RCHME SURVEY REPORT

FORMER LOOMSHOP

Tonedale Mills
Wellington
Somerset

CONTENTS

Former Loomshop (building 83) Grid Ref: ST 1282 2139

Tonedale mills NBR: 90889

Wellington

Somerset

Summary

Building 83 (identified on the Insurance block plan, Document 1) is located along the north side of the main east-west access road into the Tonedale Mills complex. It had been built by 1839 but may be of early 19th century date and originally formed part of the boundary of the site. The building has retained its general external appearance and has high "group value" with other structures in the centre of the complex. It is one of the earliest extant buildings at the site and retains evidence of several changes of use. Alterations include the replacement of the floors and re-siting of doorways. Most of the alterations have resulted from the building being adapted to serve adjoining buildings which were added in the mid- and late 19th century, including a beam engine house and extensive weaving sheds built in several phases. Although it was not powered, the building probably originally served an ancillary manufacturing function to the main water- and steam-powered mills, which stand on the opposite side of the road to the south. Documentary evidence indicates that part of it contained handlooms in the late 19th century and the building has similar characteristics to loomshops which have been identified in other areas. It is referred to as a loomshop in this report, although it may also have served additional related functions. Unusually, an intact handloom remains *in situ* in the top storey, but is not an original feature. The building is significant as a surviving early component of the largest integrated textile mill site in the south-west region.

The building was investigated in June 1998 following requests for information from English Heritage and Taunton Deane Borough Council. Access was kindly provided by Mr A. Antonello of Fox Brothers & Co., Ltd.

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Introduction

The loomshop is of three storeys and was built to a long plan of 11 bays; a full-height 3 bay extension was later added to the east end. Its external dimensions are 29.8 metres by 5.7 metres (see Ground Floor Plan and Cross-Section, attached).

It is mainly of red brick laid in Flemish bond, but in the rear, north, elevation, the bottom storey wall is of rubble, as are the end and rear walls of the east extension. The front, south, elevation has a regular fenestration of rectangular windows with splayed brick heads. The windows are smaller than those in the larger mills to the south, which are also shown on the 1839 Tithe Map, but the brickwork and window heads are similar, indicating that the loomshop is of similar date. The north side of the original building, which formed part of the boundary wall of the site, only has regular fenestration to the top storey, with smaller square windows at eaves height. The gabled roof is slate-covered and is hipped at the later east end. The building has two main doors in the south elevation, both in the positions of former windows, and a blocked door in the east end wall. The door in the 4th bay from the west end enters a through-passage giving access to the later adjoining weaving shed to the north (77 on block plan). The door in the 6th bay gives access to a late 19th century staircase (see Cross-Section). The original door was located in the adjacent bay to the east, which gave access to a staircase in the same position. Other doors have been inserted and blocked at different dates.

Historical background:

The earliest available reference to the loomshop is the Tithe Map of 1839 (Document 2), although it is possible that other documentary evidence survives in the extensive archives of Fox Brothers and Co.[1] The building is shown without the later weaving sheds, engine house and east end extension. The Tithe Map shows two watercourses which may have influenced the position of the building. The tailrace from the wheel chamber in the water-powered mill passed close by the west end and a narrow feeder channel for the canal basin to the north of the site (not extant) was culverted beneath the west half of the building. There is no evidence that the loomshop itself was ever water powered.

Powerlooms were first used at Tonedale in 1852[2]. The weaving sheds were added to the north side of the loomshop and powered from the beam engine house which was added to the west end. Both the new buildings were described in the 1880s[3] and illustrated on the Ordnance Survey 1:2,500 plan of 1890 (Document 3). The original weaving shed was extended at least once before 1890, in 1884-5[4]. It is likely that the function of the loomshop was partly altered at this time, to accommodate ancillary processes for the weaving shed; multi-storeyed ancillary buildings are commonly seen attached to late-19th century weaving sheds in other areas. A description of the site in 1883 states that the loomshop ("the old building by the road") then contained handlooms in the top storey, a dining room in the middle storey and a wool store in the bottom storey[5]. The north side of the loomshop may also have supported the main drive shaft for the weaving shed (see below).

Tonedale Mills saw extensive rebuilding and expansion throughout the second half of the 19th century, more than doubling the size of the complex. The next major development to influence the loomshop was the construction in 1897-8 of a new engine house (the "Iron Duke" engine) in the south-west corner of the weaving sheds[6] and the partial rebuilding of the sheds themselves. The earlier weaving shed beam engine was dismantled at this time. The Iron Duke engine house, built for a large horizontal tandem engine, remains well-preserved, with intact engine beds, rope-race and a contemporary generator room (71, 73, 74 on block plan). An external gallery at first-floor level was added to the north side of the loomshop at this time; this formed part of the rebuilt weaving shed and may have been related to the shed's power transmission system (see below).

From the early 20th century the loomshop has been principally used as a store. A valuation of the site date 1916 describes two rooms in each of the three storeys[7]. The top floor contained the Pattern room and "Store for pickers, including Broad Hand Pattern Loom". The middle storey contained a storeroom and a drying room, and the bottom storey a "Store room for electric fittings". At the time of survey the east half of building contained engineering stores in the bottom two storeys. The top storey includes the handloom and the exceptional survival of an extensive store of wooden casting patterns for plant and machinery which was formerly used at the site.

Evidence of original function:

No documentary or physical evidence has been seen of the use of power in the building, indicating it may have been built for either hand-powered processes or for storage. In addition, no documentary evidence of its original use is available. Indirect evidence, however, and comparison with similar buildings in other areas, suggests that it was probably built for handloom weaving, possibly in combination with other functions. The absence of wide doorways or of taking-in doors for the upper storeys suggests that it was probably not built for warehousing. Its location on the 1839 Tithe Map, close to the powered mills but on the opposite side of the site to the main entrance, suggests that it was more likely to have served a function relating to production processes than storage or warehousing. Other buildings at the site provided warehousing facilities in this period, notably the range adjoining the east side of the powered mills (10 - 14 on block plan) and a detached late-18th century building close to the entrance (3 on block plan). In addition, the regular fenestration of the south elevation indicates that the original use of the building required good lighting. Workshops built for hand-powered processes, of similar scale, were a feature of the textile industries in different parts of England in the late 18th and early 19th century. They were typically used for handloom weaving, hand spinning or for related processes such as carding or cloth inspection; such buildings were intended to be flexible and

were often used for more than one function.

The handloom which survives in the west end bay of the top storey appears to have been installed for use in the building sometime after the replacement of the floors and is therefore not original. It is probably the Broad Hand Pattern Loom mentioned in the 1916 valuation. It is of pegged timber construction and may be of mid-19th century date. It is not a typical handloom, however, and may have been used for the production of a specialised fabric; in particular it is unusually wide, occupying most of the width of the building.

Evidence of development and alterations:

The general arrangement of the original fenestration has been retained, but the window sills of the south elevation have all been replaced in moulded red brick, probably of late 19th century date. "Closer" bricks in the jambs do not extend down to the present level of the sills, suggesting that the window sills may also have been lowered.

In the original 11 bays the first and second floors have both been replaced at a higher level. No evidence of a fire or other structural damage has been seen and it can be surmised that the alteration of the floor levels coincided with a change of use of the building, possibly when handloom weaving ceased. The plaster on the side walls and west end wall terminates beneath the present ceiling joists, indicating the approximate levels of the original ceilings (see Cross-Section). The ceiling heights of both storeys were increased when the original floors were replaced. The present floors comprise transverse joists mounted on trimmer beams along both side walls. The trimmer beams are supported by brick corbels; the bricks are larger than those used in the external walls. The joists are notably thin (approximately 4.5cm wide and 25cm deep), suggesting that the floors were replaced in the last quarter of the 19th century. They are strengthened by a central row of cross-bracing.

The roof comprises timber principals with bolted tie-beams, a single row of butt purlins, short queen struts and a central vertical tie-rod. The tie-beams are located above the level of the eaves. The purlins are attached to the principals with iron straps and the apex is supported by a vertical ridge plank. A plaster-on-lath ceiling is attached to the underside of the rafters. Roof trusses with these features are not confined to a particular period, and the roof could date from any time between the early and late 19th century. The trusses do not match the spacing of the 11 original window bays, however, which might indicate that the roof is not original.

Late-19th century tongue-and-groove partitions have been inserted in parts of the building, particularly in the area of the staircase in the sixth bay from the west end

(see Cross-Section). This suggests that the building was subdivided to serve a number of different functions. The staircase itself is of similar date, and was probably constructed at the same time as the new floors. It may be on the site of the original staircase, however, since this bay does not have a window in the north elevation.

The extension to the east end was probably added soon after 1890, since it is not shown on the 1:2,500 plan of that date (Document 3). The original east end wall has been removed. The ground floor in the extension is 25cm higher. The south side wall is thinner than the original wall, with an internal set back. The north side projects externally beyond the line of the original north wall. The floors of the extension have slightly thicker joists and the roof trusses do not have vertical struts; this suggests that the extension was added after the floors in the original 11 bays had been replaced. The north side of the extension was better-lit than the original part of the building, with pairs of large windows in the upper two storeys, now blocked.

Beneath the ground floor of the extension is a brick-lined culvert containing a horizontal drive shaft which appears to be of cast-iron. The shaft is 13.5cm diameter and is supported on two bearing blocks. The culvert runs from the mill to the south of the loomshop, beneath the intervening road, and extends beyond the north side wall where it meets another east-west culvert. The position of the shaft suggests it linked with the steam-powered main drive shaft of the mill to the south (see separate report). Its north end was probably bevel-geared to another shaft in the east-west culvert. This is a rare survival of a mid-19th century main drive shaft. It indicates the complexity of the evolving power transmission system at Tonedale Mills in the second half of the 19th century. It is not clear whether it was powered from the north, from either the weaving shed engine or the Iron Duke engine, or from the detached engine house alongside the mill to the south. It may have been added when the weaving shed engine was adapted to power a newly built spinning mill in 1863 (see below).

The attached beam-engine house:

The engine house attached to the west end of the loomshop is of typical size and proportions for a mid-19th century single-cylinder beam engine. It was probably built to power the weaving sheds to the north, but may have been adapted at an early date to also power the large spinning mill in the western part of the site. Documentary sources in the Fox archives indicate that the beam engine was replaced by a horizontal tandem engine in 1886[8]. The engine house is lit by narrow arched windows in the west end and north side; other former windows may have been blocked. It is constructed of slightly larger red brick than the loomshop and the side walls retain large ashlar blocks indicating the former

position of the entablature beam. At ground level, the north side also has ashlar blocks for the main flywheel shaft and a large blocked cast-iron shaft box indicating where the main drive shaft entered the weaving shed. This box also has cut-off brackets for a main horizontal drive shaft running east-west along the south end of the shed; to the east of the engine house this shaft must have been attached to the north side of the loomshop. Inside the engine house there is no evidence of the engine itself. The entablature beam, beam floor and engine beds do not survive. The engine house is still open to the original gabled roof, the tie-beams of which retain lifting rings used in the installation of the engine. An unusual feature is a heavy cast-iron beam which spans the window jambs in the west end. The beam is of I-section with a wider bottom flange. The flange includes a bolting face for the bearing of a horizontal shaft which probably extended beyond the west end of the engine house. This shaft may have been related to the adaptation of the beam engine to power the large spinning mill to the west, which was built in-line with the engine house in 1863[9] (69 on Block Plan). At a later date additional shaft boxes were inserted into the side walls for a high-level drive shaft which spanned the road to the south. It is not known whether this shaft was powered from the north or south end.

The attached weaving shed:

As mentioned above, the extensive weaving sheds to the north of the loomshop have been built in several phases. It is unlikely that any part of the original 1850s shed roof survives. The south half of the shed, adjoining the loomshop, appears to have been rebuilt at the same time as the construction of the Iron Duke engine house to the west, in 1897. This shed was itself later partly rebuilt. The extant north-light roof (the north-lights actually face east) is of corrugated cement or asbestos and comprises timber trusses supported by steel beams and cast-iron columns, suggesting an early or mid-20th century date. The east side wall, of rubble with external brick pilasters, may be the earliest extant part of the shed, and appears to be marked on the 1890 1:2,500 plan (Document 3). The northern half of the shed appears to be earlier, with a slate-covered north-light roof which may be of late 19th or early 20th date.

Part of the south end of the c.1897 weaving shed survives in the form of a gallery running along the north side wall of the loomshop and the adjoining beam engine house. This is an unusual feature which may have been a rope race for driving line shafting in the shed. It is entered through a door inserted into the north side of the loomshop at first-floor level. The north side of the gallery is formed by the timber gable ends of the former shed roof; these are symmetrical in shape and located at a higher level than the extant roof. The wooden panelling used in the gables is very similar to that which survives in the Iron Duke engine house. The gables

contain redundant hatches which gave access to the shed roof. The floor of the gallery is supported by the sawn-off ends of the beams which supported the former roof.

Investigated by Mike Williams and Barry Jones, 22nd July 1998.
Report and cross-section by Mike Williams, plan by Barry Jones.
RCHME photographic job number 96 / 01963, photographed by James Davies, 7-2-1996.

NOTES

1. Documents relating to the use of the site in the first half of the 19th century are included in the report on the records of Fox Brothers and Co. by The Royal Commission on Historical Manuscripts.

2. Fox, C.H., 24.

3. Fox, F.H., 7 - 8.

4. Fox, F.H., 10.

5. Fox, F.H., 8.

6. Fox, F.H., 23.

7. *Valuation of Machinery in Buildings 1 - 54*, June 1916, by Eddison, Taylor & Booth of Huddersfield. Fox archives.

8. In the Fox archives the new engine is mentioned in a letter dated 6-9-1886 from Timothy Bates & Co., Sowerby Bridge; it is also referred to in a hand-written note in a copy of *Description and Use of McNought's Improved Indicator*....., 1860. This states that the new engine came into use on 25-7-1886. The valuation of 1916 states that the engine, by Pollitt and Wigzell, was still in use and was then of 200 IHP.

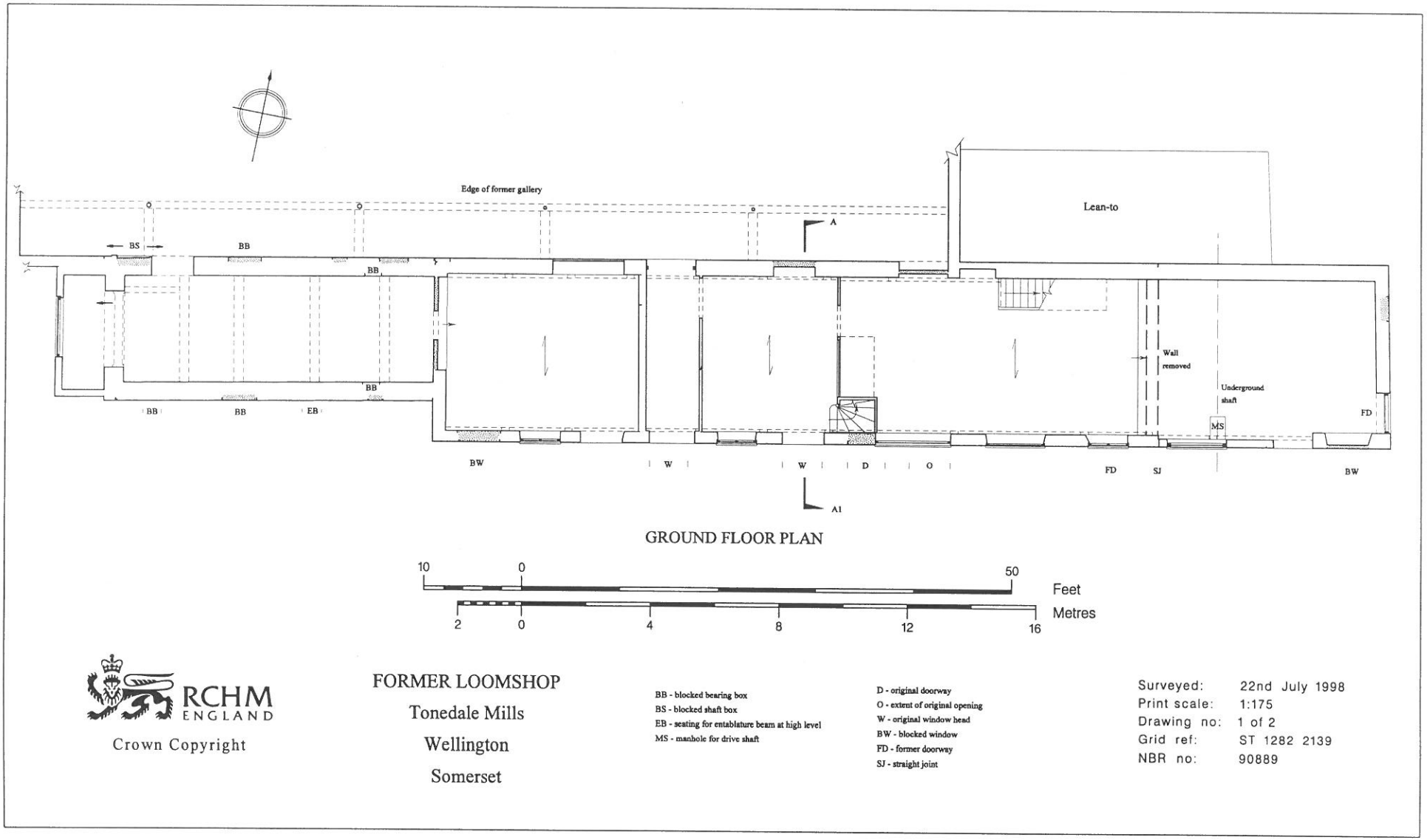
9. Fox, C.H., 25.

BIBLIOGRAPHY

Fox, C.H., 1879, *Chronicles of Tonedale, two centuries of family history*, unpublished, inspected courtesy of Mr Richard Fox.

Fox, F.H., 1933, *Fox Brothers & Co., Ltd., Fifty Years' History*, unpublished, Fox Brothers' Archives.

Report on the Records of FOX BROTHERS & CO LTD., woollen manufacturers, Wellington, Somerset, Royal Commission on Historical Manuscripts, 1988.



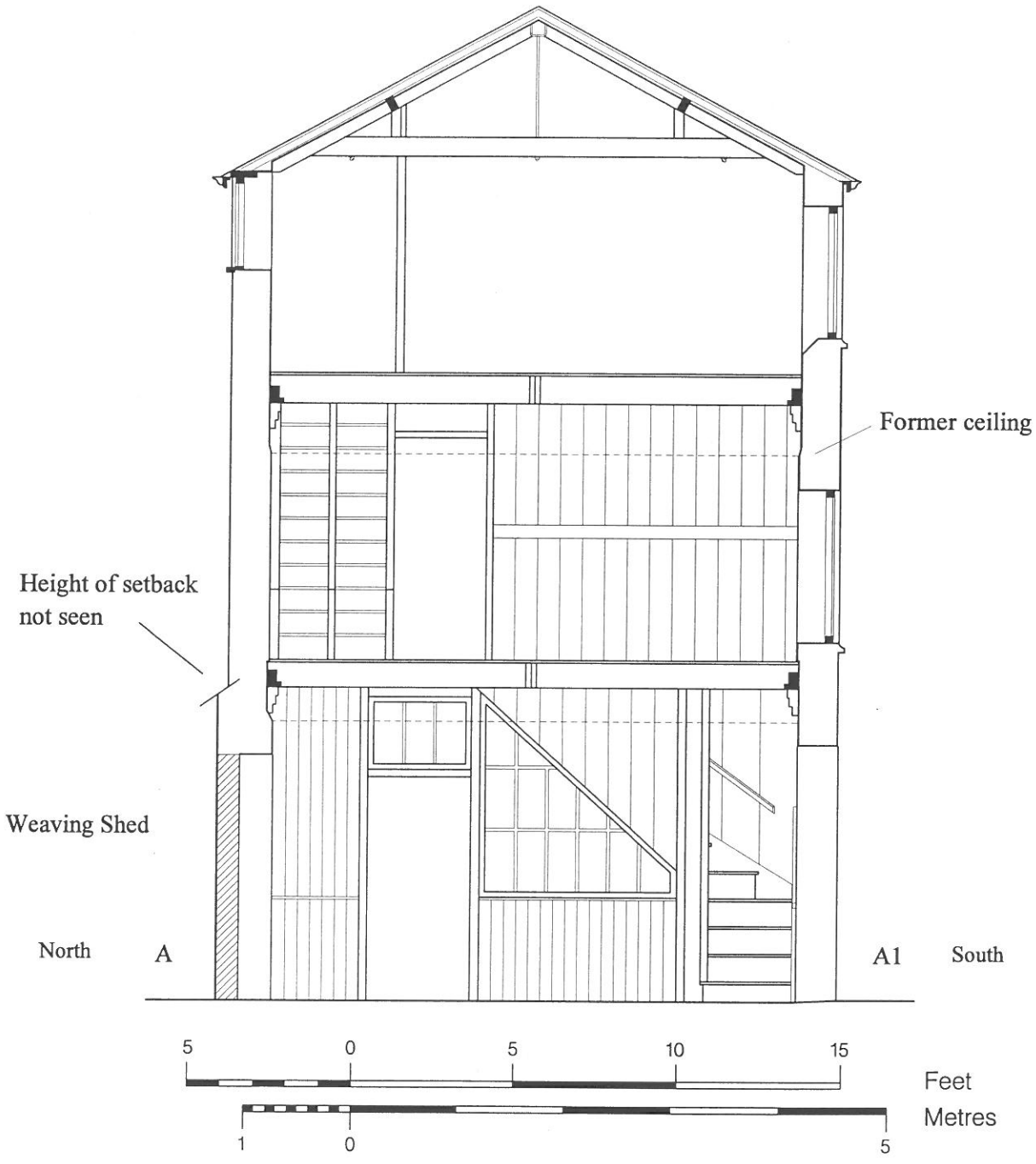
GROUND FLOOR PLAN

FORMER LOOMSHOP
Tonedale Mills
Wellington
Somerset

BB - blocked bearing box
BS - blocked shaft box
EB - seating for entablature beam at high level
MS - manhole for drive shaft

D - original doorway
O - extent of original opening
W - original window head
BW - blocked window
FD - former doorway
SJ - straight joint

Surveyed: 22nd July 1998
Print scale: 1:175
Drawing no: 1 of 2
Grid ref: ST 1282 2139
NBR no: 90889



CROSS-SECTION A - A1
Former Loomshop (building 83)
Tonedale Mills
Wellington
Somerset

RCHM
ENGLAND

Surveyed:	22nd July 1998
Print scale:	1:60
Drawing no:	2 of 2
Grid ref:	ST 1282 2139
NBR no:	90889

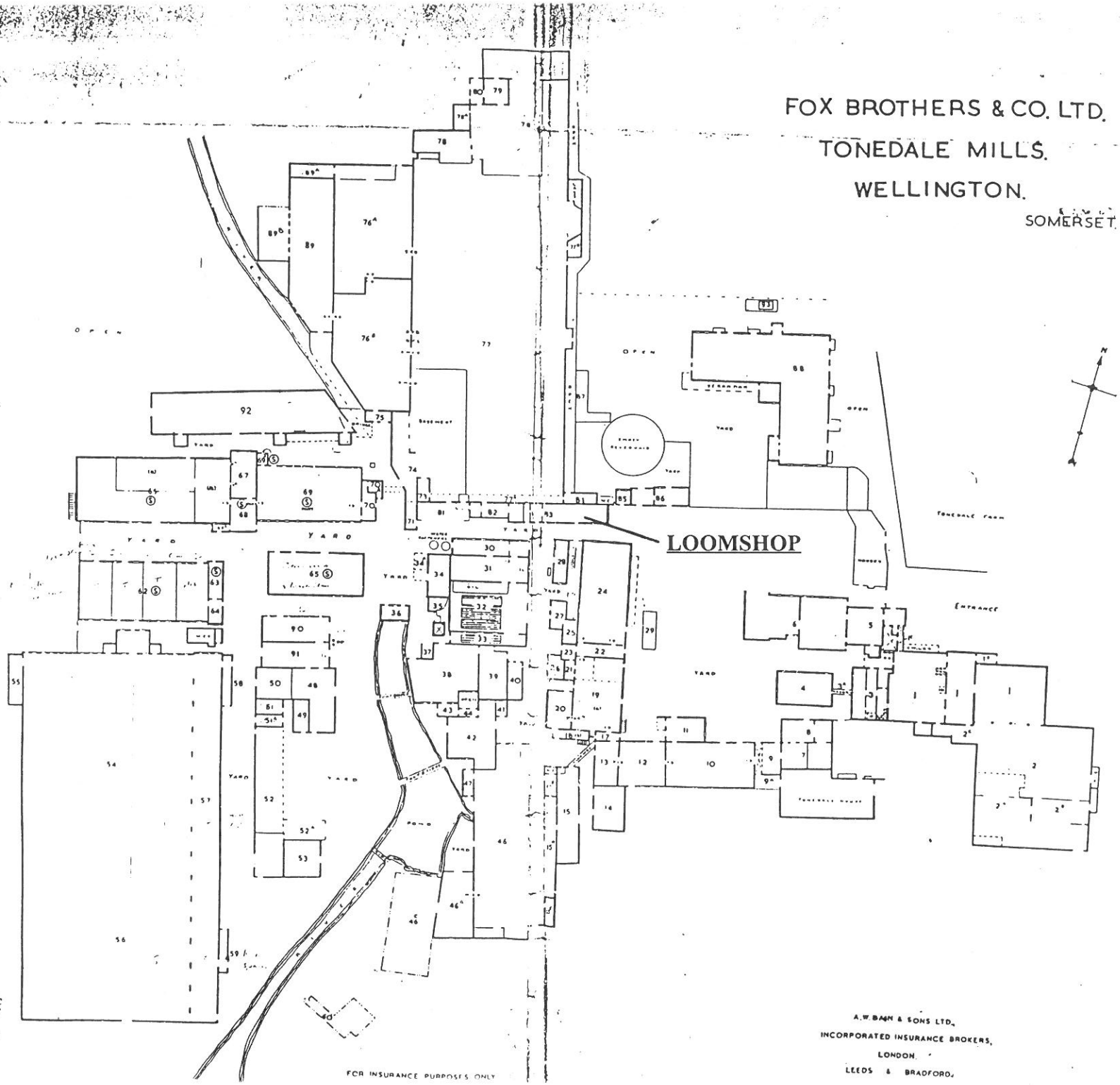
DOCUMENTS IN FILE

1. Block Plan, nd, Fox Brothers & Co. Ltd., Tonedale Mills, Wellington, Somerset.

2. Extract from Tithe Map, 1839, Somerset Records Office.

3. Extract from Ordnance Survey 1:2,500, Somerset Sheet XVIII.4, surveyed 1886-7, published 1890.

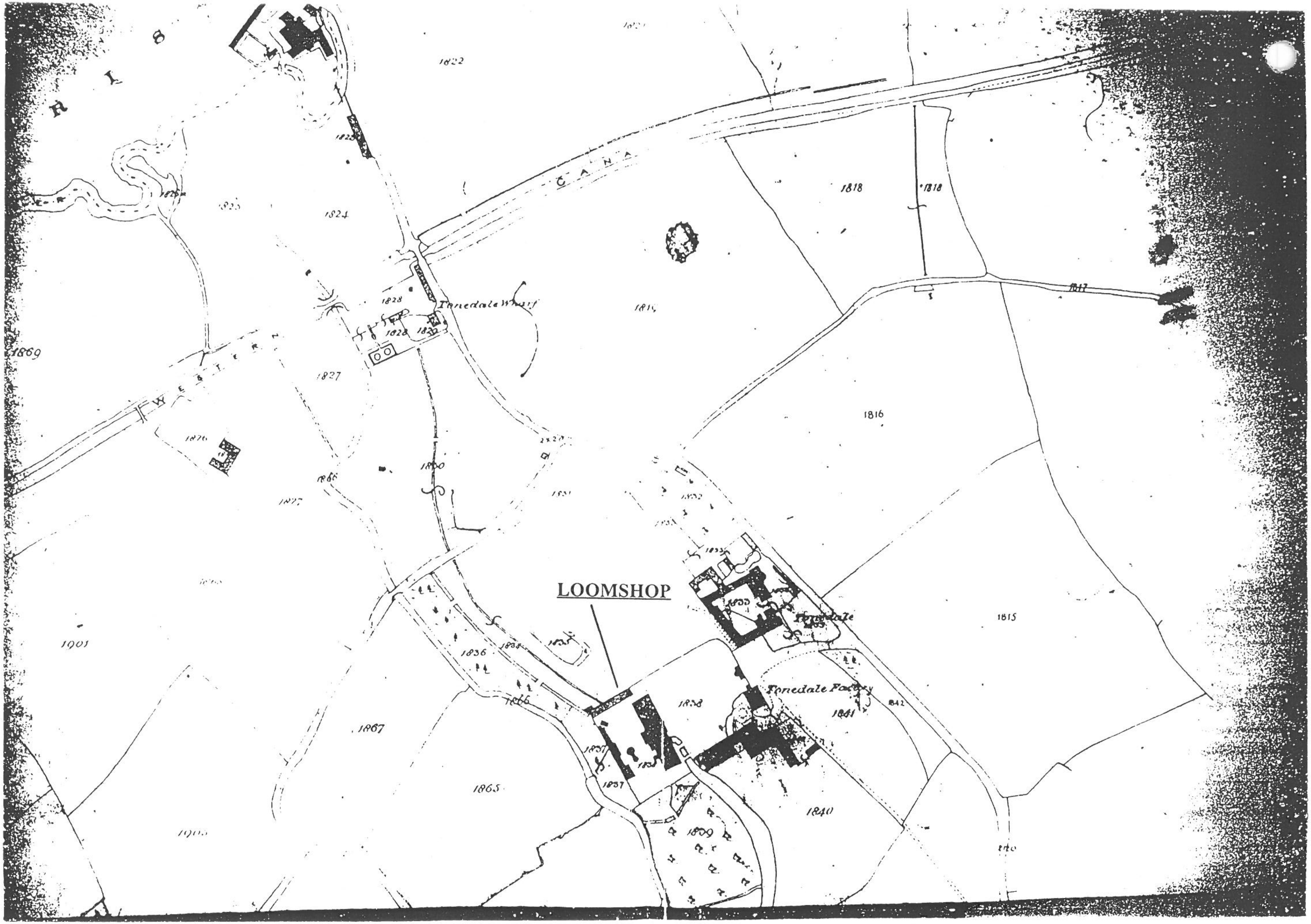
FOX BROTHERS & CO. LTD.
TONEDALE MILLS.
WELLINGTON.
SOMERSET.

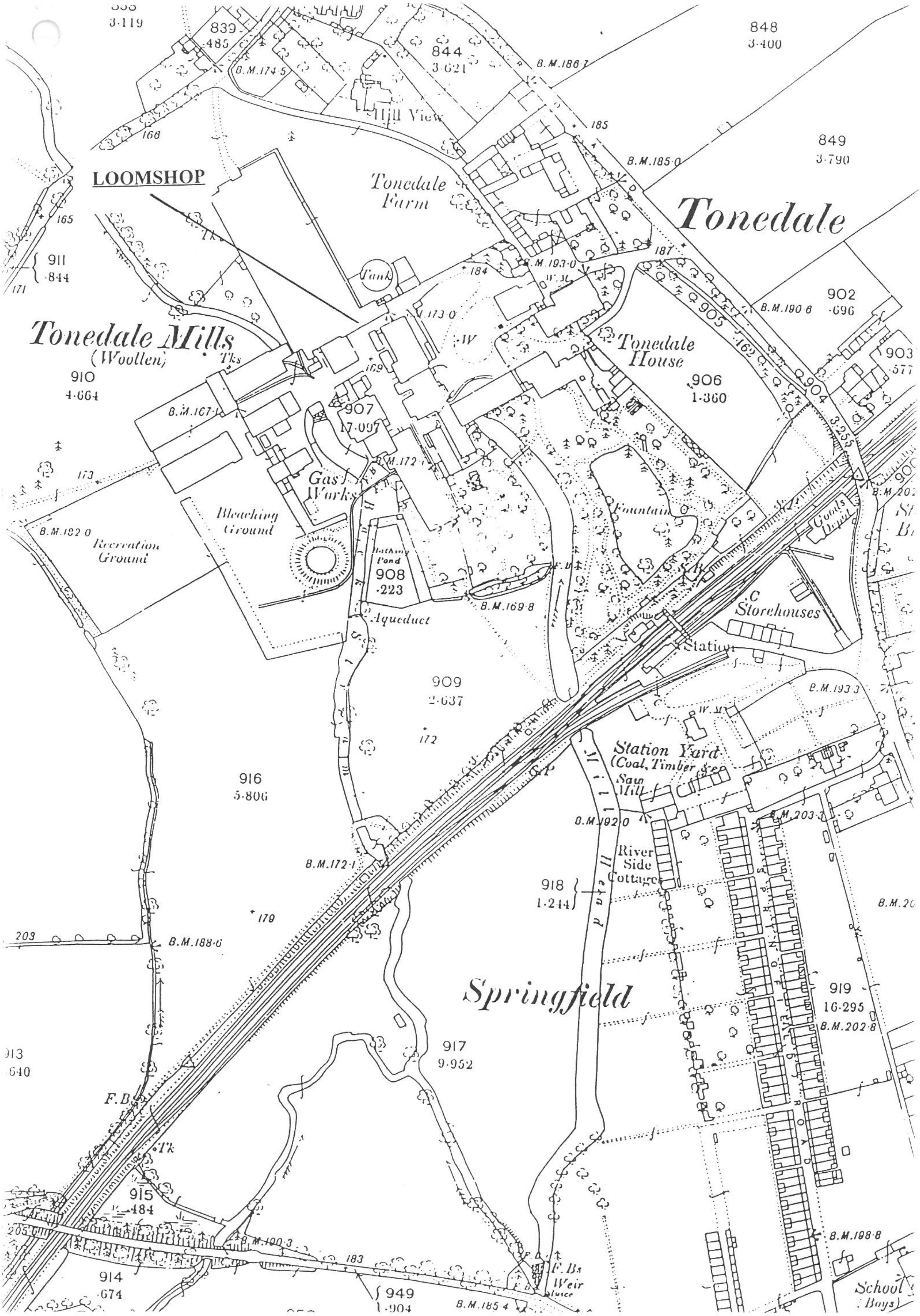


REDUCED 2½

SCALE
1 INCH = 40 FEET.
Nov. 1956
DEC 1957
JULY 1958
SEPT 1960
NOV 1962

A.W. BAIN & SONS LTD.,
INCORPORATED INSURANCE BROKERS,
LONDON,
LEEDS & BRADFORD.


LOOMSHOP
Tonedale Wharf
Tonedale Factory
CANA
WESTERN
1815
1816
1818
1822
1824
1827
1828
1836
1838
1840
1841
1865
1867
1901



LOOMSHOP
Tonedale
Tonedale Mills
(Woollen)
Tonedale Farm
Hill View
Tank
Tonedale House
Gas Works
Bleaching Ground
Recreation Ground
Bathing Pond
Aqueduct
Fountain
Goods Depot
Storehouses
Station
Station Yard
(Coal, Timber &c
Saw Mill
River Side Cottages
Springfield
Mill Head
F.B
F. Bs
Weir
School (Boys)
839
·485
844
3·621
848
3·400
849
3·790
902
·696
903
·577
906
1·360
907
17·097
908
·223
909
2·637
910
4·664
911
·844
913
·640
914
·674
915
·484
916
5·806
917
9·952
918
1·244
919
16·295
949
1·904
B.M. 186·7
B.M. 185·0
B.M. 190·6
B.M. 193·0
B.M. 174·5
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B.M. 173·0
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B.M. 193·3
B.M. 192·0
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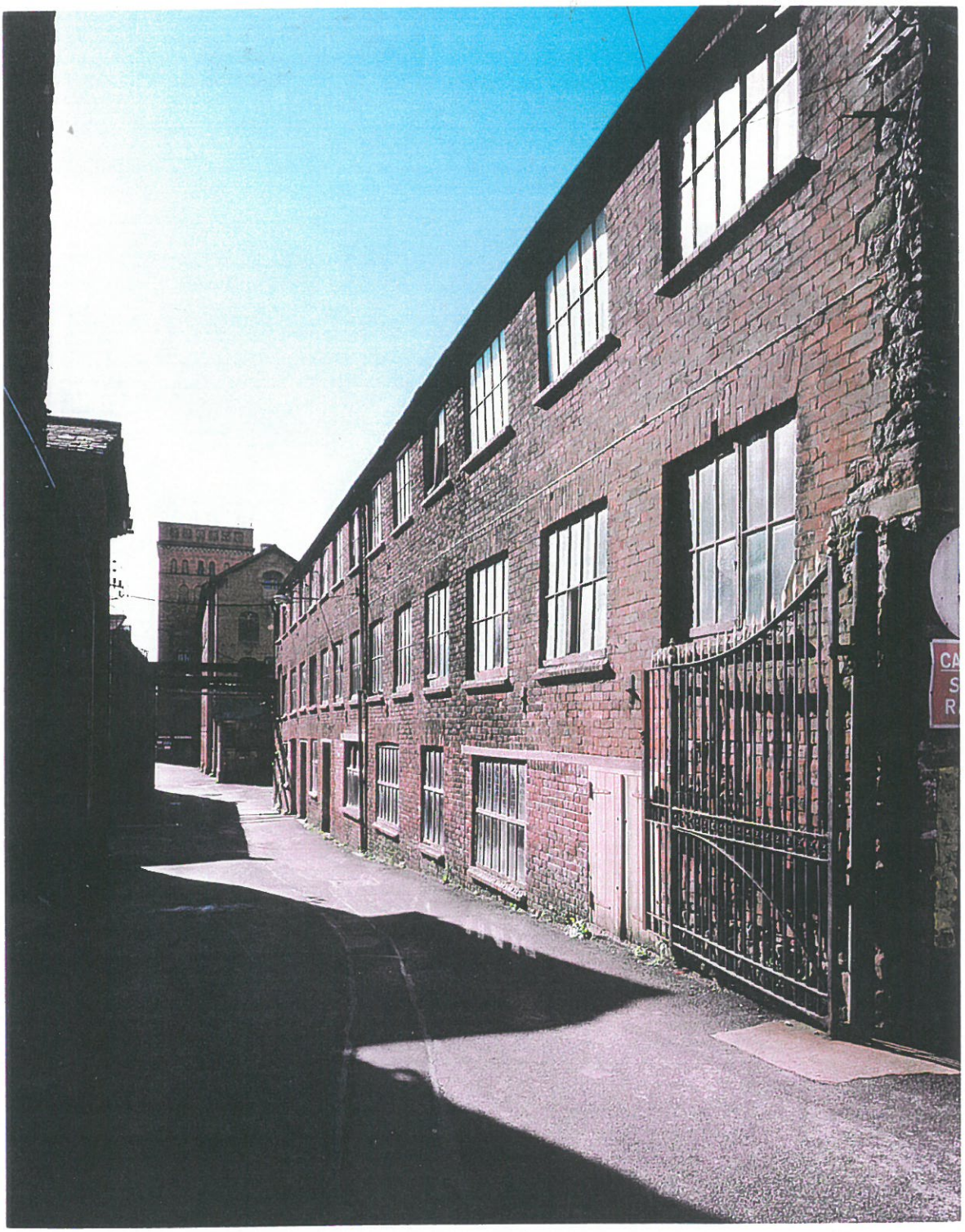

SOUTH ELEVATION, FACING WEST

BEAM-ENGINE HOUSE WITH LOOMSHOP TO REAR, FACING EAST

TOP STOREY, BROAD HAND PATTERN LOOM, FACING WEST

TOP STOREY PATTERN STORE, FACING EAST

The National Monuments Record contains all the information in this report – and more: original photographs, plans old and new, the results of all RCHME field surveys, indexes of archaeological sites and historical buildings, and complete coverage of England in air photographs.

The Royal Commission on the Historical Monuments of England gathers information on England's heritage and provides it through the National Monuments Record

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