



ARCHAEOLOGICAL
SERVICES
WYAS

**Westwood Mill,
Linthwaite**

Building Recording
Volume 1

January 2004

Report No. 1129

C L I E N T

Michael Wilson Restorations



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Summary

Westwood Mill was a remarkably complete integrated textile mill with a history spanning over 200 years. Although many of the buildings were semi derelict, particularly those to the southern half of the site, sufficient remained to provide a record enabling the reconstruction of the development of the complex.

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Archaeological Services WYAS
PO Box 30, Nepshaw Lane South, Morley, Leeds LS27 0UG

1. Introduction

- 1.1 Archaeological Services WYAS undertook building recording on Westwood Mill initially at the request of Martin Whiteley of Magna Holdings in July 2001. Following a change of ownership further recording work was carried out in June 2003 at the request of John Bresnahan of Rhodes Brothers Limited for Michael Wilson Restorations in advance of its further development.
- 1.2 The archaeological building recording was required to fulfil a condition attached to the planning application and listed building consent. The majority of the buildings on the site are listed Grade II*
- 1.3 The buildings which form the subject of this report are known from the mid 19th century as 'Low Westwood Upper Mills', later reduced to 'Westwood Mills'. They are situated between the Huddersfield Narrow Canal to the north and the River Colne to the south. The buildings are approached from Manchester Road via Westwood Lane. Grid Reference SE 0949 1458.
- 1.4 The buildings comprise the remains of an early 19th century water powered scribbling, fulling and carding mill added to and improved over time to include warehouses, engine house, boiler room, loomshops, workshops, offices, dyehouse, and grinding sheds. The majority of the 19th century building are multi storeyed and are constructed of stone. On the eastern part of the site are a number of later 20th century Nissan huts which fall outside the area of recording.
- 1.5 The general condition of most of the buildings was poor. Many had lost their roofs allowing water to penetrate the wooden floors below. The central jack-arched building was one of the few structures with safe floors.
- 1.6 The specification required that a comprehensive drawn and photographic report be carried out together with background research, phasing, and the compilation of a descriptive report.

2. Methodology

- 2.1 The site survey was undertaken in two phases. The first between 23rd July and 25th July 2001, the second on 1st July 2003.
- 2.2 A risk assessment had been prepared in advance. This highlighted a number of risks which included unsafe floors in many areas, and the presence of asbestos lagging in areas of the ground floor.

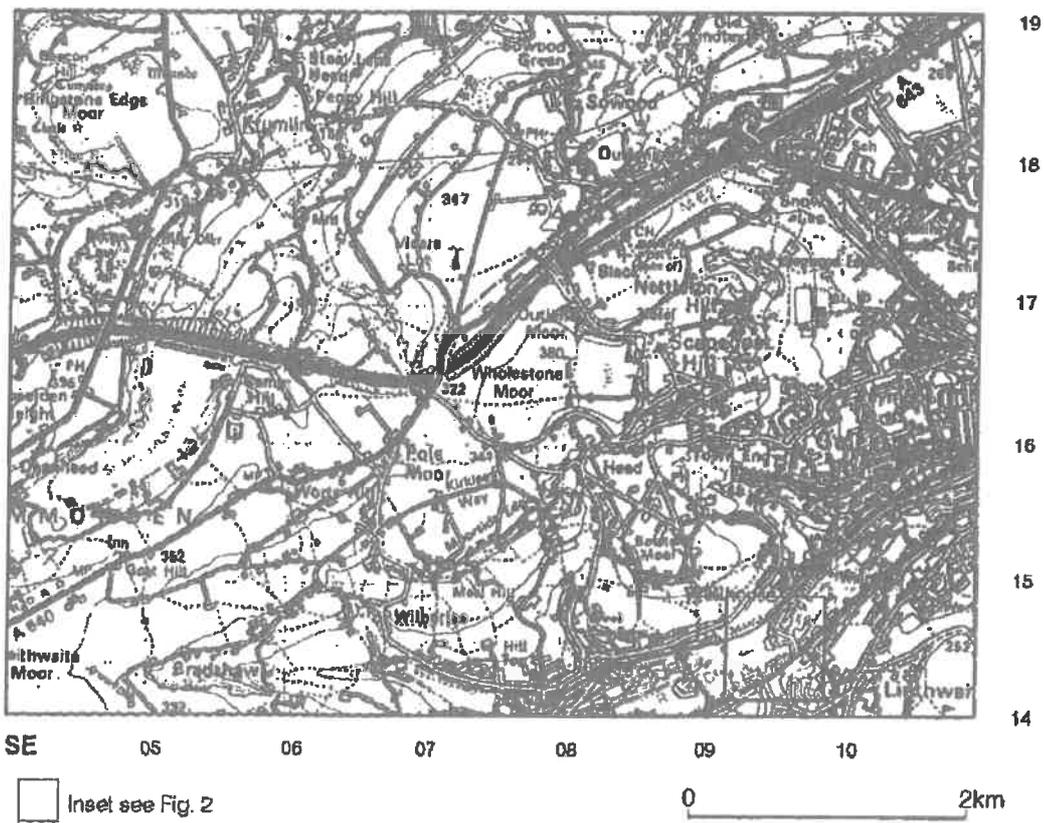
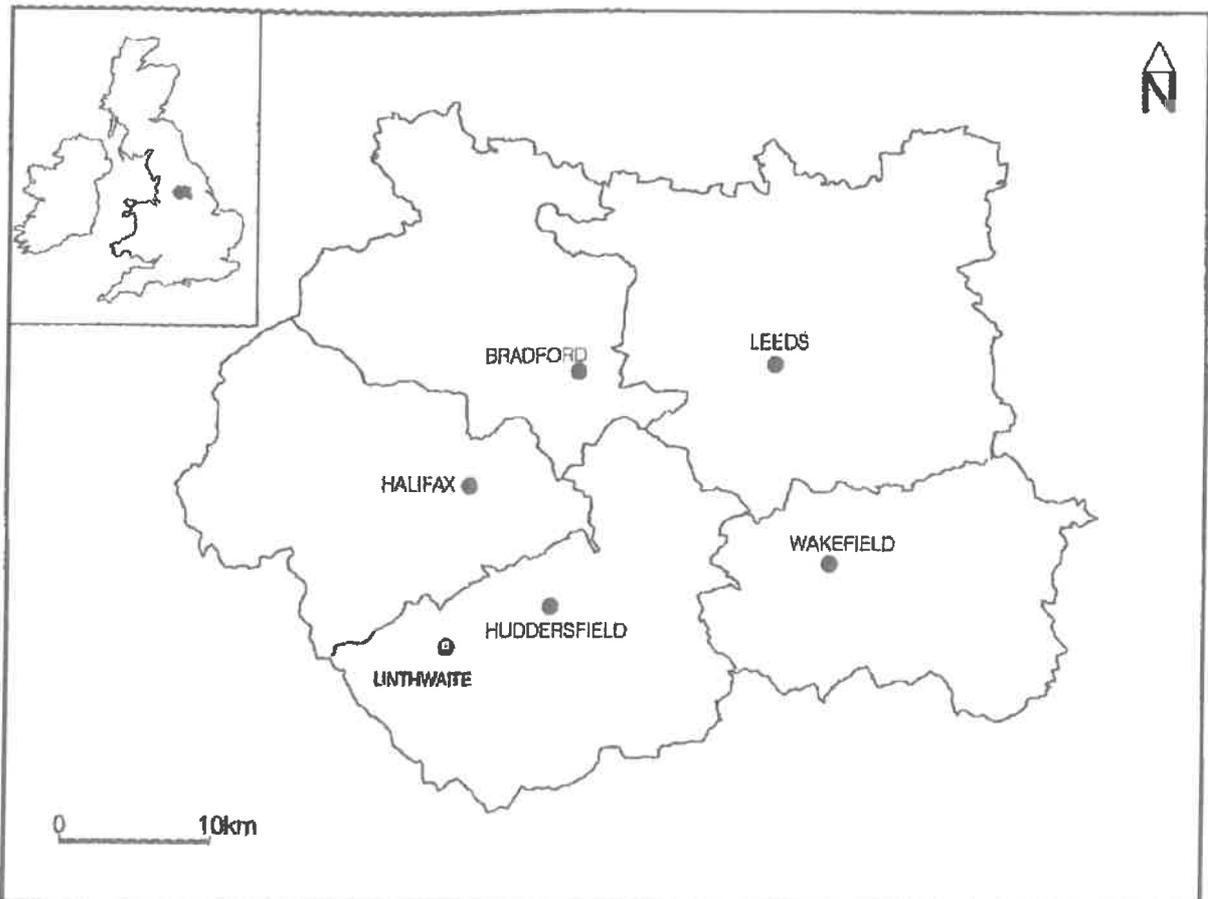


Fig. 1. Site location

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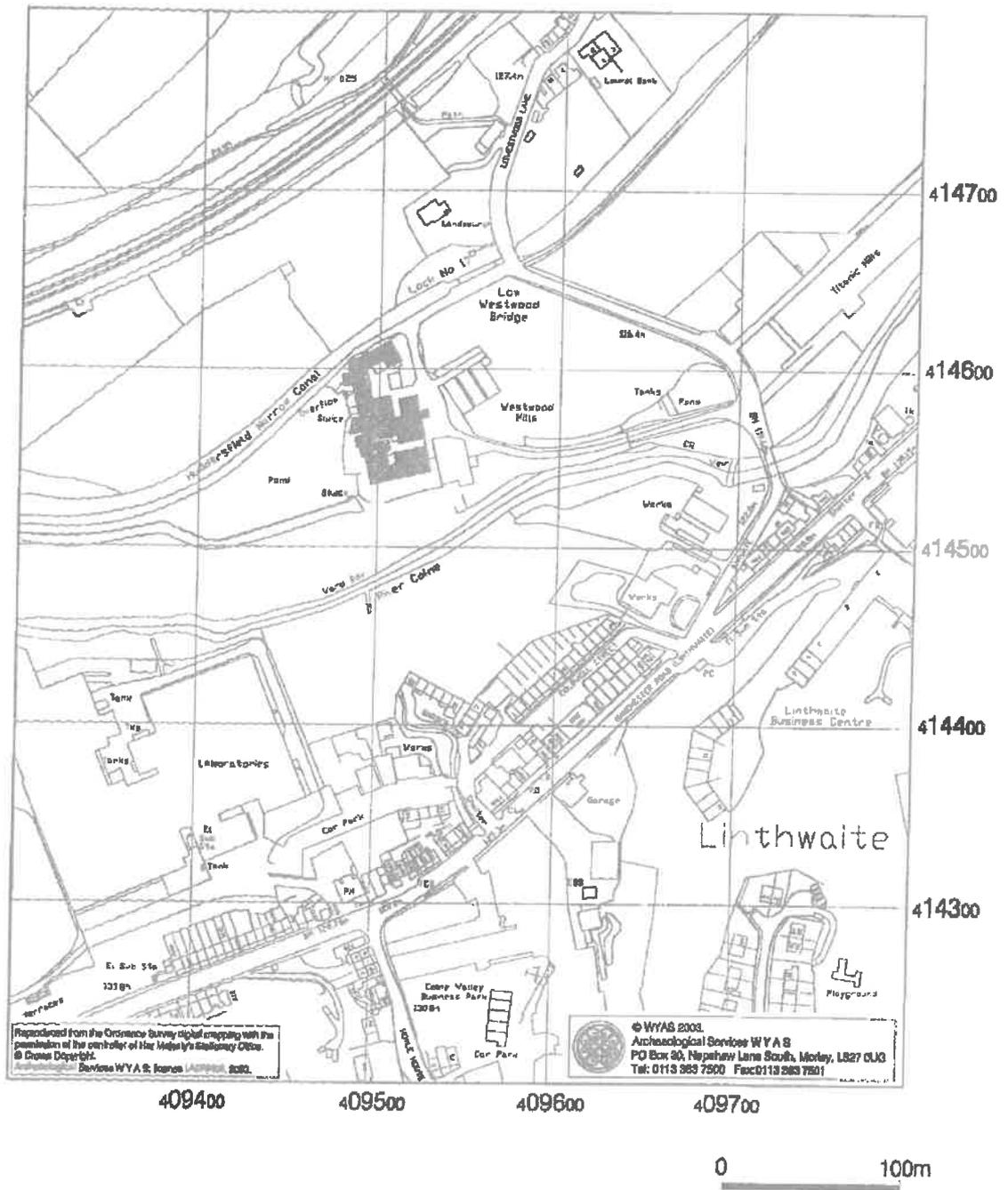


Fig. 2. Site location

- 2.3 Drawn survey. Sketch plans were produced on site and measurements added using a combination of hand tapes and remote EDM measurement. Plans produced by The Percy Thomas Partnership (Architects) Limited were annotated and used as an aid to the survey. Survey data were processed at Archaeological Services offices at Morley, where a ground floor and basement plan were produced at a scale of 1:100. An outline instrument survey was undertaken to check basic accuracy.
- 2.4 Photographic record. A medium format (Mamiya RB 6x7cm) camera was used to record, in general and in detail, the interior and exterior of the standing structure and its environs. The record was black and white. This was supplemented by the production of a number of 35mm colour transparencies. A series of rectified photographs were taken of key elevations using a half-plate camera.
- 2.5 An archival study was undertaken. This was based upon visits to the Kirklees Archive Service in Huddersfield, and to the Local History Library
- 2.6 Initial data were processed at Archaeological Services offices at Morley during July and August 2001. Further work was undertaken in August and December 2003, and the final report was compiled in January 2004.
- 2.7 Access for photography to the interior of the first floors of buildings K and M proved impossible, as did photography in the second floor of M.

3. Historical Background

- 3.1 A series of eight historic maps were consulted, ranging in date from 1775 to 1977. A series of major changes and additions were noted between 1894 and 1977, a date by which the mill was fully developed and beginning its fall into decline.
- 3.2 Fig. 3 A survey of the County of Yorkshire, Thomas Jefferys, 1775. The village of Linthwaite, between 'Slaughwaite' and 'Milnsbrigg', on the line of the River Colne is not named. However, between the two, and to the north of the river is the name 'Westwood' or 'Westwood Hill Top', in the general vicinity of the later mill. The Huddersfield canal has yet to be constructed.
- 3.3 Fig. 4 Ordnance Survey 6 inch to 1 mile scale, sheet 260, 1854 (1848-51). Some 80 years later substantial parts of the mill complex known as 'Low West Wood Mills' have been constructed on land between the canal and the

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Fig. 3 A Survey of the County of Yorkshire, Thomas Jefferys, 1775. Enlarged portions of sheets 12 and 17



Fig. 4 Ordnance Survey 6 inch to 1 mile scale, sheet 260, 1854 (1848-51)

river. The word 'Woollen' is shown after the name of the mill indicating the type of mill. To the west is the mill pond, and to the south, tenters.

- 3.4 Fig.5 Ordnance Survey 6 inch to 1 mile scale, sheet 260, 1894. A further 40 years on and few changes to the building plan can be seen. A building to the south may have been extended to east, and a central building possibly reduced.
- 3.5 Fig. 6 Ordnance Survey 6 inch to 1 mile scale, sheet 260NW, 1908. Now known as 'Low Westwood Upper Mills', a number of changes have been made. In the centre of the complex a large single storey shed has been built, whilst to the south, a two storey building, possibly for rag grinding, has been constructed incorporating part of an earlier structure.
- 3.6 Fig. 7 Ordnance Survey 6 inch to 1 mile scale, sheet 260NW, 1927. The buildings remain unchanged with the exception of the construction of a detached open-fronted brick shed of six bays at the south-east corner of the complex.
- 3.7 Fig. 8 Ordnance Survey 25 inch to 1 mile scale, sheet 260.1, 1932. This larger scale plan is useful in that divisions between adjoining buildings are indicated. There is however, little new information. Interestingly, this plan makes it easier to understand the earlier water courses. It is apparent that the water from the mill pond that turned the early wheel (c. 1800) was then fed into the mill pond which powered Beaufort Mill to the east. The course of the channel for the later turbine appears to have been culveted and runs to the south and east of the complex, rejoining the Colne downstream above a small weir.
- 3.8 Fig. 9 Ordnance survey 6 inch to 1 mile scale, sheet 260NW, 1948. Now changes shown to building plans on this map.
- 3.9 Fig. 10 Ordnance Survey 1:2500 scale, sheet SE 0814 0914, 1977. The main changes are an addition to the east of a brick shed (possibly a garage) to the rear of the open fronted six-bay shed noted in 3.6, and the siting of three Nissan huts (WWII salvage?) to the east of the central building range.

4. Historical Analysis

- 4.1 The information contained in the above series of maps is summarised in Fig. 11. Only certain maps provided relevant information.



Fig. 6 Ordnance Survey 6 inch to 1 mile scale, sheet 260NW, 1908

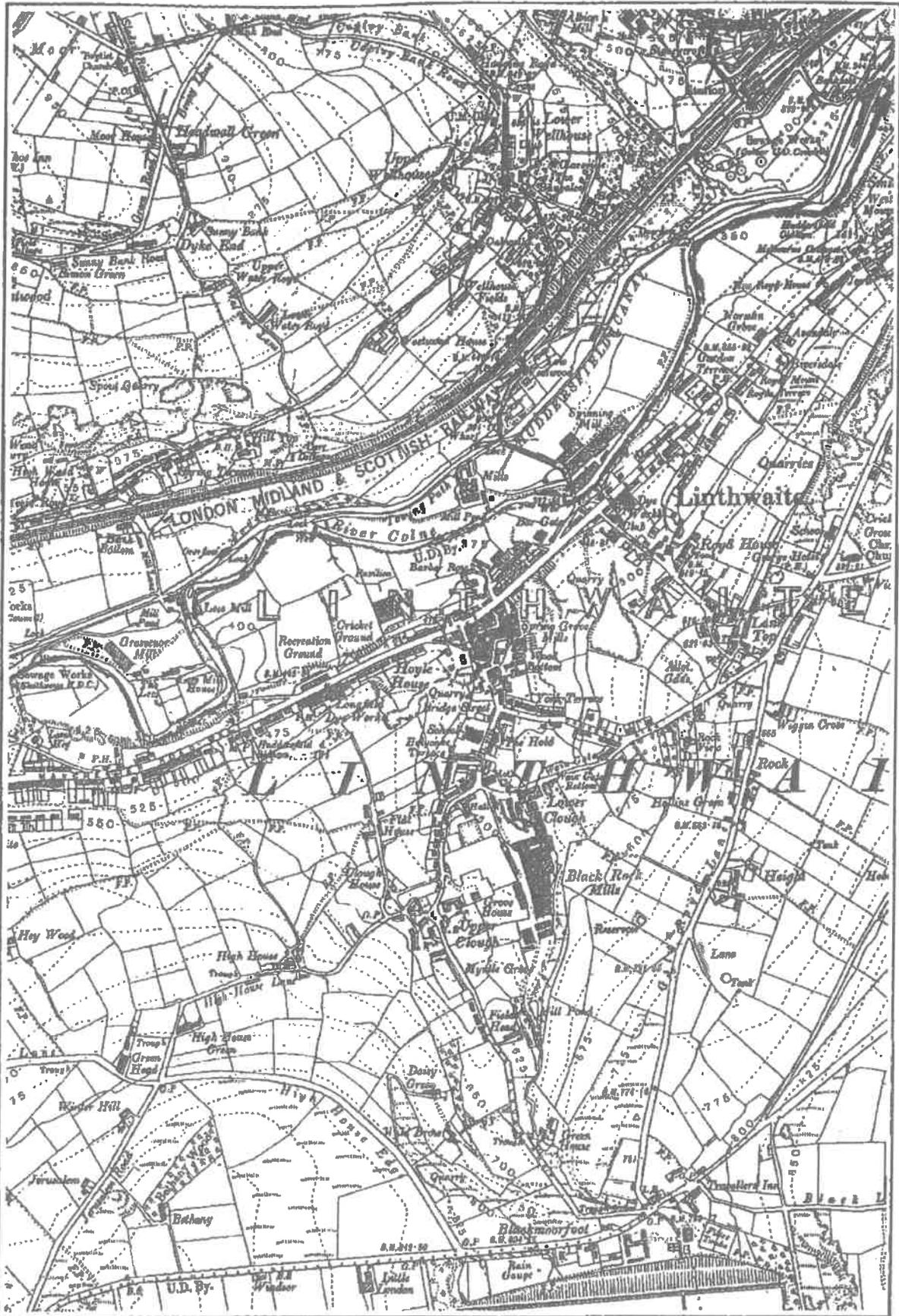


Fig. 7 Ordnance Survey 6 inch to 1 mile scale, sheet 260NW, 1929

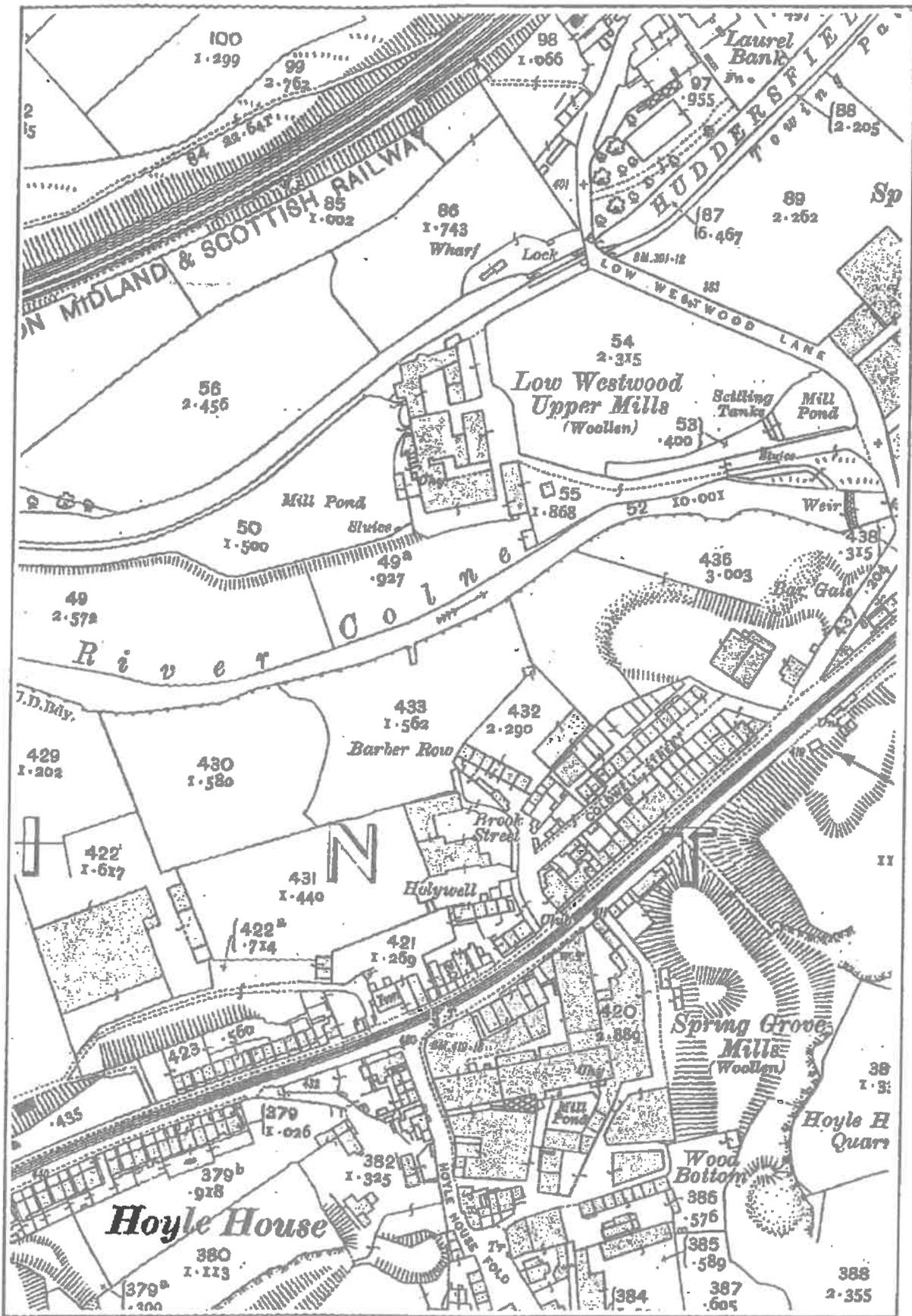


Fig. 8 Ordnance Survey 25 inch to 1 mile scale, sheet 260.1, 1932

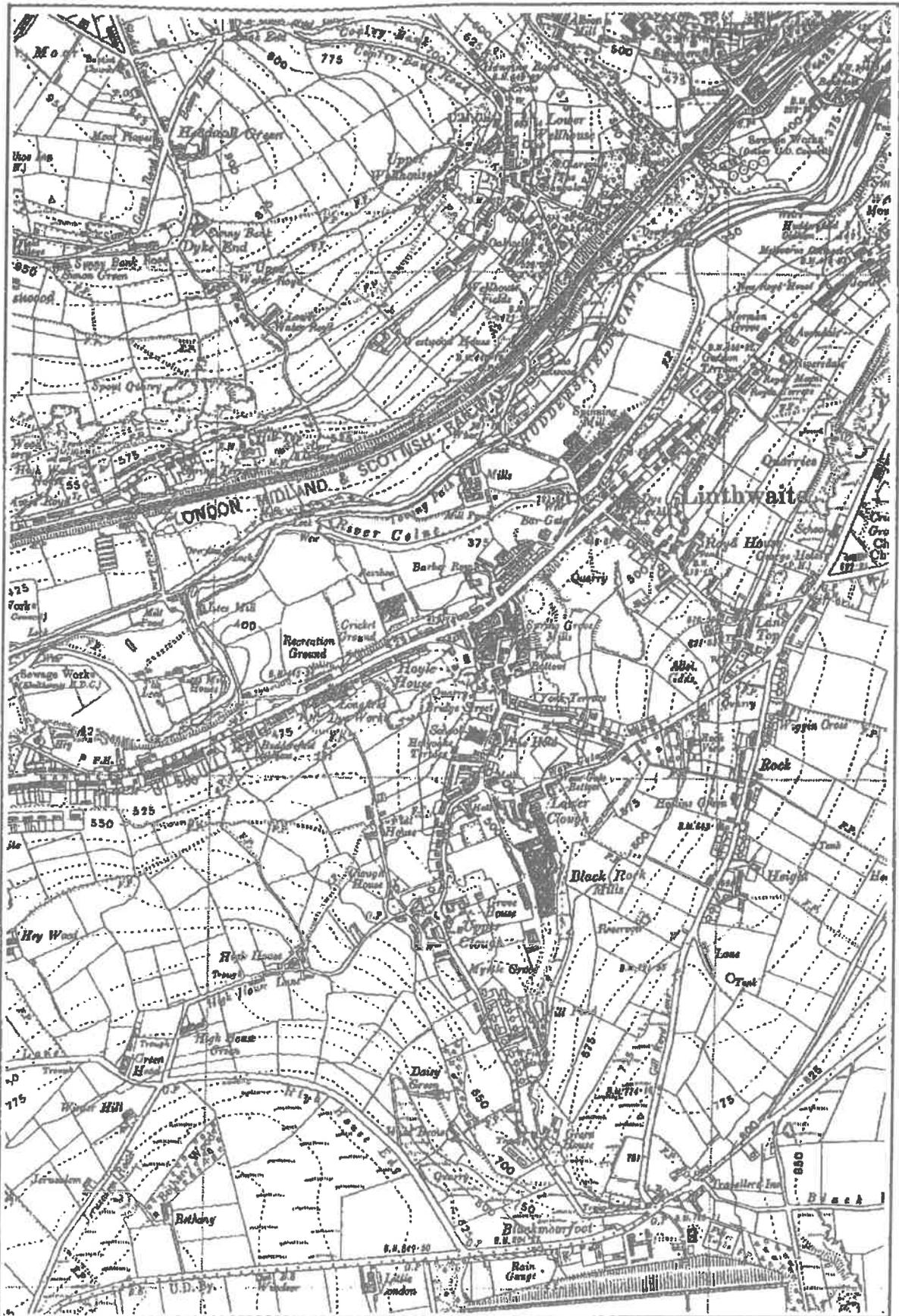


Fig. 9 Ordnance Survey 6 inch to 1 mile scale, sheet 260NW, 1948

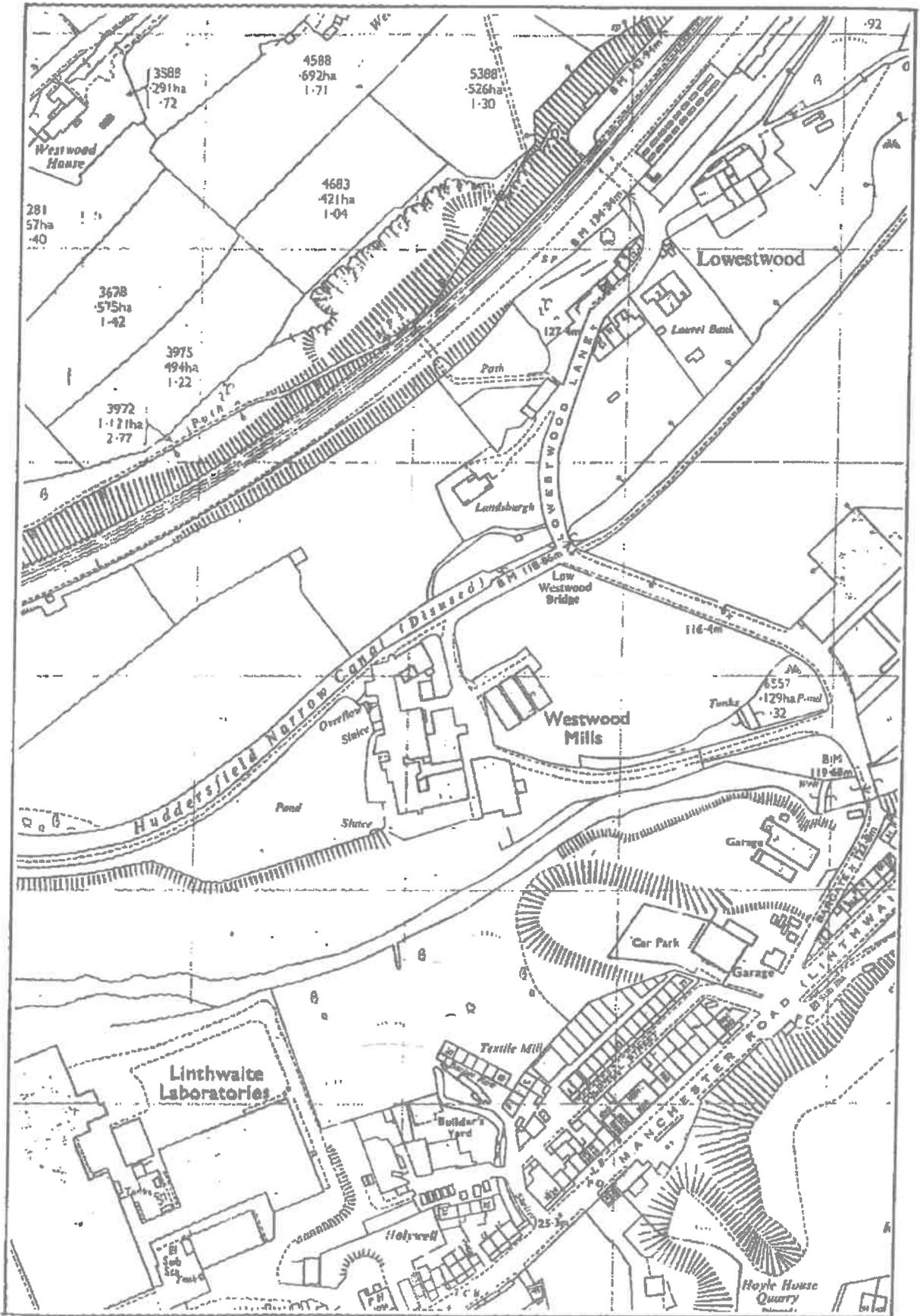


Fig. 10 Ordnance Survey 1:2500 scale, sheet SE 0814 0914, 1977

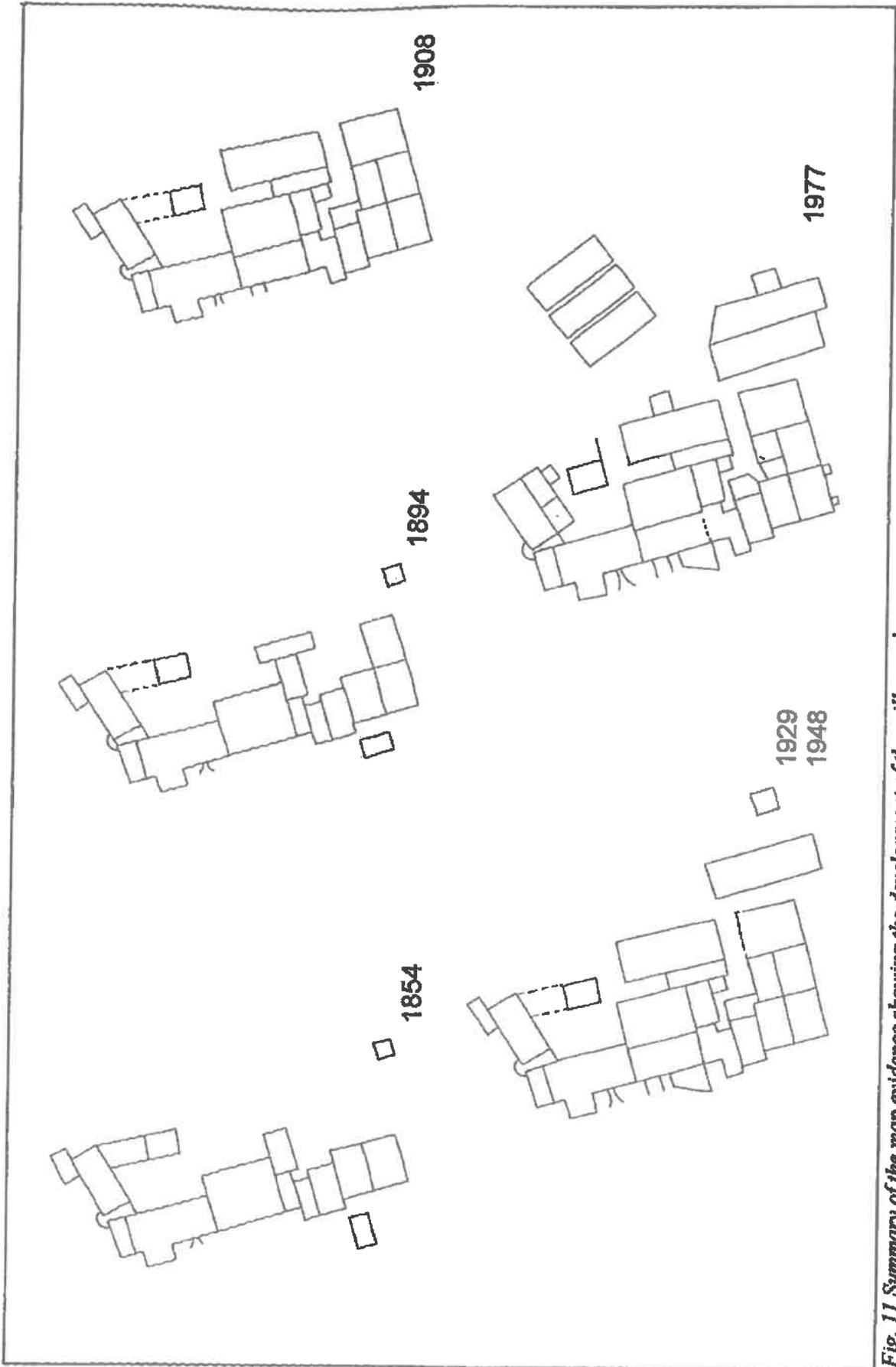


Fig. 11 Summary of the map evidence showing the development of the mill complex

- 4.2 The first edition Ordnance Survey of 1854 (Fig. 4) shows a relatively well-developed group of buildings. Clearly from inspecting the buildings on the ground they belong to a number of different phases, several earlier than this date. The mill at this time is probably powered by a vertical steam engine housed in the engine house, with boiler-house to the south. Power is transmitted horizontally along the north-south axis. The Early building facing the canal may be a warehouse as there is no evidence here for power transmission
- 4.3 The Ordnance Survey plan of 1894 shows only a few minor changes. The building between B and C (Fig. 11) has been removed. A small shed has been added to the central area. Additional buildings have been constructed to the south.
- 4.4 1908. Evidence shown for the introduction of water turbine power. Major grow and addition of new buildings to the south and west. It is possible that the central jack-arched building is new or refurbished at this time.
- 4.5 Maps dated 1929 and 1948 show very similar information. By this date the site is almost fully developed with the addition of buildings in the south-east corner.
- 4.6 The final map shows the site in 1977. Additional buildings have been added to the south-east, and to the centre-east. Some minor changes noted to some of the more established structures.

5. Building Description

- 5.1 To aid identification, each building has been allocated a letter, and each room a sequential number. Descriptions are by building, not by floor. See Fig. 12.
- 5.2 Building A, ground floor (Fig. 13.) comprising three rooms, numbered 1-3. Construction is entirely of stone. Room 1, aligned north-south, has gross dimensions of 20m by 9m. The building is of seven bays and has three floors. Externally, the eastern façade (Fig. 34.) faces a courtyard and has windows at each bay with the exception of the southern most which has taking-in doors. Access is on the ground floor, through an original door in the third bay from the north, and later in a secondary door in the second bay from the north. Room two forms a slightly later addition to the building (room 31 on the first floor). The external north facing elevation (Fig. 31.) has blocked windows at ground floor level, a half blocked mullioned

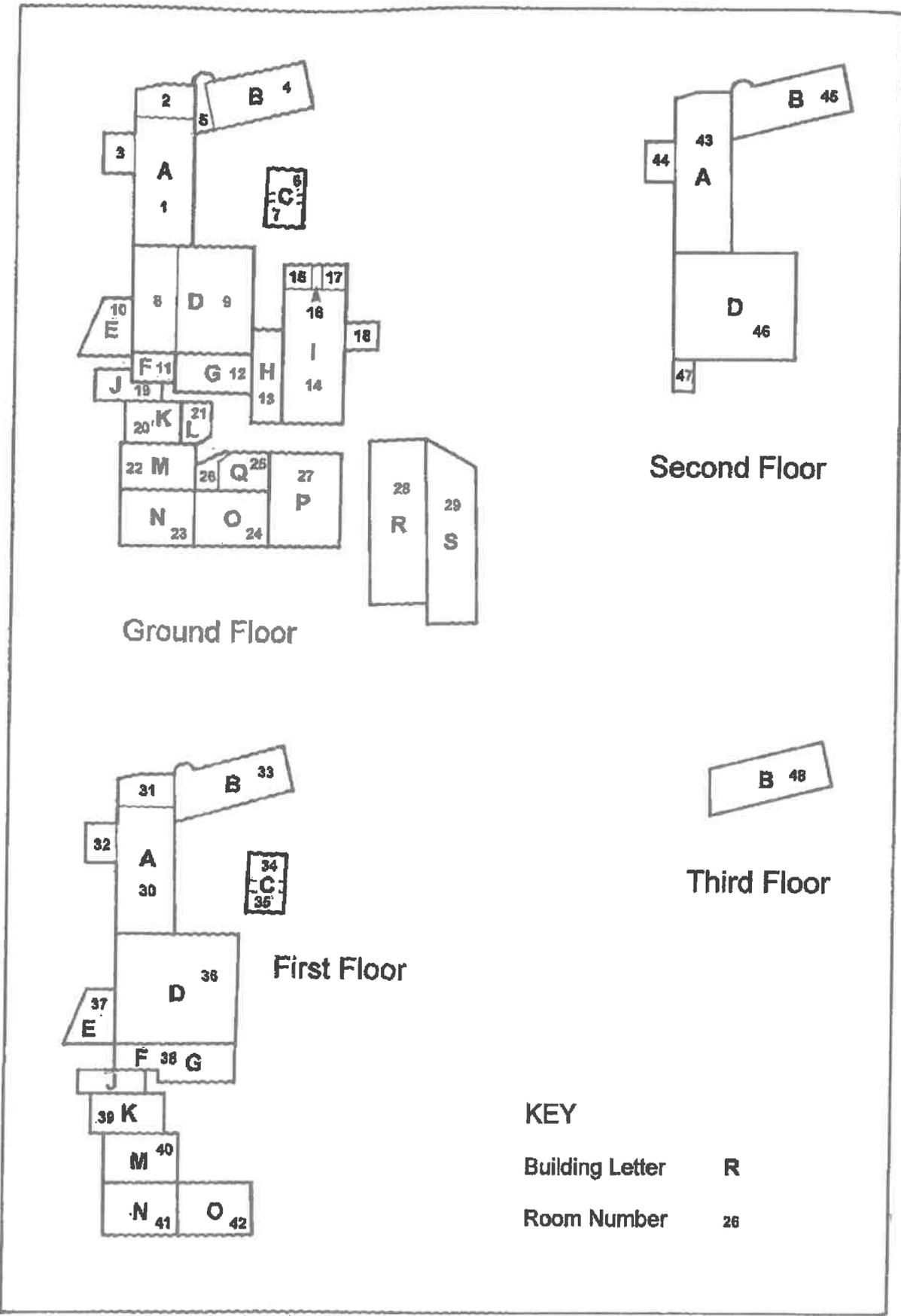


Fig. 12 Key plan showing the building and room references used in the report

window at first floor level and three windows, one of which is blocked on the second floor. Windows higher in the elevation including a central arch headed multi paned window indicate the possibility that building A was originally of four floors. The west facing elevation (Fig. 30.) of building A has the later two storey vertical transmission shaft projecting. This has stone blocked windows to both floors. The original seven bay extent is defined by quoins at either extremity. To the north, the single bay of rooms two and thirty one is added. Stone blocked mullioned windows can be seen at all three floors of this addition. In the main body of the building, all ground floor windows are blocked, some of the first floor windows are blocked, but the second floor windows remain open, with some retaining their own original glazing.

Room one on the ground floor (Fig. 13.) has six substantial beams supporting the floor above. Beneath each beam are positioned two tension rods, stitching the outer walls together. The floor of the room is of timber. Recent brick piers support the beams in several places. Within bays one and two from the north are the remains of line shafting and take off wheels. These formerly connected to an electric engine situated in the motor room (room three). Windows on the west side, south of the motor room are blocked, as is a window on the east side in bay one and an original connecting door to room two. Within the southern wall are a number of blocked wall boxes. Room two to the north, of slightly later date is entered by its secondary door. The structure is of five bays and has a three light mullioned window in its northern wall, and a two light window to the west. A door in the eastern wall connects with the later stair passage for building B. A blocked opening to the north may have been original. A flight of wooden stairs in bay two of room one lead to the first floor.

Room thirty (Fig. 15.) is again of seven bays with mullioned windows and an end taking in door facing the eastern courtyard. On the western side are a series of two and three light mullioned windows. The later power transmission shaft, room thirty two has opposed two light mullioned windows in its side walls and two more recent windows in its western wall. The beams supporting the second floor have tension rods similar to those visible on the ground floor. Blocked wall boxes are visible in the southern wall, as is blocked mullioned window and a later door communicating with building D. In the northern wall is an original blocked door, and a later door leading to room thirty one. This later addition shares the same footprint as room two, has a wide window in its western wall and two windows in the northern wall, one of which is blocked. The floors of both rooms are of timber. Access to the second floor is made via the spiral staircase between buildings A and B.

Westwood Mill, Lintwaite
Ground floor plan

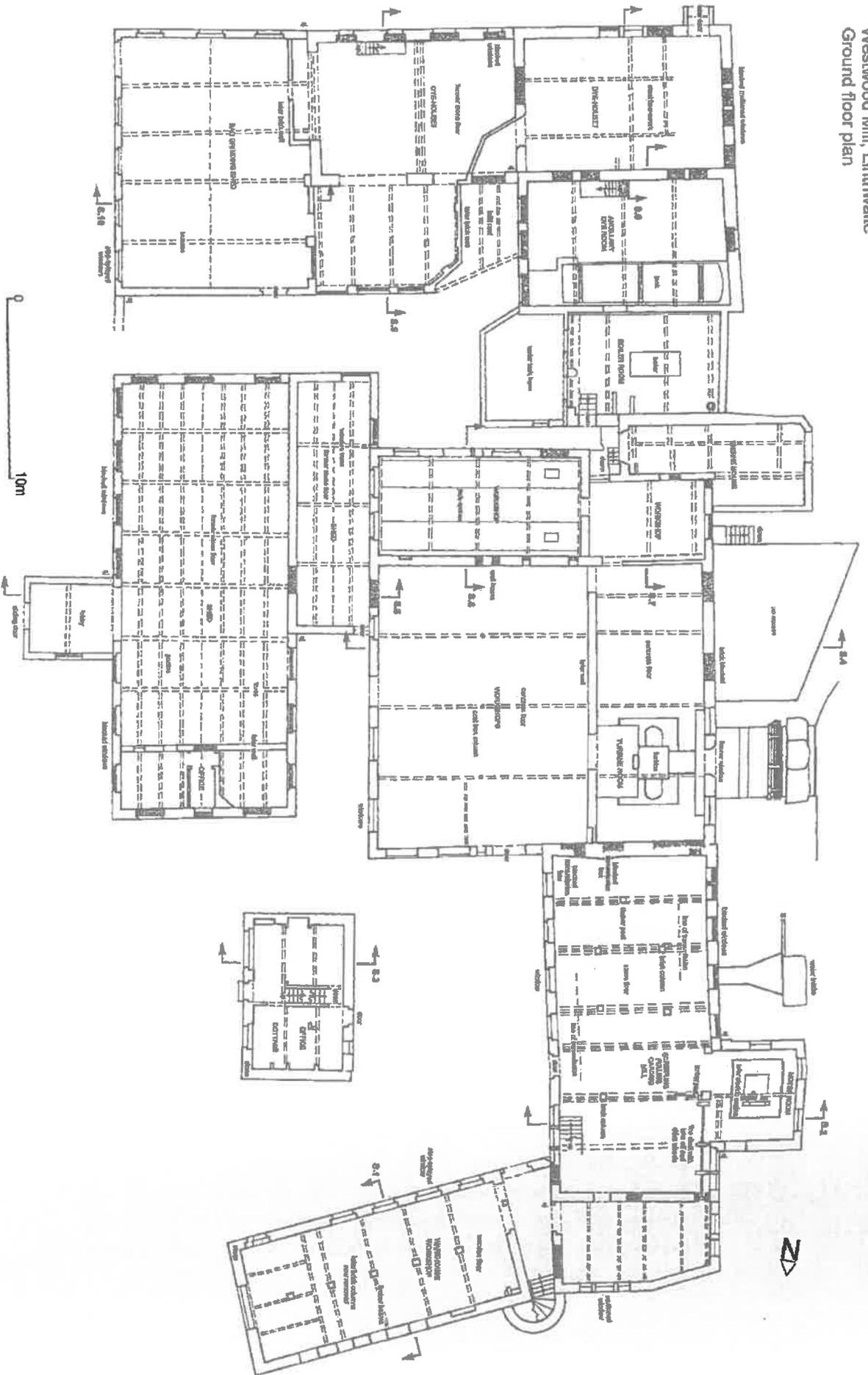


Fig. 13 Ground floor plan

Westwood Mill, Lintwaite Ground floor plan

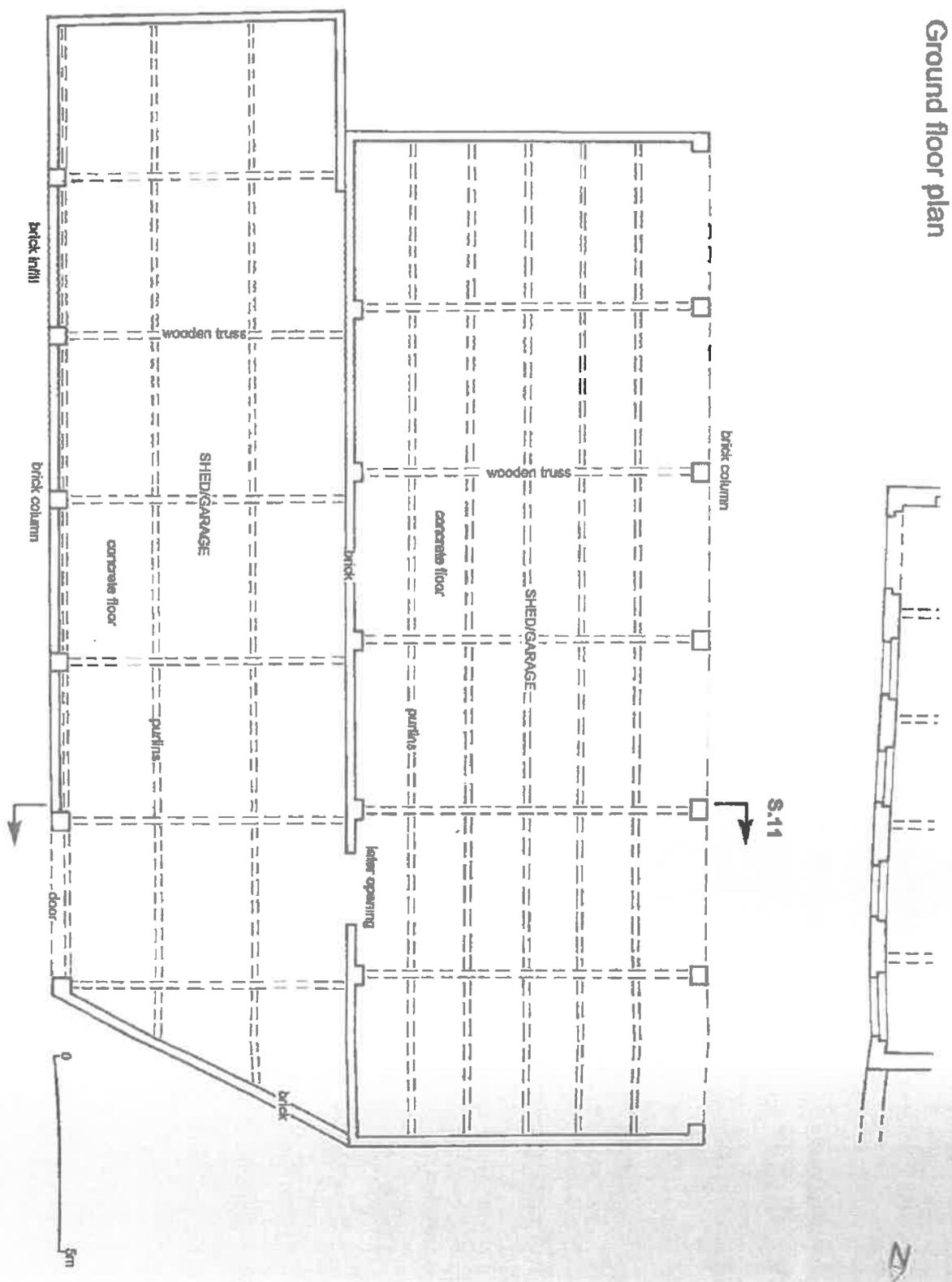


Fig. 1.4 Later detached ground floor buildings

Westwood Mill, Linthwaite
First floor plan

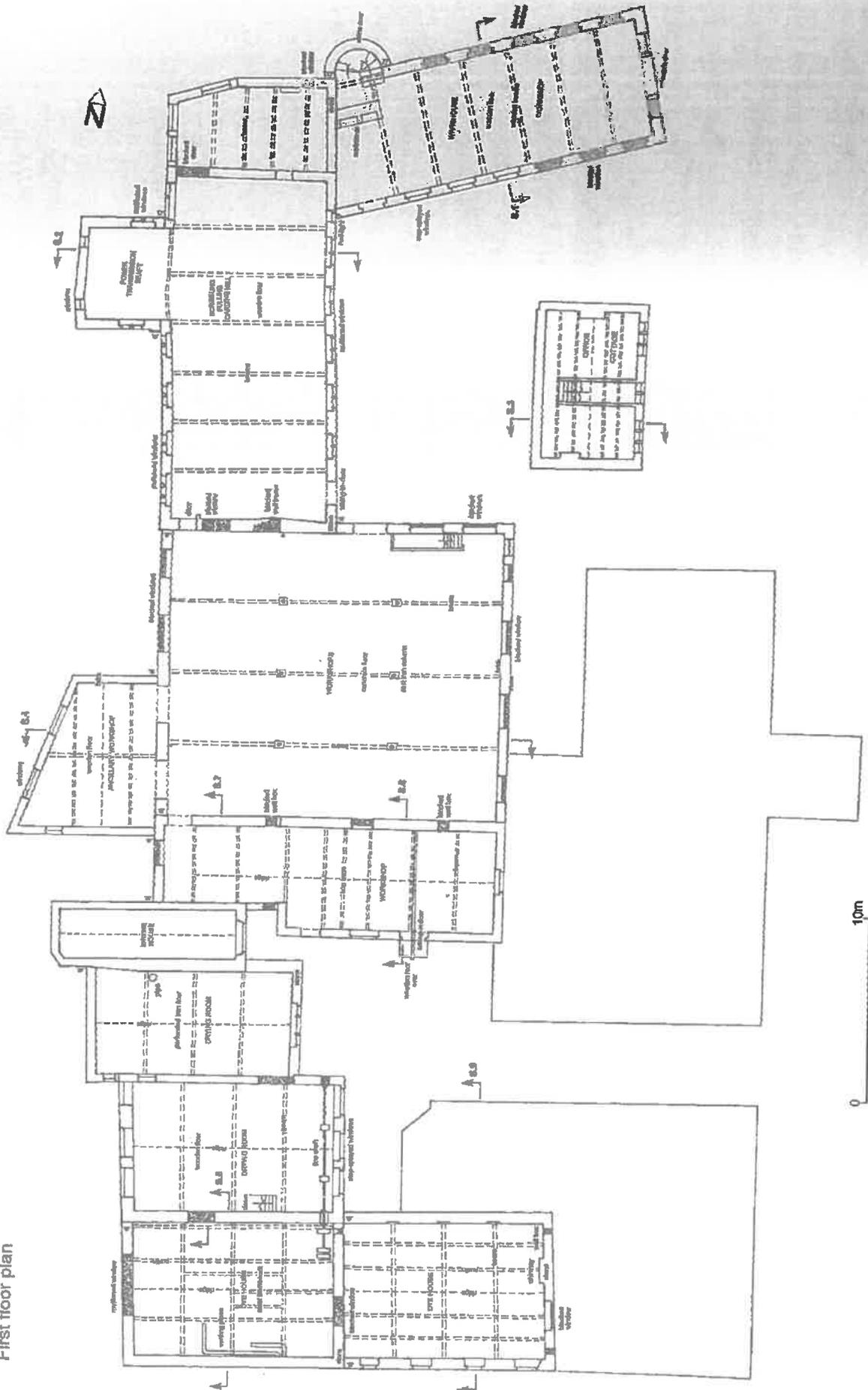


Fig. 15 First floor plan

Westwood Mill, Linthwaite
Second floor plan

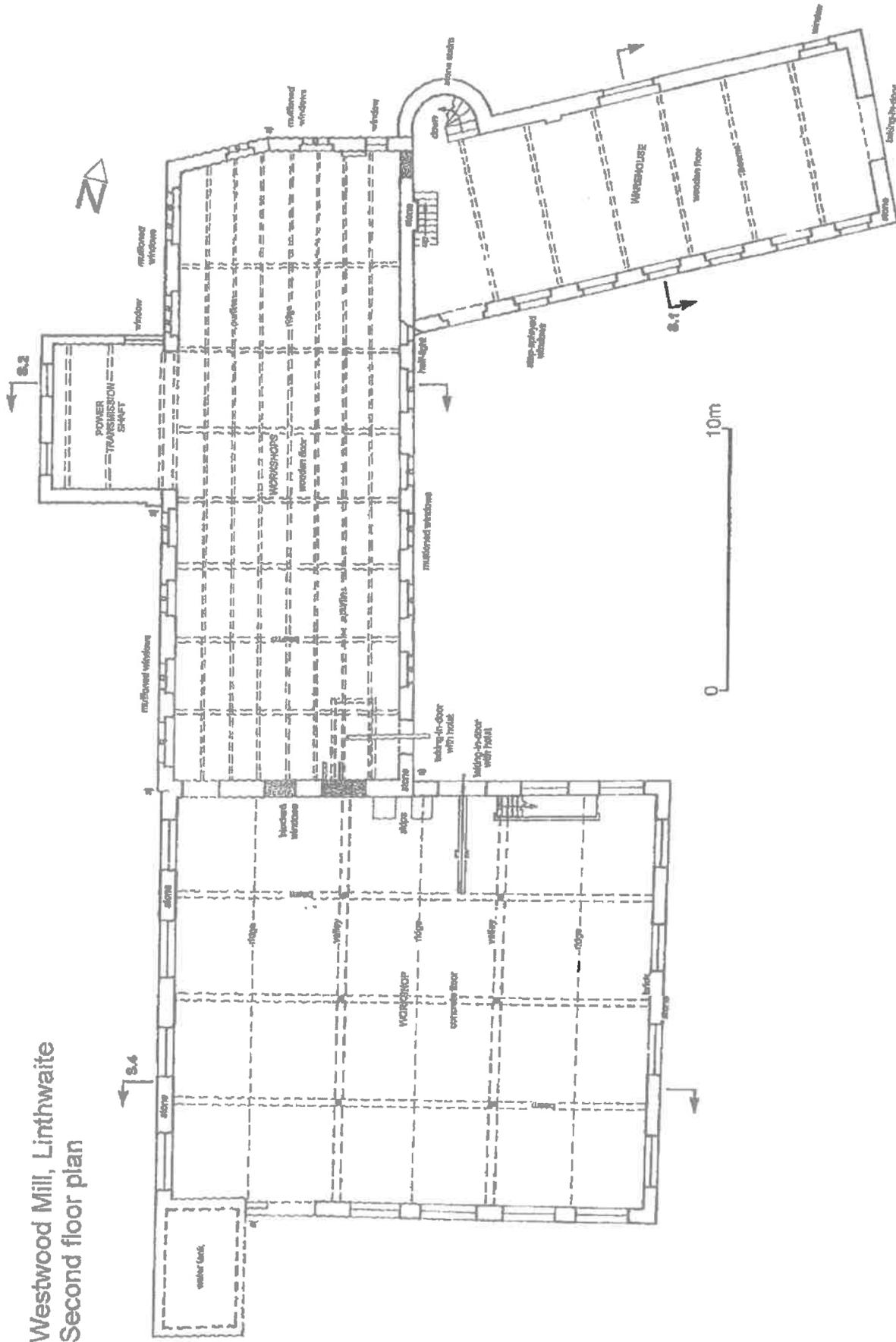


Fig. 16 Second floor plan

Westwood Mill, Linthwaite Third floor plan

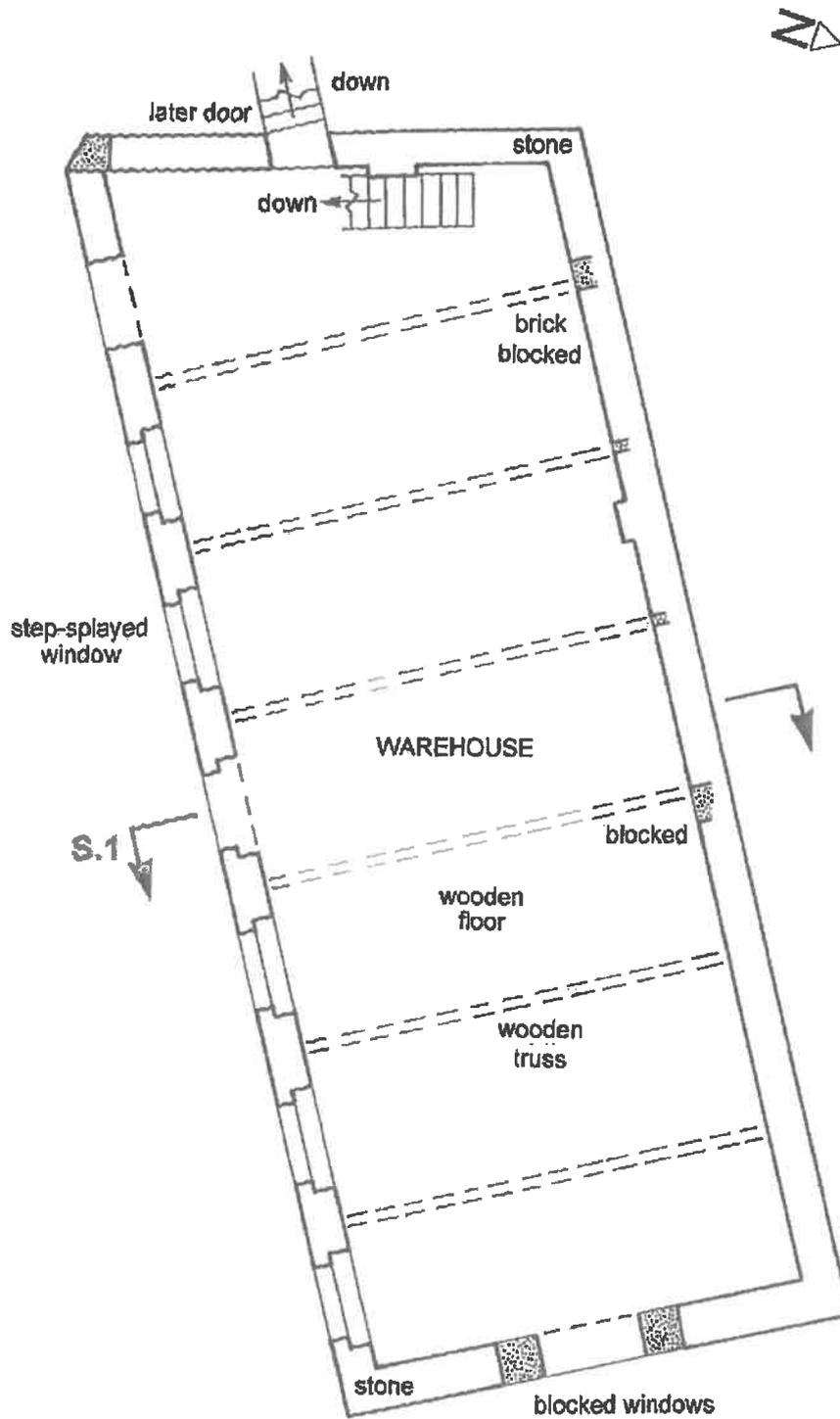


Fig. 17 Third floor plan

0 5m

The second floor (Fig. 16.) comprises one space of eight bays (room forty three). It originally had two light mullioned windows at each bay with three light mullioned windows in bays one and two from the north. The northern wall has a pair of two light mullioned windows with a slightly later single light window. The southern wall has two blocked windows and a later doorway to building D. Over the taking in door in bay eight is a hoist. The later power transmission shaft has two windows in its western wall and one in the northern wall.

The roof (Fig. 19.) is supported on a series of seven soft-wood trusses. Each consists of a tie-beam supporting two queen posts with joining collar. A raked brace from each post supports a half rafter, which in turn supports the principal rafters which join at the apex without a ridge. Iron strapping is used to reinforce joints in the collar line and at each post. The principal rafters rest on wall plates and support three trenched purlins to each side. The cladding originally was of stone.

- 5.3 Building B (see plan Fig. 13. for ground floor) to the east of A was originally detached, of four floors, each of six bays. Shortly after its construction it became attached to building A by the addition of a short run of wall to the south, and a spiral stair tower to the north. Its original gross dimensions are 16m by 7m, aligned east to west. The building is constructed of stone. Externally, the south facing façade (Fig. 33) has on the ground floor step-splayed window openings at each bay, original glazing and frames have been removed, and the windows in bays two-four from the west have been blocked with stone. This is because a later lean-to structure was built in this area away from the wall, beam mortices to support the roof are illustrated. An electricity sub-station of two floors has been built over the end three ground and first floor bays. A door with stone surround is situated at bay one and leads into the stair passage. At first floor level the three windows at bays two-four retain four-light glazing, of later date. In bay one is a taking-in door with load rollers attached to its stone lintel. Windows at the second floor are stepped with glazing removed in bays two, three, five, and six. In bay seven the original nine light glazing survives. The taking in door at bay one is similar to that on the first floor. At bay four, the window is a two centred pointed arch with key stone, partly blocked above the sill. Terminals of two tie rods can be seen either side of this window. On the third floor, the arrangement of windows is identical, with those at bays five and seven having four light glazing, the others without glazing. The taking in door in bay one is not as tall as other examples and has a hoist above its lintel. Between bays three, four, five and six, are further tie rod terminals.

The east facing façade (Fig. 32.) has, on its ground floor a wide loading door, possibly of later date. At first floor level, a wide taking in door with load-rollers attached to its steel lintel has been inserted in what may have been a four part mullioned window. The northern part retains its multi pane glazing. The wide taking in door at second floor level may replace a two part mullioned window, and at third floor level, a narrower taking in door replaces a three part taking in door. A hoist projects from the apex of the roof. It is possible that the stone work above the lintel of the top taking in door has been rebuilt. The north facing elevation (Fig. 31.) demonstrates that the land rises to the north. There are no ground floor windows. At first floor level, openings at bays three to six are stone blocked. Tie rod terminals are situated between bays three and four. At second floor level, a wide stone blocked window is situated at bay four, and a multi light window with original glazing at bay seven. Above window head heights are three tie rod terminals. The semi circular projection of the stair tower obscures the first two bays of this building.

Ground floor, room five. A stepped doorway leads to the stair passage, inserted between buildings A and B, with stone steps leading up to the first floor of B. Room four, having gross dimensions of approximately 16mx7m is of six bays. On the south side are four stepped windows in the first four bays, with an altered stepped window in the last bay. On the north side, what may have been window openings in bays three to six are blocked. A semi blocked fireplace can be seen in bay two. The stone constructed building has a wooden floor. A series of brick piers running down the centre of the room supporting the beams of the floor above. Spiral stairs lead to the first floor.

This floor (Fig. 15.) of seven bays has step-splayed windows facing south, with the end three stone blocked, and the first one having a taking-in door. On the northern side similar windows in bays three to seven are all blocked. Near the head of the stairs are a pair of stone cupboards lined in steel. Beams between each bay support the floor above, which can be reached up the spiral stairs. The second floor (Fig. 16.) is of similar plan to that below. In the northern wall is a single wide window at bay five, and one of standard size at bay seven. A flight of wooden stairs adjacent to the west wall leads to the third floor. This floor (Fig. 17, room 48) is open to its rafters. It follows the same seven bay plan and has a taking in door inserted over an earlier triple mullioned window in the eastern wall. The arrangement of windows facing south is similar to that on the lower floors. A series of mortices between bays 1-4 may imply altered tie beam positions. The floor is of wood. The roof (see Fig. 18) is supported on six trusses. Each has a tie-beam set into the side walls supporting principal rafters which meet at the apex

without a ridge piece. A collar provides additional support for the two purlins to either side. The principal rafters sit upon wall plates. Original cladding was of stone.

- 5.4 Building C, south of B, and west of A, possibly a combination of domestic and offices. Constructed of stone and originally wholly detached the building has a small basement, ground and first floors. Its gross dimensions are 9m by 6m.

East facing elevation (Fig. 35). The ground floor has a blocked three part mullioned window to the south, and a blocked two part window to the north. In the centre is a stone blocked door with two steps up. At first floor height two three part mullioned windows flank a central two part one. All are open but have lost their glazing. Iron strapping has been used to repair the windows. The roof, of stone, survives. North facing elevation. Part rendered, generally plain, gable all. Pitch of the roof is remarkably shallow. West facing elevation. Rough coursed stone. Interrupted to the north by a stone blocked door and window. South facing elevation. Partly obscured by recent wooden buttresses designed to prevent further movement of the bowing wall. The elevation is part rendered and generally featureless.

Basement entered by a flight of stone steps from the west. The single room has a series of recessed stone keeping places, and a central cold slab. The floor is flagged, and the walls whitewashed.

Ground floor (Fig. 13). Two rooms divided by centrally placed stairs. Two doors, each opening to a separate room. To the north, room 6 has a fireplace and the remains of a side cupboard, with two beams supporting the upper floor. It is lit by windows to the east and west. Room 7, to the south, again has a fireplace and side cupboard, with a single window to the east. Access to the upper floor is by wooden stairs from this room.

First floor (Fig. 15). Room 34 to the north has a blocked fireplace and a three part window to the east. Room 35 to the south has the same. The stairs are lit by a single two part east facing window. The roof (Fig. 20) is supported on trusses comprising soft-wood tie-beams with principal rafters and collar. The tie beams rest on wall plates, with the principal rafters supporting two morticed purlins to either side. There is a small ridge piece at the apex.

5.5

Building D, to the south of A, to which it is attached, is constructed of stone with an inner facing of brick. It is of three floors and has a shuttered concrete floor. Gross dimensions are 16m by 18m.

Elevation facing west (5106/7) has the later building E forward, and obscuring part of its southern half. At ground floor level the water intake mechanism (5108/15) for the turbine can be seen forward of the wall, which has a regular arrangement of four segmental arched windows in it. The northern one is breezeblock blocked, as is the one next to it which retains twelve light framing. The two to the south are obscured. At first floor level the windows are deeper and have an arrangement of nine lights, as they do on the second floor. Stone brackets above would have supported a gutter, now removed. The roof is part clad in slate. North facing elevation (0/854) is obscured to the west by the position of building A. The original arrangement is of three floors with a three pitch roof. Three of the six bays of the building are visible in this elevation. At ground floor level are two segmental arched nine light windows, both brick blocked, with a flat headed, formerly arch headed, door to the west. The arrangement of windows in the two bays is repeated on the first and second floors. In the third bay on both floors are deep taking in doors, with a hoist associated with the upper one. East facing elevation, visible in part in 5107/3, and from a distance in 9273/15, has a very regular arrangement of four nine light arched windows to the first and second floors. At ground floor level there are two similar windows to the north, with a later door south, with a later window, and an original blocked window part obscured by shed H. Little can be seen of the southern elevation which is built against the earlier two storey buildings F and G. The tops of the three gables are just visible in 5108/7. Four windows are evident at second floor level.

Ground floor (Fig. 13). The original almost square space is later divided into two rooms, 8 and 9. Room 8 houses the later turbine (9270/3) In the northern wall (9270/7) a brick blocked semi-circular opening may have been the original water wheel recess associated with building A. Blocked wall box and window can be seen further east in this wall (9270/12) The eastern wall (9270/14) is a later insertion of thin coursed stone, with one blocked door, and one door to the south joining with room 9. The southern wall has been part rebuilt in brick. The western wall has four blocked windows (9270/3, 9270/5). The turbine, which is constructed of riveted sections of iron, takes water from the west, which drives through the transposed chamber, emerges to the south, and is channelled away. The floor of the room is of concrete, the ceiling is concrete supported on iron beams. Room 9, twice the area of 8, has a row of three central supporting cast iron columns with bolting heads, each supporting an iron beam (9265/2). The eastern wall is an original part

of the building with two nine light windows and a flat headed door. Beyond the windows are blocked. The northern wall has a regular arrangement of two windows and a door, and a straight joint can be seen, marking the corner of building A. The southern wall is the reused northern wall of building G, and displays a number of blocked wall boxes along its length.

First floor (Fig. 15) can only be reached through building A at second floor level, and then down a later flight of stairs. The floor, room 36, is open and uninterrupted. Two rows of cast iron columns can be seen (9268/3) supporting iron beams above. In the northern wall (9268/9) can be see a blocked window and low arched opening with blocked wall box above. Interestingly, a roof scar visible in this elevation may have belonged to the early wheelhouse. To the east later stairs encased with brick cause the two windows in this area to be blocked. The eastern elevation is original to the building D phase, and has four similar sized blocked windows. To the south, the wall is shared with the earlier building G which has a number of blocked wall boxes along its length. The western wall originally had four windows. The two to the north have been blocked, whilst the two to the south have been altered to provide openings to the later building E. Stairs lead to the second floor.

Second floor (Fig. 16). An open area, exposed to the rafters, with the roof removed, 9267/13. The northern wall (9267/14) is mostly composed of the southern gable of building A. The pitch of the earlier roof line in stone contrasts with the brick additions of the later roofs. Within the early gable can be seen (possibly) two stone blocked two part mullioned windows, with an arch headed window above. The door to the west is clearly later. Two small brick built skips or chutes are placed in the centre of the wall, to the east of which is the brick enclosed stair down. A taking in door between has a hoist above (9297/16). The eastern and western walls are undistinguished., both having a regular arrangement of four segmental arched windows. The southern wall (9267/13) has five segmental arched windows. In the western bay the stone of the earlier water tower contrasts with the brick of the later building. The tower supports an iron tank (9268/2). The roof (9267/18) is of three pitches supported two rows of three columns at the valleys. All trusses are identical (Fig. 21) comprising Vitruvian style king posts and struts supporting principal rafters with single purlins to each side.

5.6 Building E is an annex to D to the east. It is built of brick and has two floors, although the ground floor cannot be accessed due to later blockings. It is eccentrically shaped, with a long side of 8m, a short side of 5m, and a width of 9m. At first floor level room 37 can be entered from room 36 via an

Westwood Mill, Linthwaite
Section 1, looking east

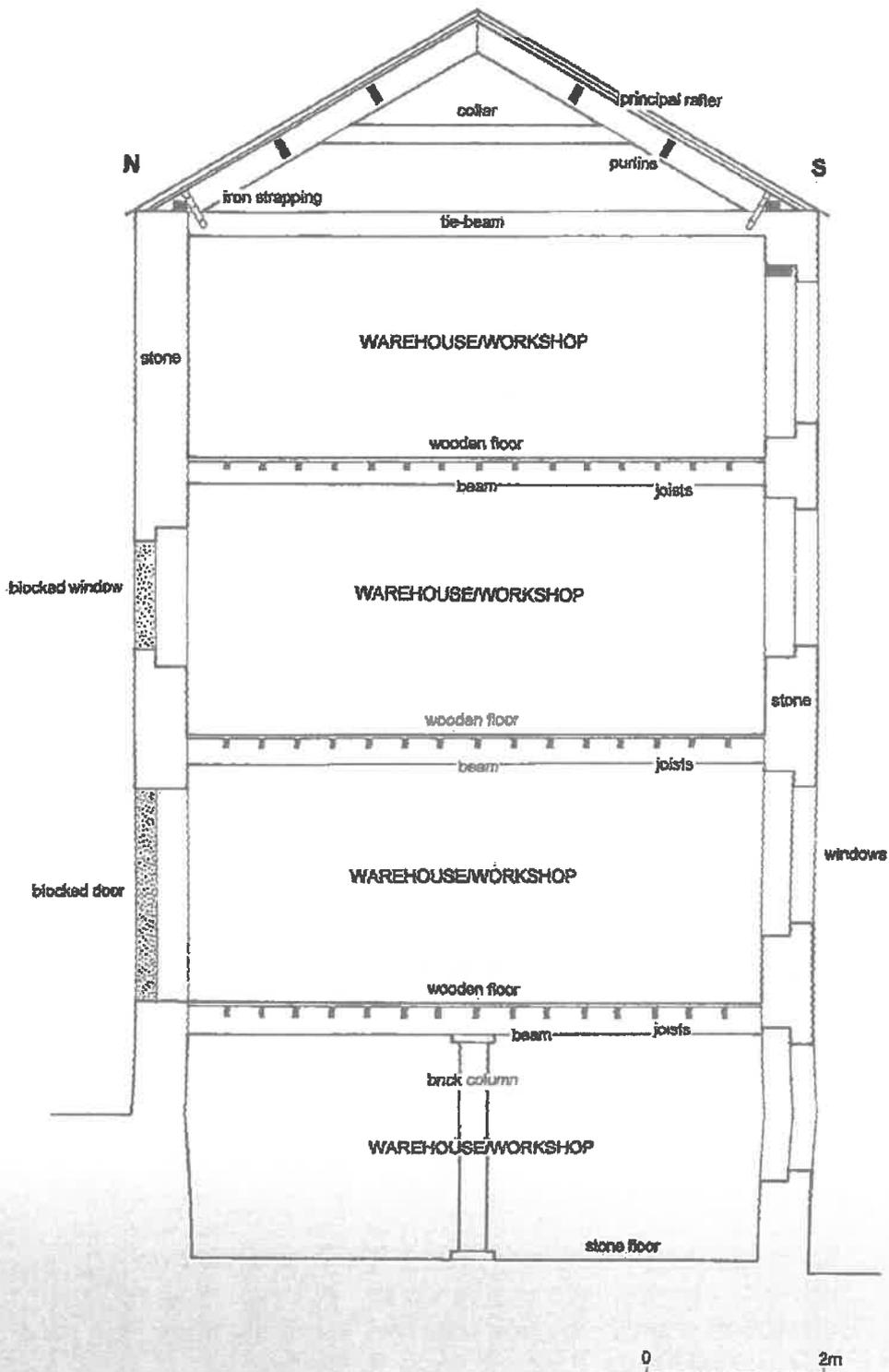


Fig. 18 Section 1

Westwood Mill, Linthwaite
 Section 2, looking south

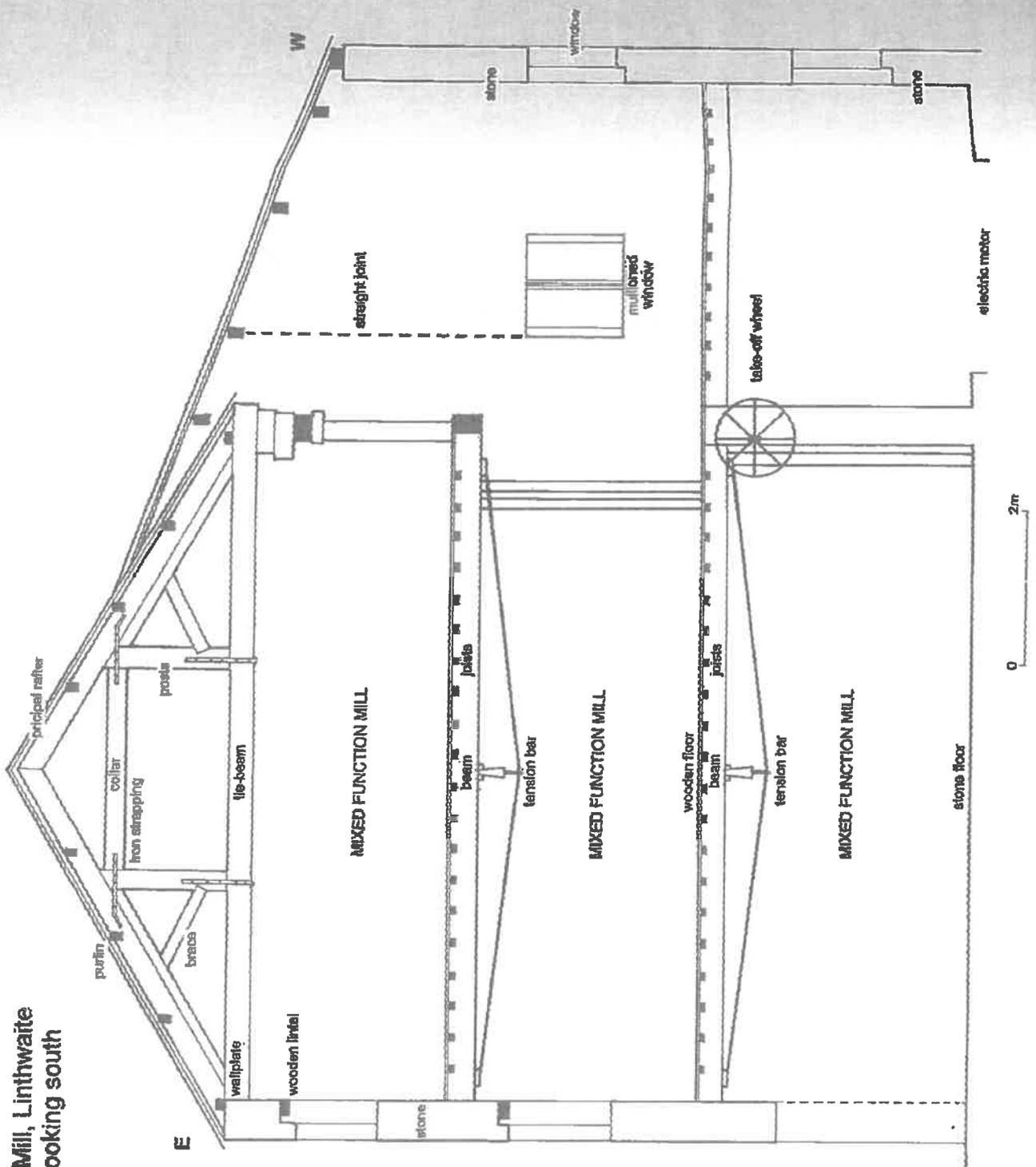


Fig. 19 Section 2

Westwood Mill, Linthwaite Section 3, looking south

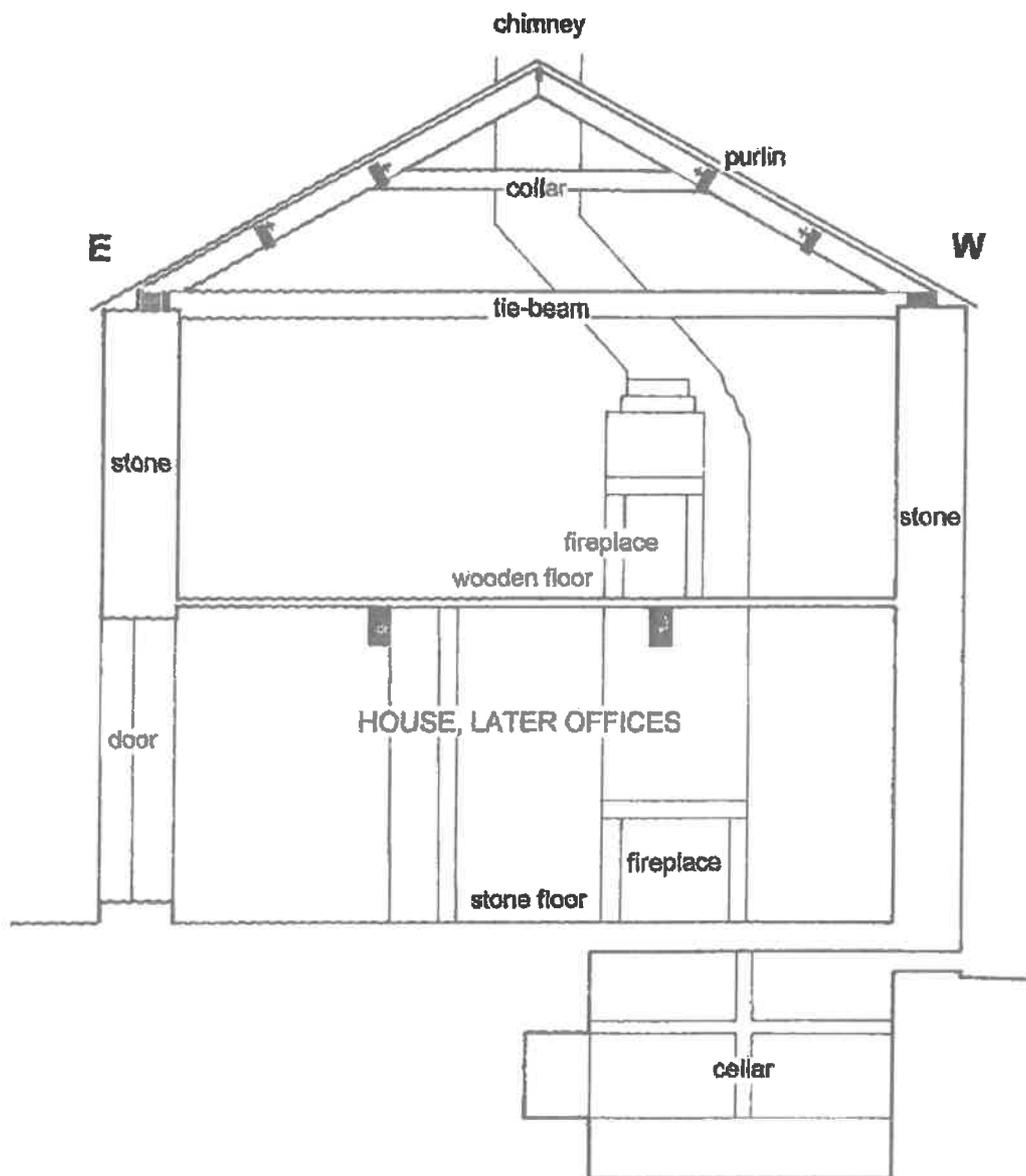


Fig. 20 Section 3

0 2m

Westwood Mill, Linthwaite
Section 4, looking south

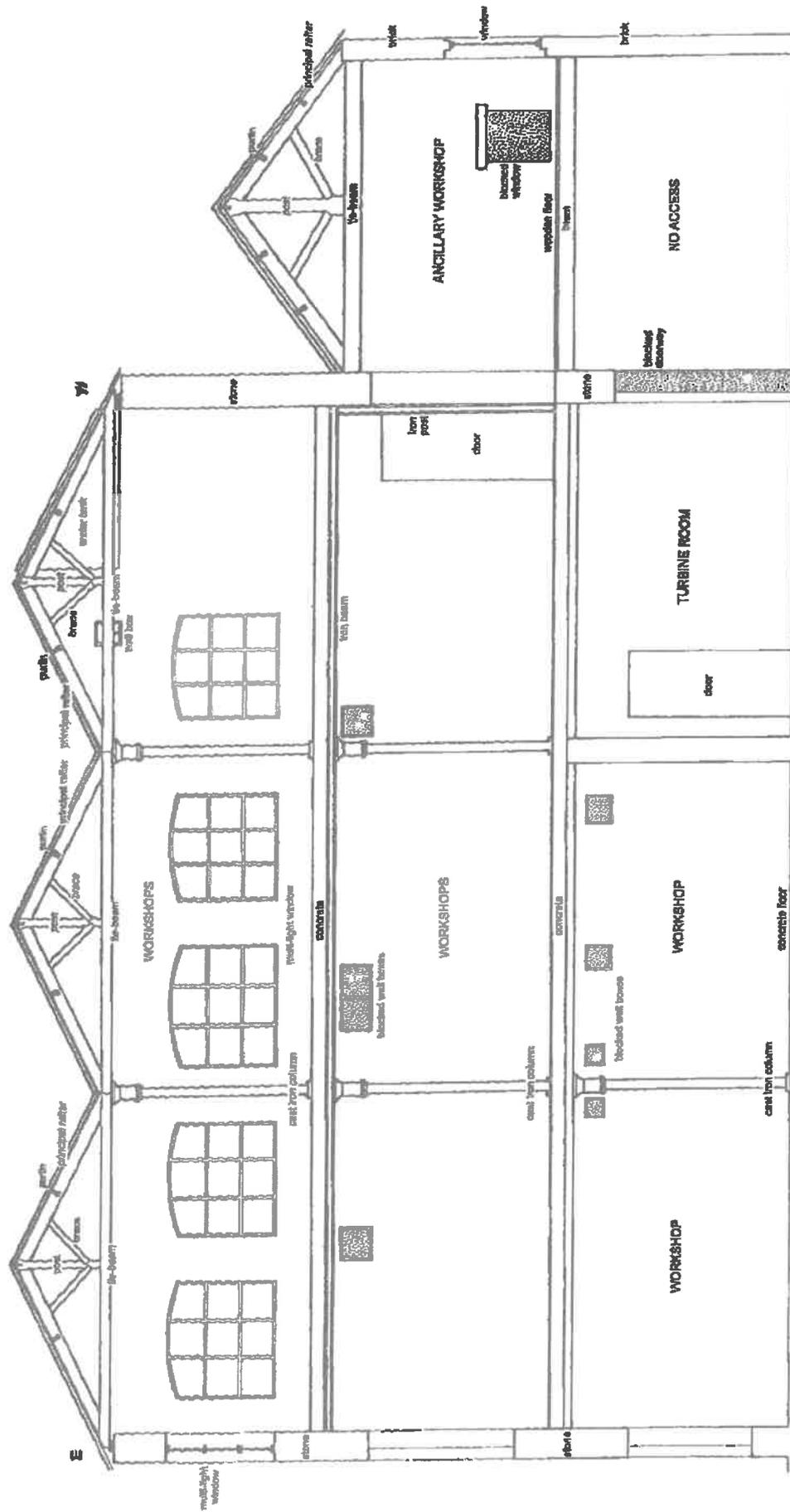


Fig. 21 Section 4

Westwood Mill, Linthwaite
 Section 5, looking south

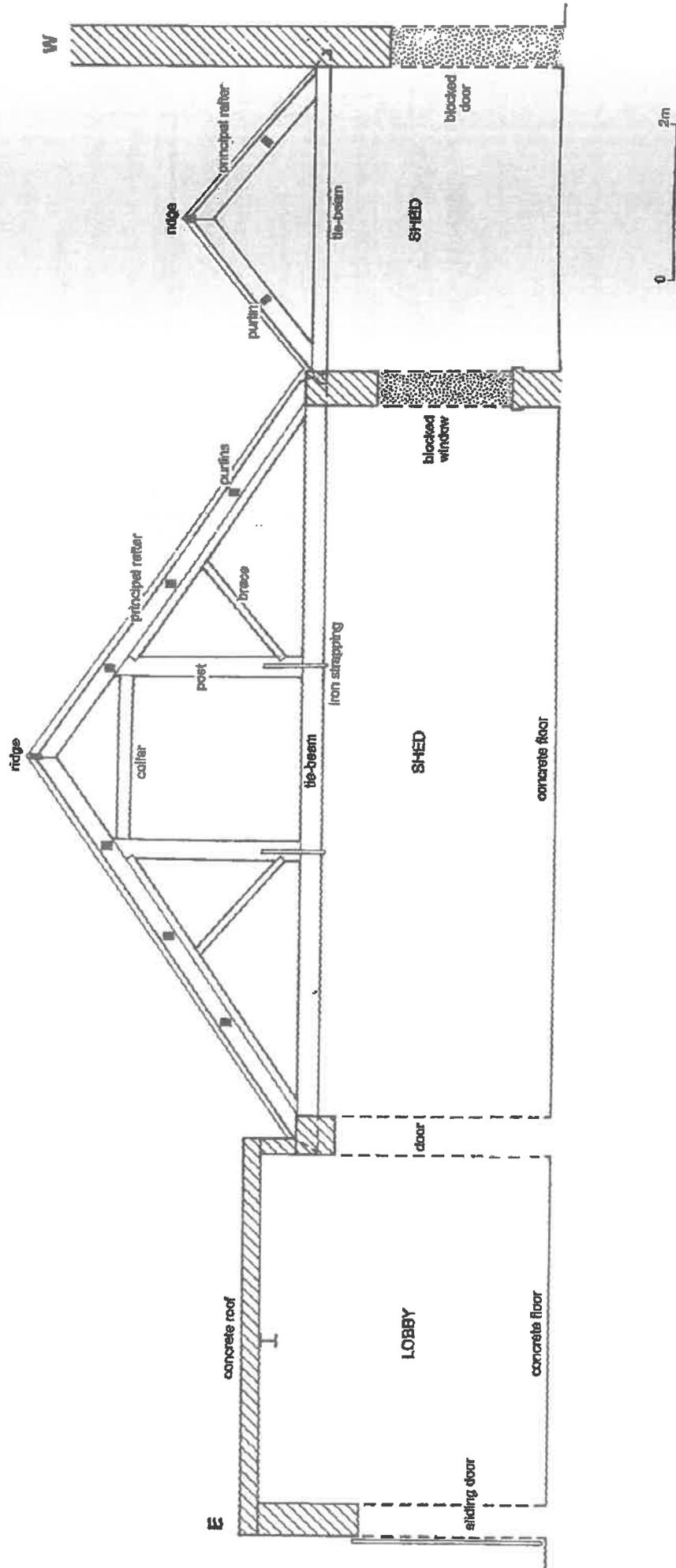
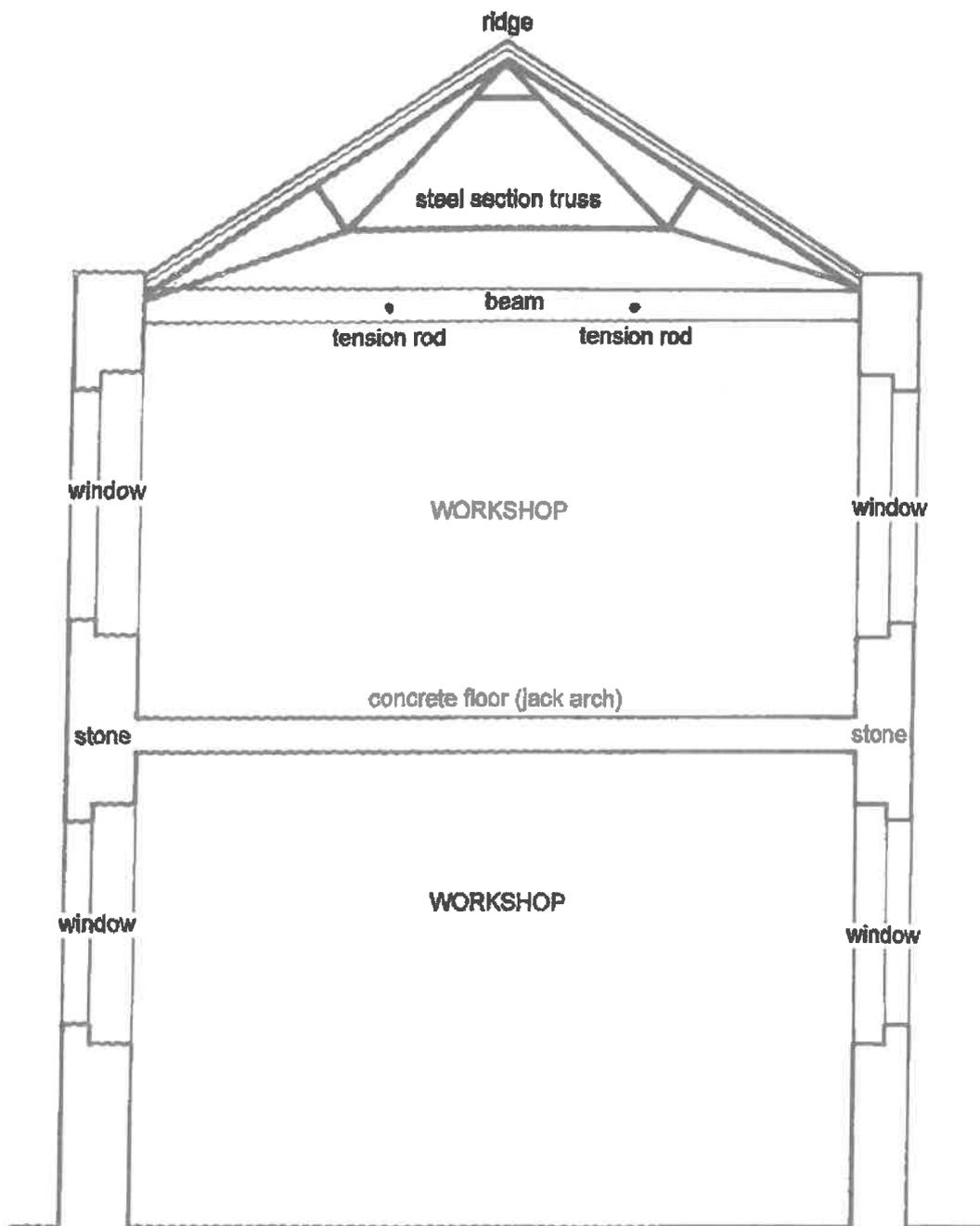


Fig. 22 Section 5

Westwood Mill, Linthwaite Section 6



0 2m

Fig. 23 Section 6

Westwood Mill, Linthwaite
Section 7, looking west

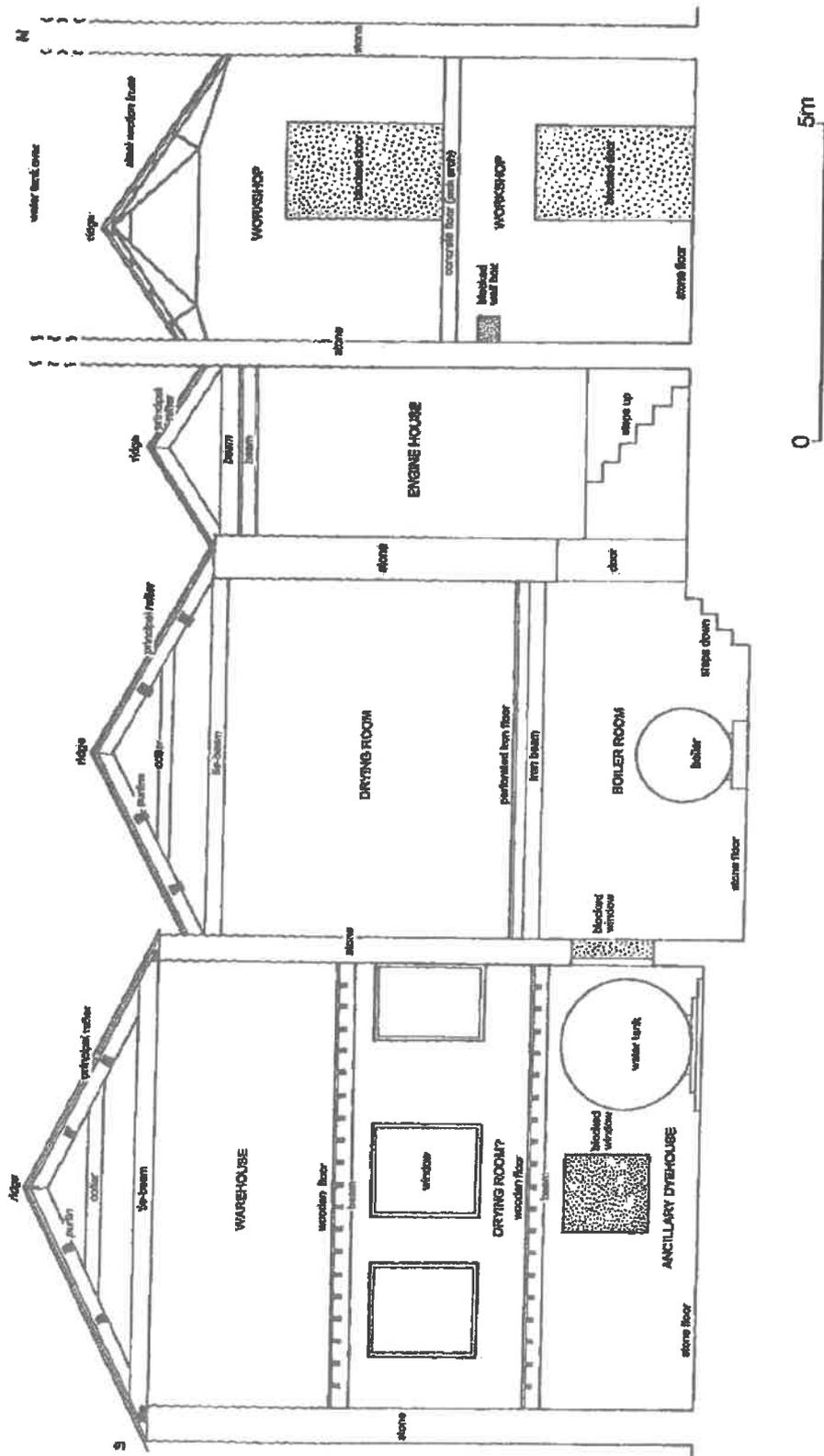


Fig. 24 Section 7

Westwood Mill, Linthwaite
Section 8, looking west

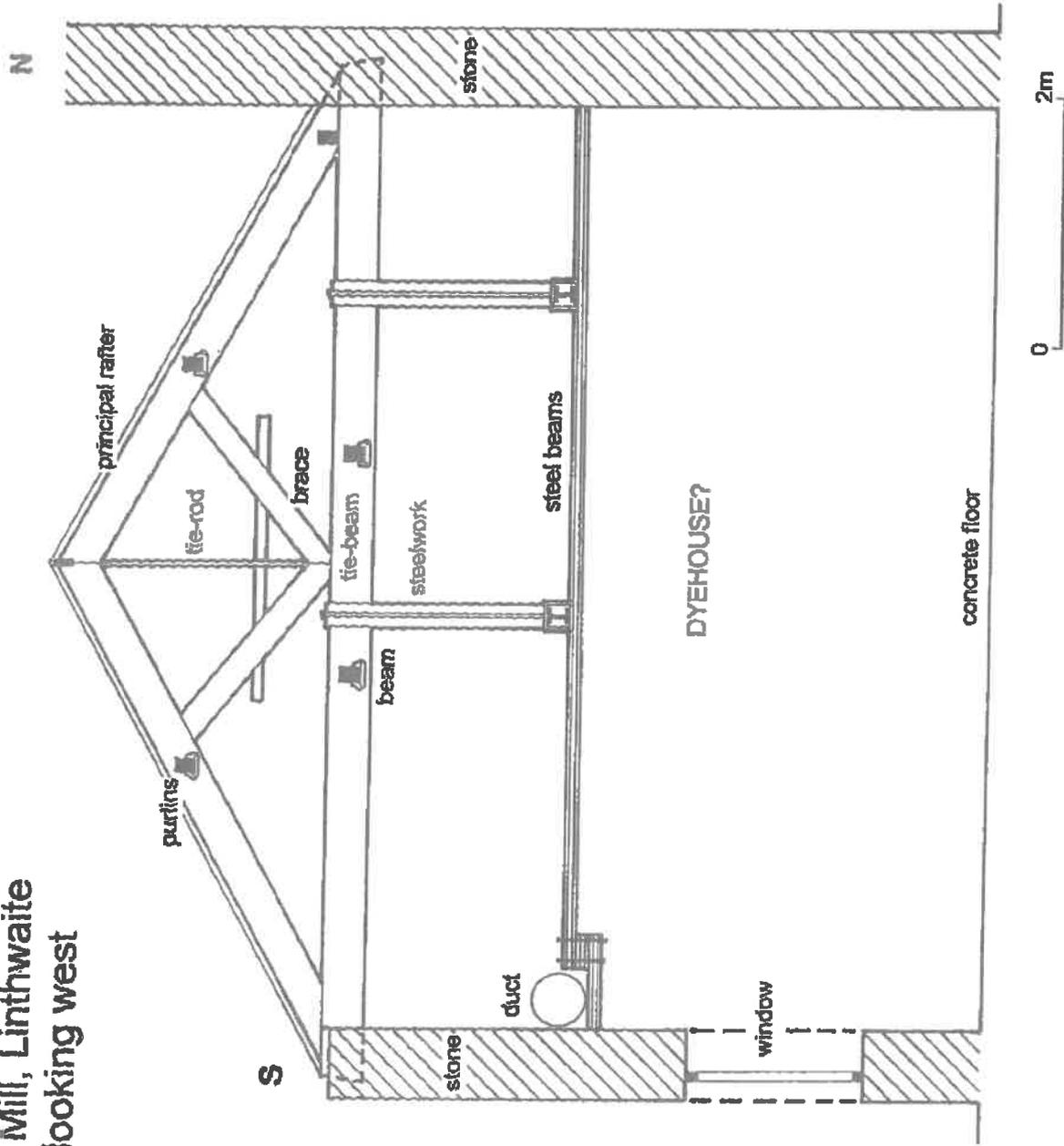


Fig. 25 Section 8

Westwood Mill, Linthwaite
Section 9, looking west

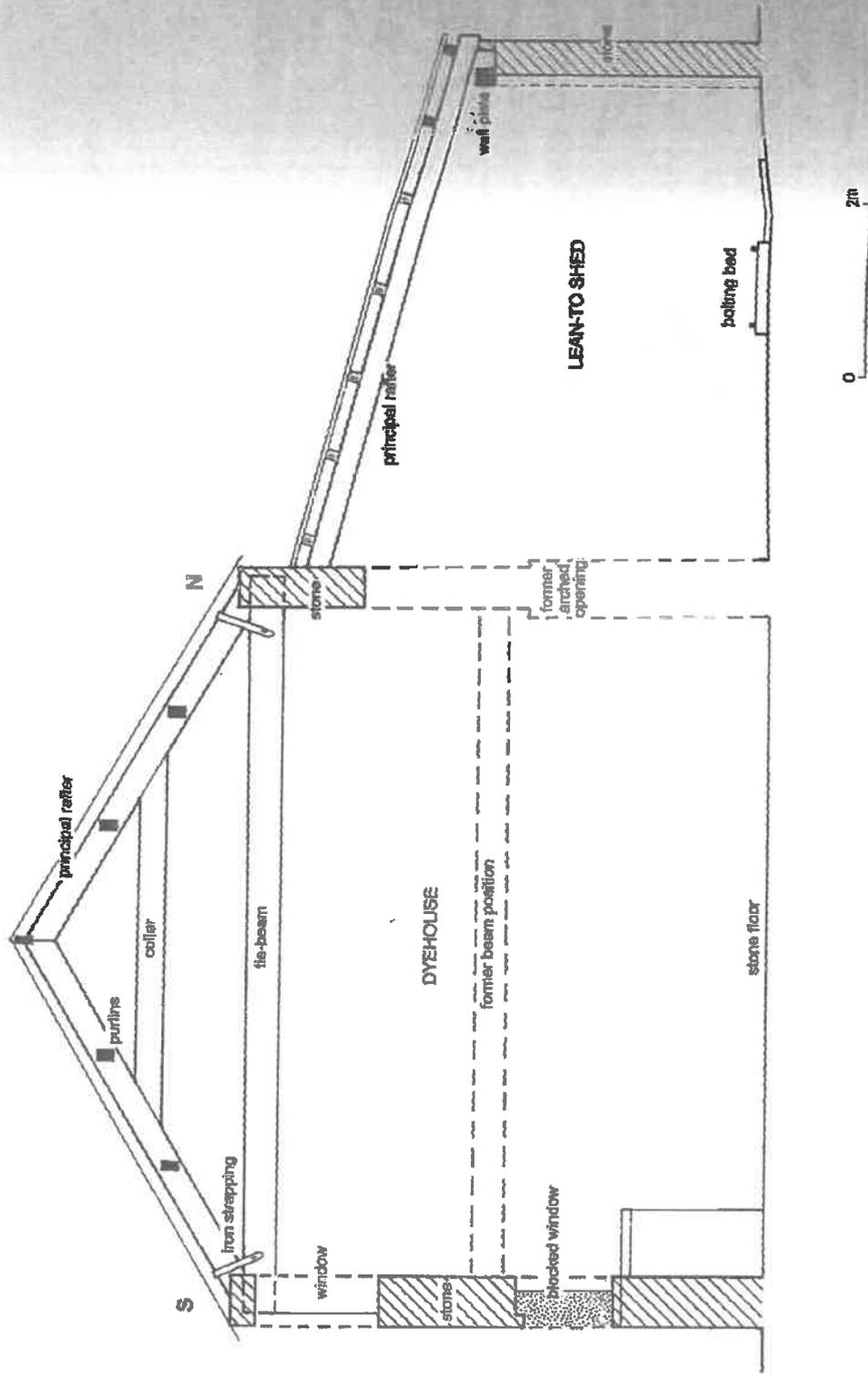


Fig. 26 Section 9

Westwood Mill, Linthwaite
Section 10, looking south

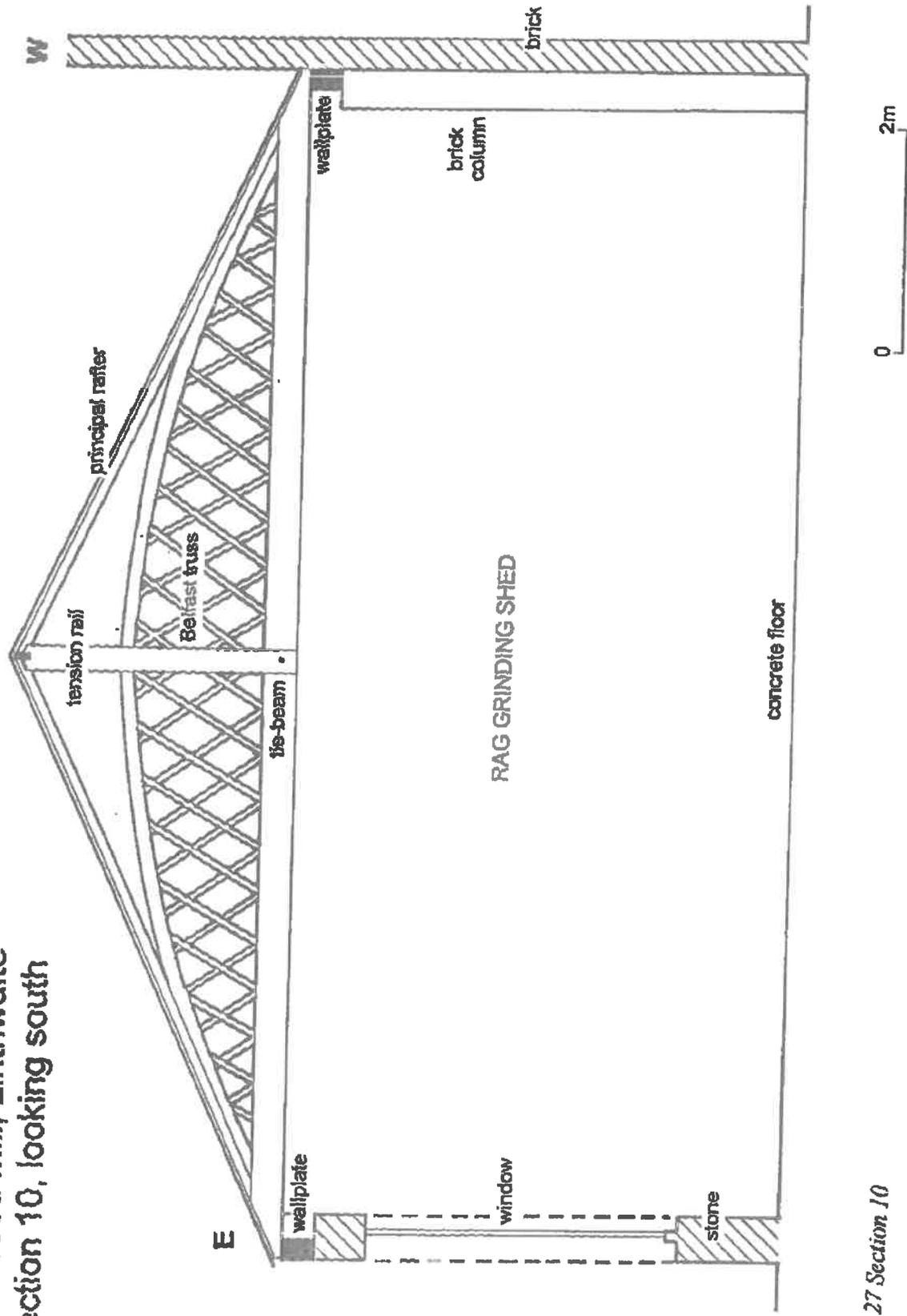


Fig. 27 Section 10

Westwood Mill, Linthwaite
Section 11, looking north

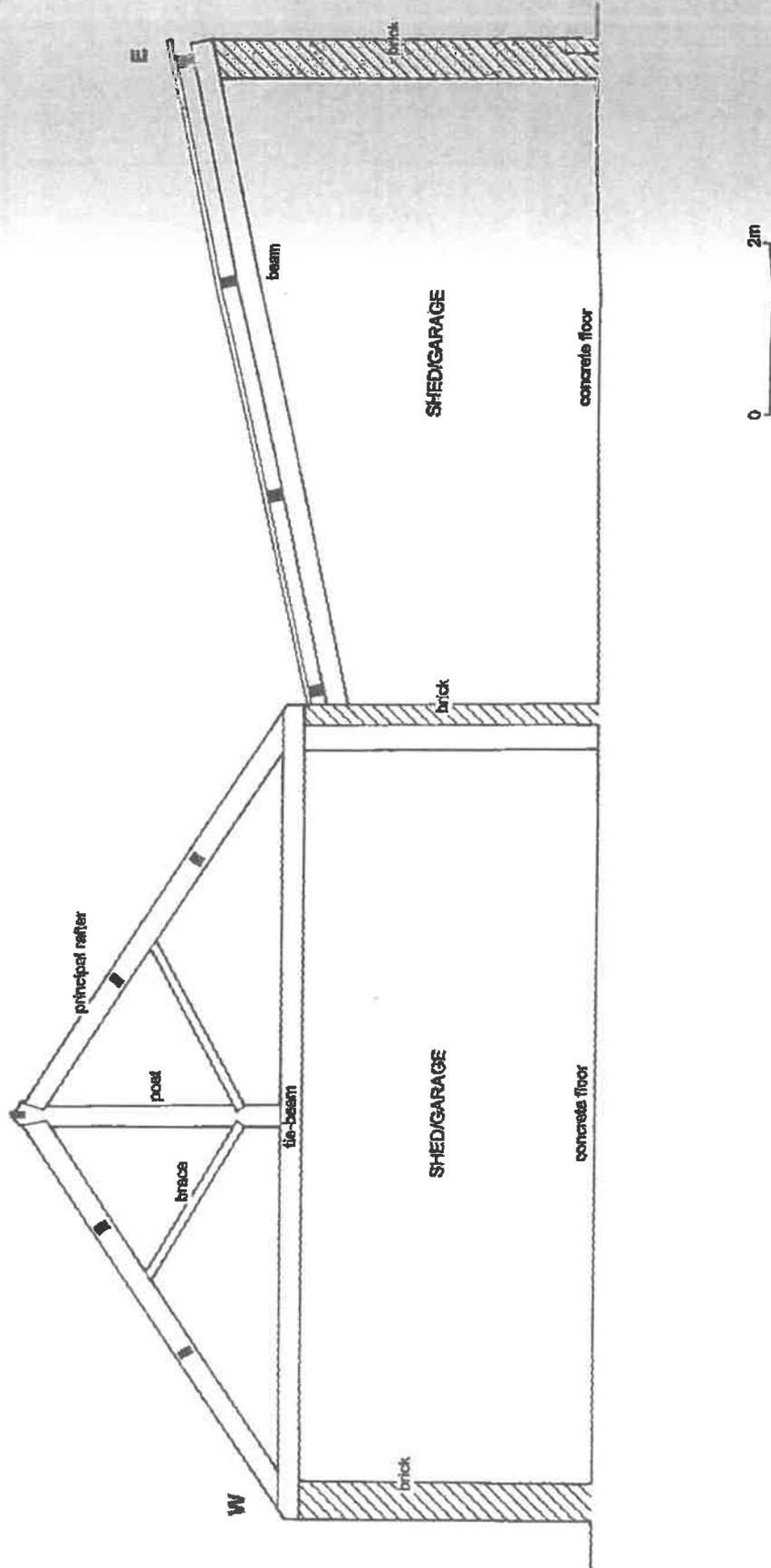


Fig. 28 Section 11

arched door, formerly a window (9268/11). In the southern wall is a single low level brick blocked window. In the western wall is a brick blocked door, and a (possibly) blocked four light window. The northern wall has no features. The roof is supported on a single king post truss with side struts, each principal rafter supporting a single purlin. The floor is of wood.

- 5.7 Building F. Small stone building of one cell (room 11) earlier than building D to the north, and later than building G to the east. Dimensions approximately 4m wide by 6m long. The building has two floors. All external elevations are obscured by other buildings.

Ground floor, room 11. South wall has a brick blocked door (9269/1) and a blocked wall box. Its eastern wall joins with building G and has a central connecting door. In the western wall (9271/14) is a brick blocked window, and further brick blocking to the south. The northern wall which is of later brick, has a sliding door connection with building D, and a re-used cast-iron column (9271/16) supporting an iron beam. The floor is of concrete.

First floor, room 38. Extends to the east into building G. In southern wall, blocked wall box, with opposed box in the northern wall passing to building D (9268/16). At height, at the western end of the room, a riveted iron water tank is supported on beams. Light is provided by a single window in the western wall.

- 5.8 Building G, of four bays. Building adjacent to and slightly earlier than building F. Dimensions approximately 5m wide by 10m long. Of two floors divided by jack-arching.

Ground floor, room 12. The southern wall has three windows, that in the fourth bay (from the east) is blocked. In bay two is a door (9269/16). The northern wall has a series of blocked all boxes (9269/13). The door leading to building F can be seen in the western wall. In the eastern wall are two blocked windows (9269/14).

First floor, room 38. In the southern wall is a taking-in door at bay two, with hoist over, an altered window at bay three, and a second door converted to window in the fourth bay. The eastern wall has a single central window, whilst the northern wall (9268/13) has a number of blocked openings, including two high wall boxes.

- 5.9 Building H is a small shed attached to building G to the west, and the later shed I to the east. The shed has gross dimensions of 4m wide by 14 m long. The structure is of four bays and comprises brick walls joining the east walls

of buildings D and G. There is a narrow (possibly later) door in the north wall, a single blocked window in the east wall, and a blocked door in the south wall (5108/7). The roof is supported on three simple soft-wood trusses comprising tie-beam and principal rafters, with a fully morticed purlin to either side. Original cladding had been removed.

- 5.10 Building I is a larger shed to the east of H, to which it is attached. The building is of stone, of single storey, and eight bays. At the northern end bay eight has been converted to a small suite of offices, rooms 15, 16, and 17. A brick wall has been inserted. Room 15 (5105/16) has plastered walls, a ceiling and skirting boards. There is a breezeblocked blocked window in the western wall, and a brick blocked window in the northern wall. To the east, room 16 forms a small entrance lobby (5105/14) with multi-panelled door, and soft-wood panelling to either side. An inner door leading to rooms 15 and 17 has a payment window and wooden sill within it. Room 17, east (5105/18) has two brick blocked windows in its north and east walls, and two small windows in the south wall.

The main body of the shed is open to its rafters and formerly had a concrete floor. The eastern wall (5109/17) from the north has a blocked window retaining a four light wooden frame, and a brick blocked door with frame and light above. To the south is the straight joint with shed H, and the brick blocked window of that building. The southern wall (5109/15) has two breezeblock blocked windows and a brick blocked door. The east wall, from the south has blocked windows in each bay, however, at bay five an opening has been made and a brick lobby (room 18) with flat concrete roof inserted (5098/3). Opposed blocked windows are situated in bays six and seven. The roof is supported on seven soft-wood trusses (5109/18). Long un-joined tie-beams support queen posts with collar and side braces. Half rafters give support to the principal rafters join at the apex with a small ridge piece. There are three purlins to either side. Later iron strapping reinforces the joint between the tie-beam and the posts.

- 5.11 Building J, the engine house, had original dimensions of 3m wide by 10m long. A small single storey lean-to to the north-west increases the width at that point to nearly 5m. The building is of stone and rises two stories in height. Looking west (5100/3) a breezeblock blocked window can be seen in the end wall. This had been reduced from a deeper window as brick blocking was noted below the later sill. To the north a pair of steel beams support the upper wall over the later lean-to. To the east (5100/5) a large opening in the wall consists of an upper arch-headed, multi-pane window with entry door below. The southern wall was generally featureless. Details in the northern wall (5100/7) include former electrical equipment over a series of wall boxes

The roof (5100/6) was supported on three trusses of very similar design with beams supporting principal rafters. A series of steel beams below the trusses supported a movable hoist.

- 5.12 Building K, stone built boiler room south of the engine house. Width 6m, length 8m. Of three bays, constructed of stone, but later brick to the east. On the ground floor 5100/11 shows the east wall with two blocked windows. The south wall has a blocked window near its centre. The west wall has no features. The north wall has a straight joint with the earlier engine-house and the entry door with stairs down. Adjacent to the east wall is a cast iron column giving support to one of four iron beams supporting a perforated iron drying floor above. In the centre of the room is an iron boiler.

The first floor has three blocked windows on the southern side, and a three part mullioned window facing east. The roof is supported on three trusses comprising tie-beam, collar, and principal rafters.

- 5.13 Building L. Shell structure in brick and stone protecting a large tank, either for water or fuel oil (5109/13). No roof was apparent.
- 5.14 Building M, ancillary dye-room of four bays extent. The building is of stone, has three floors, and appears to be earlier than the boiler-room to the north. Its dimensions are 7m wide by 11m long. The dominant feature within the area of the ground floor is the large iron water tank. This lies adjacent to the north wall. The west wall (5101/7) has a single brick blocked window. In the east wall (5101/8) are two breezeblock blocked windows and a door. The south wall, shared with building N has blocked windows to the west (5101/10), and to the east (5101/11). A flight of later wooden stairs rise to the first floor, under which is a stone blocked arched opening. The first floor was supported on three beams.

The first floor has two step-splayed windows to the east with a taking-in door adjacent, a single blocked window to the south, and three windows to the west. In the northern wall is a single blocked opening, with a wall box to the east. This is connected to line shafting which extends into building N. Access to the second floor was not possible, although an external photograph, 9269/18 shows a similar arrangement of windows and door to that on the first floor. The roof (Fig. 24) was supported on three trusses comprising a tie-beam with wide collar and principal rafters with two purlins to each side.

- 5.15 Building N, original dye-house. A four bay stone building of two storeys. The building butts against the earlier building M to the north, and is earlier than building O to east. Its dimensions are 7m wide by 11m long. At ground

floor level the northern wall is shared with building M (5098/18), and has a double mullioned window to the west, and a pair of blocked windows to the east. The eastern wall (5099/8) has a segmental arched opening with later alteration in brick, with a later part blocked doorway to the south. Within the western elevation is a blocked three part mullioned window and door? To the north. The southern wall (5099/12) has a later inserted door to the west, and a blocked double mullioned window to the east. The floor is of concrete.

The first floor has a wide mullioned window in the west wall, with single blocked windows in the north and east walls, with no openings, but two venting pipes in the south wall. The roof is supported on three trusses comprising tie-beams with side braces and a central tie-rod. The principal rafters each support single bracketed purlins. Further beams are bracketed into the tie-beam. Suspended from the tie-beam by steel sections was a sub structure of steel beams tied into either wall.

- 5.16 Building O, secondary dye-house. A four bay stone building of two storeys in height. The building butts against the earlier dye-house, N, with building Q adjoining to the north. On the ground floor, the southern wall has blocked windows in each bay with the base of a flight of stairs between the first and second bays (from the east, 5109/6). To the east the wall has been knocked back and an extension built in brick encroaching into building P. The wall to the west, the eastern wall of N, has a semi blocked doorway to the north of which is a later brick wall (5109/9) The northern wall originally must have had within it two large arched openings through two floors (5099/7), the western one of which is now blocked (5099/6). It is likely that the arches are later than the original building, which at first floor level almost looks domestic. On close inspection the northern wall has probably been rebuilt to form the arches, the first 2m above ground being original wall.

At first floor level the southern wall has step-splayed windows in each bay. Within the western wall is a blocked window and small wall box to the north. The northern wall is featureless. A blocked fireplace and window can be seen in the eastern wall, with a wall box to the north. The roof of this building (5098/17) is supported on three trusses (Fig. 26). Each has a tie-beam with principal rafters and collar. There are two purlins to each side, and a ridge piece at the apex. Iron strapping reinforces the join at either side between the tie-beam and principal rafter.

- 5.17 Building P, possible late rag grinding shed east of buildings O and Q, width 10m, length 14m. Construction is of stone but survival is poor (5098/7). The building was of a single storey, though tall. The outer east and south walls both had a regular arrangement of step-splayed windows. The northern wall

has a door opening towards the west. The roof is supported on four 'Belfast' style trusses, one between each bay (5098/9). Each truss (Fig. 27) had a tie-beam resting on wall plates with the latticed truss over supporting narrow principal rafters, and a central tension rail. The roof had collapsed, but the cladding seemed to have been planks with felt over. The floor was of concrete.

- 5.18 Building Q, a tall lean-to structure adjacent to building O. Construction is of brick with a solid floor. It represents an expansion of dying activities to the north (5099/3). The building is of four bays with outer north and west walls having regular piers along their length. There are three blocked openings in the north wall. The west wall may have originally been open between the piers (5099/5). The roof has sloping principal rafters between each bay which sits on a wall plate and supports seven purlins. Near the centre of the floor were the remains of a concrete bolting bed. The southern wall, the northern wall of building O, shows one arched opening to the east, and a further blocked example to the west (5099/3). Between the two may be a large stone blocked wall box.
- 5.19 Building R, room 28. Single storey brick shed to the east of building P (Fig. 14). The structure consists of six bays, m and is open to the east. The north and south walls are plain brick. The eastern wall incorporates piers between each bay, and has a later opening to building S. The west facing façade (5098/5) consists only of a series of brick piers which support the five roof trusses (Fig. 28). Each truss is of Vitruvian style with principal rafters each with two purlins. Original cladding removed. The floor is of concrete.
- 5.20 Building S, a later lean-to addition to shed R. the structure is of brick, rectangular, but with a trapezoidal northern end. It has seven bays with supporting trusses between, each supported at the east on brick piers. Each truss consists of a single beam with three purlins and a wall plate (5101/6). A corrugated sheet cladding survives in part. The floor is of concrete.

6. Indicators of use

- 6.1 Building A. Evidence for one, possibly two, water powered wheels providing direct transmitted power to belt take-off wheels to all floors. Later electrical power to drive vertical transmission. No direct indicator of use. General process areas for scribbling, fulling, and carding.
- 6.2 Building B. General work and warehousing areas, taking power from building A. Generous provision of taking-in doors, both as original features,

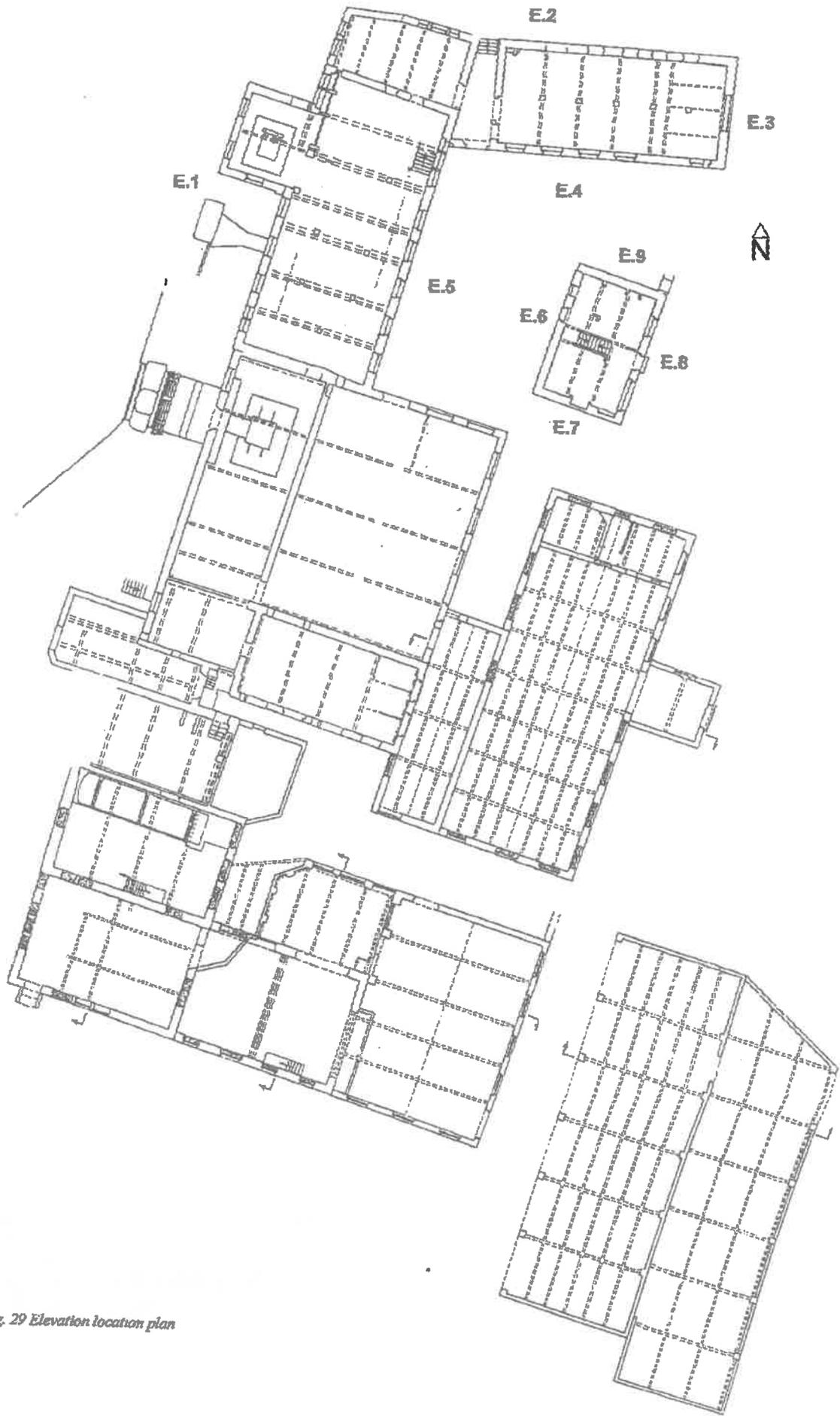


Fig. 29 Elevation location plan

Westwood Mill, Linthwaite
Elevation 1, facing west

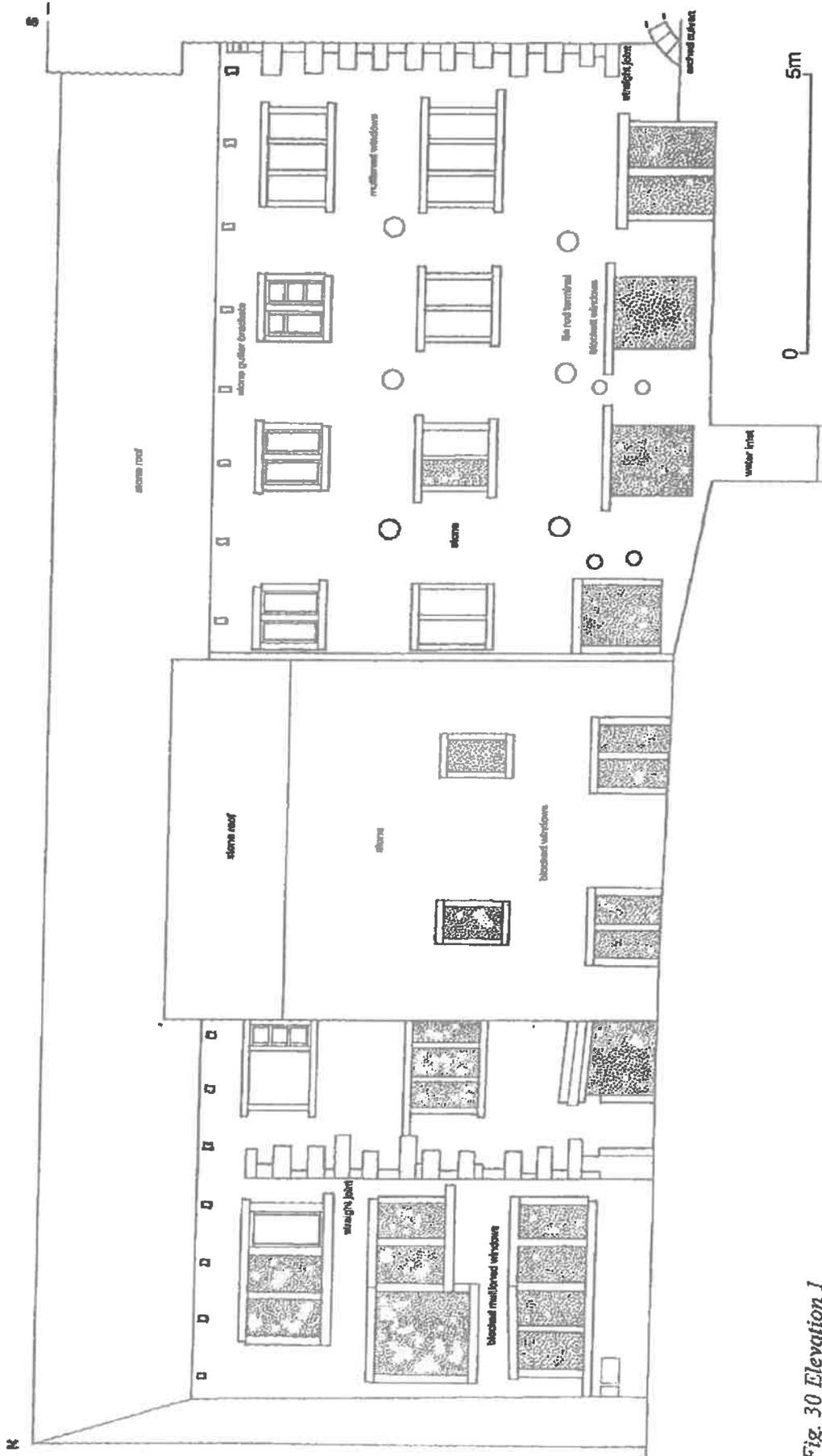


Fig. 30 Elevation 1

Westwood Mill, Linthwaite
Elevation 2, facing north

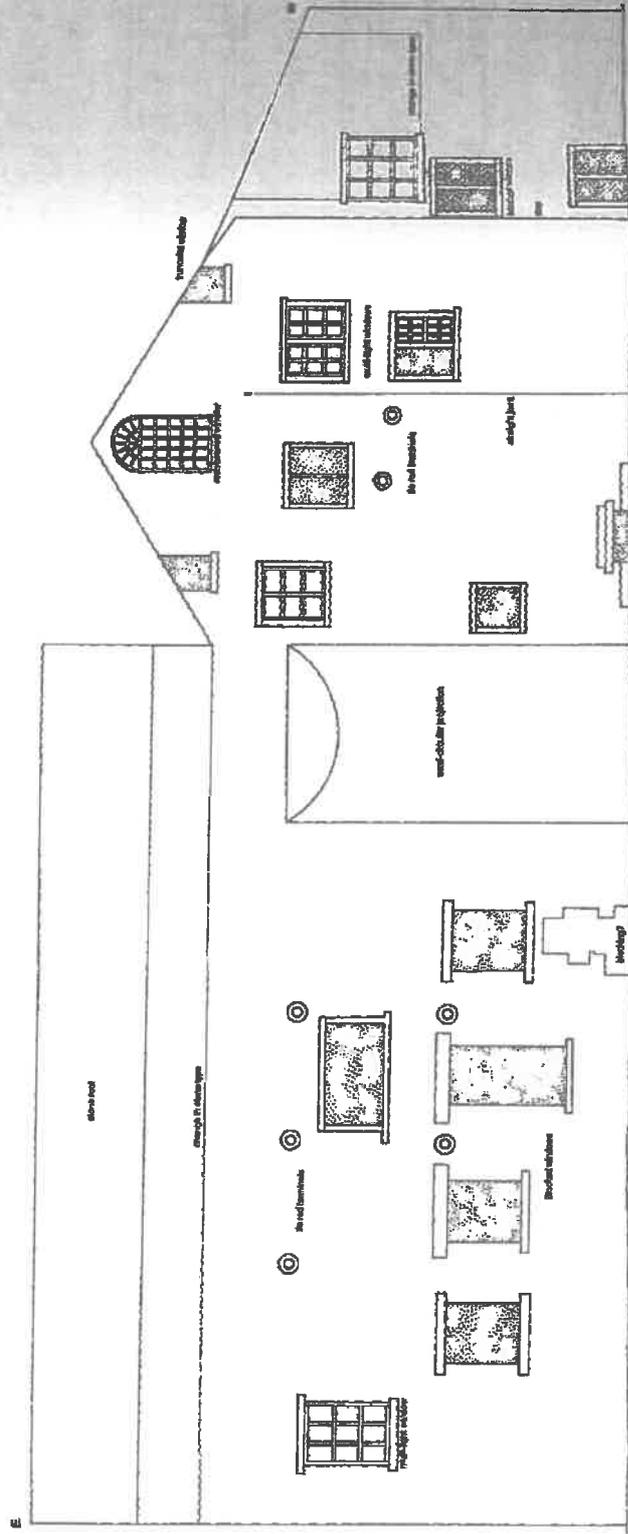


Fig. 31 Elevation 2

Westwood Mill, Linthwaite
Elevation 3, facing east

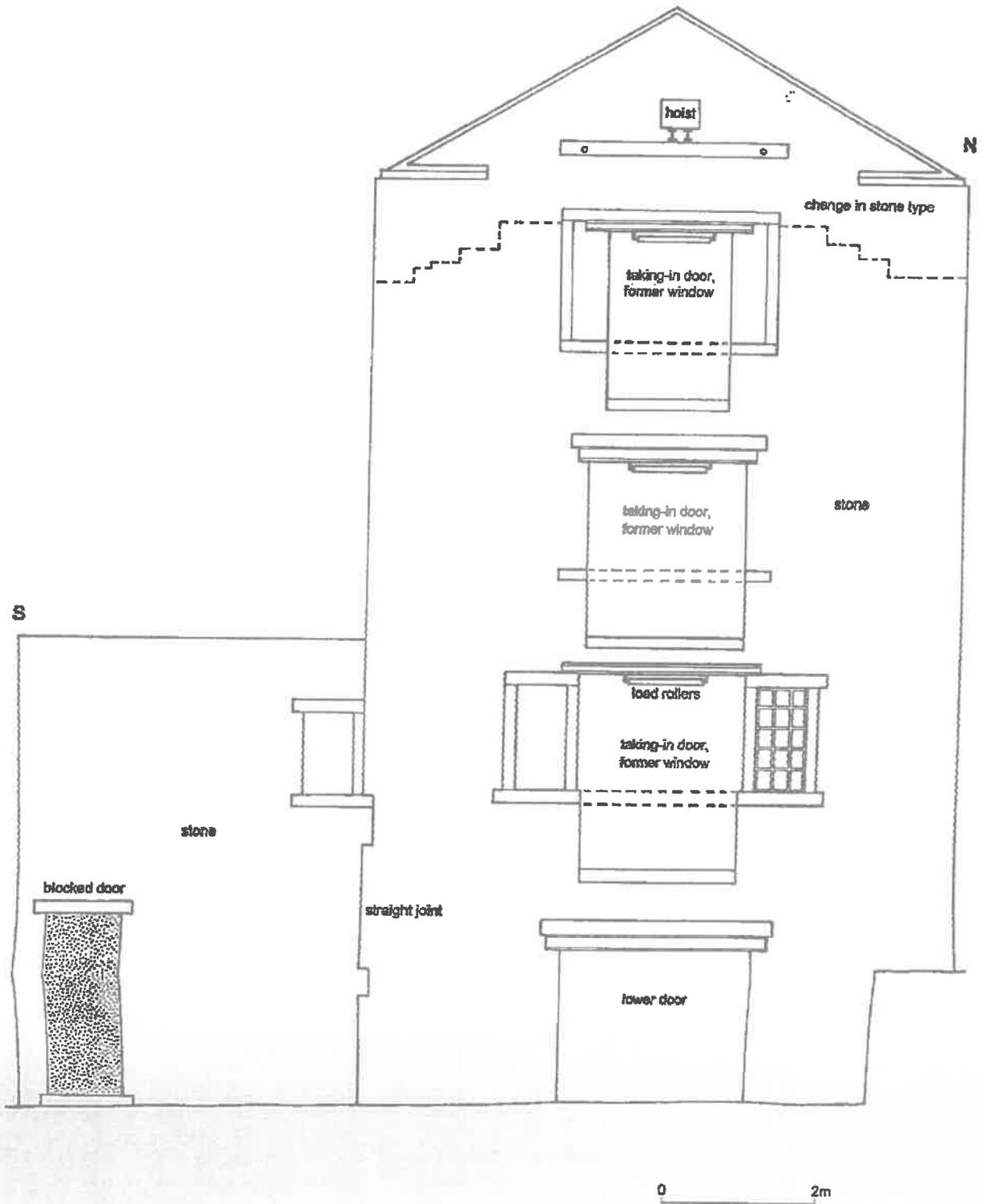


Fig. 32 Elevation 3

Westwood Mill, Linthwaite
Elevation 4, facing south

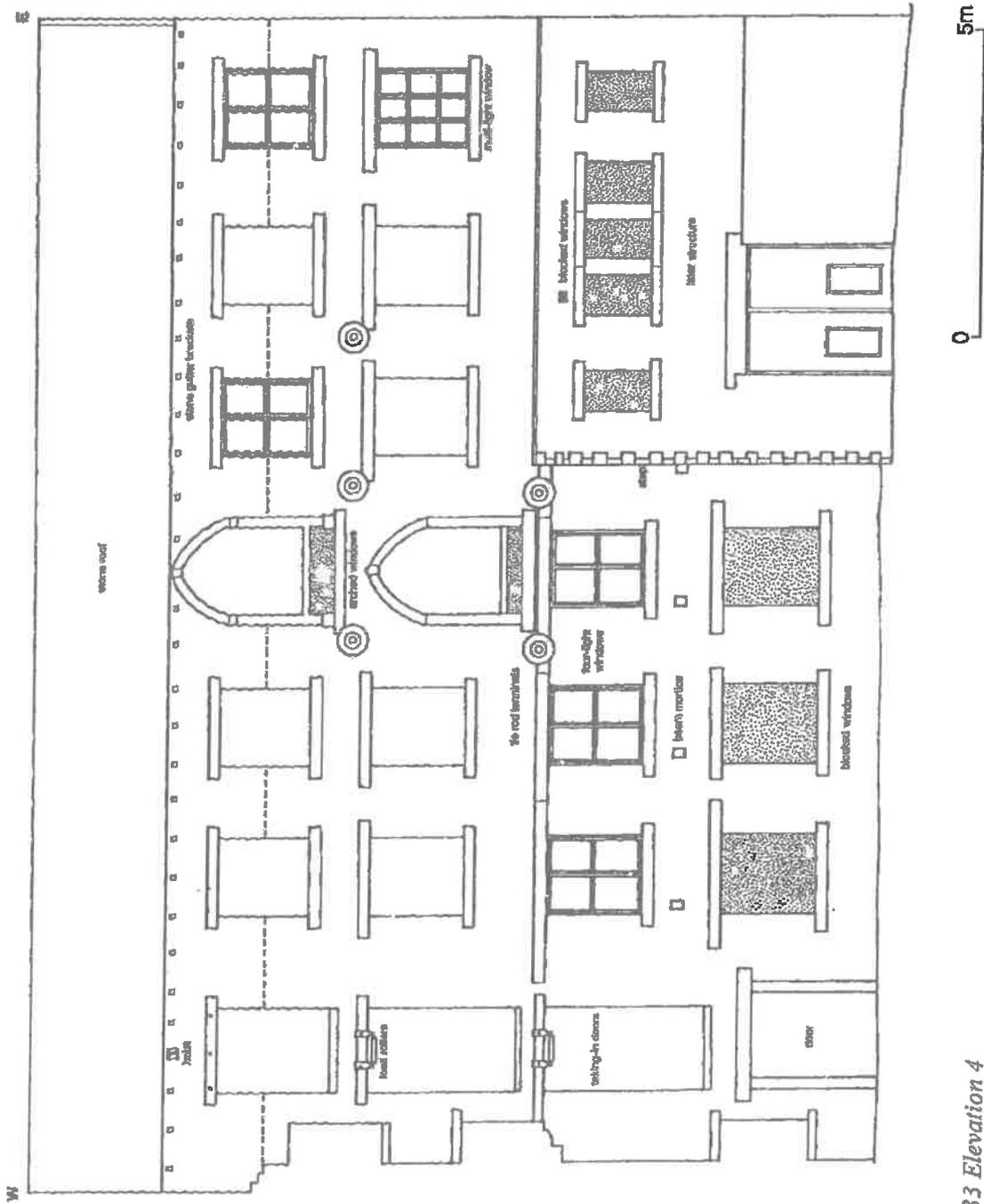
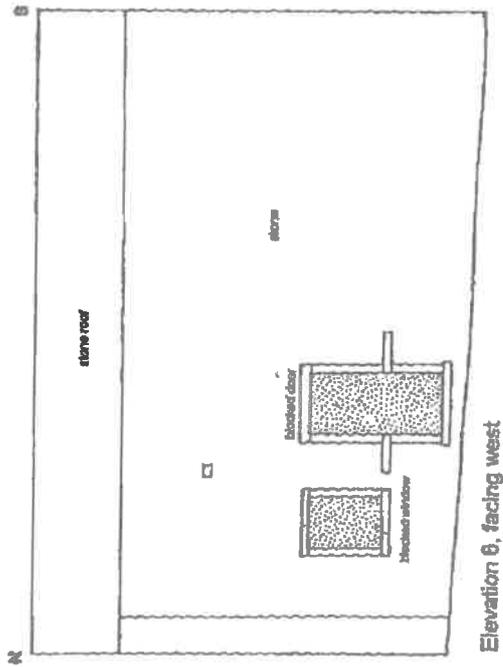
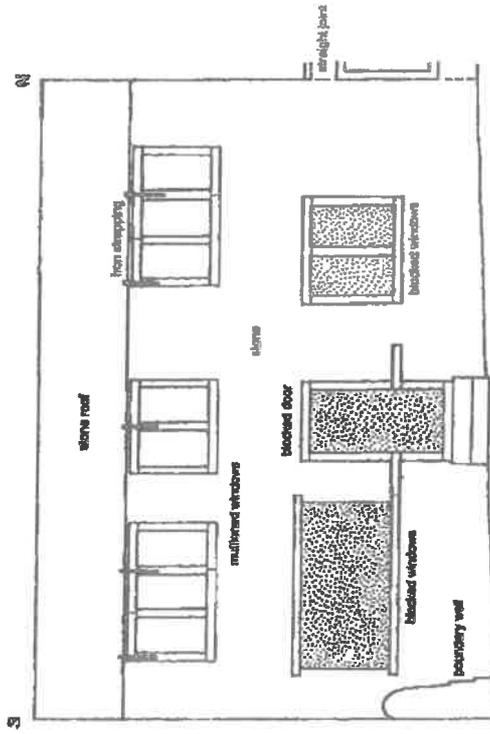
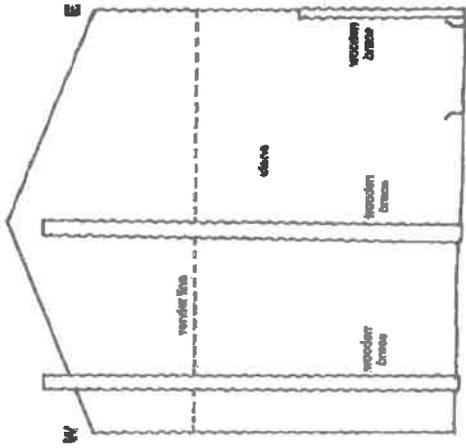


Fig. 33 Elevation 4

Westwood Mill, Linthwaite
Elevations 6, 7, 8, & 9, facing east



Elevation 7, facing south



Elevation 9, facing north

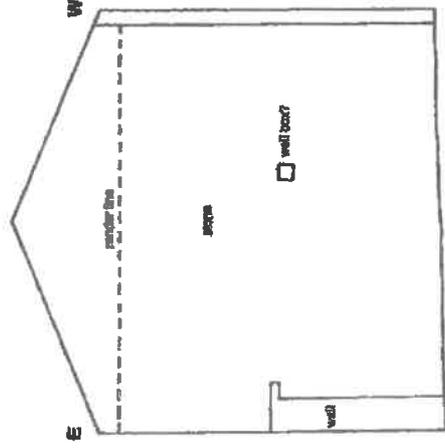
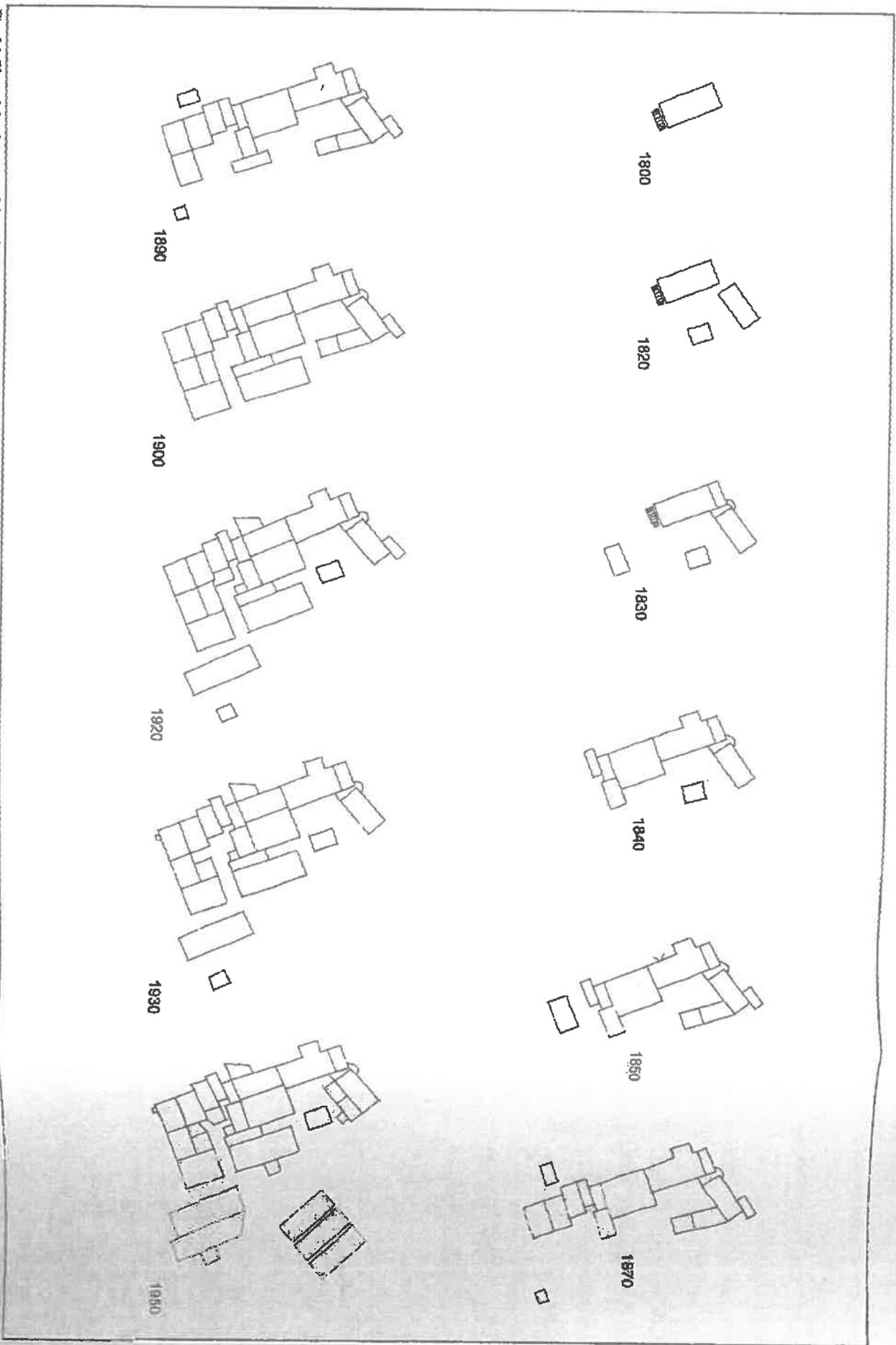


Fig. 35 Elevations 6, 7, 8, & 9

and as later additions, may indicate use more dedicated to warehousing. The building is well lit on all floors, making it suitable for a number of processes.

- 6.3 Building C. Originally a cottage, with a larder basement, kitchen and living room on the ground floor, and two bedrooms on the first floor. Not grand enough to be the owners house, but more than adequate for that of the manager. Possible use more recently as office area.
- 6.4 Building D. Obvious power production in room 8 of the ground floor. All other areas provide well lit powered areas with taking-in doors to all floors. Workshops, looms?
- 6.5 Building E. No obvious use other than additional work area.
- 6.6 Buildings F and G Associated, and probably having the same use even though G is earlier. Only jack-arched buildings in the complex. Both have good access and taking-in doors. Not well lit, particularly on the northern side. Water tank and tower above F. A wet process area is indicated, though not dying which took place to the south. Possibly fulling.
- 6.7 Buildings H and I. Single storey sheds, H earlier, and not as well lit as I. H possibly raw materials store, I possibly mixed use, later part use at northern end as office.
- 6.8 Building J. The engine house and its later extension. Typically rising through two floors, with tall window to the east. No evidence for engine bed survival, thought it would have had an engine turning a fly wheel on the northern side. Evidence for power transmission to the north. Small north-west single storey extension belongs to a post steam engine use.
- 6.9 Building K. The boiler room, identified because of its proximity to the engine room, and the position of a large iron boiler in the centre of the ground floor. Water could have been provided from the tank above room 38, or from tanks in room 22 or 21. The perforated iron ceiling above the boiler room clearly was utilising heat as a means of drying cloth.
- 6.10 Building L. To the east of K, a small structure providing the base for a large cylindrical water tank.
- 6.11 Building M. Three storey building with good lighting to all floors, and taking-in doors facing east. Large horizontal water tank on the ground floor.

Fig. 36 Phased development of the mill complex



Possible uses could include drying and warehousing on the upper floors. May have an association with dyeing.

- 6.12 Building N. Probably an early dye-house. Tall, well ventilated, good light. More recently, equipped with ducting pipes. Later load moving gear at first floor height.
- 6.13 Building O. Later purpose built dye-house. Northern wall originally had two very tall arched openings. Later divided into two floors, possibly post dye-house phase. Proximity of running water from River Colne c.40m to the south.
- 6.14 Building P. Single storey shed, but with tall windows. Rag grinding?
- 6.15 Building Q. Associated with O. Dyeing process.
- 6.16 Buildings R and S. Single storey open fronted shed, and later adjoining shed. Could be associated with process requiring a free flow of air, or as a garage or wagon shed, or as materials warehousing (associated with rag grinding?)

7. Phasing summary

- 7.1 This section should be read in conjunction with Fig. 36, which shows a phased development of the mill complex. It has been devised using a combination of on-site observation of relationships, and of an analysis of map evidence (see Fig. 11). All dates are relative, and are given to illustrate what was happening *around a certain time*.
- 7.2 1800. Building A is constructed. Water from the Colne is diverted to form a pond. Water fed into the goit to turn a wheel to provide power to the mill.
- 7.3 1820. Expansion of the mill. A second building of four floors constructed to double work capacity. House for resident manager built.
- 7.4 1830. Detached two storey building G constructed, possibly as wet process building, although difficult to power. At a similar time room 2-31 added to the rear of A, the building amalgamated with B, and a spiral staircase built.
- 7.5 1840. Building F added to G, The water wheel goes out of use (or is moved into the body of building A), and the three storey building D is constructed between A and F-G, though building D may have been constructed a number of years later. To the south of F the engine house is built. It is inferred that at this time two power sources may have been in use at the mill.

- 7.6 1850. Addition of two unidentified buildings shown on the first edition OS plan, attached to building B. Construction to the southern side of the site of the three storey building M.
- 7.7 1870. Boiler house constructed (was there an earlier one near to the engine house?). First dyehouse, building N built. Two detached buildings, not identified on site, but evident on mapping, shown at the southern end of the site.
- 7.8 1890. Addition of building O, the purpose built dyehouse, to room N. Construction of the small shed, H to the east of building G.
- 7.9 1900. Addition of shed I to H, and the construction of structures Q and P at the south-east corner of the site. Additional unidentified building to the west is shown removed.
- 7.10 1920. Open fronted shed R built. Structure removed between buildings B and C. Water storage building L appears.
- 7.11 1930. Vague changes in the area around the boiler house. Reduction of building Q?
- 7.12 1950. Addition of brick shed S. Three Nissan huts to the east. Lean-to structure against building B. Brick electricity sub-station.

8. Acknowledgements

Drawn Survey

A C Swann, MAAIS
J. Prudhoe
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Research

A C Swann, MAAIS
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Photographic Survey

P. Gwilliam BA (Hons)

Illustrations

A C Swann, MAAIS
J Prudhoe

Graphics

P Gwilliam, BA (Hons)

Report

A.C. Swann, MAAIS

Archaeological services WYAS wish to acknowledge the collaborative role of the County Archaeological Service for West Yorkshire in the production of this report.

9. Sources

- West Yorkshire Archaeological Service, Sites and Monuments Record
- Local History Library, Huddersfield
- West Yorkshire Archive Service, Huddersfield
- <http://www.imagesofengland.org.uk>

Graphics

P Gwilliam, BA (Hons)

Report

A.C. Swann, MAAIS

Archaeological services WYAS wish to acknowledge the collaborative role of the County Archaeological Service for West Yorkshire in the production of this report.

9. Sources

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Appendix 1
Specification

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Specification

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Specification for Building Recording
Westwood Mills
Lowestwood Lane, Linthwaite
(SE 0949 1458)

Prepared for Magna Holdings Ltd

1 Summary

1.1 Westwood Mills constitutes a well-preserved and technically significant 19th-century textile mill complex. A building survey is required to identify and record all features of archaeological interest prior to the refurbishment of the structures for leisure and residential use. This specification for the necessary work has been prepared by the West Yorkshire Archaeology Service's Advisory Service section, the curators of the West Yorkshire Sites and Monuments Record.

2 Site Location and Description

2.1 (Grid reference SE 0949 1458) Westwood Mill lies to the south of the Huddersfield Narrow Canal, on the west side of Lowestwood Lane. The site comprises four principal buildings and a number of ancillary buildings to the south. The buildings are primarily of stone, and range in height between one and three storeys. There appear to be three principal phases of development represented on the site. The structural condition of the buildings varies from reasonable to very poor, and many of the structures have been extensively vandalised (with this vandalism constituting partial demolition in the ranges at the southern end of the site). The majority of the buildings on the site are Listed Grade II*.

3 Planning Background

3.1 Magna Holdings Ltd (Heath Hall, Heath, Wakefield WF1 5SL – contact Martin Whiteley) plan to seek permission for the conversion of the mill complex to residential and leisure use. The WYAS Advisory Service (as Kirklees District Council's archaeological advisor) has prepared this specification in order to allow the owners to submit information with regard to the archaeological significance of the site as part of the planning application.

4 Archaeological Interest

4.1 (See attached plan) Westwood Mill is an important survival of an early 19th century textile mill of the type built to complement and service the already-extant domestic-scale weaving industry. Building A was constructed c. 1800 as a water-powered scribbling, fulling and carding mill. Building B was probably constructed during the first quarter of the 19th century, and may have served as warehousing and workshops for hand-powered processes. Building C may be contemporary with Building A, and certainly dates from the first half of the 19th century. The small scale of the structure suggests domestic use, but it is likely to have served as offices (and possibly workshops) for the mill. The main component of Building D in its present form probably dates from the last quarter of the 19th century, but appears to replace an earlier (probably 1824) building on this alignment; the original building contained a second waterwheel, and the present building contains *in situ* a water-powered turbine of the 1st quarter

of the 20th century. Smaller ancillary structures to the south and west comprise an engine house, boiler shop and rope race, some elements of which may date to the first quarter of the 19th century. Building E comprises a single-storey building of probable late-19th century date. Building F consists of a number of one- and two-storey elements which may constitute the remains of mid- to late-19th century dyeing and rag-grinding sheds.

4.2 On the eastern side of the site are located a number of 20th century structures, including an open-sided brick shed and three Nissan huts. It is not intended that this later material should be recorded in detail, and no provision is made for its recording in this specification.

5 Aims of the Project

5.1 The aim of the proposed work is to identify and record all evidence for the original form and function of the buildings, and for any subsequent structural and functional alterations. The archaeologist on site should give particular attention to reconstructing as far as possible the original size and functional division of the building, establishing the phased development of the structure, and recording and analysing the available evidence for its original and subsequent historical uses.

6 Methodology

6.1 The archaeologist on site will naturally operate with due regard for Health and Safety regulations. The archaeological contractor should note that the buildings have been vacant for a number of years. This work may therefore require the preparation of a Risk Assessment of the site, in accordance with the Health and Safety at Work Regulations (1992), prior to submission of the tender. WYAS cannot be held responsible for any accidents which may occur to outside contractors engaged to undertake this survey while attempting to conform to this specification.

6.2 Prior to the commencement of *any work*, the archaeological contractor should confirm in writing adherence to this specification, or state (with reasons) any specific proposals to vary the specification. Should the contractor wish to vary the specification, then written confirmation of the agreement of the WYAS Advisory Service to any variations is required prior to work commencing. Modifications presented in the form of a re-written project brief will not be considered by the WYAS Advisory Service.

6.3 Prior to the commencement of work *on site*, the archaeological contractor should provide the WYAS Advisory Service in writing with a projected timetable for the site work, and with details regarding staff structure and numbers. *Curriculum vitae* of key project members (the project manager, site supervisor, any proposed specialists *etc.*), along with details of any specialist sub-contractors, should also be supplied to the WYAS Advisory Service. All project staff provided by the archaeological contractor must be suitably qualified and experienced for their on-site roles. In particular, staff involved in building recording should have proven expertise in the recording and analysis of standing industrial structures.

6.4 Prior to the commencement of work *on site* the archaeological contractor should identify all accumulations of loose modern debris within the building which may mask material requiring an archaeological record, and make arrangements with the client for its

removal (if necessary, under archaeological supervision). Similarly, the archaeologist should identify any contaminants which constitute potential Health and Safety hazards (e.g. pigeon guano) and make arrangements with the client for decontamination as necessary and appropriate. It is not the intention of this specification that large-scale removal of debris should take place with the archaeological contractor's manpower or at that contractor's expense.

6.5 Prior to the commencement of work on site, the archaeological contractor should undertake a rapid map-regression exercise based on the readily-available map and site-plan evidence held by the WY Archives Service (Kirklees) and the relevant Local History Library. This work is intended to inform the archaeological recording by providing background information with regard to function and phasing. Please note that this exercise is *not* intended to be a formal desk-based assessment.

6.6 Magna Holdings have commissioned plans as existing of the mill complex. Where appropriate, these plans may be used as the basis for the drawn record of the building and for any annotation relative to the photographic record. It is the responsibility of the archaeological contractor to check the accuracy of these drawings and to make any necessary adjustments or corrections. Contractors are therefore advised to determine *prior* to the submission of tender whether major re-survey/re-drawing will be necessary.

6.7 In some areas, building recording may need to take place in two stages. Initial recording should take place prior to the stripping of any late-20th century fixtures and fittings from the buildings. Where detail is significantly obscured, provision will need to be made to allow the recording work to be completed at an early stage of the redevelopment work, after the stripping-out of modern features. Features requiring removal for this purpose, and areas of fabric that are otherwise not presently suited to archaeological analysis and recording (e.g.: heavily painted or rendered portions of wall; areas of the site currently inaccessible for Health and Safety reasons) should be identified and reported to Martin Whiteley of Magna Holdings Ltd and to the WYAS Advisory Service. Removal of modern features may in some instances require Listed Building Consent, and care should be taken by the contracting archaeologists to ensure that they do not carry out what may appear to be minor, ad hoc stripping-out (e.g. - tearing back loose dry-boarding or ceiling panels) without first determining that any appropriate statutory consents have been obtained by the client.

6.8 The drawn record for the building should comprise: plans of all floors of each of the structures comprising buildings A-F, at a suitable scale (not smaller than 1:100); a representative section through each of the following - Building A, Building B, Building C, the principal component of Building D, the engine and boiler houses - parallel to the line of the roof trusses, at a suitable scale (not smaller than 1:50); sections through any identifiable 19th-century channels related to the use of water-power on the site: eastern and western elevations of Building A; northern and southern elevations of Building B; eastern, western and southern elevations of Building C. Elevation drawings which are partly or wholly produced by means of a rectified photographic survey will be acceptable in this instance. (If this course of action is adopted, exact methodology must be agreed with the WYAS Advisory Service *prior to the commencement of work on site*). With the exception of very ephemeral, clearly modern features (e.g. plasterboard partitions) the structures should be recorded as existing, but a clear distinction should be made on the final drawings between surviving *in*

situ 19th-century features and all material introduced in the structure during the course of the 20th-century. The building should be carefully examined prior to the commencement of recording in order to identify all features relevant to the original and subsequent historical uses of the site. These features should then be incorporated into, and clearly identified in, the final drawn record. Typically, items of interest would include:

- all 19th century structural elements (including posts, columns, etc)
- truss positions and form
- original staircases
- original sanitary arrangements
- all evidence for the generation or transmission of power
- original fitted furniture including shelves and cupboards
- original doors and windows; any associated shutters or other fittings
- original and subsequent historical internal partitions
- any traps, hoists or lifting mechanisms
- original fireplaces or any other evidence for internal heating arrangements
- any other extant 19th-century features (e.g. gas fittings)

but this list should not be treated as exhaustive. The archaeologist on site should also identify and record:

- any significant changes in construction material – this is intended to include significant changes in stone type and size
- any blocked openings
- evidence for phasing, and for historical additions or alterations to the building.

6.9 A general external photographic record should be made of each elevation of the building.

6.10 A general internal photographic record should be made of each of the buildings. General views should be taken of *each room* or discrete internal space from a sufficient number of angles to ensure complete coverage.

6.11 In addition, detailed record shots should be made of all individual elements noted in section 6.7 above, including

- A representative example of each post or column type; this should *exclude* 20th-century material as defined above.
- A representative example of each truss type
- A representative example of each original or other 19th-century window/door type

6.12 Dimensional accuracy should accord with the normal requirements of the English Heritage Architecture and Survey Branch (at 1:20, measurements should be accurate to at least 10mm; at 1:50, to at least 20mm; at 1:100, to at least 50mm). Major features such as changes in structural material may be indicated in outline. The recording of individual stone/brick blocks and courses is not required unless greater detail is needed in order to adequately represent a particular feature of interest.

6.13 General photographs should be taken with a Large Format camera, or with a Medium Format camera *which has perspective control*. Any detail photographs of structural elements should if possible be taken with a camera with perspective control. Other detail photographs may be taken with either a Medium Format or a 35mm camera. All photographs to be black and white, using silver-based film only. Dye-based films such as Ilford XP2 and Kodak T40CN are unacceptable due to poor archiving qualities. Digital photography is unacceptable due to unproven archiving qualities. This basic photographic record should be supplemented by colour slide photography as necessary. *All* detail photographs must contain a graduated photographic scale of appropriate dimensions (a measuring tape is *not* sufficient). Record photographs should be printed at a minimum of 5" by 4". A photographic register detailing (as a minimum) location and direction of shot must accompany the photographic record. Position and direction of *each photograph* should be noted on a separate copy of the building plan.

6.14 The archaeologist on site should supplement the photographic record with written observations (e.g. on phasing; on building function) sufficient to permit the preparation of a report on the structure.

7. Post-Recording Work and Report Preparation

7.1 A fully indexed field archive shall be compiled consisting of all primary written documents, plans, photographic negatives and a complete set of labelled photographic prints. Labelling should be in indelible ink on the *back* of the print and should include: film and frame number; date recorded and photographer's name; name and address of building; national grid reference. Photographic prints should be mounted in appropriate archivally stable sleeves. Copy plans should be produced on a stable medium (dye-line is archivally unstable and is not, therefore, acceptable). A quantified index to the field archive should be deposited with the West Yorkshire SMR. The field archive should be deposited with the Kirklees Office of the West Yorkshire Archive Service and should be accompanied by a covering letter detailing the deposit location of the full report.

7.2 A written report should be produced, describing and analysing the surviving remains and placing the building in its historical and technological context (as far as this is possible using the readily available documentary and secondary evidence). **The archaeological contractor may wish to consider providing the WYAS Advisory Service with a draft copy of the report for comment prior to the submission of the final report.** It is not envisaged that the report is likely to be published, (although summary results are expected to be included in the annual *CBA Forum* for Yorkshire), but it should be produced with sufficient care and attention to detail to be of academic use to future researchers. The report should include a bibliography/complete list of sources consulted, and a copy of this specification should be bound into the back of the report. The report illustrations should include, as a minimum, a location map and a complete set of site drawings at original scale and executed to publication standard. A complete set of clear photocopies or laser-printed copies of all photographs should be bound into the report, appropriately labelled and referenced within the text as necessary. Bracketed shots of identical viewpoints need not be reproduced, but *all* viewpoints must be represented within the report.

7.3 The report should be supplied to the client and an identical copy (including photographic prints) supplied to the County SMR. The finished report should be supplied within eight

weeks of completion of the fieldwork, unless otherwise agreed with the West Yorkshire SMR. The information content of the report will become publicly accessible once deposited with the West Yorkshire Archaeology Service.

8 General considerations

8.1 It should be noted that this specification is based on a cursory examination of the site by the WYAS Advisory Service. Archaeological contractors submitting tenders are strongly advised to carry out an inspection of the site prior to submission. If, on first visiting the site or at any time during the course of the recording exercise, it appears in the archaeologist's professional judgement that

- i) a part or the whole of the site is not amenable to recording as detailed above, and/or
- ii) an alternative approach may be more appropriate or likely to produce more informative results, and/or
- iii) any features which should be recorded, as having a bearing on the interpretation of the structure, have been omitted from the specification,

then it is expected that the archaeologist will contact the WYAS Advisory Service as a matter of urgency. The Advisory Service will then resolve the matter in liaison as necessary with the developer. Similarly, any technical queries arising from the specification detailed above should be addressed to the WYAS Advisory Service without delay.

8.2 The recording exercise will be monitored as necessary and practicable by the WYAS Advisory Service in its role as 'curator' of the county's archaeology. The Advisory Service should receive at least one week's notice in writing of the intention to start the fieldwork.

Any queries relating to this specification should be addressed to the WYAS Advisory Service.

West Yorkshire Archaeology Service – Advisory Service
HM Gomersall

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West Yorkshire Archaeology Service
Registry of Deeds
Newstead Road
Wakefield
WF1 2DE

Telephone: (01924) 306798
Fax: (01924) 306810 e-mail: wysmr@compuserve.com