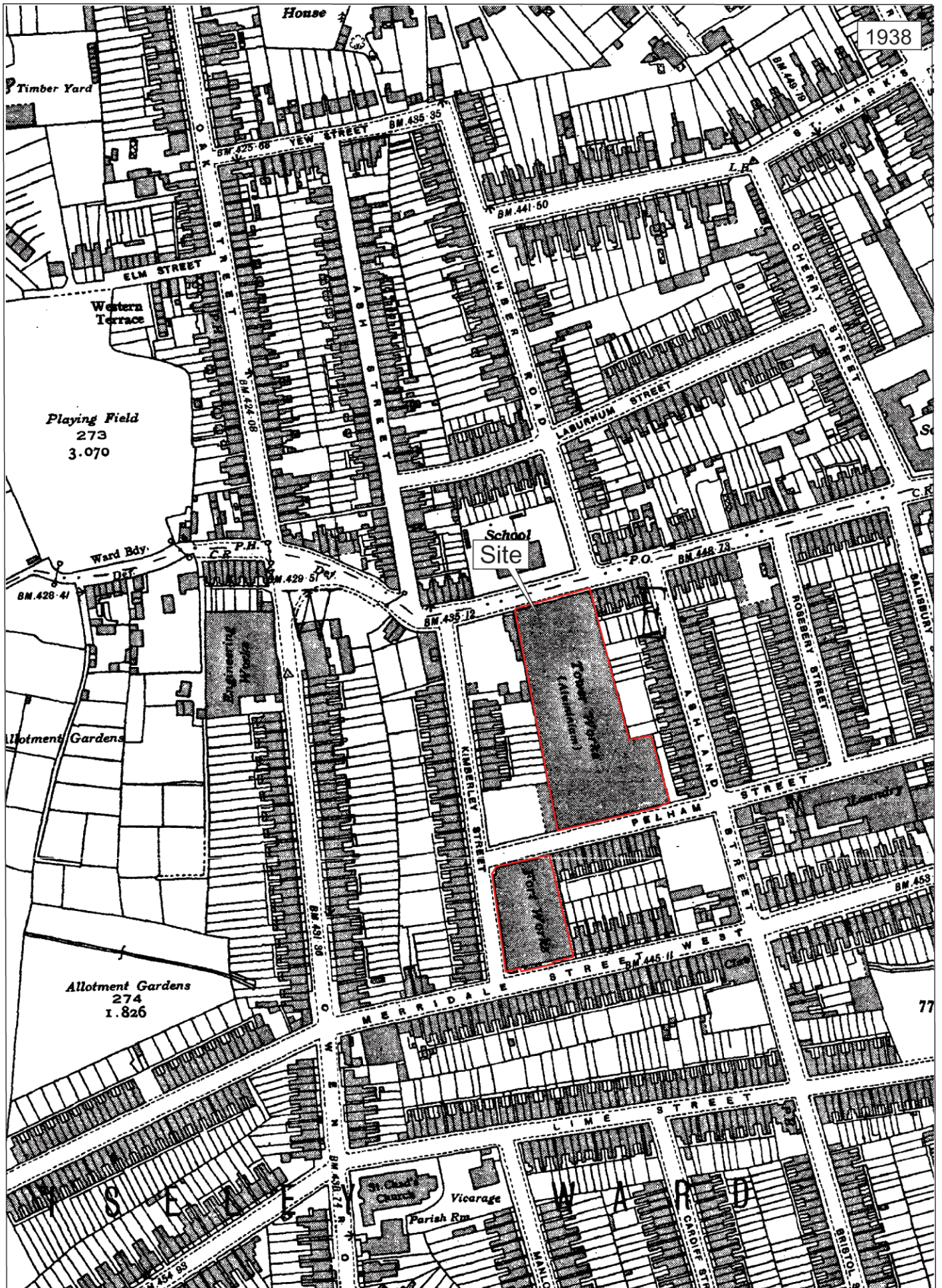


Fig.8

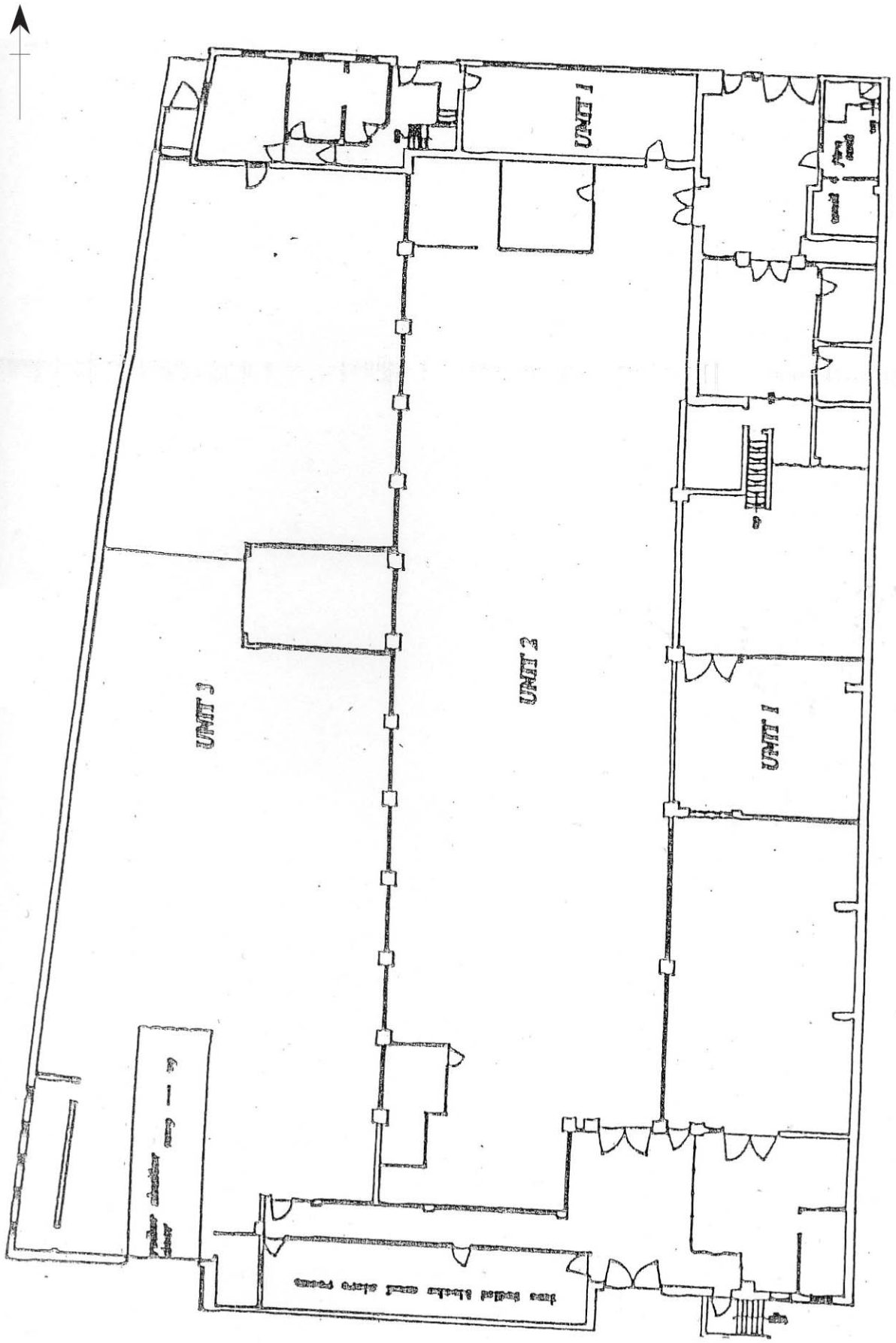


Fig.9



Fig.10



Plate 1



Plate 2





Plate 3



Plate 4



Plate 5



Plate 6



Plate 7



Plate 8



Plate 9



Plate 10



Plate 11



Plate 12



Plate 13



Plate 14



Plate 15



Plate 16