

# An Archaeological Assessment of the New Union Mill, Grosvenor Street West, Birmingham

Planning Application Nos. C/05934/02/FUL and c/05935/02/LBC

Bicmingham University Field Archaeology Unit



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#### Birmingham University Field Archaeology Unit Project No. 1049 March 2003

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SMR 03444, SP 0578 8653

Planning Application Nos. C/05934/02/FUL and C/05935/02/LBC

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#### Summary

An archaeological assessment was carried out in March 2003 in advance of proposed development of a block of land between the Birmingham Canal and Grosvenor Street West, in Birmingham (centred on NGR SP 0578 8653). The work was undertaken by BUFAU on behalf of Associated Architects, for Mesterbrook Ltd. The area affected by the proposed development was part of a complex of ancillary buildings associated with the New Union Mill which was an early steam powered flour mill. It was built c.1813 and was originally situated just outside the study area. One of the primary aims of the project was to identify where the early engine house, which originally housed a Boulton and Watt steam engine, had been situated. Research revealed that a sequence of engine houses for two separate steam engines had all been located on the northwestern side of the mill by the canal, outside the Study Area. The mill was replaced by the Fellows Moreton and Clayton warehouse during the 1930s when the whole of the canal basin was also redesigned, a marina, to the northwest of the apartment block, has probably removed all traces of the engine houses. Latterly the mill was converted into apartments and is now known as the Sherborne Wharf.

#### 1.0 Introduction

This archaeological assessment was prepared by Birmingham University Field Archaeology Unit on behalf of Associated Architects, for Mesterbrook Ltd. The objective was to inform development proposals for a block of land centred on NGR SP 0578 8653, and hereafter referred to as the Study Arca (Fig.1). It comprises a roughly square block of land fronting on to Grosvenor Street West near to its junction with Sheepcote Street, Sherborne Wharf and a loop of the Birmingham Main Line Canal is located to the rear of the block, and the site is bounded by an alectrical substations to the north and a new housing development to the south. A brief for the archaeological work, produced by Birmingham City Council (Appendix 2), proposed that this assessment would form the first stage of an archaeological response with regard to the proposed development, in accordance with Policy 8.36 of the City Council's Unitary Development Plan and guidelines laid down in Planning Policy Guidance Note 16 (DoE 1990). The assessment has been prepared in accordance with the Institute of Field Archaeologists Standards and Guidance for Archaeological Dcsk-based Assessments (Institute of Field Archaeologists 1999).

#### 2.0 Background to the project

The Study Area includes the only surviving part of a complex of ancillary buildings associated with the New Union Mill. The range along the Grosvenor Street frontage,

which will be retained as part of the new development proposals, is a Grade II listed building. A modern rear wing will be demolished as part of the redevelopment of the site. Two new rear wings are proposed, the new build of which will involve considerable intrusion into existing ground level to a depth equivalent to a storey. The New Union Mill was one of only three steam powered corn mills in Birmingham in the early 19<sup>th</sup> century, and therefore an important element within the overall development of early steam mills.

#### 2.1 Objectives

The assessment was designed to enable appropriate mitigation strategies to be devised regarding below-ground archaeological remains within the Study Area, and, more specifically to identify the location of the steam engine house used to power the flour mill.

#### 2.2 Method

Published archaeological sources, primary and secondary records and maps held by the Local Studies and Archives sections of Birmingham Reference Library (BRL), and Birmingham University Library (all sources are listed in Appendix I below). Unfortunately most papers in the Boulton and Watt Collection and the Matthew Boulton Papers could not be accessed as they are currently being re-catalogued as part of the Archives of Soho Project, they will available again later this year. Due to the lack of information available regarding the function of the buildings within the Study Area, a rapid assessment of the standing building stock was made.

#### 3.0 Present character of the Study Area

The frontage on to Grosvenor Street West is occupied by a Grade II listed building (LB 5104). The building is two-storeyed, and eleven bays long. The central bay, which also serves as the entrance to the complex, breaks forward from the main range, and is pedimented. The main gate opens on to a courtyard area to the rear of the main building, part of the courtyard is occupied by a modern L-shaped wing. To the rear of the plot lies the canal basin and the Sherborne Wharf development.

#### 4.0 General historical context

Following the passing of the Corn Laws in 1773, which set a fixed price for home grown wheat at 80 shillings a quarter and forbade the import of corn into the country until the home produce reached the set market price, there were riots about the inflated price of bread. Some employers, largely in the manufacturing industries, contrived to supply cheaper, good quality bread to the working classes through the introduction of co-operative mills, rather than making an increase in wages. Thus the Birmingham Flour and Bread Company was established by a selection of local dignitaries, amongst them Joseph Barber (Artist). It was set up as charitable venture with shares being sold at twenty shillings each so that the poorer classes were not exempt (The Birmingham Magazine 1900, 115). It's first premises were the Old Union Mill on Holt Street, with New Union Mill opening c.1813. According to a

parchment dated to 1796 the directors commissioned one of Boulton and Watt's double acting, 16 horse power, sun and planet type steam engine to power the Old Union Mill.

#### 5.0 Detailed history of the Study Area

The study area, in the district of Ladywood, lies to the southwest of the centre of Birmingham. Early maps of Birmingham, dating between 1795 and 1810 (see Appendix 1), indicate that this area was open fields and relatively undeveloped at this time. A large tract of land was acquired, on long lease, from Miss Colmore for the building of a mill and bakery by the Union Mill Co. (The Birmingham Magazine 1900, 115). The New Union Mill was one of the first buildings to be built in this district of the town, with the majority of the area remaining as gardens and fields.

The Mill is first shown on a Map of Birmingham and its Environs for the Earl of Dartmouth dating to 1824-5 (Fig. 2). A new stretch of canal, linking more directly the Old Line with the new Birmingham-Fazeley Canal, is depicted. It is the construction of this that created the loop upon which the New Union Mill was built. A new basin was also created at the time, with a probable spur off the canal running into the mill building. As well as the mill building there are ancillary structures ranged around a central courtyard running back from the canal and fronting on to a new access road leading off Nelson Street (latterly Sheepcote Street). The adjacent plot was occupied by the Broadfield Dock at this time, which was situated between the mill and Nelson Street. The first listing of the mill in trade directories is for the New Union Flour and Bread Company's Mill, Sheepcote Lane, in the Commercial Directory for 1816-17. Prior to this the company is recorded as having a mill, The Old Union Mill, on Holt Street (Wrightson 1815).

Several plans relating to a new steam engine, supplied by Boulton and Watt, also date to this period. These include a plan of the engine house and boiler showing the crank platform, condenser cistern, cylinder platform, boiler and ash pit, a plan of the tunnel system, a cross-section showing the steam feed pipes, longitudinal and cross-sections of the boiler, and longitudinal and cross-sections through the engine house (Fig. 3). The section of the engine reveals that it was a single-cylinder rotative beam engine, common after 1800 (pers. comm. Litherland). A plan showing the location of this new boiler house, associated with the engine locates it at the rear of the mill by the canal and depicts a pair of Wagon boilers (pers. comm. Litherland, Fig. 7).

Hunt's Map of 1834 (Fig. 4) reveals that the new road has been more formerly laid out, extending eastwards over Sheepcote Street, and was renamed Mill Street, turning into Grosvenor Street further to the west. The only building depicted on the site is a U-shaped building, a rather sketchy reference to the ancillary buildings belonging to the mill. Jobbins' plan of Birmingham and its Environs showing the London and Birmingham and the Grand Junction Rail Depots was drawn up in 1838 (Fig. 5), and shows the same layout of the mill complex as the map dating to 1824-5. However, a new spur off the canal, immediately northwest of the mill, has been cut to supply Rollansons Coal Wharf.

Pigott-Smith's Map of Birmingham (datable to c.1850-55, Fig. 6) is the first map to depict the new engine and boiler house, extending out from the northwestern elevation of the mill building. The area immediately surrounding the new engine house is open, and it seems likely that this area would have been used for the storage of coal. A spur off the canal also appears to enter the mill. The map also details divisions within the ancillary buildings which was probably where the grain was stored.

Plans for a later boiler house (Fig. 7) and new damper gear, dating to 1873, reveal that the mill was again extended to the northwest. The new boiler house and chimney are both shown on the First Edition OS Map (1888, Fig. 8). During the 1870s Lancashire boilers or Fire-tube boilers began to replace the earlier wagon-type (pers. comm. Litherland), they were a more efficient way of creating steam, but would still have worked with original Boulton and Watt engine. Internal divisions are again detailed for the ancillary buildings, one of which, on the northeastern side of the gate, has also been extended into the courtyard. The area immediately around the canal side has remained open, again probably for the storage of coal.

By the time of the Second Edition OS Map in 1904 (Fig. 9) the mill has been renamed the Central City Flour Mill. According to Kelly's Directory this change of name occurred between 1899, when the New Union Mill Company name was listed for the last time, and 1900, when Walter Brown and Sons are listed as the proprietors of the Central City Flour Mills. Walter Brown and Sons had three other flour mills, in Dublin and Bagnalstown (Ireland) and Crewe (The Birmingham Magazine 1900, 115). The article goes on to say that during the summer and autumn of the previous year the mill had been refitted with a new steam engine and modern flour milling machinery, including new grinding machinery (Plate 1, ibid, 116). The new grinding machinery was needed in response to grain imports from Hungary, Russia and the USA. The grain was harder than that grown in England and needed to be rolled. The plant was supplied and fitted by the milling engineers Mssrs. Thomas Robinson and Son, Ltd., Rochdale, and no expense was spared on updating the mill to the most modern standards.

However, plans relating to the Alterations and Additions to New Union Mill Premises, Grosvenor St., Birmingham, For the Directors by George Hay Cox (architect) dating to July 1892 reveal that preparations for updating the mill were already proposed prior to the purchase of the mill by Brown. These plans show that the alterations included the building of an additional storey on to the building, the insertion of new windows, and the raising of others, old sliding doors to be re-fixed opening inwards and the stairs to be made narrower and their pitch altered. There is also an annotated overall plan of the whole complex that shows that the left wing of the buildings around the yard area was used for stabling etc, with the corner plot fronting on to Grosvenor Street being used as a house. The northeastern corner of the range was used as a shop, with the eastern range used for warehousing. The engine house is also annotated to the rear of the mill building. There were also plans for the redesign of the Engine House, by B.A.E. Hart dating to December 1893, however these were too fragile to view. A photograph (Plate 2), which was reproduced in the Birmingham Magazine article, shows the mill after these alterations had been made, the extra storey appears to have been to house the new grinding machinery. The Central City

Flour Mill is listed for the last time in Kelly's Directory in 1927, and there is no further mention of the mill after this.

Following the closure of the mill, the ancillary buildings were split in to small scale manufacturing workshops such as those occupied by Clayton Brassfounders Ltd. The mill building was replaced by the Fellows Moreton and Clayton Warehouse, latterly converted into the Sherborne Wharf. However, the warehouse was constructed further back from the canal than mill, probably to avoid building over the spur from the canal that the mill had originally straddled. Thus the canal basin was extended, and a marina constructed (Fig. 10) which appears to have destroyed any possible remains of the engine houses. Subsequently the northern wing of the complex of ancillary buildings was removed and new units built on the spot. The mill later became known as the Old Union Mill.

#### 6.0 The Standing Buildings

The following assessment is based upon a rapid internal and external inspection of the buildings at Union Flour Mill. There are three structures in total arranged around the sides of an internal courtyard that approximately mirror the original early 19<sup>th</sup> century arrangement of the mill complex. These comprise a main range fronting Grosvenor Street West, a shortened southwestern wing behind (Plate 3) and the remains of the back wall of a demolished range behind (Plate 4) and, finally, an L-shaped set of modern studios to the rear of the site that are not described here (Plate 5).

The main range is of two storeys throughout. The style is industrial vernacular with understated classical features. The building employs mass brick walling and wooden trusses and beams. Built in Flemish-bonded red brick the frontage is articulated into 11 bays defined by small-paned, wooden-framed balanced sash windows that appear to have been replaced (Plate 6). These openings have flat gauged-brick heads and stone sills. The central bay is larger to accommodate a cart entrance and is advanced slightly with a pediment. The cart entrance has a broad segmental arch with two heavy doors set off two pairs of stone hinge-support stones. Blocked windows in the side walls of the cart entrance would have monitored access into and out of the mill complex. The other bays are regularly spaced, although reading the building from left to right the ground-floor windows to Bays 2 to 5 and 9 to 11 are set lower along the frontage and are shorter in size. The bricks are a reddy-brown colour, irregularly fired, and produced from wooden moulds and are roughly 21/2 inches tall. The slate roof with lead-sheet hip and valley detailing has been renovated relatively recently, but has retained its original low pitch. Externally, the only chimney visible is centrally placed within the left-hand gable end of the main range, but internally there is evidence of the former position of several other fireplaces and stacks within Bays 1 to 5. The roof has deep wooden eaves that are pierced by a large number of regularly-spaced circular ventilation holes that have a fine mesh cover, presumably to allow good ventilation while keeping out birds. A line of four cast-iron vents inserted between Bays 3 to 5 beneath first-floor level probably date from a later period of use of this part of the building as part of the Clayton Brass Foundry.

The rear elevation and interior of the building has been much altered, although some effort has been made to mirror the original design of the window openings and the

brickwork within this later work. In particular, on the left-hand, or northeast, side of the rear elevation facing the inner courtyard the rear portion of Bays 7 to 11 has had various openings inserted and adjoining buildings removed. A vertical scar (Plate 8) left by the removal of northeast range of the mill complex is denoted by a line of closer bricks located roughly half way along the wall between Bays 8 and 9 that demarcates largely original Flemish-bonded brickwork to the right from later infill to the left. Internally, the ground-floor level is also lower within this northeastern end of the main range as are the first-storey window openings. The right-hand, or southwest, side, of the rear elevation has been less altered. A canted bay window rising both storeys provides good visual control over the courtyard area and this bay together with the adjacent Bay 4 is deeper than the first three bays of the building. The larger heated rooms here may indicate that Bays 4 and 5 were the location of the offices supervising the running the mill, while Bays 1 to 3 together with the southwestern range behind contain a number of smaller heated rooms that was probably accommodation for a site foreman.

This southwestern wing is clearly contemporary with the main frontage being of two storeys. The gable end is blind, and the eaves course is dentilated. The ground-floor windows are probably inserted, although the doorway with its stone step appears to be original. This entrance, like the one to the office area in Bay 4, has a pedimented doorcase – while, once again, both look too crisp to be original, they may be copies of original features. The continuation of this range along the southwestern side of the central courtyard was one-and-a-half storeys in height. This can be seen in the weathering of the brickwork of the blind gable end, together with the change from closer bricks to finish the wall above this roof height and the use of headers beneath where the wall facing the courtyard would presumably have continued. This size of structure is consistent with there being a range of stables here. There is documentary evidence from 1892 to support this and the division of the brick pillars that survive along the southwest boundary wall of the site suggests that this range was sub-divided into several horse-box size bays.

In conclusion, the surviving historic buildings within the mill complex are now nearly 200 years old. Extensive refurbishment and subsequent changes of use have greatly affected the inside and rear of the main range. Nevertheless, sufficient structural evidence has survived that when combined with documentary sources it is possible to suggest the former function of many of the buildings. These include a range of stables, foreman's accommodation, offices and a central cart entrance. These are clearly ancillary structures; however, they probably survived because they were more readily adaptable than the main mill and engine house. The façade of the works presents a public face that is formal, tidy and workmanlike, but in no way ostentatious. The effect is one of sober industry, and in this and the arrangement of the works around a central courtyard not immediately obvious from the street it is much more akin to the scale and character of the larger 19<sup>th</sup>-century works associated with the saddlery trades of Walsall for instance.

#### 7.0 Conclusions and recommendations

The only surviving remnant of the mill complex, the range of buildings fronting on to Grosvenor Street West, is due to be retained as part of the proposed development.

Research has shown that the engine houses, for several different phases of milling on the site, were located outside the Study Area. A site visit revealed that the ground level within the courtyard appeared to have been lowered when the modern L-shaped wing was constructed. This may have truncated any surviving remains associated with the original use of the site as a mill. If deposits do survive they are unlikely to be more than the footprints of the buildings, which are already known from the cartographic record. However, it remains unclear as to whether the warehouse range, along the northeastern side of the plot, was cellared and it may be appropriate to undertake a watching brief on this area to establish its exact function with regard to the mill building. All recommendations are subject to comment by the city Planning Archaeologist.

#### 8.0 Acknowledgements

The project was commissioned by Associated Architects, for Mesterbrook Ltd, and thanks are due to Ian Standing for his co-operation and assistance throughout the project. Thanks also go to Mike Hodder, Planning Archaeologist, who monitored the project on behalf of Birmingham City Council. The documentary research was undertaken by Kirsty Nichol and the assessment of the standing buildings was undertaken by Stephen Litherland. The illustrations were prepared by Nigel Dodds, and Stephen Litherland edited the report.

#### 9.0 References

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

Institute of Field Archaeologists (IFA) 1999 Standards and Guidance for Archaeological Desk-based Assessments

The Birmingham Magazine 1900, A New Mill – yet a Century Old. Vol. II, No.4.

Wrightson 1815 Wrightson's New Triennial Directory of Birmingham

## APPENDIX 1

# Original sources consulted

Primary Sources		
Wrightson's New Triennial Directory of Birmingham		
1816-17 The Commercial Directory		
1818-20 The Commercial Directory		
Plans for the alterations and additional floor to the mill premises		
by George Hay Cox		
Plans for the engine house by B.A.E.Hart		
Kelly's Directory		
Kelly's Directory		
The Birmingham Magazine Vol. II, Nos. 4-6		
Kelly's Directory		
Kelly's Directory		
Photograph (BCL ref. WK/L5/28-29) Nos. 17-23 Grosvenor Street West		
Maps		
Snape's Map		
Pye's Map		
Kempson's Map		
Kempson's Map		
1810 Kempson's Map 1824-5 Map of Birmingham for the Earl of Dartmouth		
Hunt's Map		
Birmingham and its Environs showing the London and Birmingham and the		
Grand Junction Railway Depots by J.R.Jobbins		
Map of Birmingham published under the Superintendence of the Society for		
the Diffusion of Useful Knowledge		
Plan of Birmingham in Tallis World Atlas		
1851 Plan of Birmingham in Tallis World Atlas 1850-55 Piggott Smith's Map		
Map of Birmingham and its Environs		
First Edition OS Map (1:500 series)		
First Edition OS Map (25")		
Second Edition OS Map(25")		
Kelly's Map		
Third Edition OS Map(25")		
Fourth Edition OS Map (25")		
OS Map 1:10000 Series		
OS Map 1:1250		

#### **APPENDIX 2**

# BIRMINGHAM CITY COUNCIL PLANNING DEPARTMENT

Application numbers C/05934/02/FUL and C/05935/02/LBC New Union Mill, Grosvenor Street West, Birmingham(SMR 03444; SP 0578 8653)

Brief for Archaeological Desk-based Assessment in advance of consideration of proposed development

#### 1.Summary

Proposed development at New Union Mill is likely to affect below-ground archaeological remains, in particular of the site of a steam engine which powered the mill. This brief is for an **archaeological desk-based assessment** of the impact of the proposed development on archaeological remains. This will ascertain, as far as possible, the location, likely survival and significance of archaeological remains of the steam engine so that appropriate archaeological mitigation strategies can be devised.

#### 2. Site location and description

The site is on the north-west of Grosvenor Street West, extending to the Oozells Street Loop of the Old Main Line of the Birmingham Canal. The range along the street frontage is a surviving part of the New Union Mill and is a grade II listed building. Behind the frontage, a recent rear wing extends to the canal and there is a surfaced yard.

#### 3.Planning background

Applications C/05934/02/FUL and C/05935/02/LBC are for refurbishment of the former New Union Mill, demolition of the recent wing and construction of two new rear wings for residential use. The new build would involve intrusion into the existing ground level to a depth the equivalent of a storey, because of the difference between the level of the site and that of the canal.

Because the site is likely to include archaeological remains which would be affected by the proposed redevelopment, an assessment of its archaeological implications is required in advance of consideration of the proposals. This is in accordance with Policy 8.36 of the City Council's Unitary Development Plan and government advice in Planning Policy Guidance Note 16, "Archaeology and Planning". The archaeological assessment will enable appropriate archaeological mitigation strategies to be devised. The mitigation strategies may involve modification of site layout or foundation design to ensure in situ preservation of archaeological remains, or, if this is not feasible, full recording of archaeological remains in advance of development.

#### 4. Existing archaeological information

The New Union Flour Mill was constructed in 1813, following the establishment in 1796 of the Old Union Flour Mill on the north-east of the town. It was only the third steam-powered corn mill in Birmingham: the others were the Old Union Mill

and Pickard's Mill on Snow Hill, established in 1783. Albion Mill was built alongside the Newhall Branch of the Birmingham and Fazeley Canal in 1813. Experimental work in corn milling machinery took place at Mathew Boulton's Soho Manufactory in 1783. New Union Mill was itself powered by a Boulton and Watt engine and is therefore a rare example of a Boulton and Watt engine site in the city. Drawings in the Boulton and Watt Collection include a plan and elevation of the steam engine they provided and the location of the engine which it replaced. The early steam engine is likely to have been near the canal for ease of bringing coal to its boiler and removing ash, and for access to water. Even though there are no visible remains above ground, substantial parts of the steam engine would have been below ground and substantial brick foundations and water supply structures are unlikely to have been removed by later activity on the site.

#### 5. Requirements for work

The archaeological desk-based assessment is required to address the following:

- The location of the early steam engine on the site
- · The likely survival of remains of the steam engine
- The significance of surviving remains

#### 6.Stages of work

The extent, survival and significance of archaeological remains on the application site, as described in part 5 above, are to be assessed by site inspection and a search of published and unpublished written records, illustrations and maps, and archaeological and geotechnic records. The sources will include the Boulton and Watt collection and 19<sup>th</sup> century maps of Birmingham.

#### 7.Staffing

The archaeological desk-based assessment is to be carried out in accordance with the Code of Conduct, Standards, Guidelines and practices of the Institute of Field Archaeologists, and all staff are to be suitably qualified and experienced for their roles in the project. This particular project requires expertise in interpreting steam engine and corn milling technology. It is recommended that the project be under the direct supervision of a Member or Associate Member of the Institute of Field Archaeologists.

#### 8. Written Scheme of Investigation

Potential contractors should present a Written Scheme of Investigation that which details methods and staffing. It is recommended that the proposal be submitted to the City Council's Planning Archaeologist before a contractor is commissioned, to ensure that it meets the requirements of the brief.

#### 9. Monitoring

The archaeological desk-based assessment must be carried out to the satisfaction of the Chief Planning Officer, Birmingham City Council, and will be monitored on his behalf by the Planning Archaeologist. At least five working days notice of commencement of the assessment must be given to the Planning Archaeologist, so that monitoring meetings can be arranged.

#### 10.Reporting

The results of the archaeological desk-based assessment are to be presented as a written report, containing appropriate illustrations and a copy of this brief. A copy of the report must be sent to the Planning Archaeologist.

#### 11.Archive deposition

The written, drawn and photographic records of the archaeological desk-based assessment must be deposited with an appropriate repository within a reasonable time of completion, following consultation with the Planning Archaeologist.

#### 12.Publication

The written report will become publicly accessible, as part of the Birmingham Sites and Monuments Record, within six months of completion. The contractor must submit a short summary report for inclusion in *West Midlands Archaeology* and summary reports to appropriate national period journals.

CHIEF PLANNING OFFICER
BIRMINGHAM CITY COUNCIL
Date prepared: 31 January 2003

Planning Archaeologist: Dr Michael Hodder 0121-303 3161 fax 0121-464 3514

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Union Mill.doc

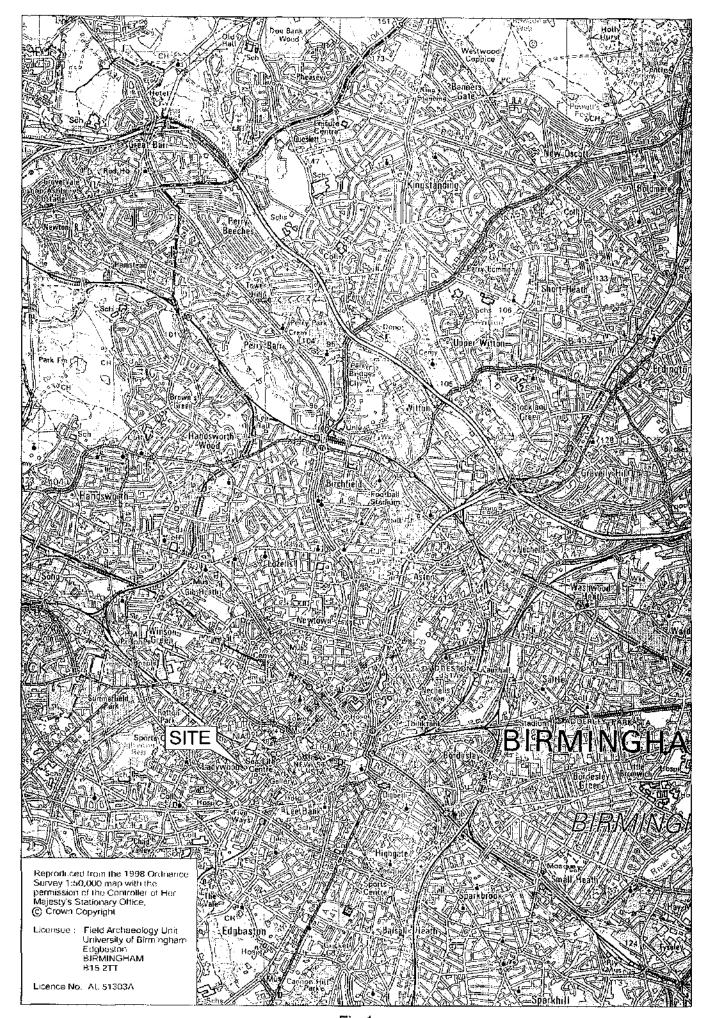


Fig.1

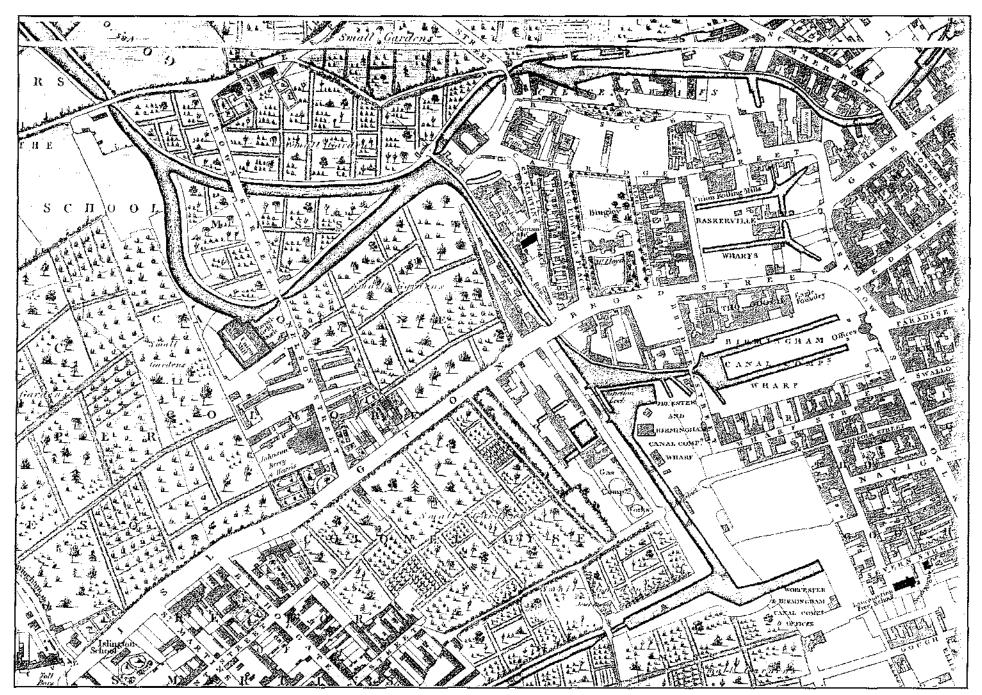
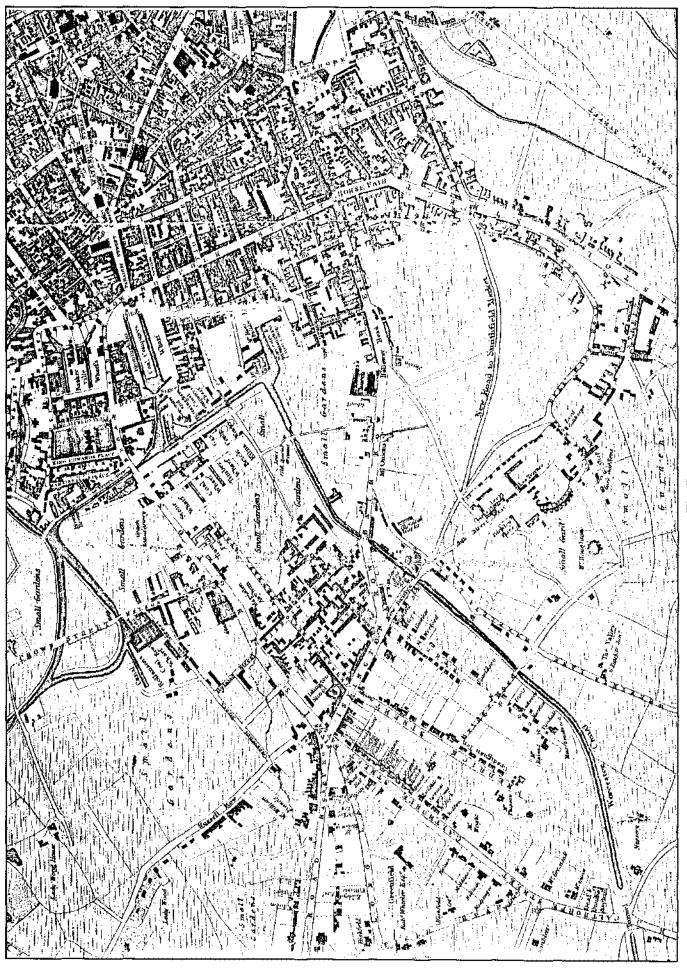
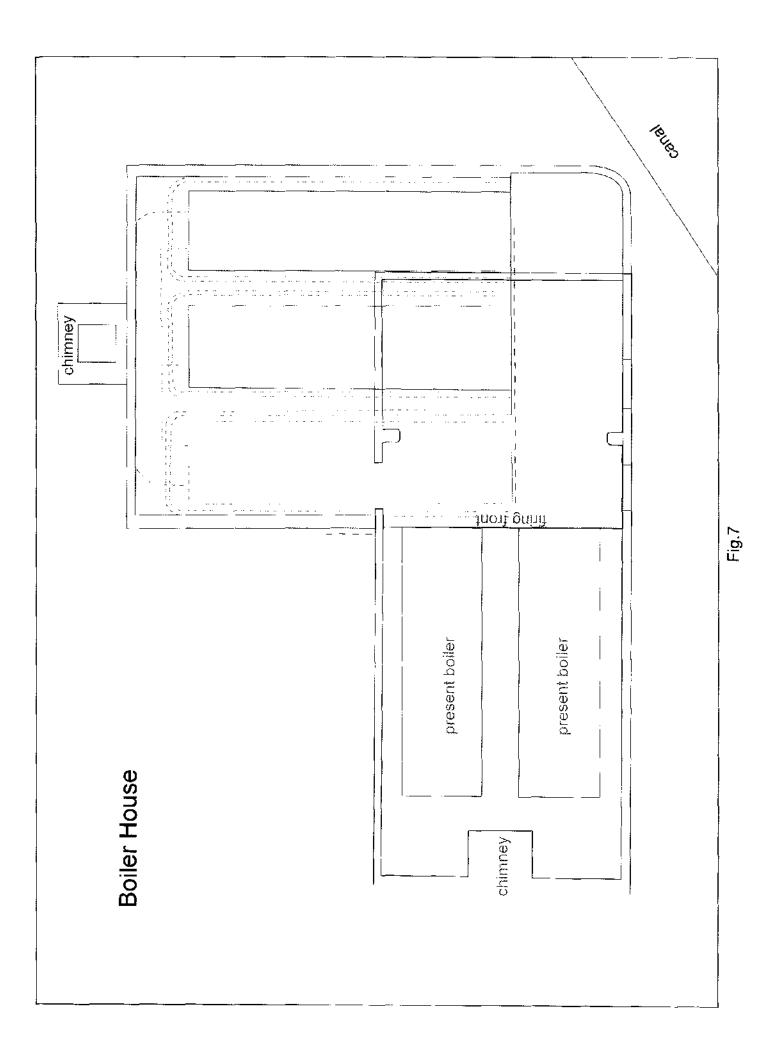


Fig.2





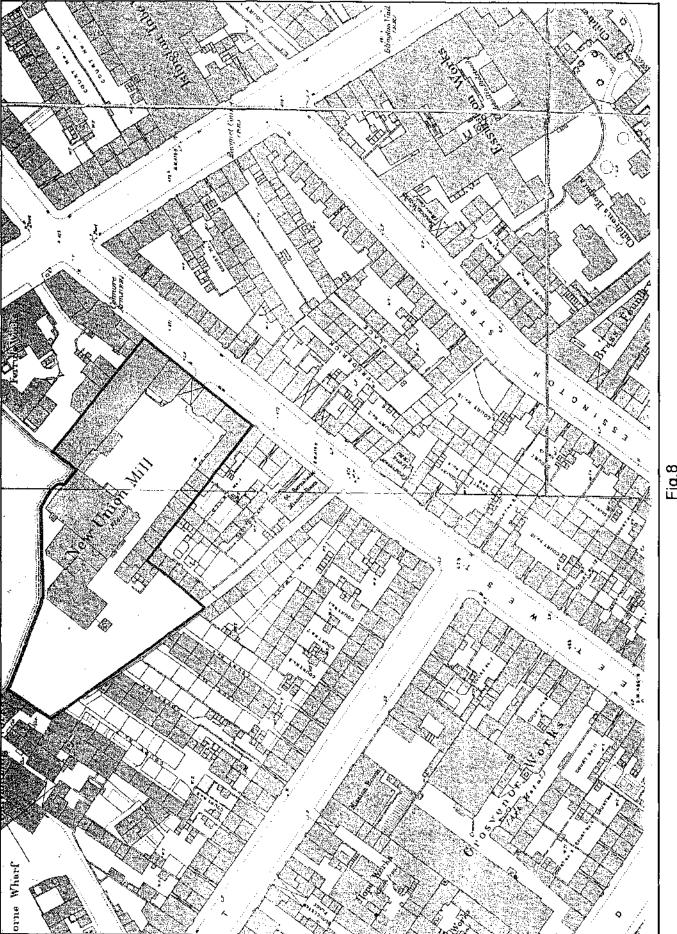


Fig.8

