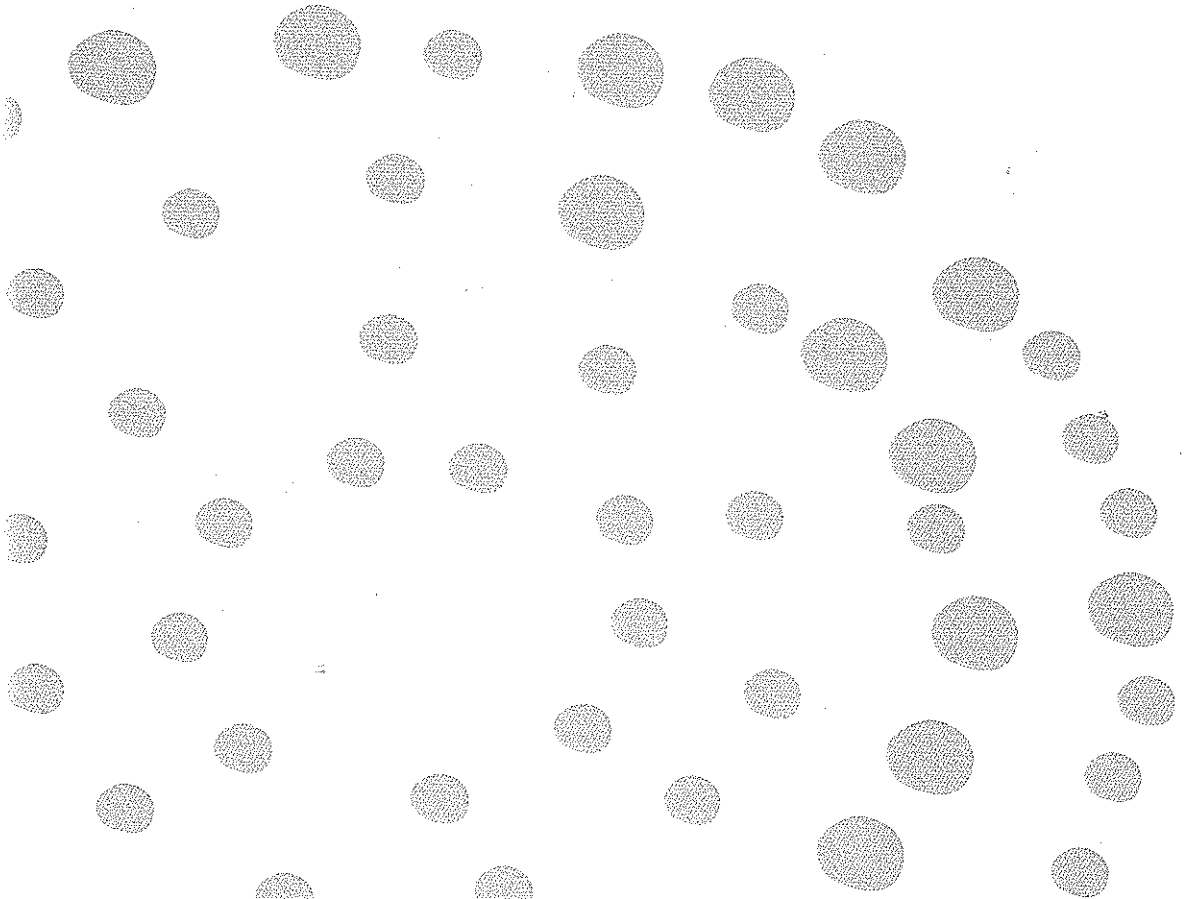
PN. 1102

birmingham archaeology

THE UNIVERSITY OF BIRMINGHAM

Marston's Brewery, Shobnall Road, Burton upon Trent, Staffordshire
An Historic Building Assessment, 2003



Project No. 1102
September 2003

Marston's Brewery, Shobnall Road, Burton upon Trent, Staffordshire

An Historic Building Assessment, 2003

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
Web Address: http://www barch.bham.ac.uk/bufau

Contents

Figures

Plates

Marston's Brewery, Shobnall Road, Burton upon Trent
An Historic Building Assessment, 2003

Summary

In September 2003 Birmingham Archaeology undertook an historic building assessment of the brewhouse and fermentation block at Marston's Brewery, Shobnall Road, Burton upon Trent, Staffordshire (NGR SK 231233). This is a single Grade II listed building dating from the establishment of the Shobnall Road brewery in 1875. The work was carried out in connection with a planning application to convert the redundant fermentation block into a brewhouse in order to assess the historical and architectural significance of the structure and the impact of proposed alterations. The assessment concluded that the principal significance of the building lay in its outward architectural effect and its historical associations with the boom in Burton's brewing industry that occurred during the latter half of the 19th century, rather than in its technological significance or the completeness of its working interior.

1.0 Introduction

This report describes an archaeological assessment undertaken by Birmingham Archaeology during September 2003 of the brewhouse and fermentation block, Marston's Brewery, Burton upon Trent, a Grade II listed building dating from 1875. The fermentation block is now redundant owing to changes in brewing practice and to regulations governing the industry, and Marston's has submitted a planning application to East Staffordshire Borough Council (LB/00441/143) for permission to convert the former fermentation block into a brewhouse, a project that would result in substantial structural changes to the interior and the removal of all existing equipment. Following consultation with English Heritage, Marston's appointed Birmingham Archaeology to assess the historical and architectural significance of the structure and the impact of the proposed alterations. The purpose of the project was to assess the conservation significance of the building as a whole and to gauge the impact of the proposed alterations on its historic fabric and fittings.

2.0 Site Location

Marston's Brewery is situated on Shobnall Road, Burton upon Trent, Staffordshire at NGR SK 231233 (Fig. 1). The brewhouse and fermentation block, which are the focus of this assessment, occupy a roughly central position within the works compound (Fig. 2).

3.0 Objectives

- To assess the historical and architectural significance of the building.
- To assess the effect of the proposed alterations.

4.0 Methods

A search of published and unpublished documentary sources, including maps, was undertaken at Marston's Brewery, Staffordshire Record Office and the library of the University of Birmingham, with the aim of establishing the historic significance of the building. A visit was made to the building in order to assess its structural development, the significance of its fittings, and the impact of the proposed alterations.

5.0 Historical Context

Burton has a long association with brewing, the beers of Burton Abbey having had a national reputation in the Middle Ages (Owen 1986, 37), but the background to the construction of the Shobnall Road brewery is the rapid growth of the town's brewing industry in the third quarter of 19th century. It was this period of expansion that led to the town becoming the most important brewing centre in the United Kingdom, and the home of the largest producer of pale ale in the world (Bass).

Apart from the undoubted quality of the product, the phenomenon owed most to the development of transport links, particularly the opening of the Derby to Birmingham Railway in 1839 (Owen 1987, 38) which provided a rail link between Burton and London. The provision of quick, cheap transport enabled the Burton breweries to tap the national market on a scale that had hitherto been only dreamt of. It led to a trebling of production every ten years between 1850 and 1880 (Richmond and Turner 1990, 6), and to an increase in the number of Burton brewers from nine to thirty-one.

Burton beers, which were strong, palatable and aesthetically pleasing, quickly attained a national profile and popularity that would lead to the eclipse of the more turgid porter favoured by the London brewers. By the time Kenneth Graham's *Wind in the Willows* was published in 1908, Burton beers had become a well-established benchmark of quality.[1] Burton's success led to the imitation of its beers by others, and to an influx into the town of brewers from outside the region, notably Ind Coope of Romford (1856), and the London firms of Charrington (1872), Truman (1873), and also Mann, Crossman and Paulin (1875), who built the premises now occupied by Marstons (Richmond and Turton, 1990, 225).

Mann, Crossman and Paulin erected the Albion Brewery[2] on Shobnall Road in 1875 to brew light sparkling ales. The buildings were designed by the Nottingham architects W. and S.T. Martin. The venture does not seem to have been entirely successful, for in 1896 the company rethought its strategy and withdrew from Burton to concentrate on the London brewery (*Ibid.*). In 1898 the premises were acquired by the established Burton firm of Marston, Thompson & Co. Ltd which bought the lease in 1905 (*Ibid.* 228), and which has occupied the site ever since.

[1] "The Rat, meanwhile, was busy examining the label on one of the beer-bottles. 'I perceive this to be Old Burton,' he remarked approvingly, 'Sensible Mole! ....."

[2] Named after the company's Albion Brewery in Whitechapel, London.

The brewhouse and fermentation block were housed within a single building, erected to a simple but effective design. Built of red brick with stone and black brick dressings and Welsh slate roof, it was of rectangular plan aligned roughly east-west with a four-storey brewery at the west end and a three-storey fermentation block to the east. Attached to the south side was a lower, lean-to wing that housed the brewing coppers. The first edition of the Ordnance Survey map of 1888 (Fig. 3) shows that a railway line formerly extended along the south side of the main building and through the wing. The wing itself linked the main building to an L-shaped block associated with two tall chimneys. The general external appearance of the complex at about this time can be gleaned from two drawings published in 1889 (Barnard, 396 and 400), and reproduced here as Figs 4 and 5.

The main three-storey block had four and nine-bay elevations, and a continuous cornice and blocking course, behind which rose the fourth storey of the three-bay brewhouse. The elevations were articulated by a continuous series of semi-circular arched recesses containing semi-circular arched windows with bracketed sills, small-pane cast iron frames and dripstone bands. The east front had twin pedimented gables each with a circular oculus. There was a doorway to the brewhouse in the centre of its north elevation.

This exterior is to a large extent unaltered (Figs 6-9), though parts have been obscured by the addition of later buildings. On the southeast elevation one of the ground storey windows has been destroyed and blocked, though its former presence is indicated by irregularities in the brickwork and by the continuation into this bay of the dripstone string.

The upper floors and roof were supported on a framework of cast iron columns and both iron and wooden beams which seems to survive largely intact; the roof trusses were essentially of king-post type but with an iron rod in place of a wooden king-post, a type that appeared in Staffordshire around 1865 (Peters1988, 29).

6.0 Assessment of the Brewery and Fermenting House

An account of a tour of the brewery made in 1889 assists in confirming the original character of the interior (Barnard 1889, 397-406), and in determining the extent to which the original arrangement and equipment survives. The brewhouse and fermentation block comprise a 'gravity brewery' in which the process started at the top of the building and worked its way downward. For this reason the floors are described below in descending order.

Brewhouse

Third Floor

On the third floor of the brewery was the **malt store**, to which sacks of malt were delivered by steam hoist directly from the trains that delivered them. A hoist can be

discerned in the 19th-century south facing view of the building (Fig. 5), the position of which corresponds with an opening at the east end of the brewhouse's south wall. The malt was then tipped into a hopper in the centre of the room, which fed down to the mill room on the floor below.

The hopper that was in use in 1889 no longer exists. Instead there is a wooden-floored gantry in the northwest corner of the room, which incorporates a later sheet steel hopper, as well as a motor-driven hoist associated with a trapdoor in the third floor. It is evident that the gantry itself has been inserted because it cuts across now blocked windows to the west (Plate 1). It is also apparent from the floorboard pattern that the trapdoor was originally much bigger.

Second Floor

The **mill room** occupied the second floor. In 1889 it contained a pair of malt rollers in the centre of the floor with an enclosed malt screen above immediately below the hopper. 'At the back of the mill' were two 7ft high grist cases for supplying the first floor mash tuns. Running through the mill room was the shafting and machinery that drove the mills, hoists etc, and in the centre of the floor was a trapdoor through which the hops were lowered to the coppers.

The 'pair of malt rollers' that existed in 1889 imply a single mill. There are now two mills, each with its own screen above. Both were made by Robert Boby Ltd of Bury St Edmunds, Suffolk, a company that was in existence in the 1870s when the brewery was built. It is probable that one of these mills (the more northerly) is to be identified with that of 1889 and that it is original to the building (Plate 2). The other was bought second-hand in 1930 (Kirkham 2003, 1)

There are also three grist cases, the largest of which of which was installed at the same time as the second mill. The other two are approximately 15ft rather than 7ft high but it is possible that they represent modifications of the original cases. Each is made up of lower, middle and upper portions riveted together. The work is somewhat crudely done, the edges of the middle plate being uneven, a circumstance that may suggest the plate to have been inserted. If so, then these two grist cases may represent modified versions of the original cases.

The shafting and machinery for driving the mills is no longer extant, having been taken out in 1982 when the mills were converted to electric motor drives, but there is evidence for the former existence of a line shaft behind (north of) the mills. High up in the east wall there is a square blocking which represents the position of the line shaft housing that must have crossed the room from east to west. On each side of the central north-south beam is an arched recess that probably represents the former positions of drive wheels on this shaft (Plate 3).

There is still a trapdoor in the floor, which lies directly below that in the floor above. However, anomalies in the pattern of the floorboards suggest that it was originally much larger (Plate 4).

First Floor

The first floor contains the **mash room**, which in 1889 accommodated two mash tuns each with a cover of pitch pine. There was also a copper vessel for receiving the wort on its way from the tuns to the coppers, which were accommodated at this level in the wing on the west side of the building. The floor of the **copper room** was laid with iron plates. To the left (south) of the entrance there was an iron gallery carrying two hot liquor backs for boiling water. There were three coppers and behind them a room containing a copper trough for conveying the wort to the hop back on the ground floor.

There are now three mash tuns. One of these is associated with the 1930 mill and grist case, with which it is contemporary. The other two, however, may be original though they have copper rather than pitch pine covers (Plate 5). Most of the copper room has extensively refurbished during the second half of the 20th century, the floor level raised and new stainless steel coppers installed. Little of the original arrangement survives, except at the north end, where one of the three original coppers remains (Plate 6).

Ground Floor

In 1889 the ground storey housed the copper **hop-back**, a large open tank fitted with strainers for separating the hops from the wort, and fed from the coppers above. Just above the top of the hop-back was a opening in the wall communicating with the hop press room through which the used hops were conveyed direct into a hydraulic press fixed on iron joists and housed in a chamber next to the boiler shed.

No original equipment survives at ground level, except the furnace for the one surviving copper (Plate 7).

Fermentation Block

Second Floor (Fig. 10)

On the second floor, which was open to the double-pile roof, there was a fermenting room, containing 20 fermentation squares, and a gallery at one end accommodating three refrigerators. Over a wide avenue between vessels and fixed on iron arches was the copper main for conveying wort from the refrigerators to the squares. The hop room was also at this level.

There is no longer a division between the hop room and the room that contained the fermenting squares, but there is evidence for a former partition wall on the line of the second roof truss from the north in the form of scars on the east and west walls and along the soffit of the tie beam. The space is now entirely given over to (redundant) yeast propagation squares, all of which have stainless steel linings. Some of the squares came

from Truman's brewery in 1968 (Kirkham 2003, 2). Most have wooden sides and have few distinguishing characteristics, but eight of them have cast iron sides and are probably late 19th century in date, though they have been dismantled and reassembled, the sides now being set in concrete.

Most of the floor is raised high above the level of the supporting main beams in order to give access to the deep squares. This raised level is unlikely to be original, because it extends across the space formerly occupied by the hop room which in 1889 was said to be of 'lofty height'. It probably dates from 1978/9 when the copper vessels were replaced with the existing stainless steel vessels of greater height (Kirkham 2003, 2). The floor of the whole room was completely relaid in 1988.

At the west end of the room is a mezzanine floor. This was constructed in 1957 to hold 60 barrel per hour paraflows (Kirkham 2003, 2), and probably replaced the original refrigerator gallery.

First Floor (Fig. 11)

From the fermentation squares the beer was transferred for further fermentation to a series of Burton union sets situated in the **Union Room,** on the first floor. A Burton union is a double-decker gantry which accommodates a row of casks below and a metal trough above. Copper tubes rise from the casks to the trough. During fermentation in the casks the fermenting liquid is pushed up through the tubes and into the trough, where it subsides and finds its way back to the casks. The process leaves yeast trapped in the trough from where it can be gathered for use in the next brew. In 1889 there were four Burton union sets on an open mesh floor, and at one end of the room a row of five cleansing squares to which the beer was transferred after fermentation.

The five squares of 1889 are probably to be identified with the five existing squares ranged along the south side of the room. In 1937 the mesh floor was replaced by a cast concrete prefabricated floor (Kirkham 2003, 1937), part of which was itself removed in 1968. Of the four union sets that were here in 1889 only two remain (2-3 set), though the timbers and were largely replaced in 1989, as well as many of the metal fittings. At the time of the survey the union casks themselves, all of which date from the late 20th century, had been removed for refurbishment. The upper copper trough is a replacement, though the long timbers that support it were not replaced in 1989 and may be original. A second copper trough under the union may be early, as well as a copper tank at the east end.

Ground Floor (Fig. 12)

At ground level was the **racking room**, which was of similar dimensions to the union room. In the middle of the room were two great racking vats, and there were slate yeast tanks situated under the cleansing squares on the floor above. On the south side were several doors opening onto the loading dock that ran along the railway track.

The character of this storey has changed considerably. The racking vats of 1889 have gone, as have the yeast tanks. Instead the room is occupied by a number of fermenting squares all copper lined. Six of these, which are constructed of vertical planks with iron stanchions, were bought from Charrington's brewery in 1926, and three others, made of copper, were purchased new soon after World War II.

7.0 The Historical and Architectural Significance of the Building

The Albion Brewery was erected at the height of Burton's success, at a time when its beers had become so renowned that brewers from other regions felt compelled to establish a presence in what had become the most important brewing centre in the country. For this reason, notwithstanding any other merits it might have, the earliest phase of the complex is symbolic of the Burton phenomenon, a distinct episode in the nation's industrial, commercial and social history. Later alterations and additions to the works are, in contrast, considerably less interesting.

Probably the greatest significance of the brewhouse and fermenting block lies in the aesthetic appeal of its external composition. It is certainly this aspect that is reflected in the list description, which makes no mention of any internal fittings, and there is no doubt that the building has an immediate architectural impact that is enhanced by the low lying character of the surrounding landscape. It embodies an intelligent design, largely classical in inspiration with hints of medieval church planning, whose clear articulation of the structure's main components alludes to its internal functions.

The significance of the interior has to be gauged differently. Here, the most important aspects are those that contribute to an understanding of how the building worked in its initial phase. Original fabric, fixtures, fittings and layout are all significant in this respect. To a large extent the brewhouse still functions as it was intended to do when it was first built. In addition it retains several pieces of original equipment, such as the mill and screen, the copper and its furnace, and the mash tuns. However, there has been a considerable amount of alteration, which has resulted in several losses, particularly in the copper room and on the ground storey.

The fermentation block has been subjected to greater alteration than the brewhouse. The ground storey is completely altered and its original equipment removed. The second storey has also been rearranged and the equipment, some of which was imported, has been altered and reset. The first floor retains what are probably five original cleansing squares in their original positions, and these are historically significant, but the main function of this storey was to house the Burton union sets.

The 1889 arrangement of four Burton union sets on an open mesh floor no longer exits. The floor itself has been lost, and only one double Burton union set remains, and although it retains early elements, its casks are comparatively new and the frame itself has been almost entirely rebuilt. However, Burton unions have now been largely discarded and few survive, indeed Marston's is one of the few, if not the only brewery

still to continue to use the system. It may, therefore, have greater significance that is immediately apparent from its state of survival.

8.0 Effect of Proposed Alterations to the Fermenting House

The brewhouse will remain unaltered, retaining such historical equipment as survives. There will, however, be major changes to the interior of the fermenting block.

Ground Floor (Fig. 13)

It is proposed that four of the original cast iron columns from the southwest row be removed together with all the fermenting vessels that currently occupy the area.

First Floor (Fig. 14)

A large part of the concrete first floor of 1937 is to be removed, together with six of the original cast iron columns, four from the southwest row and two from the northeast row. The work will necessitate the removal of the Burton union frame, and the cleansing squares.

Second Floor (Fig. 15)

The second floor and all its equipment is to be completely removed.

9.0 Conclusions

The proposed development does not compromise the outward appearance of the building, which is probably its most significant attribute, nor does it affect the interior of the brewhouse, where survival of the original character is higher than that of the fermentation block. Indeed the degree of survival is a key factor in determining the effect of the proposals on the fermentation block. As far as the ground floor is concerned the effect will be minimal being confined to the removal of imported equipment. Similarly, the effect on the second floor will be mitigated by the fact that the current arrangement is the result of later alterations. The survival of the cleansing tanks and the rebuilt Burton union at first floor level makes this storey the most coherent in respect of its late 19th-century arrangement, though here too most of the original fittings have been lost.

In essence, although there is primary equipment surviving within the fermentation block, much of the original arrangement has been lost and a good deal of the equipment is second hand, having been brought in from other breweries. As an entity, the existing complex is not particularly significant, though individual items, like the Burton union, do have an intrinsic interest quite apart from their immediate context. Regarding the consequences for the framework of columns and beams that defines the structural character of the interior, and which has survived largely intact, it should be said that such constructs are not rare and that the better part of it will be retained. Given that the primary interest of the building lies in its architectural merit and its historical associations

rather than in its technological significance, or the completeness of its working interior, the proposed changes are unlikely to detract seriously from its significance if accompanied by adequate mitigation.

10.0 Acknowledgements

The project was undertaken by Malcolm Hislop. Nigel Dodds prepared the illustrations. Thanks are owed to Steve Kirkham of Marston's, and to Wayne Haywood of Elson Construction for their assistance and co-operation.

11.0 Sources

Barnard, A. 1889, *The Noted Breweries of Great Britain and Ireland.*

Bayley, P. 1974, 'Burton Yeast and Burton Union', *The Brewer* Vol. 60, No. 715, 10-15.

Clarke, K. 2001, *Informed Conservation,* English Heritage.

Cooksey, J. 1984, *Brewery Buildings in Burton on Trent,* Victorian Society.

Hawkins, K.H. and Pass, C.L. 1979, *The Brewing Industry.*

Kirkham, S. 2003. *Brief History of the Albion Brewery Building.*

Owen, C.C. 1986, 'The History of Brewing in Burton upon Trent', *Journal of the Institute of Brewing* 93 (January – February 1986), 37-41.

Peters, J.E.C. 1988, 'Post-medieval roof trusses in some Staffordshire Farm Buildings', *Vernacular Architecture* 19, 24-31.

Richmond, L. and Turton, A. 1990, *The Brewing Industry: a Guide to Historical Records*

Sherlock, R. 1976, *The Industrial Archaeology of Staffordshire.*

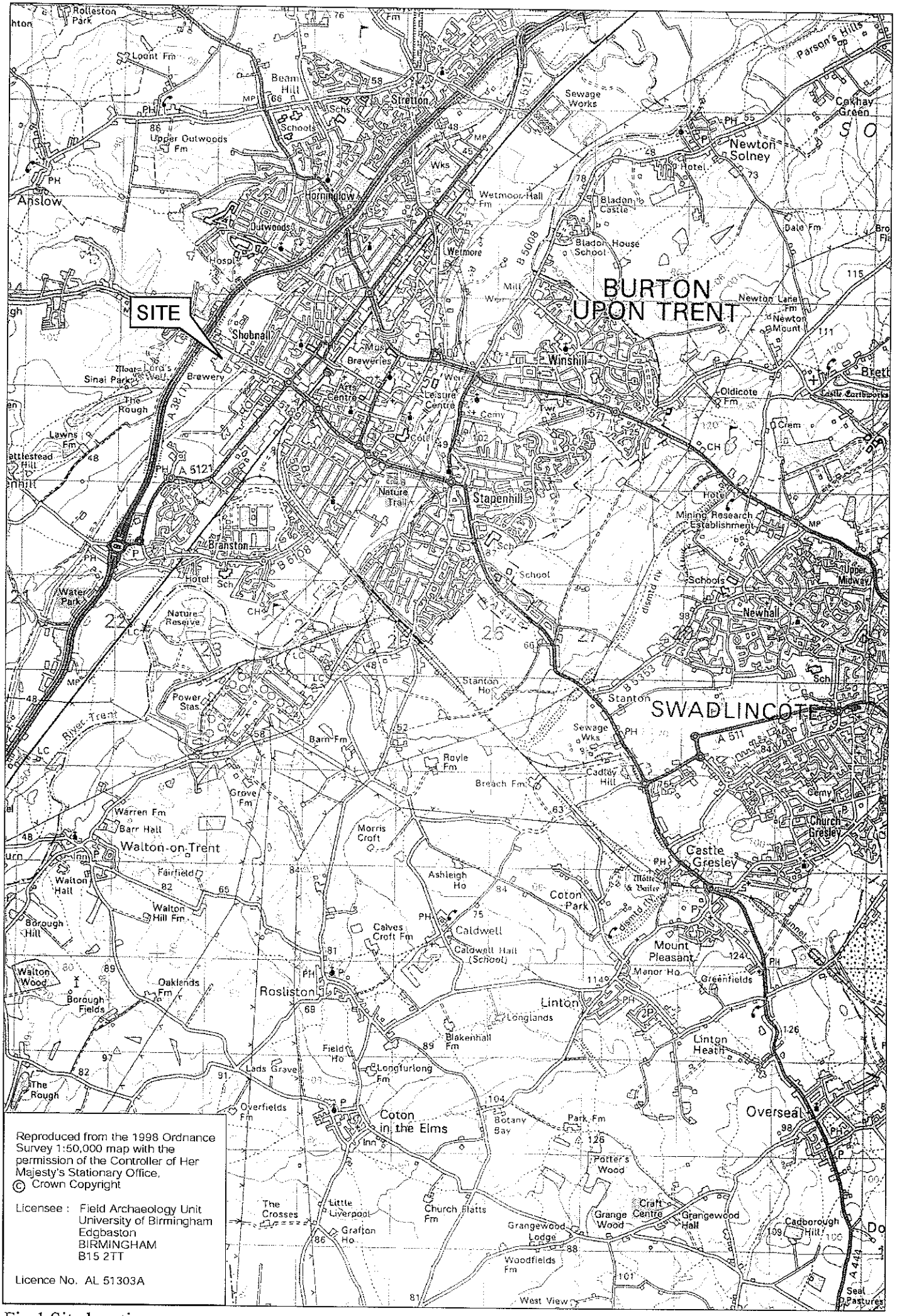


Fig.1 Site location

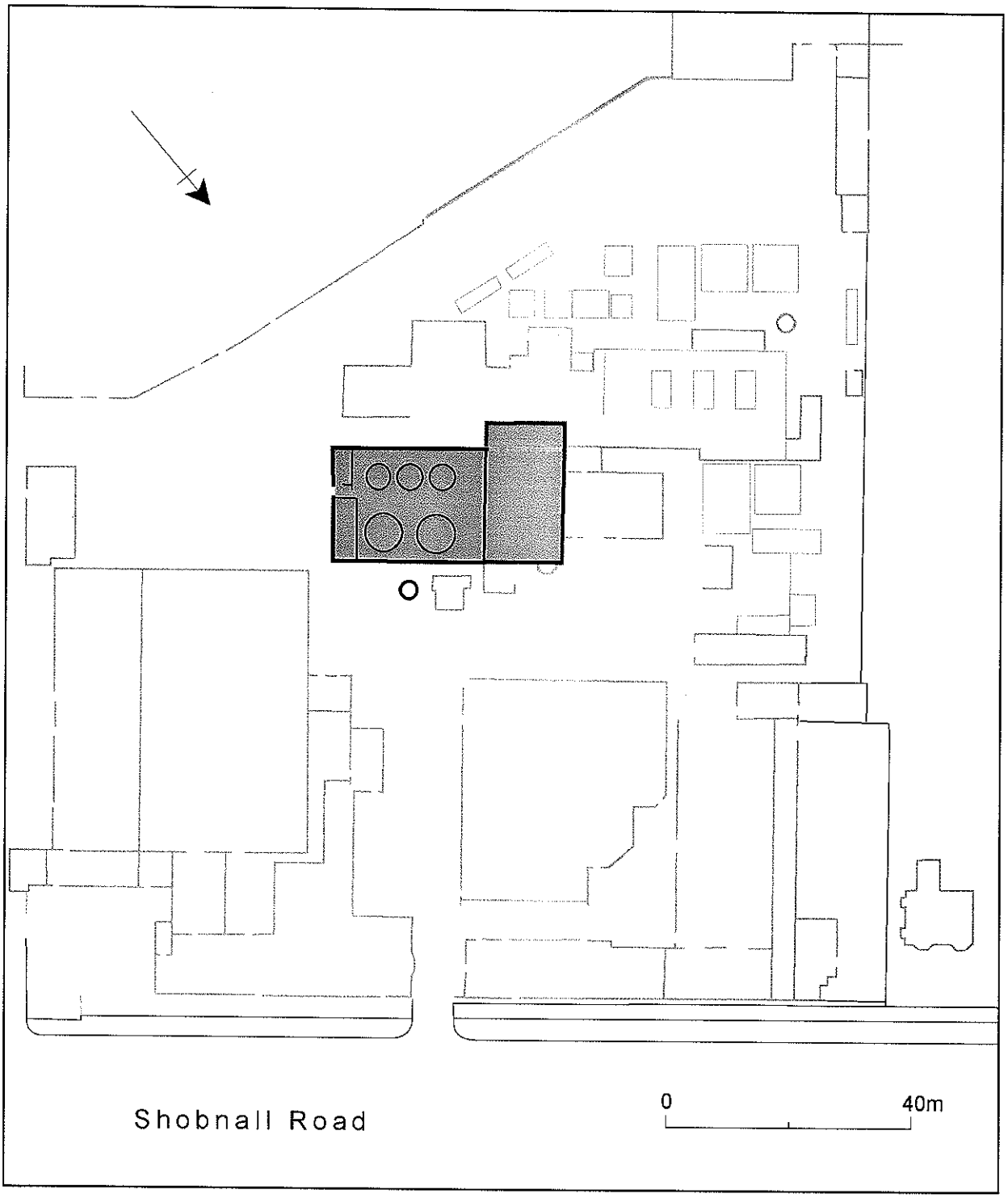


Fig.2 Site plan

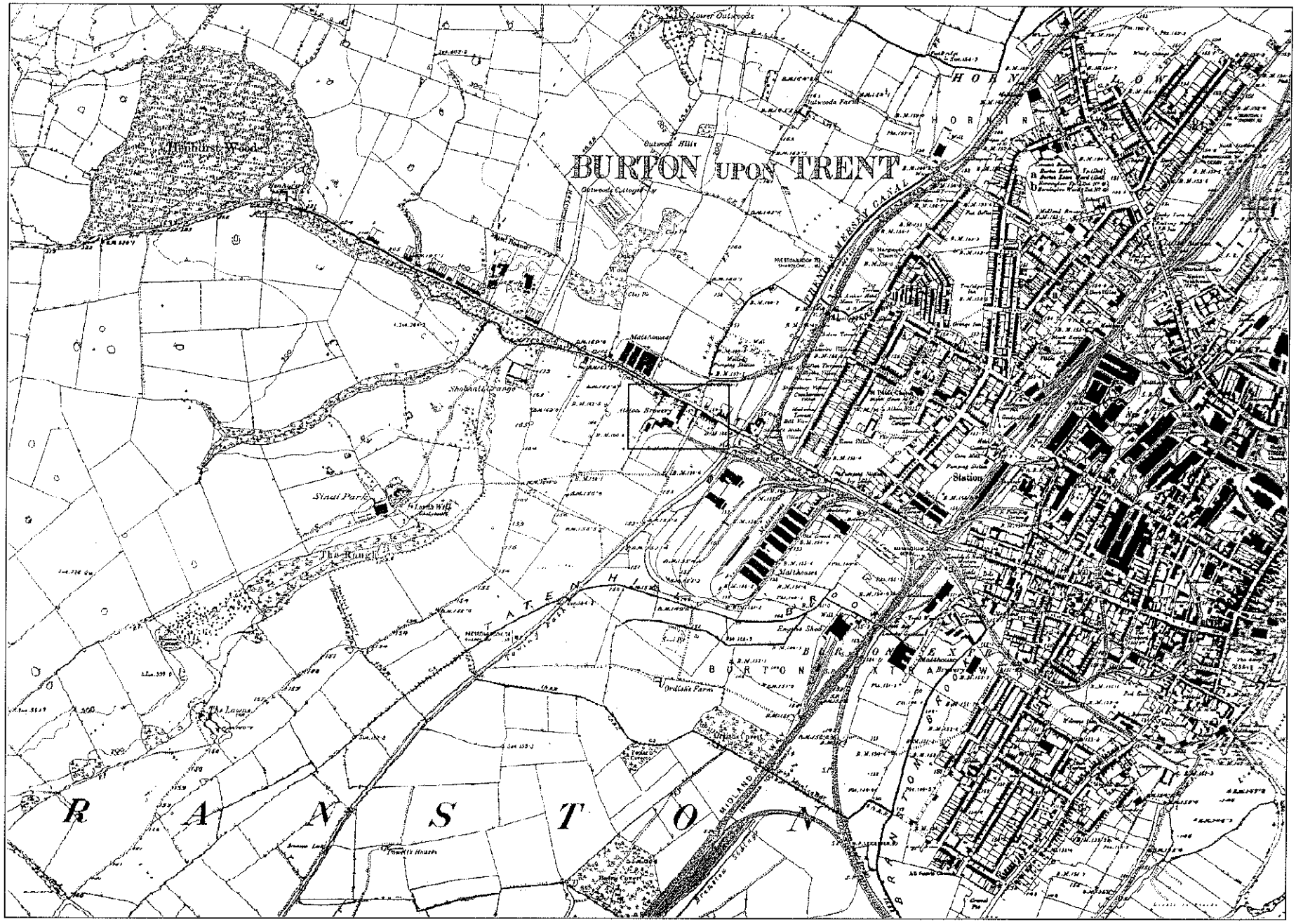


Fig.3 The site in 1888

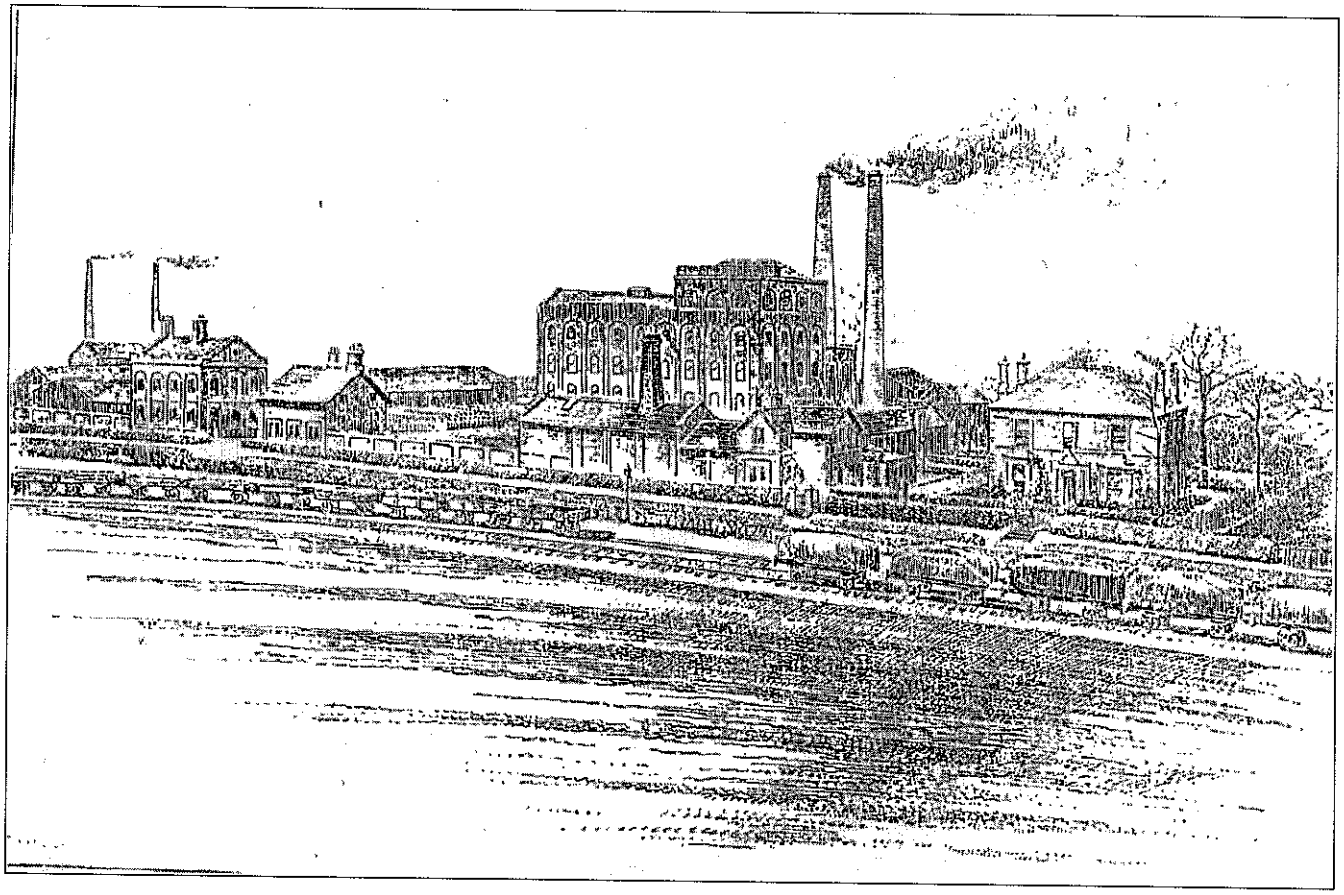


Fig.4 The building in 1889 from the north

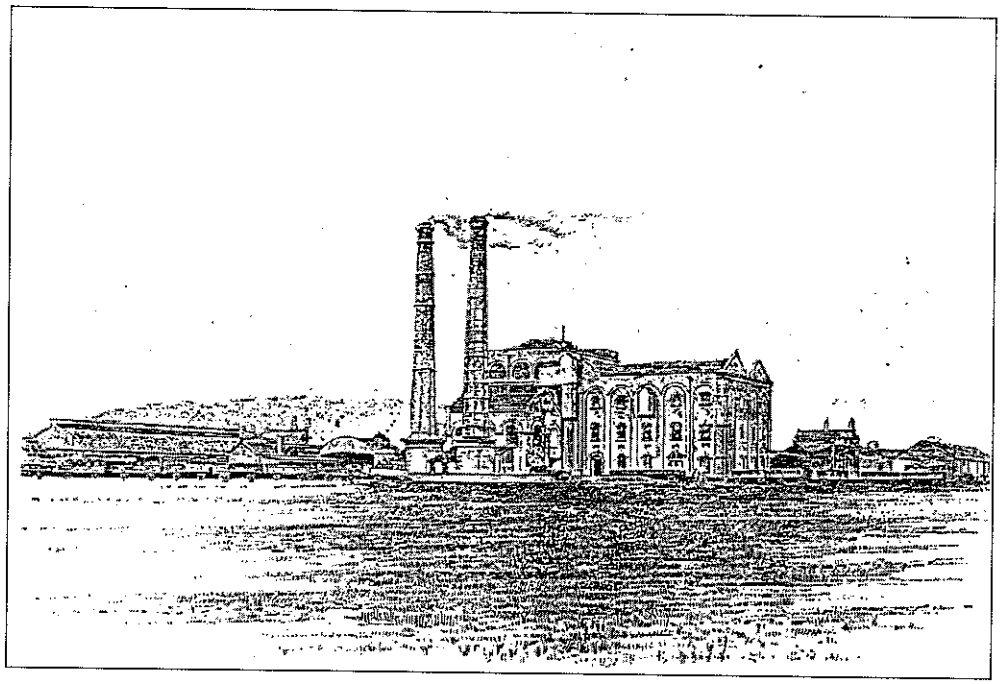


Fig.5 The building in 1889 from the south

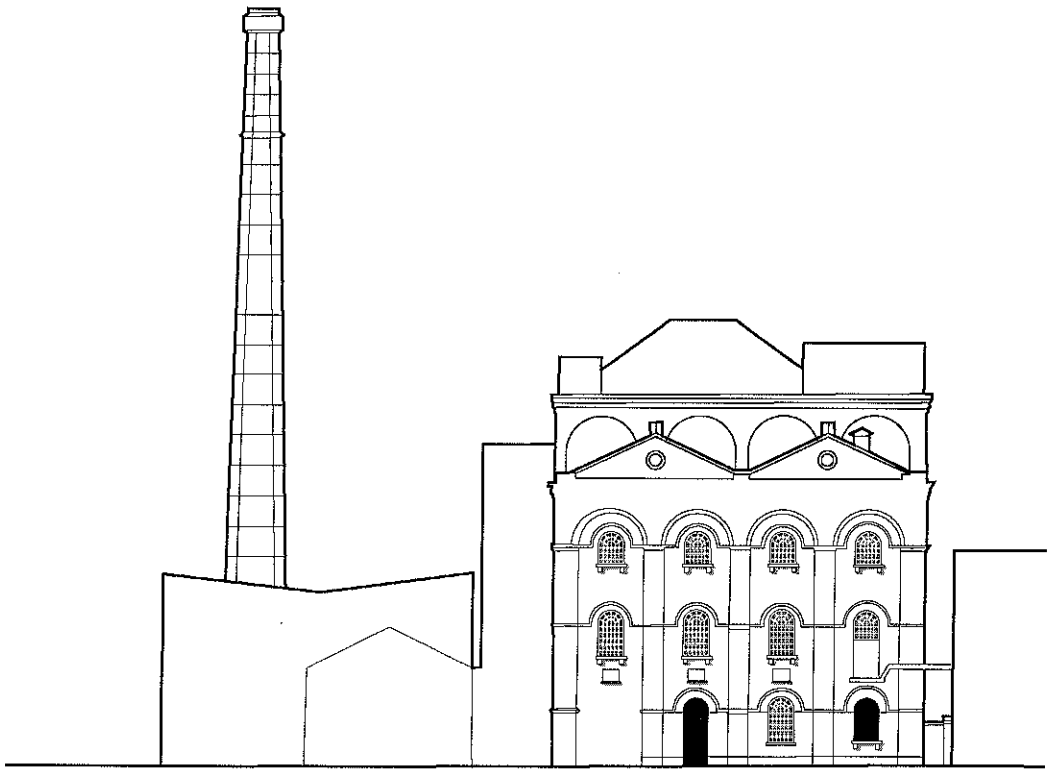


Fig.6 Existing south-east elevation

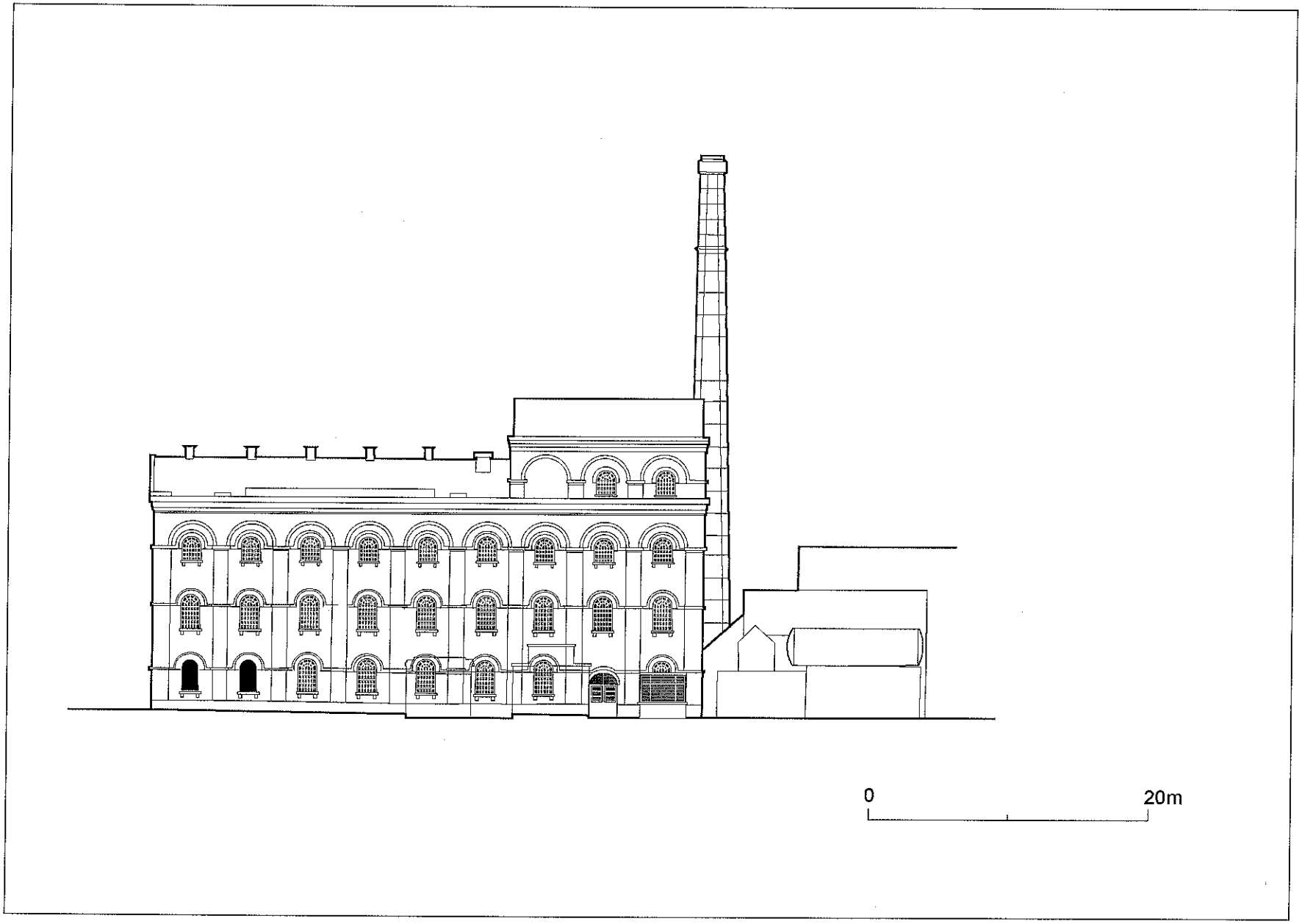


Fig.7 Existing north-east elevation

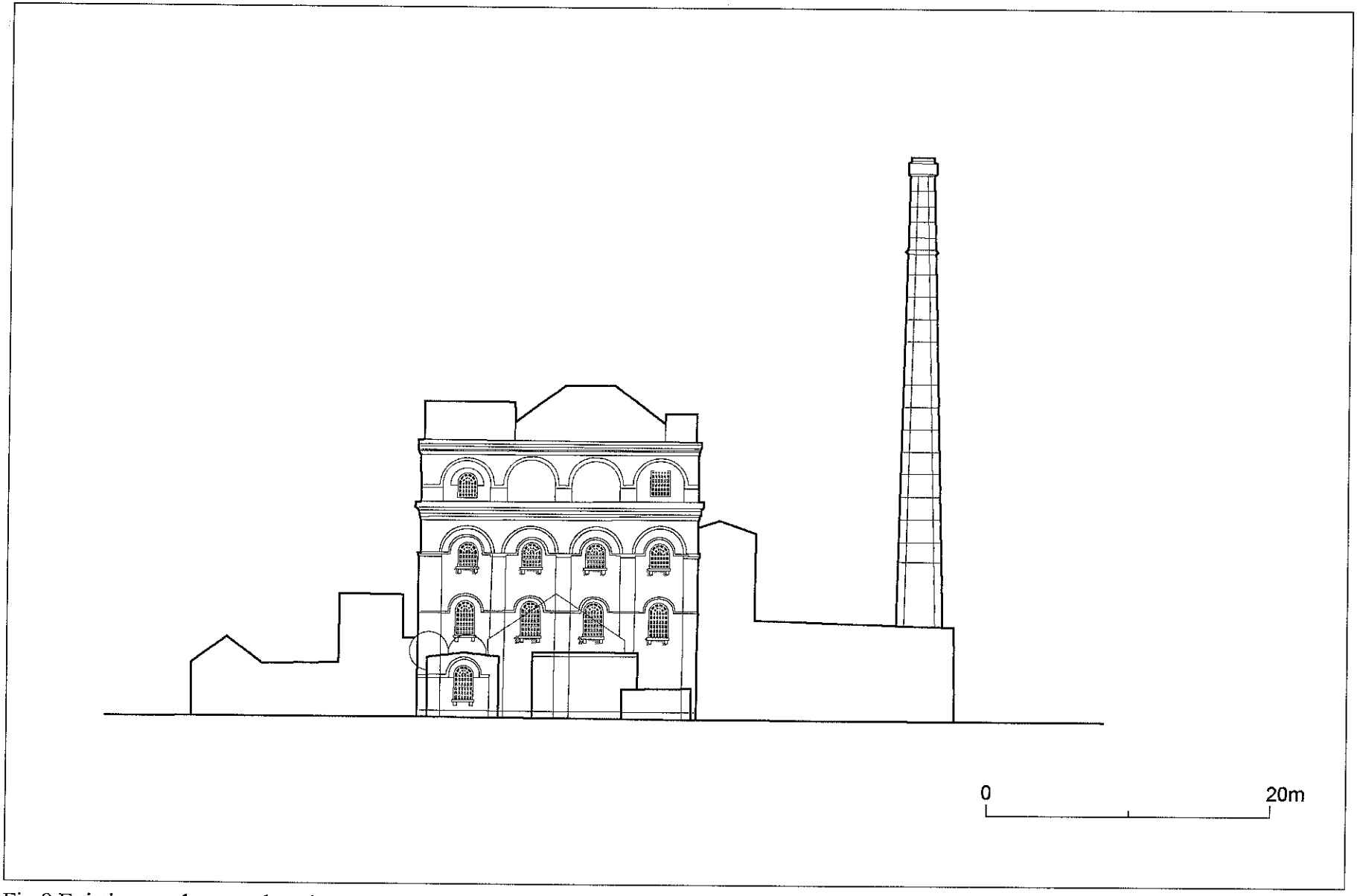


Fig.8 Existing north-west elevation

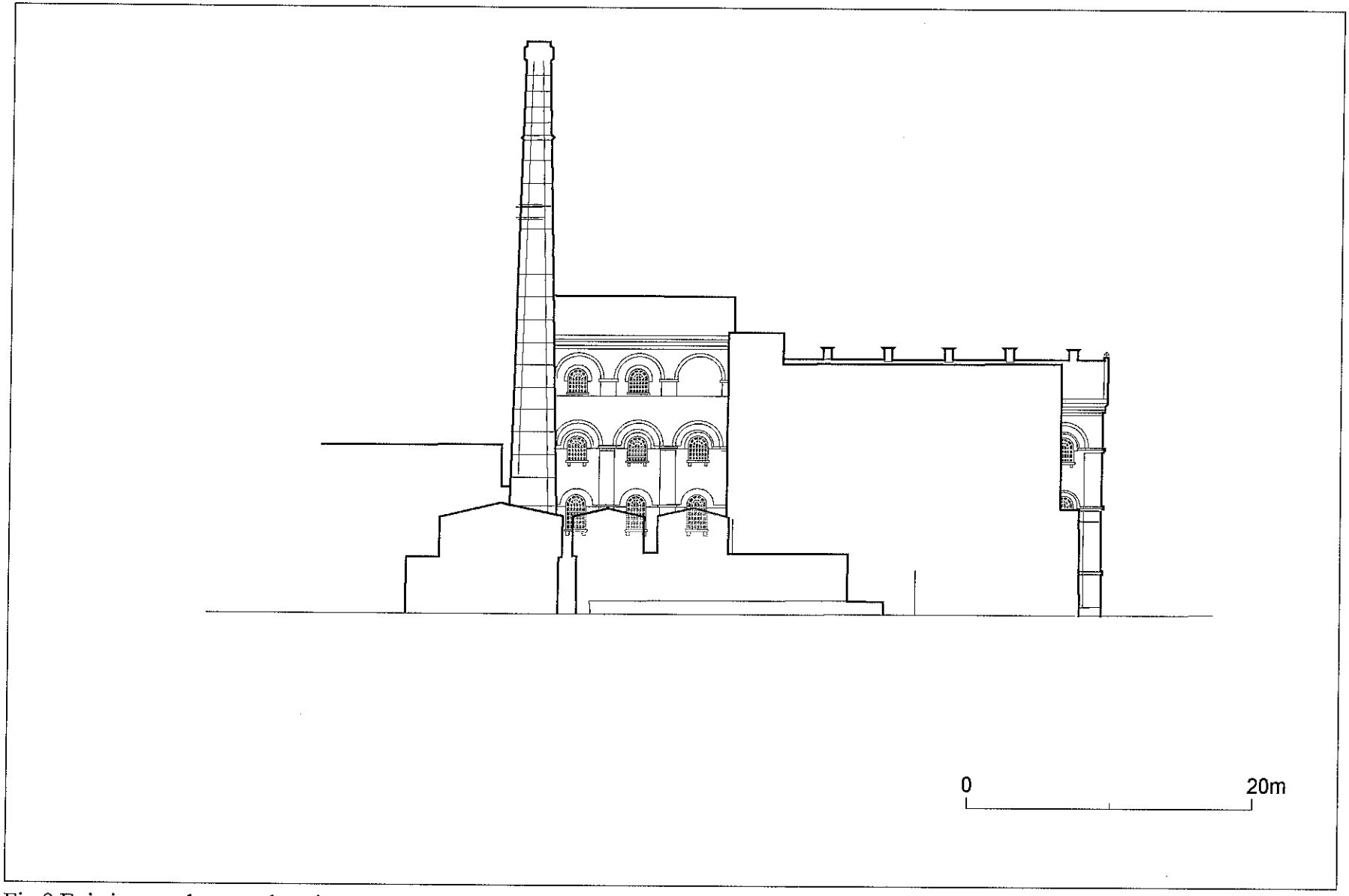


Fig.9 Existing south-west elevation

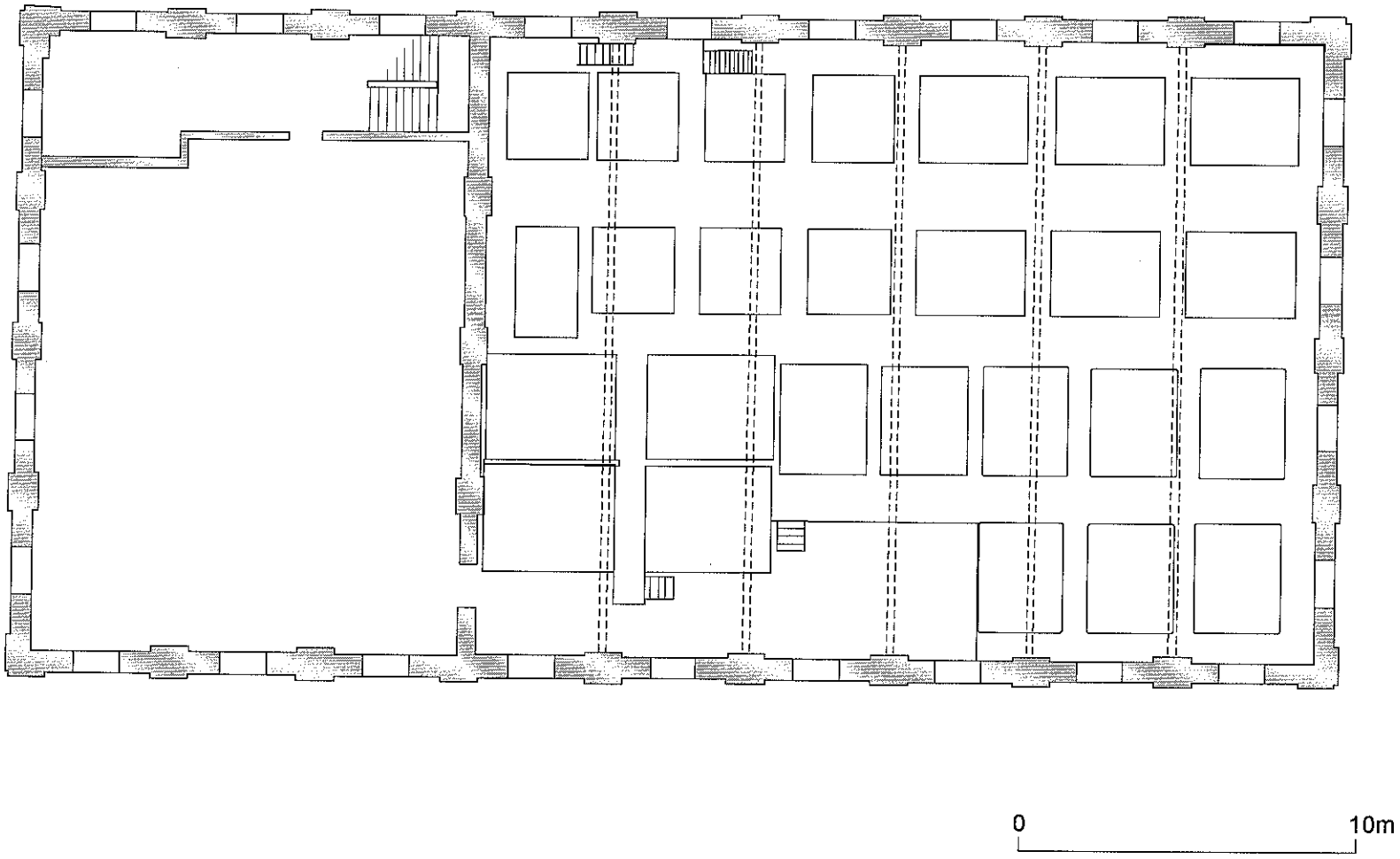


Fig.10 Existing second floor plan

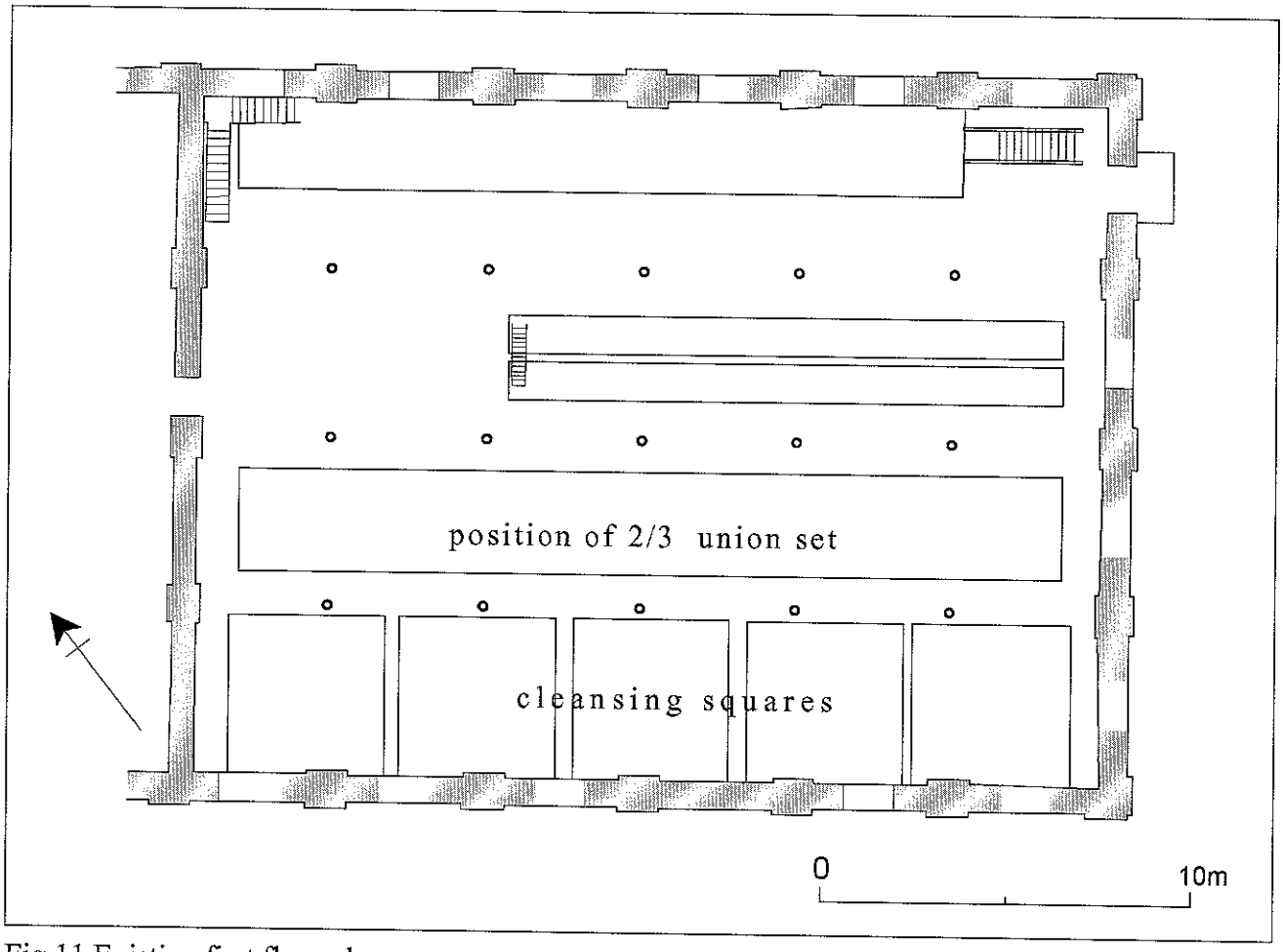


Fig.11 Existing first floor plan

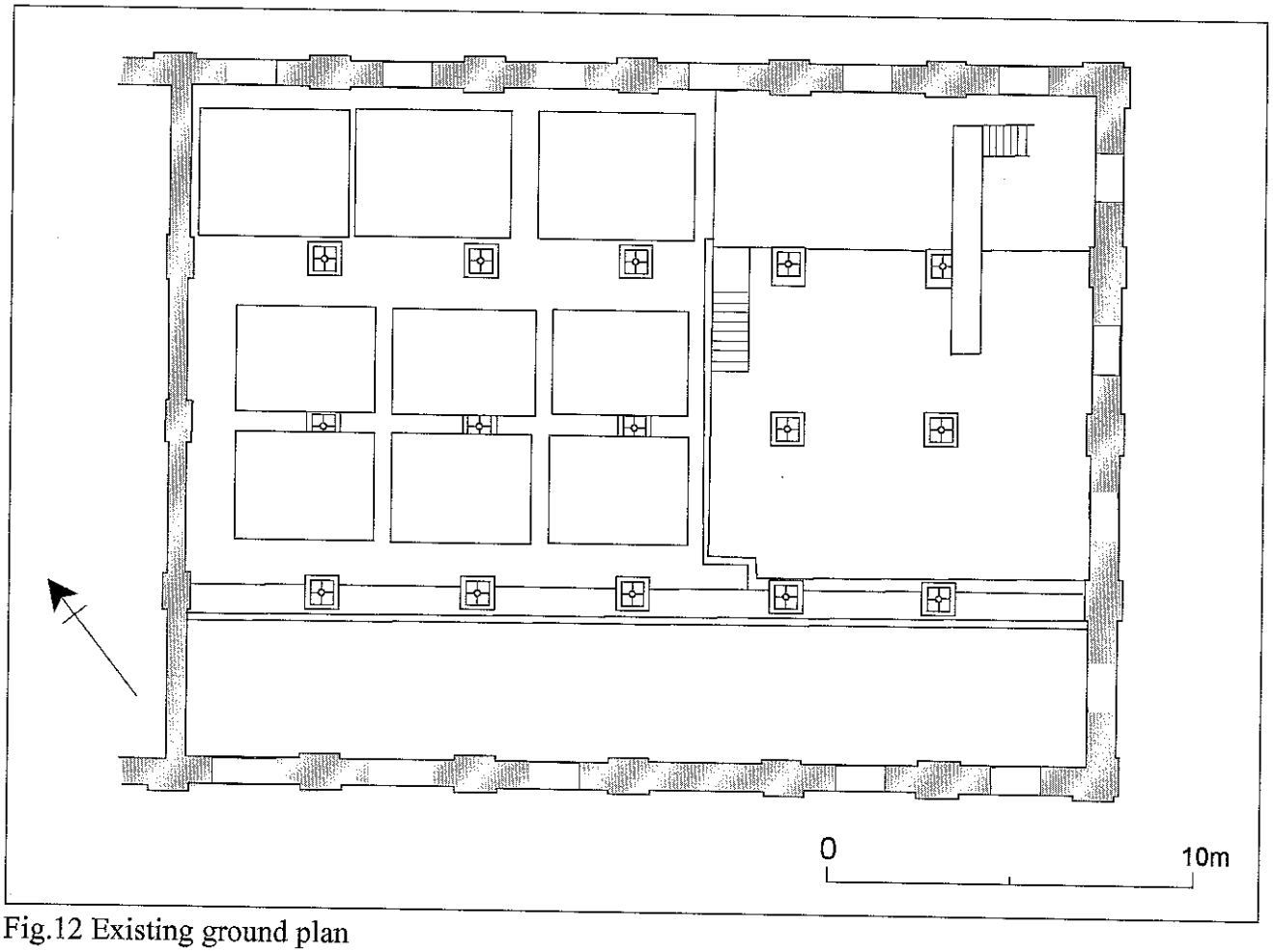


Fig.12 Existing ground plan

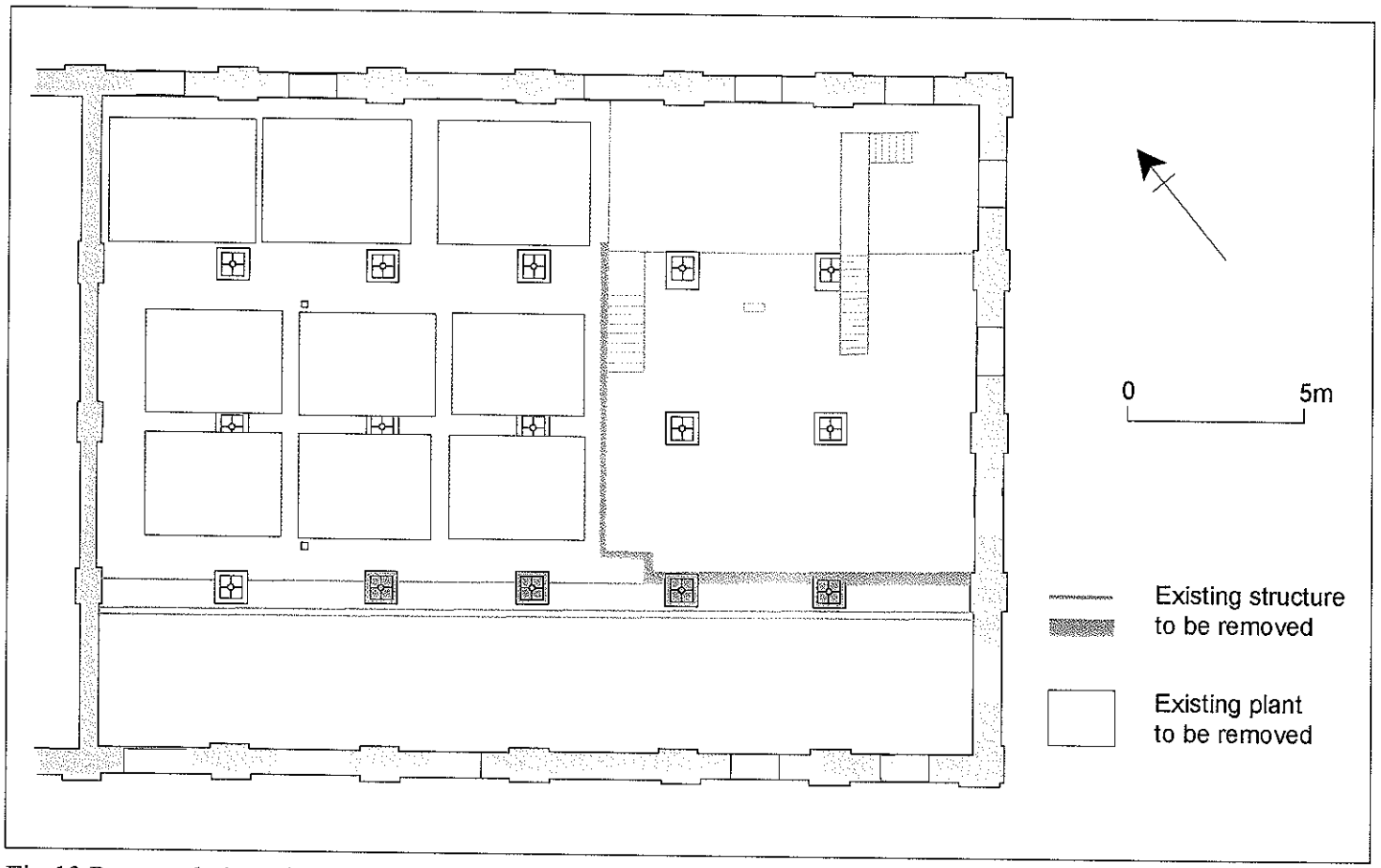


Fig.13 Proposed alterations to ground floor

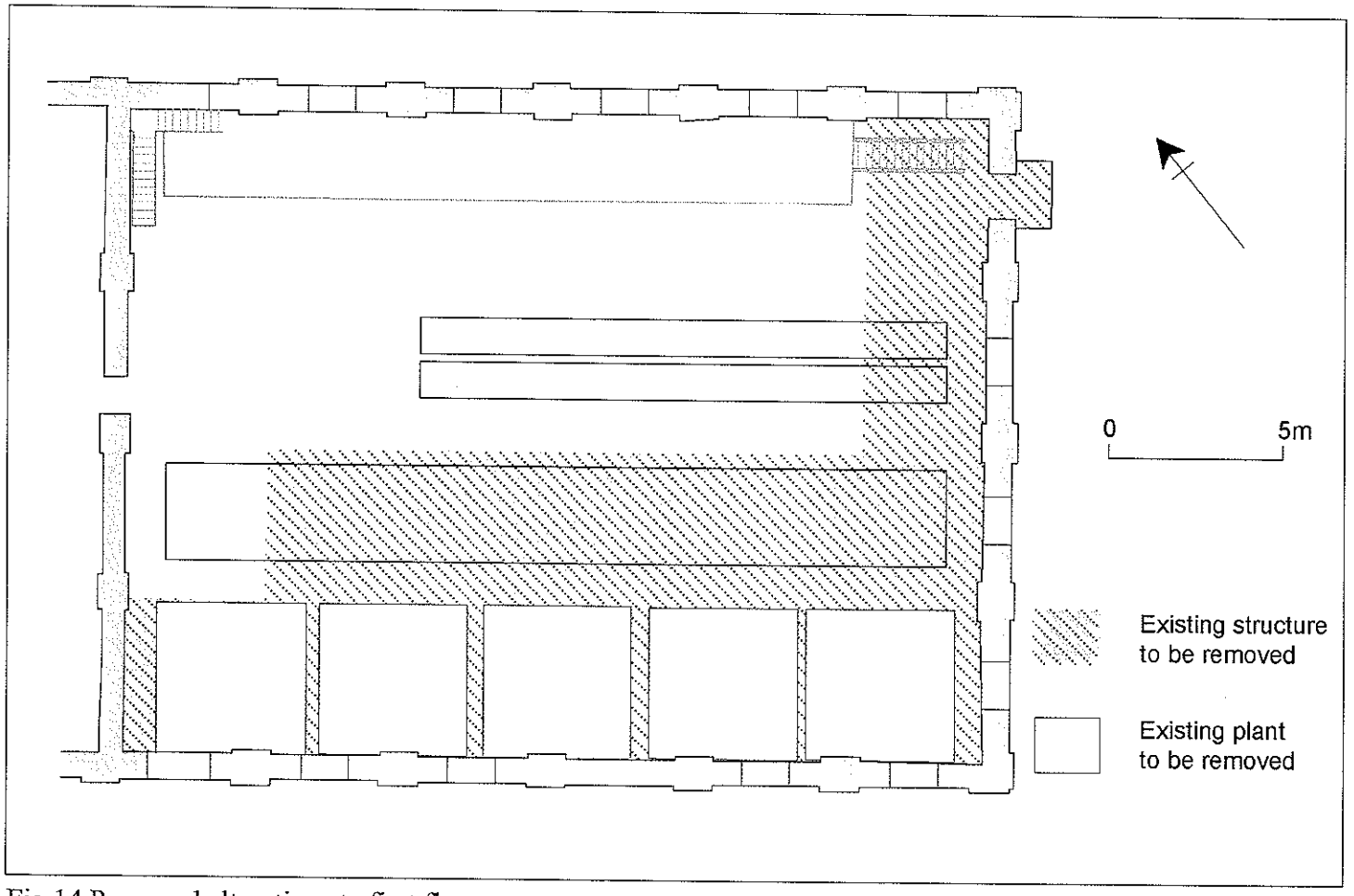


Fig.14 Proposed alterations to first floor

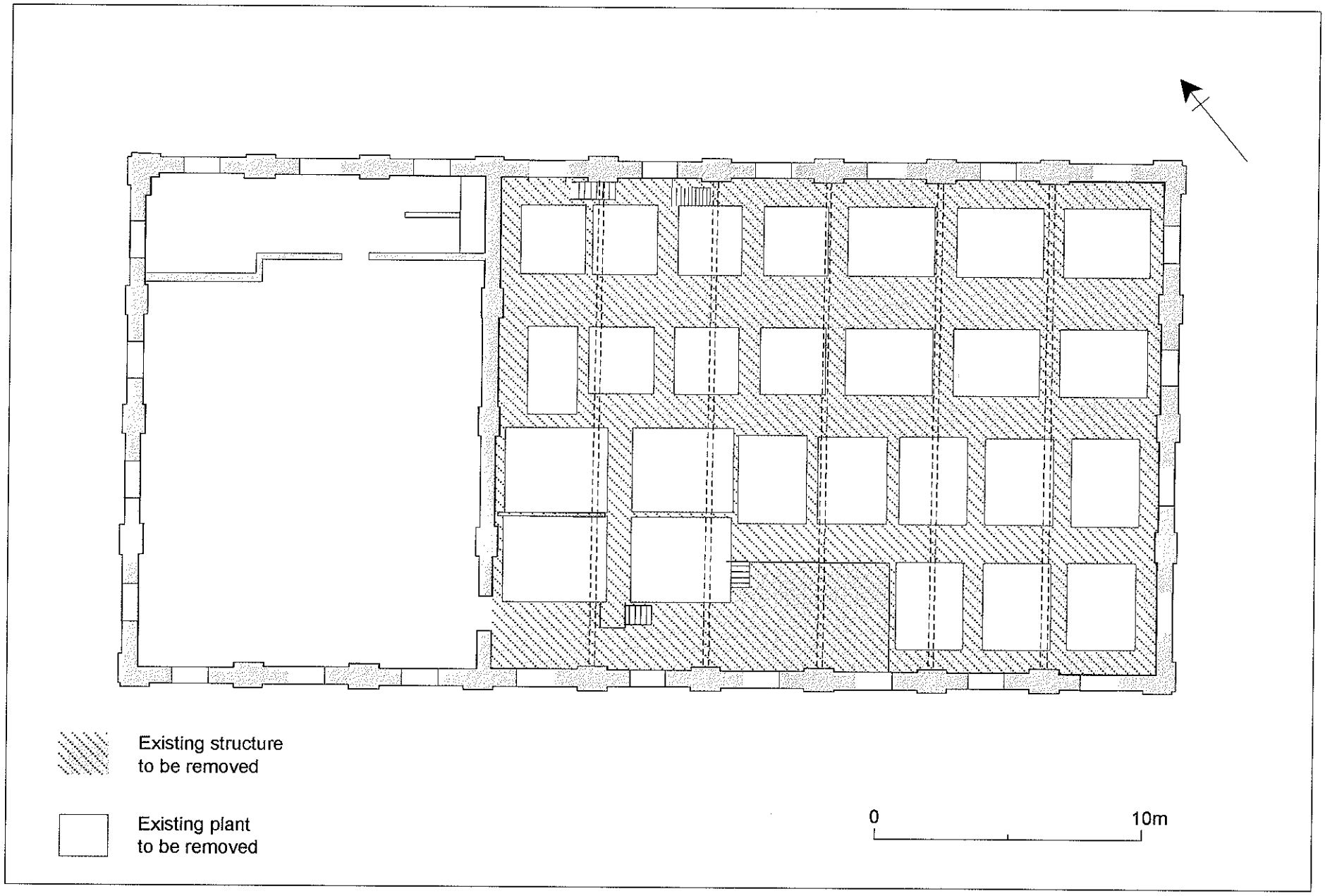


Fig.15 Proposed alterations to second floor

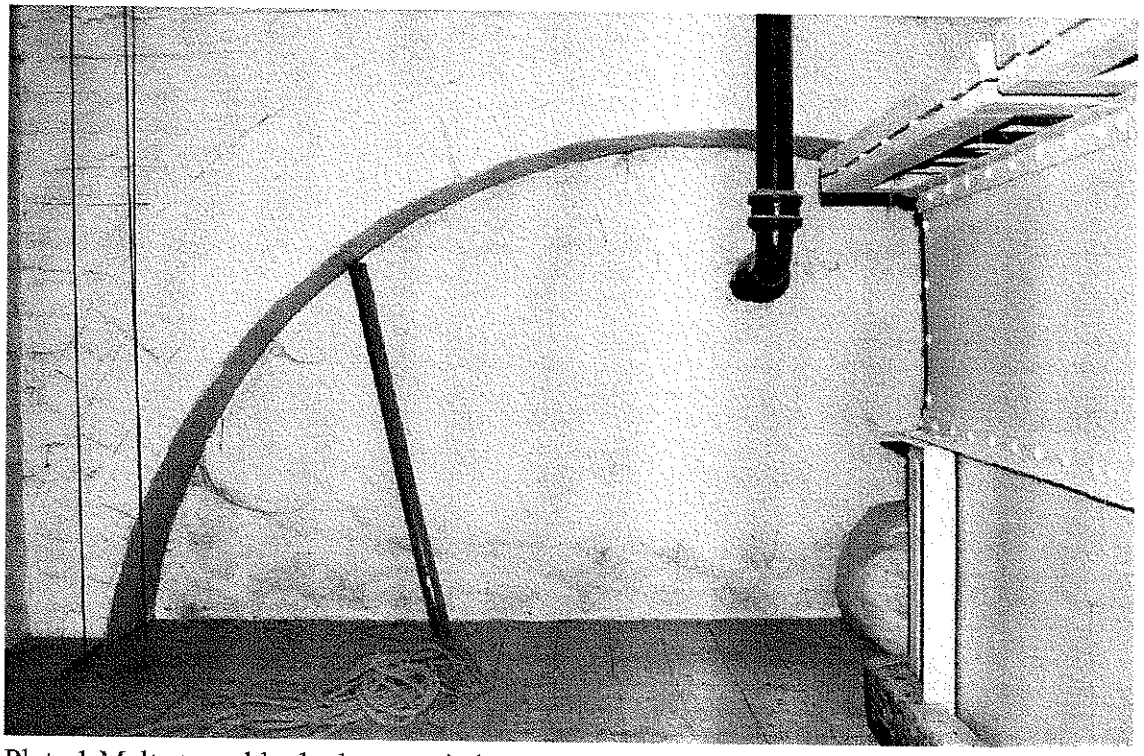


Plate 1 Malt store, blocked west window

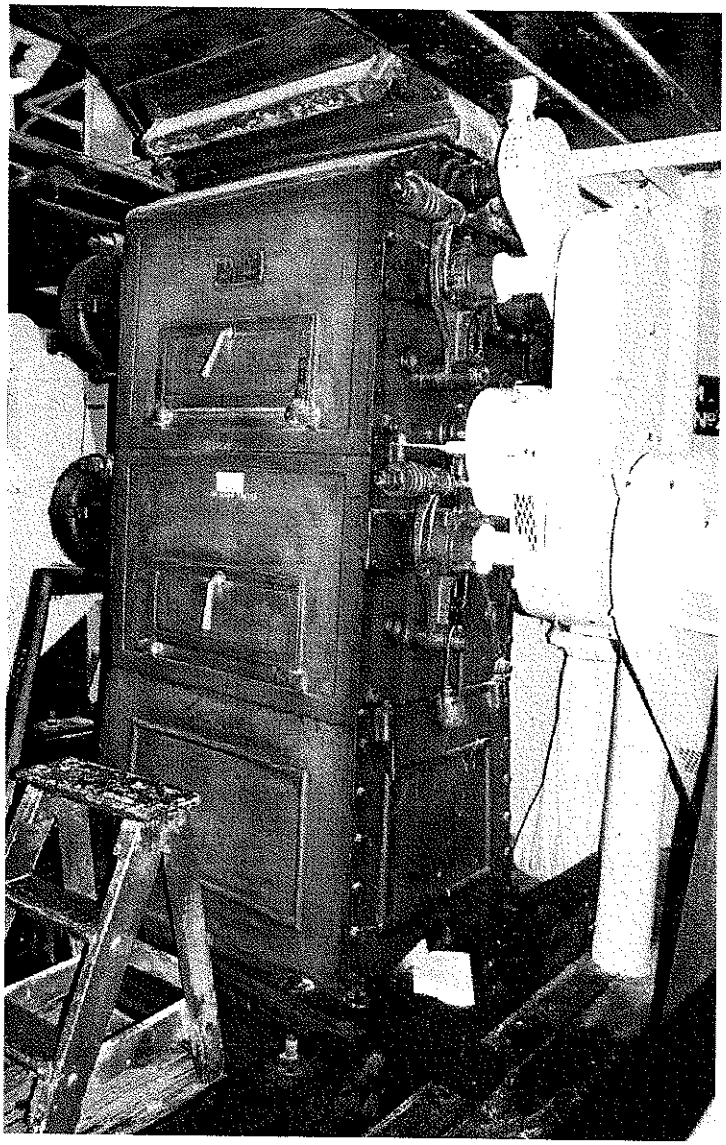


Plate 2 Mill room, Robert Boby malt mill

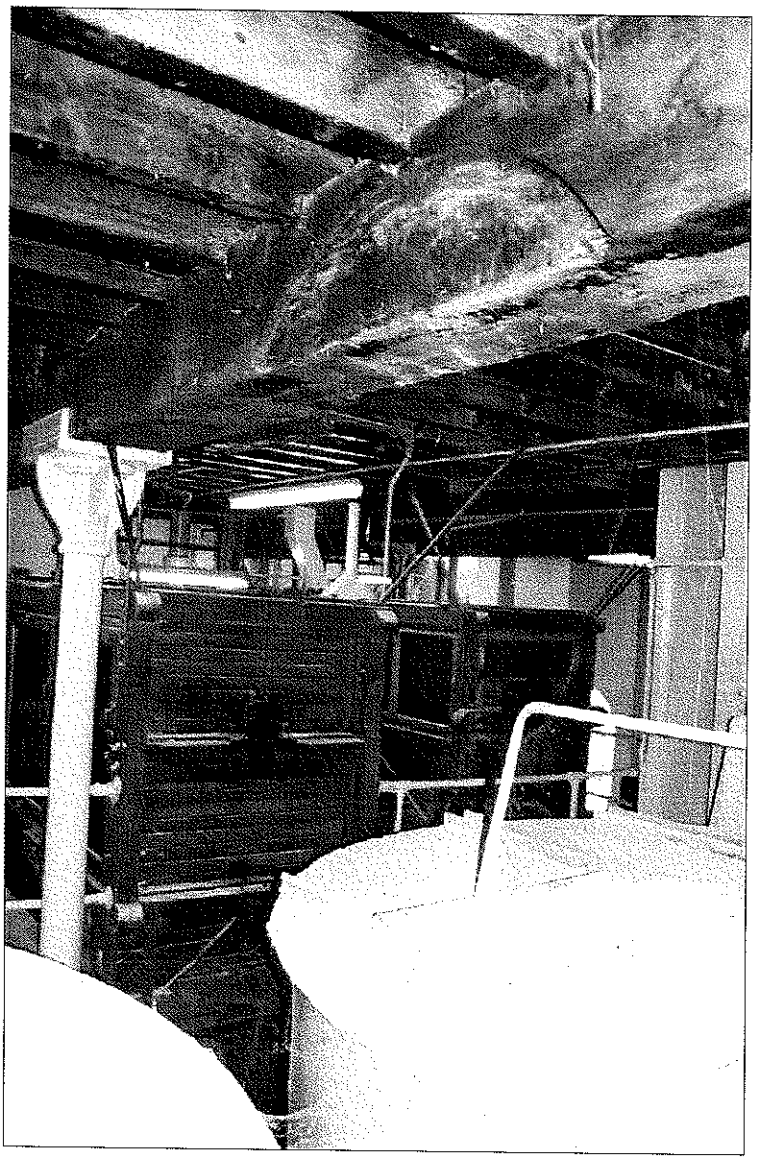


Plate 3 Mill room, arched recess in beam

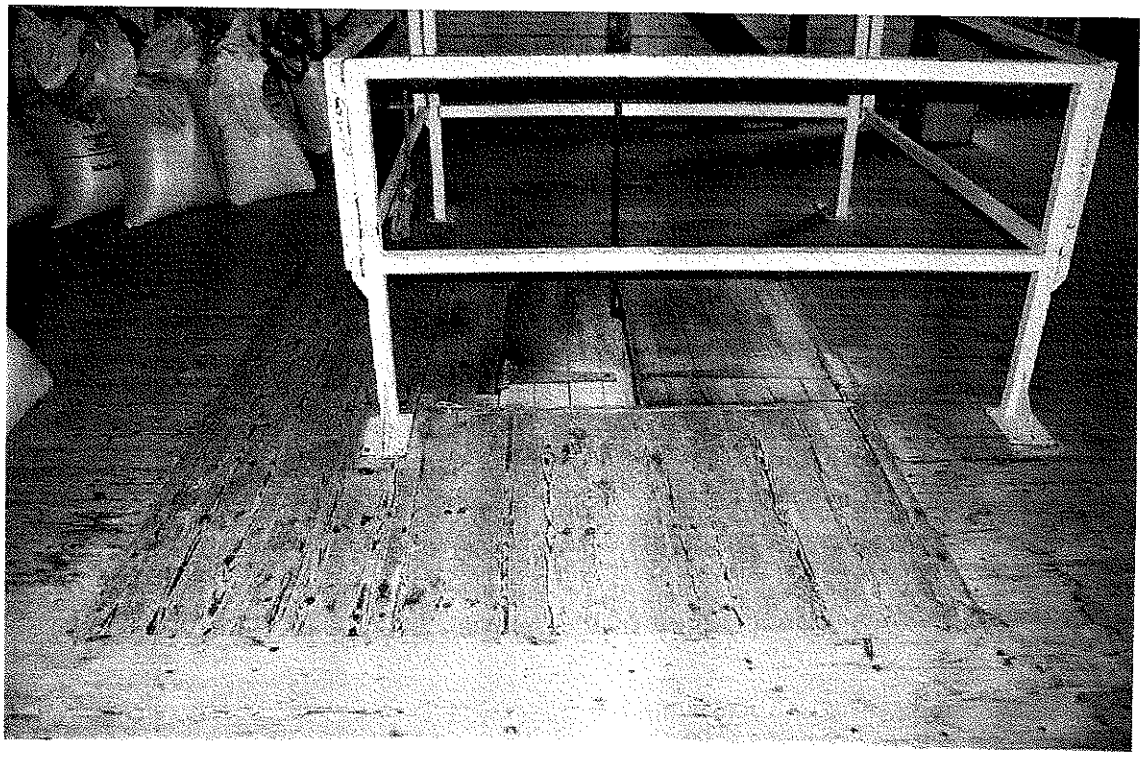


Plate 4 Mill room, trapdoor

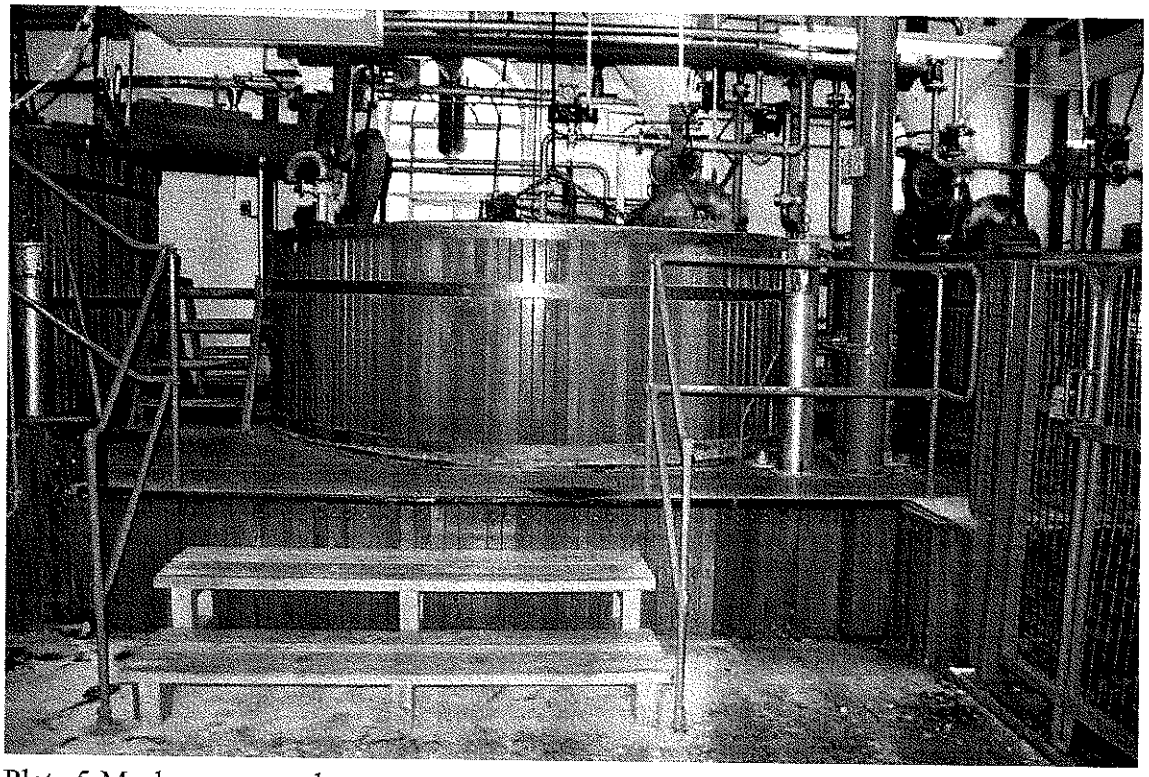


Plate 5 Mash room, mash tun

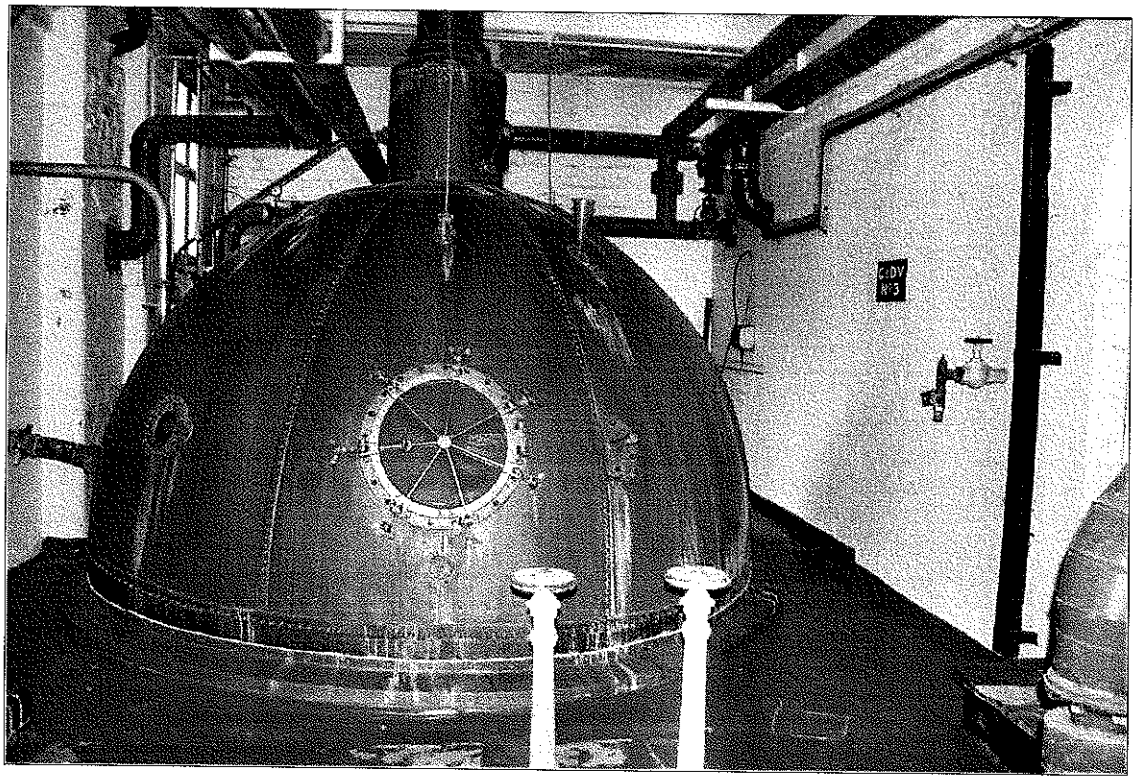


Plate 6 Copper room, original copper

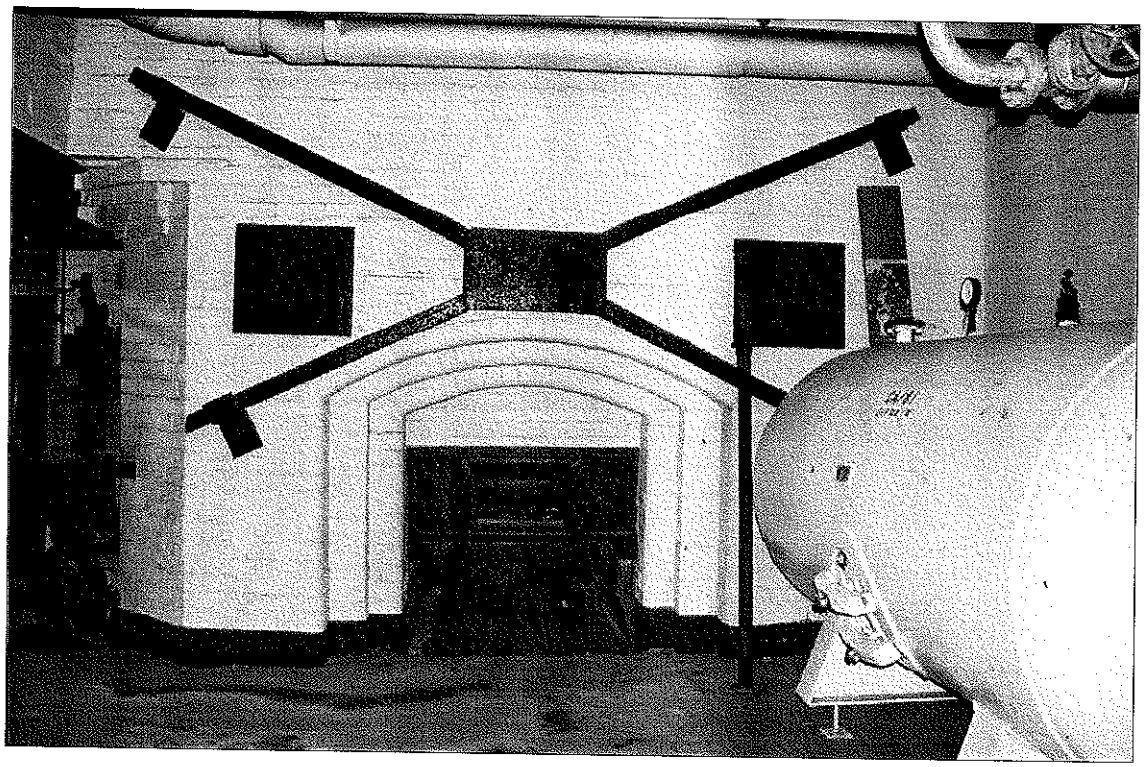


Plate 7 Ground floor, furnace beneath original copper