

LOGGANS MILL, HAYLE

An Archaeological and Historic Building Assessment



Cornwall Archaeological Unit
Cornwall County Council

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A Report for Lidl's Assets (UK) GmbH

By

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**Cornwall Archaeological Unit
Cornwall County Council**

June 1998

Acknowledgements

This study was commissioned by David Lobban of CSJ Planning Consultants Limited, acting on behalf of the site's owners, Lidl's Assets (UK) GmbH. A survey of the mill building was carried out by Robin Smyth for CSJ Planning, and annotated drawings are included with this text.

Historical archives of the HTP company are stored at Cornwall County Record Office, Truro and thanks are due to their staff for assistance in locating records, particularly David Thomas. The Royal Cornwall Museum also holds published and unpublished records relating to Loggans Mill and HTP; Angela Broome of the Courtney Library provided much help in supplying additional historical sources. Roger Penhallurick located and arranged reproduction of the historic photos of the site.

Within Cornwall Archaeological Unit, Jeanette Ratcliffe acted as Project Manager and the author carried out the historical research and on-site recording. Eleanor Bull, a student from the University of Bradford on a year's placement with CAU, provided help with the fieldwork.

Front cover illustration:

An engraving of Loggans Mill c.1850 (from HTP c.1937, reproduced by courtesy of the Royal Cornwall Museum).

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Please note that Figures 17 to 20 are drafts of the building survey, labelled to highlight elements described in the report. For more information, please refer to the architect's plans with historic information added by CAU.

Abbreviations used in the text

| | |
|-----|---|
| CAU | Cornwall Archaeological Unit |
| CRO | Cornwall County Record Office |
| CSJ | CSJ Planning Consultants Ltd |
| HTP | Hosken, Trevithick, Polkinghorn and Company Limited |
| NGR | National Grid Reference |
| PDC | Penwith District Council |
| RCM | Royal Cornwall Museum |
| SMR | Cornwall and the Isles of Scilly Sites and Monuments Record |

1. Summary of historical and archaeological importance

There is a long history of milling at Loggans Mill - a mill was first recorded here in 1684 and the site may have been used for milling from as early as the 11th century. The present mill, a Grade II Listed Building, dates from 1852 and is very rare in Cornwall in terms of both its size and character and the type of the milling operation that it represents. This was one of only a few mills in the county to be developed as a roller mill and it also has the distinction of having a strong historical association with a highly successful westcountry enterprise (Hosken, Trevithick, Polkinghorn & Co.).

Though in a ruinous condition and stripped of much of its internal machinery and fittings, the building retains its distinctive historic character and forms a prominent local landmark at the eastern approach to Hayle. Many of the associated structures that previously surrounded it have been demolished, but a number of significant features survive - for example, the mill leat and tailrace and the original boundary walls and gateways. Given the 19th and 20th century development of the site and the degree of recent ground disturbance, the potential for the survival of buried remains of earlier activity on the site is not considered to be very high.

2. Recommendations

Owing to the lack of detailed plans and elevations, it has not been possible within the scope of this report to carry out a full assessment of the impact that the proposed development will have on the historic mill building and other archaeological remains. Nevertheless, the recommendations below provide a clear idea of what is required in order to preserve the historical character of the site and make an adequate archaeological record.

2.1 The mill building

The mill building is in a dilapidated and deteriorating condition, and sensitive conversion and re-use is considered to be a viable option for the preservation of this important historic structure. However, care must be taken to preserve those features and details that give the building its distinctive character. The final design of the proposed conversion to residential use will be arrived at following discussions between representatives of the Developer, Local Planning Authority and County Archaeologist. It is intended that the following recommendations should inform such discussions.

Preserving the external appearance of the mill building (see Figures 17-20)

1. *No new openings* to be created (the lack of window openings in the north end will inevitably restrict the type of re-use that this section of the building can be adapted to).
2. *Existing openings* to be re-used using materials and fittings that are in-keeping with the mill's historic appearance, for example:
 - a) wooden four pane sash windows in the main east and west elevations;
 - b) wooden windows with wooden shutters in the south gable wall;
 - c) wooden panel doors where these are known to have existed;
 - d) larger multiple pane windows in the section that is currently roofless.

There are sufficient pieces available in the structure to create patterns for replacements.

3. The existing *roof covering* should be replaced with a material more in-keeping with the construction date (i.e. sized natural slate, with crested ridge tiles on the northern end).
4. The torn brick face of the *partially demolished tower* should be rebuilt and the tower levelled off at its present height, with a flat roof hidden behind a low parapet (rebuilding the tower to its former height would be impractical).

Preservation of the mill's internal character

In order to maintain the feel of the former industrial structure, conversion should, as far as is practical, retain the original internal layout of the building and preserve internal features and fittings. This will include:

1. Preservation of all *wooden columns*, especially the turned and decorated examples in the central section of the mill (Figure 24);
2. Preservation of the *decorative cast iron column* on the 1st floor of the central section;
3. Preservation of the pair of *embossed cast iron stanchions* on the ground floor (Figure 24);
4. Strengthening and preservation of the *low 2nd floor arch* between the central section and the southern extension;
5. Retention and consolidation of the *strong wooden 1st floor* in the central section;
6. Rebuilding of *all other floors*;
7. Preservation of *pulley wheels, axle holes etc.*;
8. Preservation and consolidation of the *spiral grain chute*.

Some internal fittings, particularly the surviving machinery, may be best preserved by careful removal to an approved museum.

2.2 Retention of other features on the site (see Figure 2)

The key features worthy of retention are listed here.

1. *Boundary walls* on the west and northeast side of the site - these substantial and apparently stable walls would afford privacy to the proposed dwellings, and the western wall contains two openings (with granite gateposts and remains of wooden gates), which could be re-used to provide access to the development (the gates could be rebuilt using the remains of the originals as a pattern).
2. *The mill leat and tailrace*, the oldest surviving features on the site - at present the tailrace hardly contains any water as the stream has largely been diverted, but the watercourse would be an attractive feature if it was cleaned out and a greater volume of water encouraged to flow along it.
3. *Remains of a 1930s brick wall* - a fragment of wall on the west side of the site, associated with a now demolished range of buildings.
4. *A rectangular rock-cut building platform* - located to the northwest of the mill, this appears to be a platform for a building constructed around the turn of the century.

2.3 Design and layout of new buildings

Though it now stands in isolation, Loggans Mill has historically been part of a complex of structures and it could, therefore be argued that the erection of new buildings on the site will enhance the setting of the mill. Design is an important factor here, and new build should reflect the style and period of the mill building (with particular attention being paid to masonry, roof materials, doors and windows). It is also important to give adequate consideration to layout and spacing: crowded regular rows of buildings would look more out of place than a seemingly organic development with a greater variety of shapes.

2.4 Further archaeological recording

Recording the mill building prior to conversion

Access to the upper parts of the mill building has not been possible to date and the external elevations contained in this report have been generated from scaled photographs. A re-assessment needs to be made when access is available, that is when the building is scaffolded ready for consolidation and conversion. Accurate measured exterior and interior elevations and plans will be needed to be created for the purposes of the development and it is essential that there is an archaeological input to these in order that they can serve as a more detailed and comprehensive historic building record.

Archaeological watching brief while construction work is in progress

There is some potential for buried archaeological remains to be revealed during the digging of foundations and service trenches. These may include traces of structures mapped since the 19th century and possibly also the footings of earlier buildings. In the light of this, an archaeological watching brief may be desirable in order that a record may be made of any remains disturbed by groundworks.

3. Background

Loggans Mill is a large and imposing granite building situated on the eastern outskirts of Hayle (at NGR SW 5736 3857, see Figures 1 and 22). The site forms an important landmark visible from the A30 and railway when approaching the town from the east. Associated with the large Cornish enterprise of Hosken, Trevithick and Polkinghorn and Company (HTP), it was Cornwall's largest flour mill during the late 19th century and early 20th century.

When HTP moved their milling business to Plymouth in 1930, Loggans Mill was effectively 'mothballed' with the machinery left inside. This was presumably undertaken so that the company could re-open the mill if extra capacity was required. The final plan of the mill complex can be seen on the 1936 OS revision (Figure 7). HTP (latterly Farm Industries) retained the site until 1973 (see Figure 15) although the mill appears to have been redundant since 1936 when HTP sold their milling business to Spillers Ltd.

During the 1980s Loggans Mill was purchased for intended redevelopment. A large complex of buildings fronting the road into Hayle was levelled and this part of the site was piled for the new structures. All other buildings on the site, with the exception of the mill, were also demolished. The mill itself was subject to a considerable amount of destruction, with some floors and machinery being removed. At this point the development was abandoned; the concrete piled foundations together with the partially stripped out mill endure as a reminder of this unfortunate episode. Since then the mill building has remained derelict, inhabited by a colony of jackdaws and only visited by local youngsters, enthusiasts of industrial archaeology and others curious to explore it. In 1988 it became a Grade II Listed Building (Ref. Hayle, 9/135).

The site has recently been acquired by Lidl Assets (UK) GmbH and is the subject of a development proposal which involves constructing a supermarket and car park on the southern half of the site, converting the mill building into flats, and erecting housing on the remainder of the site (Figure 21).

Owing to the mill's Listed Building status and the historical importance of the site as a whole, the current planning application is subject to an assessment of the impact of the proposed development on the historic structure and its immediate environs. A Brief was produced by John Gould (Assistant Conservation Officer, acting on behalf of the County Archaeologist) and a successful tender to undertake the assessment was submitted to CSJ by the contracting division of Cornwall Archaeological Unit (CAU). This report sets out the results of the study.

4. Working methods

The Archaeological and Historic Building Assessment was carried out during late May and early June 1998, and comprised a desk-based study of available historical material, followed by fieldwork.

4.1 Desk-based study

A search of historical material relating to the mill was undertaken in local archives, mainly information already held by CAU, together with additional sources at the Cornwall County Record Office (CRO) and the Royal Cornwall Museum (RCM). A full list of the sources consulted appears in Section 8. Sources at CAU offices included the Cornwall and

Isles of Scilly Sites and Monuments Record, together with place-name information and historic maps. Records relating to HTP are held at CRO; this is an extensive archive of a company which owned many sites in Cornwall. As there was only limited time in which to examine them a selection was made of the more promising entries. Trade directories were also searched for references to the mill and its owners. The Courtney Library of the RCM holds published and unpublished material relating to Loggans Mill and HTP. A useful source discovered there is a company history, published by HTP in the late 1930s as part of a brochure advertising their garage. The information appears to be more reliable than other sources, as it is both more detailed and was written from within the company. The RCM holds an extensive collection of historic photographs of Cornwall and six photographs of Loggans Mill were found there. Five are reproduced in this report (see Figures 12 to 16).

4.2 Fieldwork

Fieldwork at the mill was carried out over two days. The first visit was timed to coincide with a measured survey of the building being undertaken by Robin Smyth (a Bristol based architect) and his assistant, with the role of the archaeologist being to point out features to be included in the survey and to gain an overview of the building and its historical development. A photographic survey was also undertaken.

Safe access proved a problem in many parts of the building. In the southern part of the structure only the ground floor and part of the first floor were safe enough to enter. Some parts of the higher floors appeared to be relatively intact, with machinery visible, but these were completely inaccessible from below. In the northern part of the building the ground floor and first floor were inaccessible due to missing stairs and a partially burnt wooden floor. The roofless middle section of the building contained partially collapsed flooring and remains of machinery. Photography was used to record the interior of the building wherever possible; the complexity of such an industrial structure is difficult to visualise using only plans and elevations.

Measured survey was carried out in the accessible parts of the ground floor of the building. This was undertaken using dimensioned sketch technique, with the plan drawn up to scale off-site. As a result the plan could only show measurements and not the degree of detail usually associated with archaeological recording. As survey was carried out by taped measurement only, with no instruments available, elevations were drawn using the ground plan information as a base and scaling from photographs. The resulting elevations cannot, therefore, be regarded as being precise in terms of the higher levels but nonetheless give a realistic impression of the scale of the structure.

The second day of fieldwork was used to annotate draft copies of the architect's drawings with archaeological detail and also to annotate a topographical plan of the development site to indicate survival of features associated with the mill.

5. Historical background

5.1 Pre-1852

The first recorded reference to the place-name of Loggans is from 1154, when it was spelt *Leugan*. In this year Robert, son of William, Earl of Gloucester gave the manor of

Connerton to Richard Pincerna but excluded Loggans and the services of Alured de Trevethoe from the grant (VCH 1908, 20).

Surviving medieval documentation provides further place-name references to Loggans. As names tended to be recorded phonetically, there is variation in the spellings used:

| | | |
|------|----------------|---|
| 1300 | <i>Loigans</i> | |
| 1302 | <i>Loegans</i> | |
| 1303 | <i>Loygans</i> | |
| 1305 | <i>Loigans</i> | |
| 1327 | <i>Lugans</i> | |
| 1327 | <i>Leugeyn</i> | |
| 1369 | <i>Lugans</i> | (see Gover 1948, 612 and VCH 1908, 20). |

The origin of the place-name is obscure, as it contains the Cornish element *cant* which is suggested to mean 'district, region' or 'edge, border' or possibly 'host, throng, troop' (Padel 1985, 37). In the case of Loggans, 'edge or border' appears likely, given the site's location close to the Towans.

The author of the Victoria County History deduced that the Domesday manor of Connerton (likely to have been centred on the present village of Gwithian) had its mill at Loggans. If this is the case then the milling site would date from 1086 or earlier. There are other, perhaps less reliable, theories as to the origin of the mill. Noall (1984, 82) notes that *...in the 13th century a grant of land and a mill was made by King John to the Earl of Arundel* but does not quote his source of information and there is no correlation of this with references from elsewhere. There is also a tradition that Loggans has been the site of a mill since the reign of Henry VIII (1509-1547). This was written in an obituary of William Hosken, published in 1889. Higgans (1990, 490) suggested that Sir William Godolphin, who acquired Loggans as part of the larger estate including Lelant and Trevethoe in 1538, might have instigated the building of a mill here.

The first secure reference to a mill at Loggans is the will and inventory of William Carnarthen, dated 1684, which provides a description of the millhouse. Carnarthen's dwelling comprised a hall, buttery and kitchen above which there were two bedrooms (*ibid*). By the later 17th century the place-name appears to have developed to *Luggans* and appears as such on Joel Gascoyne's map (Figure 3, Ravenhill and Padel 1991). Thomas Martyn, whose map was published in the mid-18th century (Figure 4), shows a settlement had developed at Loggans, probably the group of cottages that are visible almost a hundred years later on the Tithe Map. In 1809 the first OS survey shows Luggans Mill and the adjoining Luggans Bridge carrying the road to Gwithian over the head of Copperhouse Creek (Figure 5).

The Hosken family took over the lease of Loggans Mill in 1810 and this was the start of a long association between the site and this family of millers. The Hoskens had previously occupied mills at Sithney in Breage and Trevethoe in Lelant. William Hosken (born 1805) became miller at Loggans on the death of his father in 1827 and he started to develop the business. Until the 19th century Loggans Mill was a grist (animal feed) mill and it is described as such in 1752 (Praed papers at CRO). A set of flour milling stones were installed in 1840 (HTP, c.1937).

In 1842 the Tithe Map for Phillack parish was surveyed (see Figure 6). The accompanying Apportionment recorded Plot No.776 as a *Dwelling House, Mill and Town-place*, occupied

by William Hosken and owned by the Rev W Hockin, Rector of Phillack. Loggans was at that time a relatively small mill with the accompanying dwelling shown to the west. Two other dwellings and gardens adjoined the mill site (Figure 6).

Trade directories that pre-date the middle of the 19th century tend to highlight businesses in the traditional market towns of Cornwall and the earliest entries for Hayle are usually included with St Ives. The 1844 edition of Pigot's Directory recorded William Hosking (*sic*) as a miller in Hayle. The 1847 edition of Williams Commercial Directory recorded *William Hoskin, miller, Hayle Copperhouse*.

In 1852 the mill was destroyed by a fire. Fortunately, an engraving of Loggans Mill was made before it burnt down and is reproduced here as the cover illustration. At this time (c.1850) the mill was considerably smaller than that now surviving, apparently narrower and probably three storey at this stage (HTP c.1937). A house and outbuildings adjoining are probably those shown on the Tithe Map; these continued in use until at least 1877.

5.2 Expansion in the later 19th century

After the fire the opportunity was taken to rebuild the mill on a much larger scale. The present structure originated during this phase of the site's development - a datestone now incorporated into the southern gable bears the initials of William Hosken and marks the date of the rebuild (1852).

Despite the fire the Hosken's business continued to grow. In 1852 Slater's Directory recorded William Hoskin under the heading *Millers, & Corn & Flour factors*. The new mill was built to five storeys high and was also longer and wider than its predecessor. William Hosken and his son Samuel also took over leases of mills at Angarrack in the middle years of the 19th century (Bliss 1978, 33). As technology developed in milling, opportunity was taken to introduce new processes at Loggans, which enabled the business to expand. In 1856 the dressing of flour through 'silks' was introduced and processes were also speeded up by the 1877 development of roller mills, rather than the traditional grinding through millstones (HTP, c.1937).

Field evidence indicates the main structure of the mill, built to five storeys high in 1852 was extended at its southern end. The 1877 OS map (Figure 7) shows an already extended mill with buildings abutting the main structure on the southeast side. These buildings overlie the line of the mill's tailrace which runs in a shallow arched tunnel beneath. Other buildings shown on the Tithe Map were still in existence. A curved enclosure to the southwest of the mill building, recorded as a garden on the Tithe Apportionment, had become a small orchard. A complex of new buildings had been constructed along the road frontage of the site, including ranges of structures around a rectangular yard. These were probably stabling for the numerous horses that were used by the Hosken's business.

A year later, Harrods Directory recorded William Hosken as a private resident at Penmare House. The business was entered as *W Hosken & Son millers corn flour cake manure and seed merchants and agents to the Royal Fire and Life Insurance Company. Copperhouse and Loggans Mill*. The old mill house apparently remained in existence until the majority of the buildings were cleared away in the 1980s so the reason for the Hosken family's move from the site was probably one of status as well as convenience, being away from the noise and bustle of the mill.

In 1883 Kelly's Directory contained the entry: *William Hosken & Sons millers (water and steam) & farmers & cattle breeders, Copperhouse & Loggans, Angarrack & Trungle*. The note advertising steam as well as water power is significant. An internal chimney stack at the corner of the southern extension indicates this was close to the site of the boiler. Higgans notes that steam was supplied by a Lancashire boiler built by Harvey and Company in Hayle. This boiler, like others employed on local mines, would have required a strong draught from a tall chimney. Steam was fed to a horizontal condensing engine, which not only powered the machinery but also generated electricity for lighting.

In 1884 Loggans Mill was completely re-organised as a roller mill (HTP, c.1937). Higgans records that the latest design of mill machinery was bought from J Harrison Carter of London. This re-organisation corresponded with another large extension to the building, this time at the northern end (see Figure 8). This part is a full six storeys high and also included a tower like structure with upper storeys of brick. It probably contained hoisting machinery for bringing grain into the top of the building.

The modernisation of the mill and extra capacity rapidly exhausted local supplies of grain. Large quantities from other parts of the country and abroad were brought into Hayle harbour and transported from Point Quay to Loggans by horse-drawn waggons and, later, by a traction engine and trailers (Higgans 1990, 492).

In 1889 William Hosken died and a year later his descendants went into partnership with other entrepreneurs to form a large milling and agricultural supplies business.

5.3 Hosken, Trevithick, Polkinghorn & Co. (HTP)

The Hosken family were not the only millers in Hayle during the 19th century. Harvey and Company, of the Foundry, was a large engineering enterprise manufacturing steam engines and mining equipment. This company, as was common practice at the time, had their own provision suppliers and employees were obliged to purchase some of their goods from them. In 1854 the provisions section seceded from Harveys' and became a separate company, J H Trevithick and Sons (Noall 1984, 82).

Like the Hoskens, the Trevithicks also built up a considerable and varied business, as their 1878 entry in Harrods Directory attests: *J H Trevithick & Sons corn & flour factors, millers, provision merchants, importers of dried and green fruits, wholesale and retail grocers, drapers and ship bread manufacturers. Town mill.*

By 1883 this firm were proud to boast an international connection - *Trevithick IH (sic) & Sons millers and general merchants steam flour mills, & at 39 Broadway, New York*. (Kellys Directory). This appears to have been short-lived as in 1889 the entry read *J H Trevithick & Sons millers & provision merchants, steam flour mills & at Truro & Plymouth*. This advert also indicates that the Trevithicks had also invested in steam powered milling machinery and had created branches elsewhere.

In 1890, a year after William Hosken's death, the two Hayle companies amalgamated, and with of Samuel Polkinghorn, a woolstapler and general dealer of Truro, formed Hosken, Trevithick, Polkinghorn and Company Limited. This company had a large customer base within the farming community in the westcountry and the initials HTP became a household name (HTP c.1937). Its milling business was soon concentrated at Loggans and the old smaller water-powered mills at Angarrack were closed down. The company also

built up a substantial transport fleet of horse-drawn waggons and traction engines, used to bring grain in and to carry sacks of flour from the mill.

Mishaps did occur, however. Another fire broke out in the mill in 1892, though fortunately the fire-fighting apparatus installed after the 1852 destruction ensured that the mill did not on this occasion suffer such severe damage (Higgans 1990, 492).

In 1897 the entry in Kellys Directory for the company read: *Hosken Trevithick and Polkinhorn & Co Ltd millers, corn seed manure and implement merchants. telegraphic address "Cornubia, Hayle"; & at Tavistock, Plymouth, Truro, St Austell & Southampton.* One of the Hosken family also occupied Carwin and Pulsack farms. The company continued to have entries in Kellys through the early years of the 20th century.

The company finally bought the freehold of the Loggans site in 1907, after leasing it for so many years. A survey plan was drawn up before contracts were exchanged, which shows the larger plan of the mill from the 1884 re-organisation (CRO document no. DDX 401 195). A comment was made within the correspondence surrounding the purchase of the mill that the company had to maintain control over the water supply. Although the mill was probably no longer water powered at this stage the mill leat was still vital to supply the boiler of the steam engine.

Loggans Mill was re-surveyed by the OS in 1908 (see Figure 8). This shows similar information to the conveyance survey. A bypass leat is depicted for the first time. The old house to the north of the mill had been demolished to make way for the northern extension. A large building and/or yard had been built to the northwest of the mill. Some changes and additions had been made to buildings on the road frontage.

In 1934 the transport division of HTP became a separate company, HTP Motors Ltd., and a showroom was opened on Lemon Quay in Truro (HTP c.1937). The showroom still exists and now houses the pannier market.

The 1935 entry in Kelly's Directory reads *Hosken Trevithick and Polkinghorn & Co Ltd provision merchants, millers, corn, seed, manure and agricultural merchants (Telegraphic address "Cornubia" TNs 152 & 153) & at Tavistock, Plymouth, Truro, St Austell, Helston, Tregony, Penzance, Wadebridge and Penryn.* The company had by this stage developed branches in the larger Cornish towns (although Tregony is a relatively small settlement, the branch there was probably opened to serve the many farms in the Roseland peninsula).

A revision of the OS 25" survey was carried out in 1936 (see Figure 9). By this time there were further small additions to buildings on the road frontage. A large range had been added in the former orchard/garden area. On the eastern side of the site the boundary had been altered and a long range of small buildings added here. The mill was still labelled as *Corn* ie. not regarded as disused.

Three photos in the collection of the RCM show traction waggons being manoeuvred around the mill yard by a solid tyred tractor. These photos appear to have been taken in the 1930s after the eastern site boundary was altered and the building range added on this side (see Figures 12 and 13).

In 1936 HTP sold their flour milling and wholesale grain business to Spillers Ltd. From this time the company concentrated their business on feedstuffs, fertilisers, seeds and agricultural and dairy machinery. The company name was changed to Farm Industries Ltd. Despite these changes there was still a brief entry for HTP in the 1939 edition of Kelly's Directory; *Hoskin, Trevithick, Polkinhorn & Co Ltd, millers* and the company was

still referred to as HTP among the Cornish farming community as late as the 1950s (M J Thomas, pers. comm.).

5.4 Later 20th century changes

A 1967 photograph, in the collection of the RCM (see Figure 14), shows the southern part of the site and makes an interesting comparison with the 1930s pictures. Loggans was then still owned by Farm Industries Ltd. A building on the eastern end of the probable stable complex had a curious conical roof structure. The low buildings adjoining the east side of mill had altered roof vents from the 1930s view, and were also extended with a lean-to. The southern part of the mill was already roofed with asbestos sheets (the present covering) and the site of the chimney at the southeast corner is marked by an angle in the granite roof cornice.

In 1973 Farm Industries Ltd closed their Hayle branch and sold Loggans Mill to a property developer (Higgins 1990, 492). At about this time the mill was photographed from the west side; the two pictures are the last known views of the mill when it was owned by Farm Industries (see Figures 15 and 16). Double wooden gates are visible in front. The upper storey windows of mill were blocked, probably as weatherproofing to protect machinery still inside. The view to the southern part of the mill is the only example that shows the buildings adjoining this side. The long single storey building may be that shown as a house on the Tithe Map but appears more likely to be a replacement. A half hipped roofed building with a sash window and asbestos sheet roof is evidently part of the pre-1936 range. Another view shows the northern extension and the tower. The tower was still to its full height but there were signs of neglect with ivy growing on the building. A canopy over an arched doorway was extant but had roof slates missing. All of the mill was roofed, the northern extension still having its sized slate roof with crested ridge tiles.

In 1988 Loggans Mill became a Grade II Listed Building. Its Listing description recorded:

Circa early C19, extended in 1852 for Mr W Hosken and again extended in 1884. Granite rubble with granite dressings to the older parts, rockfaced granite to the later C19 part.. Corrugated asbestos roofs with gable ends coped gable on right. Scantle slate over rear wing.

Plan: Large rectangular plan plus square tower towards left and single storey wing at right angles to rear right. Waterwheel was originally at rear left. The building was entirely re-furbished in 1884 as a very advanced steam-driven roller mill with electric light. All machinery now gone.

Exterior: 4-storeys and 5-storeys. At left is taller (on higher ground) late C19 block with large round arched doorway on the ground floor, otherwise blind. In front of the right hand corner of this block is a 4-storey roofless tower of similar date. Tower has wide segmentally arched doorway on ground floor and windows to each floor above. Older part, right, is a regular 1:4:3 window range. Large window openings in the left hand bay, otherwise smaller window openings. 2 openings have been made into loading doorways, many of the openings have been blocked but there are some circa late C19 4-pane sashes and some small paned casements surviving. Datestone on right-hand gable end.

Interior: not inspected.

This mill is part of a large C19 industrial complex much of which has been partly demolished in the 1980's.

(Department of the Environment, undated. Note that some aspects of this description have been re-interpreted in Section 6.2).

The latest OS survey (see Figure 2) shows the mill extant but all other buildings demolished.

6. Archaeology

6.1 The site (Figure 2)

The present property at Loggans Mill covers approximately one hectare in area. In recent years there has been a modification to the boundary on the eastern side, where a Pickfords depot is now located and a concrete block boundary wall has been built. The property no longer includes surviving structures adjoining on the east side, which are historically associated with the mill.

Within the property, the only standing structures associated with the site's historic use are as follows:

- the granite mill building itself;
- watercourses of the leat and tailrace;
- boundary walls and a Cornish hedge;
- gateposts with remains of gates;
- a fragment of brick wall associated with part of the 1930s building range (see Figure 2).

All other buildings have been demolished although it is likely that there are some traces surviving below ground. A large sub-rectangular cutting into the rock face just to the northwest of the mill appears to be a platform for a building first shown here in 1908. The complex of buildings along the southern frontage are likely to have been erased by piled foundations intended for a previous development proposal. Elsewhere on the site, there is little trace of any surviving structures as ground levels have been changed. In places, earth and stone debris may mask any foundations. A pile of granite rubble to the north of the tailrace channel includes granite lintels and shaped blocks and this is likely to have been derived from buildings sited here.

Aside from the mill which is described below, the most prominent features are boundary walls defining the western site boundary and the leat and tailrace.

Boundary walls and gateposts

The boundary walls are generally 1.8m (6 ft) high on the road side, built of random faced granite masonry and have semicircular tops to repel water. Two vehicle entrances onto Loggans Road, now partially blocked off with mounds of spoil, are defined by squared granite gateposts 0.5m by 0.5m and c.1.9m high. These support remains of wooden gates, now mostly hidden by ivy. The gates are visible in the 1973 photographs (see Figures 15 and 16) and sufficient remains survive to allow reconstructions to be made. The present plan of the boundary walls reflects that shown on the OS map of 1936; they appear to have been built between 1908 and 1936, probably when a new building range was added to the

west of the mill. Earlier boundaries are likely to have been Cornish hedges; one is extant at the northern end of the site.

The northeastern site boundary is defined by a granite rubble wall c. 1.8m high. This is carried over the leat on a shallow arch of dressed granite voussoirs. This boundary also post-dates 1908, and is first visible on the OS revision of 1936.

Mill leat and tailrace

The leat which once supplied the mill still carries water, although the course is now diverted away from the mill by its former bypass channel. Water now cascades over the stepped structure of the bypass sluice and into a modern channel carrying the water easterly and then into the Angarrack stream. Concrete lining on the south side of the leat carries an incised date of 1941. The leat itself is blocked from the head of the bypass channel, where a slot for a sluice gate can still be seen. A wooden launder is likely to have carried the leat to the wheelpit and the course of this can still be traced. Some water still finds its way from the stream into the wheelpit and tailrace. The wheelpit has at some time during the mill's use been converted to a concrete machinery base and holding down bolts are still extant. It seems likely that when the mill was fully converted to steam power, the waterwheel was removed and other machinery substituted. It is possible that during the early years of this century an auxiliary oil engine may have been installed here and attached to the gearing formerly turned by the waterwheel.

A shallow arch of the tailrace is visible, although there is much debris discarded into this area. The tailrace flowed beneath buildings attached to the east side of the mill before emerging once again into an open channel to the southwest. Here the channel is defined by a revetment of slag blocks, characteristic of many structures in Hayle where slag from the smelting works was re-used as a building material. The courses of the leat and tailrace do not appear to have changed since the Tithe Map and therefore these may be the oldest features surviving on the site.

An unusual bridge carries Loggans Road over the end of the tailrace. It comprises two shallow brick arches with a tall granite upright forming the central bridge pier. The arches are only faces, as behind them simple granite lintels can be seen.

6.2 Mill building (Figures 10-11, 17-20)

Loggans Mill is a large and complex building which demonstrates phases of alteration and use. For convenience, this description has been divided into sub-sections which define particular elements.

Area 1 (Central section)

The oldest part of the mill is the central section, which is five storeys high and is itself divided into two parts. Masonry throughout is of mixed granite and killas rubble, with occasional slag blocks included (more of these are visible on the eastern side). Dressed granite is used for lintels and quoins. The structure is oriented roughly N-S and the western side has a regular pattern of windows, so that it could take maximum advantage of afternoon daylight. Windows, where they survive, are small four pane double hung sash designs, typical of the mid to late 19th century. All window openings have slate sills.

The northern part of Area 1 adjoins the wheelpit (situated immediately east) and formerly contained the main gearing. A brick-lined pit within the building, alongside the wheelpit, probably once held the pit wheel for the mill. This part of the building is now roofless and is dangerous to enter as floors and machinery within have partially collapsed. At ground floor level, a concrete block wall has been built to try and prevent persons entering. This part of the building is abutted on the west side by the tower, and on the north side the walling has been raised another storey where the northern extension has been added. There is no true walling on the west side; here the floor levels are now defined by lines of girders, each supporting a small amount of masonry and slate window sills. Photographs taken in the 1970s indicate that this part of the mill was lit by multiple pane windows. The slate roof of this part contained a large ventilator at the apex, the scar of this is still visible on the northern extension.

A dividing wall separates this part of the building from the remainder of Area 1 to the south. There are traces of blocked openings within this wall and also small apertures where grain chutes, as well as axles and shafts to drive the various machines, passed through.

The southern part of Area 1 is the largest and occupies the greatest ground area of the mill. It has a regular window pattern in the west wall of four windows per floor, whilst in the rear there are usually only two, with occasional later additions. In the ground floor, one former window space has subsequently been converted into a wider loading door, and has a loading step outside. Another former window has brick lining which has reduced the size of the opening. All window spaces in the west wall on the ground floor have been sealed with concrete block walling. At the south end of the central section are internal buttresses, linked at second floor level by a shallow arch. The buttresses are a fragment of the original south gable wall, which became redundant when the building was extended to the south. The shallow arch was presumably added to aid stability of the tall structure. Traces of brick round arched openings can be seen in the ground floor, evidently part of the original doorways or windows.

The first floor level in the southern part of Area 1 is a substantial structure, indicating that major machinery was supported here. It comprises three major joists each 0.3m by 0.3m (1ft by 1ft) spanning the width of the building. Instead of the more usual subsidiary joists the floor is instead constructed of closely set boarding 0.18m (7") wide and 0.05m (2") thick. On top of this there are traces of groove and tongue floorboarding; this may be a later addition and need not have covered the entire floor area. The floor is pierced in many places with small rectangular holes where drive belts for machinery passed through. Major machinery bearings are likely to have been sited on the main joists, where cast iron brackets and shoes are still visible.

The second floor level has been removed and access to the upper floors is now impractical and dangerous without scaffolding. All the upper floors have been built in the traditional way, with subsidiary joists and thinner floorboards. The ground floor has a worn cement rendered floor which may be a replacement, perhaps laid when the building was extended. Comparison of the height of the blocked arches visible in the former gable wall suggests the original floor may have been lower.

Between the floors in this part are several round wooden columns, each with turned decorated tops, emulating the style of classical columns (Figure 24). These are attractive features worthy of retention and preservation. In places these columns have been replaced by straight wooden or cast iron columns.

Area 2 (Southern extension)

The southern extension increased the ground area of the mill by about 50%. It is built of similar masonry to the central section and rises to the same height. This and the southern part of the central section are now roofed with corrugated asbestos sheets. The original roof was probably slate, but had been replaced before 1967.

In the west wall there are three windows per floor but only one in the east wall. Surviving windows in this elevation are four pane double hung sash designs, matching those in the central section. The southern gable wall has two brick round arched doorways in the ground floor. Although now sealed with concrete block, one of these retains its wooden door frame with a fanlight above. Above this, the other floors have windows beneath shallow brick arches. Window patterns are typically three small rectangular panes above a pair of inward opening shutters. The uppermost opening in this elevation is round arched, situated within the roof space of the mill. At some time it has been partially blocked and turned into a window or vent. The original dimensions suggest it was originally a loading door.

The gable wall is finished by a moulded granite cornice above the roof slope. At the southeast corner the moulding drops down and then continues horizontally. This was the location of a chimney for the steam engine of the mill, the flue of which is more visible in the interior, where it forms a round bulge at the angles of the walls. The presence of brick below the present roofline suggests that the chimney stack was of brick, and appears to have been square section in the lower part, probably surmounted by a round stack rising above the height of the roof apex.

A granite datestone is set into the centre of the wall on the southern gable. Inscribed *W.H. 1852* it commemorates the replacement of William Hosken's mill after the fire in that year. Masonry on this wall has been repointed and lined out; the datestone has also been set within a moulded panel of mortar. It is likely that this datestone has been moved from its original location in the original gable wall of the mill.

Inside the extension the upper floors have been removed, with the main joists roughly sawn off. The first floor, only partially extant, is less substantial than in the central section (Area 1). On the ground floor timber columns survive but these are not finely turned as in the older part of the building. The columns are of differing diameters and one is partially octagonal in section. It seems possible that these timbers are re-used sections of a ship's mast.

Two massive cast iron stanchions in the corner of the extension face onto a flue-like hole in the wall. They are embossed *J.H. Carter London*, the name of the manufacturer who supplied the milling machinery to Loggans (see Higgans 1990, 491). The presence of the flue-like hole would suggest the boiler of the mill was sited here, although there are no other footings visible. If the boiler was in this position then the flue must have been carried within the thickness of the wall to the base of the chimney at the southwest corner. An alternative and more plausible site for the boiler and engine may have been the two single storey buildings abutting the mill (Area 5), as a large boiler here could vent directly to the chimney and could also have more practical storage for coal. It seems likely that the flue-like hole in the wall, and also a blocked up brick lined vertical slot nearby may have been for belt drives from the steam engine, driving pulleys mounted on axles supported on the cast iron stanchions.

Area 3 (Northern extension)

The northern extension is built to the equivalent of a full six storeys high and the walling is stepped in slightly at the fifth floor level. It is built entirely of squared and semi-coursed granite. Dressed 'rockfaced' granite masonry, typical of the later 19th century and early 20th century, is used for lintels and sills of windows and the voussoirs of arches. The pitched roof is now covered with corrugated sheets; photos taken in 1967 and the 1970s reveal it formerly had slates with ridge tiles, and a small ventilator was built into the east slope.

The only large openings are in the ground floor, comprising two windows in the east wall, three in the north and two doorways in the west. A wide round arched doorway in the west wall was presumably for loading. This doorway was once protected by a sloping canopy, a support of which still survives and part of the roof flashing line is visible. At its south end, the canopy rested on a beam mounted in the corner of the adjacent tower.

Only the ground floor now survives in Area 3; beneath this is a basement that has not been explored to date as the fire damaged floor is in poor condition. There are remains of grain elevators lying in this part of the mill and some machinery may be still *in situ* in the basement.

Oddly, there are no traces of higher floors. No joist holes are visible in the higher walls and the only possible site for a floor is a slight ledge that would be equivalent to second floor height. There are remains of a stairway which linked the ground floor level to a probable staging. The lack of floors and limited number of openings strongly suggest that Area 3 was used for grain storage.

In the higher parts of the building an axle and pulleys survive. There is also line shafting fixed to the roof timbers. Two small windows provide some light to the upper section. These were built against the quoin of the earlier building (Area 1).

In both gable ends of the northern extension are single round arched openings with dressed granite voussoirs. The southern example has been blocked with brickwork but the northern one is still open. A single louvred ventilation panel survives; it is likely that the remainder of the frame was also filled with louvres. Below the ventilation panel an iron flanged pipe emerges at an angle from the wall face. It is not known what purpose this served.

Area 4 (The tower)

The tower is built of similar masonry to the northern extension (Area 3) and is evidently contemporary. Historic photographs show that it originally stood six storeys high from the visible ground level (and possibly has a basement as well, like the northern extension). The top two storeys were of brickwork in English bond and had pairs of tall recessed panels in each storey, designed to resemble window openings. Access into the upper storey was possible from a doorway on the east side; staging and railings can be seen on the 1967 photograph. The top of the tower supported a structure that looks like a water tank, but is more likely to have been a housing for a hoist mechanism. Lower floors of the tower have remains of windows in each elevation. There are also traces of floors, which suggests that if a hoist was sited here then it must have operated through trapdoors in each floor, as was the common practice in grain mills. In the ground floor is a wide loading doorway with girder supports and a shallow arch above. The girders appear to be secondary and to be contemporary with the addition of a concrete first floor level. At some time the wide doorway has also been infilled with brickwork to reduce the opening to a standard door

width. Destruction of the tower occurred during the period between 1973 and 1988, when other buildings on the site were demolished. It now stands four storeys high, with the sills of the fifth storey brick recesses still visible on the south side.

Area 5 (Buildings on east side)

A group of structures on the east side of the mill lie outside the present property boundary and are unaffected by the development proposals. These are historically associated with the mill's operation and therefore warrant a brief description.

Two stone-built single storey buildings formerly abutted the southern extension of the mill building and are now visible as scars where the rooflines and walls once adjoined. Both buildings are visible in old photographs of the mill. The northernmost building, which had a higher roofline, has been completely demolished. Its southern wall was tied in to the southern extension (Area 2) of the mill, indicating that it was contemporary with this part, while the north wall abutted the older central section (Area 1). Where the gable adjoined the mill, the building was lined with tiles and concrete flooring. The lining is a later addition and is likely to represent a change of use. South of this building is another structure, which is still largely extant but the bay adjoining the mill has been removed. This building partially overlapped the mill's southern gable. Two iron pipes and girders linked this building with the mill.

Adjoining the east side of the wheelpit are two single storey flat roofed concrete buildings, levelled into the surrounding ground. The purpose of these is uncertain; they have doors and window openings facing the mill and may have been offices or store buildings. They post-date the building of the by-pass leat shown in 1908 and are not shown on the 1936 OS map, suggesting they are of later 20th century date.

6.3 Surviving machinery and fittings

Despite demolition in the 1980s some machinery and various fittings still survive inside the mill building. In the central part of the mill (Area 1), machinery (of unknown type and function, probably for dressing/refining the flour) is visible on the upper floors (see for example Figure 23). It appears to have been protected by the blocking in of the upper windows and its inaccessible position. An iron spiral-shaped grain chute once connected at least three floors. This, now rusty and vulnerable feature, is situated in the accessible first floor. In the ground floor of the southern extension (Area 2) are at least two large panel doors now lying on the floor, probably original fittings of the mill.

Pieces of machinery are also visible in the collapsed and roofless part of Area 1, including what appears to be a dressing machine. There may also be machinery surviving in the inaccessible basement below. Within the northern extension (Area 3), parts of grain conveyors survive, albeit not *in situ*. There may also be further features within the basement.

7. Dating evidence, phasing and functions; a discussion

7.1 Pre-1852 mill and ancillary buildings

There are few visible traces of structures pre-dating the 1852 mill. The exceptions are the mill leat and tailrace, which are recorded on the Tithe Map. Most mill sites in Cornwall, as elsewhere, were used over many centuries and the buildings were developed in line with

the prevailing technology. Surviving documentation indicates Loggans to have been a site of a mill from the late 17th century, with hints that it is probably much older, almost certainly medieval.

The structural evidence indicates that the earliest surviving mill building is post-1852, and that this was built directly on the site of its predecessor, probably to take advantage of an existing wheelpit, supply leat and tailrace. Foundations of the pre-1852 building may be preserved below the floor levels of the central section of the present building (Area 1).

Buildings around the mill at the time of the Tithe Map appear to have been destroyed as the mill itself was enlarged, although a long building to the west of the mill (the miller's dwelling in 1842) may have survived until the 1980s demolition episode.

7.2 Post-1852 mill

The present central part of the mill (Area 1) was built to its full five storey height in one episode; it appears to be the mill that was built following the fire in 1852. This massive mill building appears to have been well appointed, containing the turned and decorated wooden columns. It is an interesting question as to where the capital for such an improvement (and for subsequent development on the site before the Hosken's business became part of HTP) came from.

At this time all machinery in the mill was water powered. The wheelpit, together with the height of the leat entering it, suggests the waterwheel was an overshot or high breast shot type, approximately 12 ft diameter and 5 ft wide. The original machinery (pre-roller mill) probably comprised several pairs of burr stones driven by the pit wheel and subsidiary gearing.

The datestone now in the gable of the southern extension was probably originally sited in the central part, and was moved when the building was enlarged.

7.3 Southern extension

The southern extension (Area 2), together with the buildings adjoining on the southeast side (Area 5), are first recorded on the OS survey of 1877. The development, which included construction of the chimney, is related to the introduction of steam power at the mill. The two adjoining buildings are likely to represent the boiler and engine houses, the building with the lower roofline adjacent to the chimney being the boiler house and the other, now demolished building, being the engine house. The location of the boiler and engine outside the main part of the mill appears to have been for practical reasons; firstly to keep dirt, dampness and condensation out of the mill itself and secondly to give reasonable access for coal supplies to the boiler, which could be conveniently stored outside the eastern end of the boiler house. Single storey construction hints that a horizontal engine was employed here. Higgans (1990, 491) notes that the engine at Loggans was a horizontal condensing engine, supplied with steam from a Lancashire boiler made by Harveys of Hayle. He says these were installed in 1884, apparently confusing this with the later extension to the mill, unless the engine and boiler were upgraded then. Belt drive from the engine to the machinery appears to have been carried through a slot in the east wall of the mill. As no pond is visible, water for the boiler is likely to have been drawn directly from the leat.

According to the HTP history, roller mills were first introduced in 1877, so the mapping of the site in the same year by the OS indicates that the mill extension was then very new. It is likely that the waterwheel was retained to drive some of the machinery, as this was a cheap form of power.

Expansion of the business in the middle years of the 19th century is also represented by the development of the yard complex on the road frontage, which, as has been suggested above, probably functioned as stabling for horses used for pulling waggons to and from the mill.

7.4 Northern extension

Loggans mill was completely re-organised as a roller mill in 1884 (HTP, c.1937) and this further development of the site appears to be represented by the construction of the northern extension (Area 3) and the tower (Area 4). These parts of the building were first mapped in 1908. The northern extension is likely to have been largely a grain loft, feeding the machinery in the remainder of the building. The tower appears to have served as a hoist, or perhaps contained augers, for carrying unloaded grain into the northern extension or directly to the roller mills.

Construction of the northern extension and a large rectangular complex of buildings or yards to the northwest destroyed a dwelling shown here on the Tithe Map and 1877 OS map.

7.5 20th century additions

By 1936 the site had developed further with a large range of buildings added to the west of the mill (see Figure 13). By this date the site was undergoing change of use, as from 1930 HTP concentrated their milling interests at the Valletort mills in Plymouth docks and had closed down Loggans Mill. It is unlikely the mill was used after the sale of HTP's mill business to Spillers Ltd in 1936. It has not been possible to establish, in this short study, the reasons why HTP sold their core business to Spillers. It was presumably an offer of a large amount of capital so HTP/Farm Industries could diversify into other areas of business. The Loggans site subsequently became one of the branches of Farm Industries Ltd, a role it continued to have until 1973.

At some time during the present century a machinery base was added on a concrete plinth situated in the former waterwheel pit. This may have been for an oil engine, used to power machinery for a few years before the mill's closure.

It is not known at what date the steam engine was removed from the site but it may have been soon after the permanent closure of the mill. The former engine house appears to have been stripped out, the walls tiled and converted to a new use.

8. References

8.1 Books, journals and indexes

Bliss, V., 1978, *The History of Hayle: A script to accompany the exhibition*, published by PDC Department of the Environment, undated, *Listed Building description* (held by CCC Planning Department, County Hall, Truro)

Gould, J., 1998, *Brief for Archaeological and Historic Building Assessment for Development Site at Loggans Mill*

Gover, J.E.B., 1948, *Place-Names of Cornwall* (manuscript at RCM)

Harrods (publisher), 1878, *Royal County Directory of Cornwall*, 2nd Edition (copy at CRO)

Higgins, J., 1990, *The Old Water-mills of Hayle Old Cornwall Vol X No10*

HTP, various dates, *CRO documents, indexed DDX 401*

HTP Motors, undated c.1937, *Progress! Being a Brief Record of the History of HTP Motors Ltd., Truro* (copy at RCM).

Institute of Cornish Studies, *Place-Names Index* (summary copy held by CAU, Truro)

Kelly (publisher), editions between 1883 to 1939, *Directory of Cornwall* (copies at CRO)

Noall, C., 1984, *The Book of Hayle* Barracuda Books, Abingdon

Pigot & Co., 1844, *Commercial Directory* (copy at CRO)

Ratcliffe, J., 1998, *Loggans Mill, Hayle: Project Design and Costing for an Archaeological and Historic Building Assessment*

Royal Cornwall Museum, *collection of historic photographs*

Slater (publisher), 1852-3, *Directory of Cornwall* (copy at CRO)

Unknown, 1908, *Victoria County History, Cornwall: The Hundred of Penwith* (unpublished manuscript at RCM)

Williams (publisher), 1847, *Commercial Directory of Market Towns in Cornwall* (copy at CRO)

8.2 Cartographic sources

Margary, H., 1977, *The Old Series Ordnance Survey Maps, Vol II: Devon, Cornwall and West Somerset* Lympne (Reproduction of OS 1st Series 1 Inch Map, 1813)

Martyn, Thomas, 1748, *Map of Cornwall at One Inch Scale* (microfiche copy at CAU)

Ordnance Survey, 1809, *Surveyors Drawing 2" inch scale* (microfiche copy at CAU)

Ordnance Survey, 1877, *25 Inch Map* 1st Edition (microfiche copy at CAU)

Ordnance Survey, 1908, *25 Inch Map* 2nd Edition (microfiche copy at CAU)

Ordnance Survey, 1936, *25 Inch Map* Revision (microfiche copy at CAU)

Ordnance Survey, 1998, *1:10,000 digital data* (CD ROM copy at CAU)

Ordnance Survey, 1998, *LandLine digital data at 1:2500* (CD ROM copy at CAU)

Padel, O.J., 1985, *Cornish Place-Name Elements*, Nottingham

Ravenhill, W.L.D. and Padel, O.J., 1991, *Joel Gascoyne's Map of the County of Cornwall* Facsimile reproduced by Devon and Cornwall Record Society. Vol. 34

Tithe Map and Apportionment, 1842, *Parish of Phillack* (microfiche copy at CAU)

9. CAU archive

The following information is stored at CAU's offices in Truro. Notes and correspondence are held in a project file, reference 1998049, with historical notes in an information file, ref. SW53NE. Field notes and film overlays are stored in archive folder GRE 302.

The text of this report is stored electronically, filename:
\\SITES.E-H\\HAYLE.GEN\\LOGGANS\\LOGGANS.RTF.

Appendix: List of photographs

Exterior views

| CAU No. | Details |
|---------|--|
| 23567 | General view of the mill, from SW |
| 23568 | " " |
| 23569 | Tower (Area 4), from SW |
| 23570 | Arched doorway in northern extension (Area 3) |
| 23571 | Blocked doorway in lower storey of tower |
| 23572 | Chamfer detail on tower |
| 23573 | Tower, from S |
| 23574 | Central part of mill (Area 1), ground floor |
| 23575 | Central part of mill (Area 1), upper floors |
| 23576 | Collapsed machinery in northern part of Area 1 |
| 23577 | Collapsed floors " |
| 23578 | " " |
| 23579 | Southern extension (Area 2), from SW |
| 23580 | Southern extension, from W |
| 23581 | S gable end (Area 2) |
| 23582 | " " |
| 23583 | " " showing datestone |
| 23584 | SE corner and adjoining buildings (Areas 2 & 5) |
| 23585 | " " |
| 23586 | General view of the exterior of the mill, from NE |
| 23587 | Tailrace entrance and bypass channel |
| 23588 | Scars of adjoining buildings at SE part (Area 5) |
| 23589 | Central section, upper floors, from E |
| 23590 | Central section, middle floors, from E |
| 23591 | Central section, lower floors, from E |
| 23592 | Wheelpit area |
| 23593 | Wheelpit and launder support |
| 23594 | Northern part of Area 1, from E, showing launder support |
| 23595 | Northern extension (Area 3), from SE |
| 23596 | " " from E |
| 23597 | Northern extension and tower (Areas 3 & 4), from W |
| 23598 | General view: central section and southern extension (Areas 1 & 2), from S |
| 23599 | N gable wall (Area 3), from NW |
| 23600 | Tailrace channel, from NE |
| 23601 | Tailrace channel, from SW, looking towards mill |

| CAU No. | Details |
|---------|--|
| 23602 | Leat, from SW |
| 23603 | Bypass sluice, from N |
| 23604 | Cascade below bypass sluice, from S |
| 23605 | Launder support, from NE |
| 23606 | Concrete buildings beside wheelpit, from W |
| 23607 | Concrete machinery base inside wheelpit |
| 23608 | " " " |

Interior views

| CAU No. | Details |
|---------|---|
| 23609 | N part of Area 1: brick-lined pit and holding down bolts |
| 23610 | S part of Area 1, ground floor: decorated wooden columns |
| 23611 | " " " underside of industrial wooden floor |
| 23612 | " " " " " " |
| 23613 | " " " blocked archway in former gable wall |
| 23614 | Area 2, ground floor: plain wooden columns |
| 23615 | " " base of corner chimney breast |
| 23616 | Area 2: corner chimney breast |
| 23617 | Area 2, ground floor: cast iron stanchions/machinery supports |
| 23618 | " " embossing on cast iron stanchions <i>J H Carter London</i> |
| 23619 | Area 2: view into upper floors |
| 23620 | Area 1, upper floors: two decorated wooden columns |
| 23621 | Area 1, 1 st floor: arch formerly supporting 2 nd floor, and spiral grain chute |
| 23622 | " cast iron column |
| 23623 | " heavy duty industrial wooden floor |
| 23624 | " " " " " |
| 23625 | Area 2: view into upper floors, towards S gable end |
| 23626 | Area 2: view towards S gable end, showing remains of shuttered windows |
| 23627 | Area 1, upper floors: spiral grain chute |
| 23628 | Area 1, 1 st floor: " " |
| 23629 | Area 1, upper floors: view into upper floors showing machinery |
| 23630 | " " " " " " |
| 23631 | " " " " " " |
| 23632 | Area 1, 2 nd floor: blocked doorway, and cast iron axle apertures |
| 23633 | Area 1, 1 st floor: decorated wooden column, iron support, blocked doorway |

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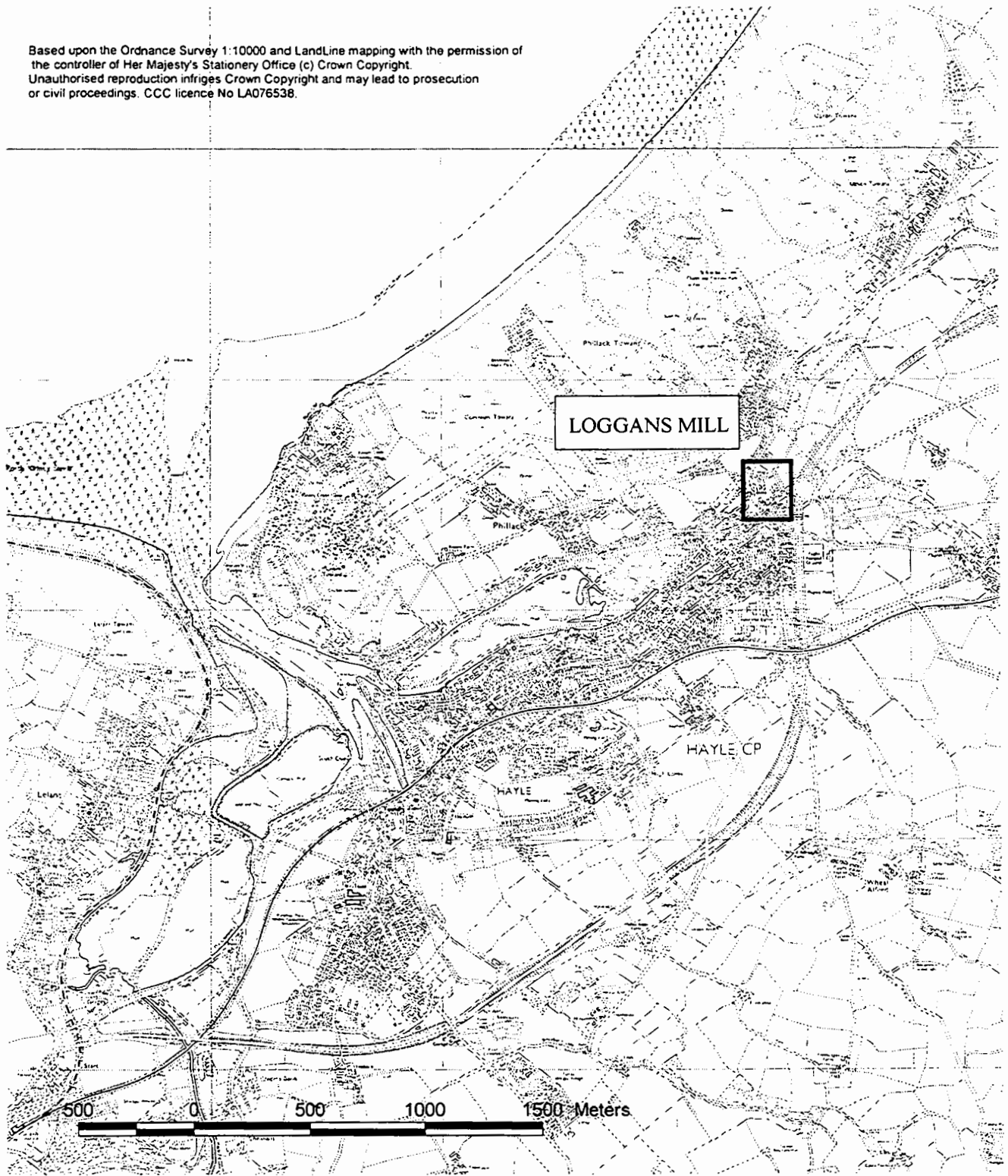
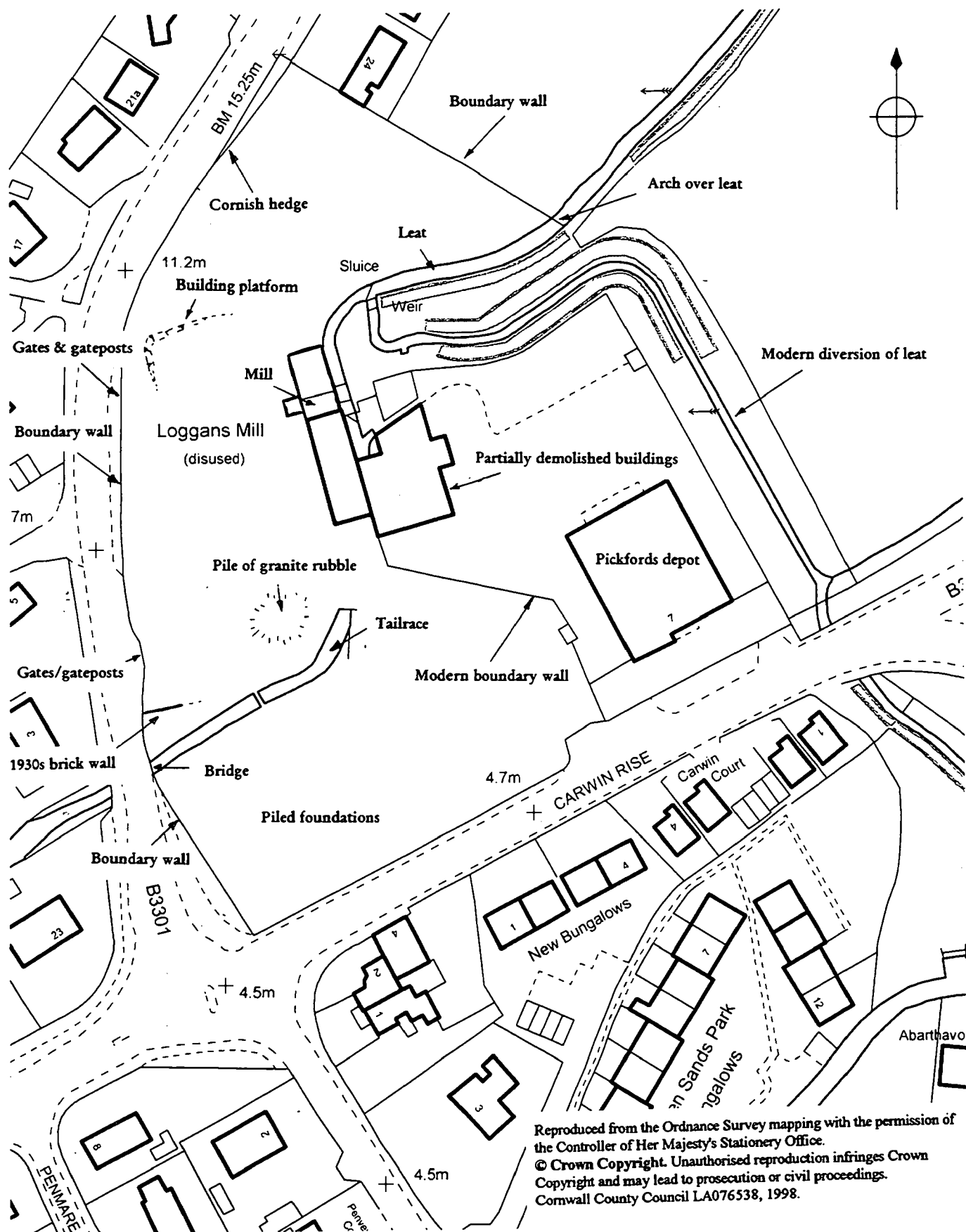


Figure 1 Location map.



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 Cornwall County Council LA076538, 1998.

Figure 2 OS LandLine survey detail, 1997. Annotation shows extent of surviving historic features.

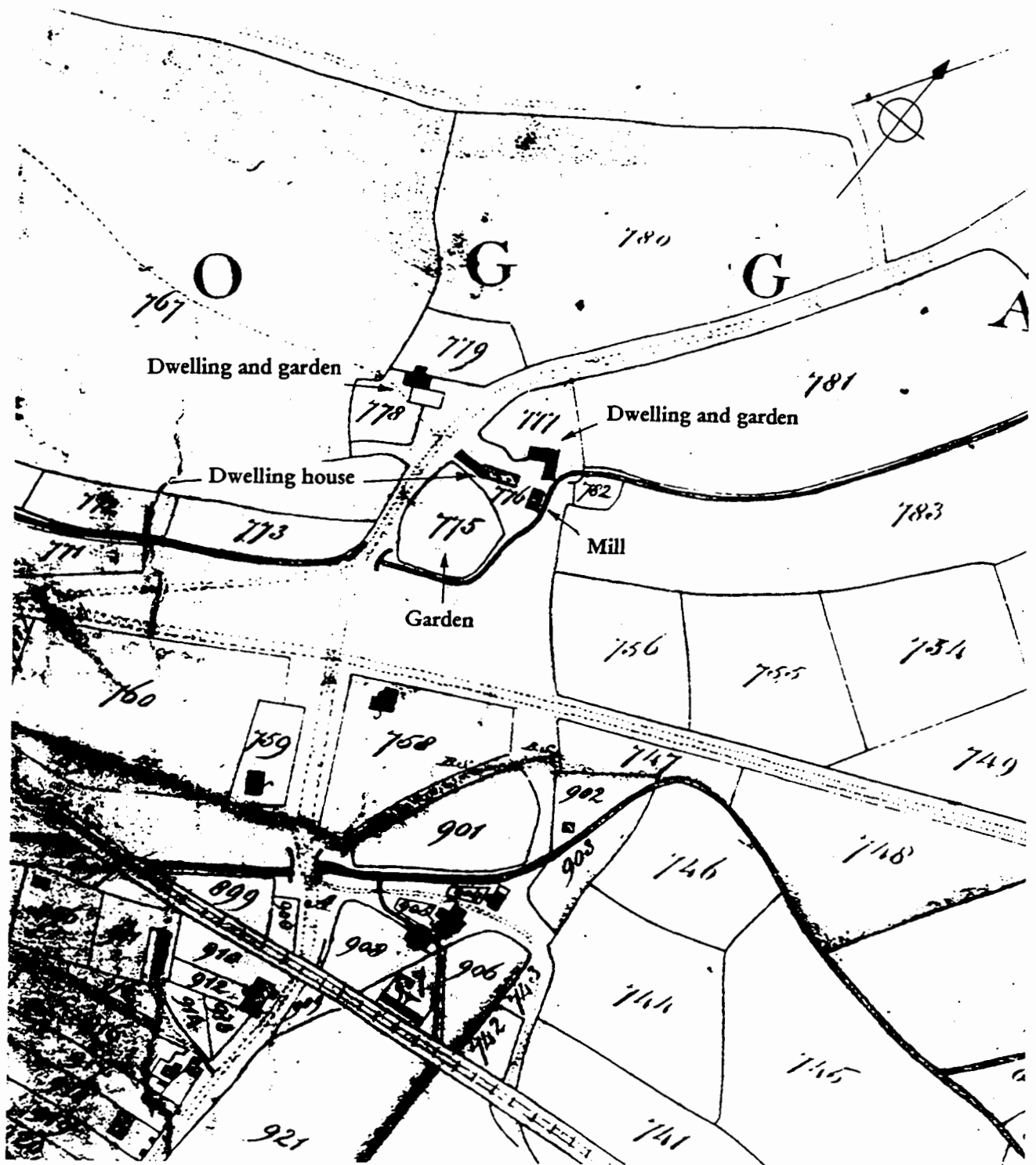


Figure 6 *Phillack Tithe Map, surveyed 1842. This map shows the layout before Loggans Mill was destroyed by fire ten years later. The mill in 1842 was relatively small in plan. The leat and tailrace were re-used by the later mill.*

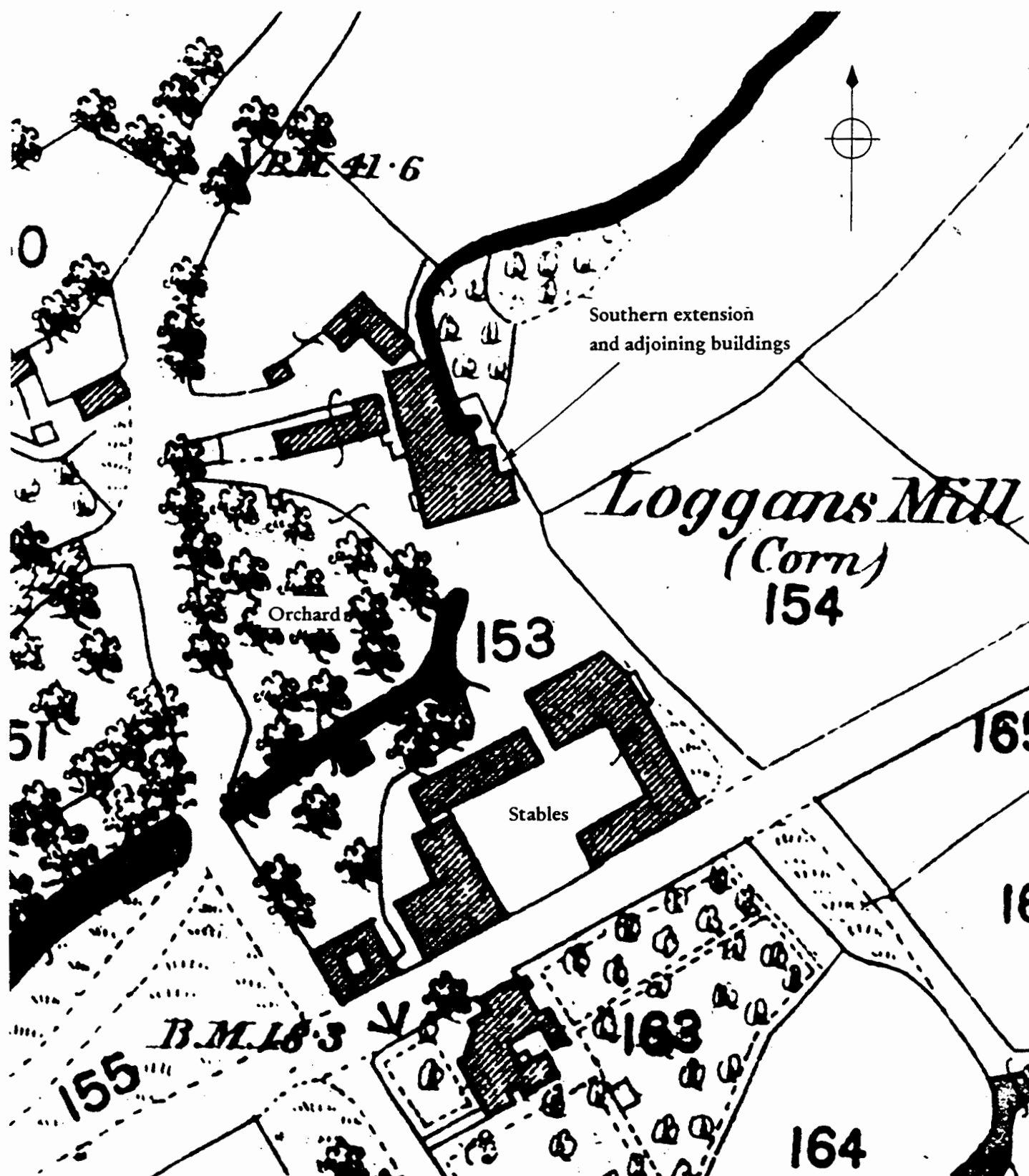


Figure 7

The First Edition OS 25 Inch Map, surveyed in 1877. By this date the mill had been rebuilt following the 1852 fire and had already been extended to the south and east. This corresponds with the introduction of steam power. The rectangular ranges of buildings south of the mill (on the road frontage into Hayle) are probably stabling and yards for horses and waggons belonging to the mill.

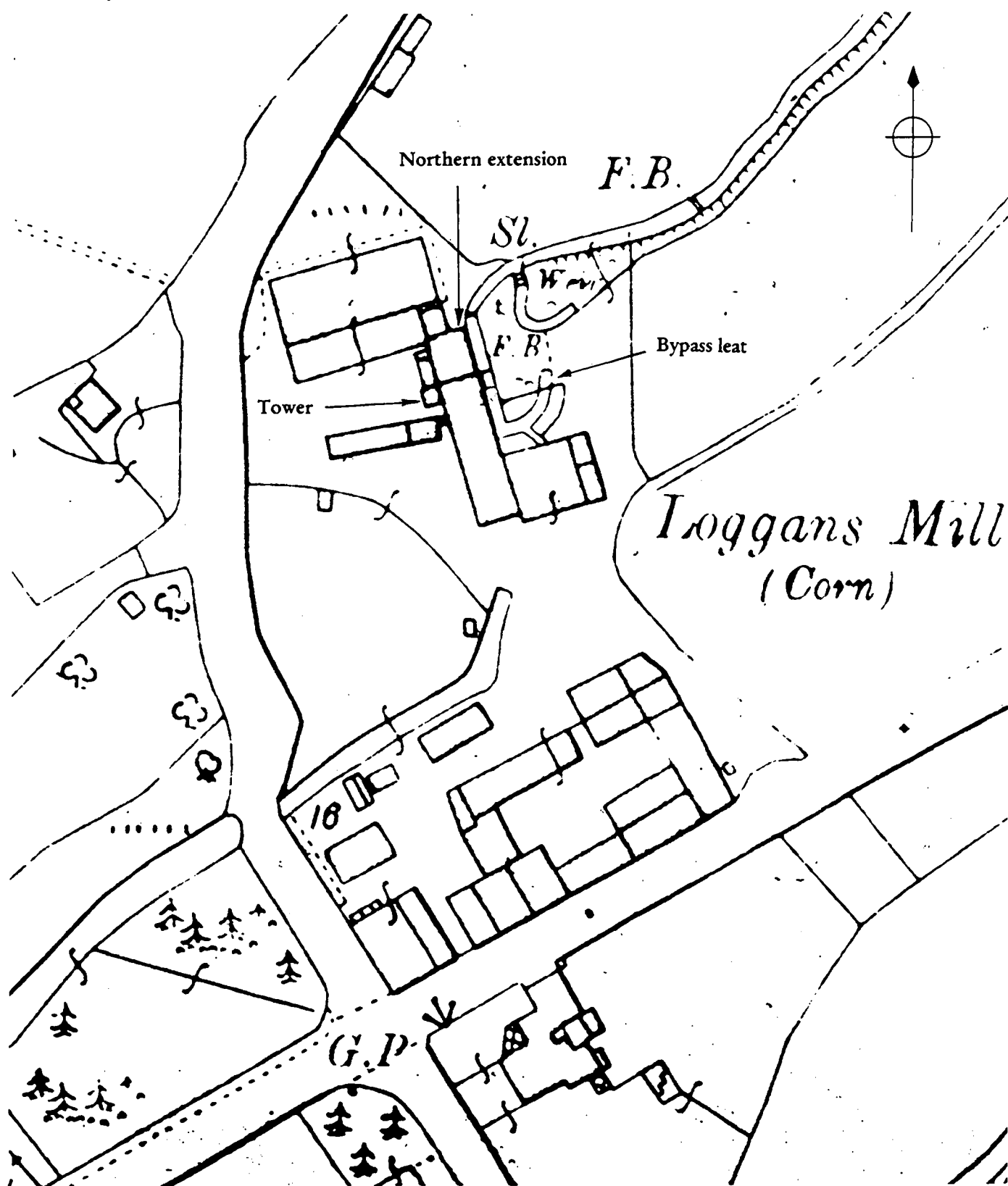


Figure 8

Loggans Mill in 1908. By this date the mill had been extended to the north, to the present-day plan of the building. Older buildings northwest of the mill had given way to a large rectangular range of structures. The bypass leat is also depicted for the first time. There are a few changes visible in layout of buildings on the south side.

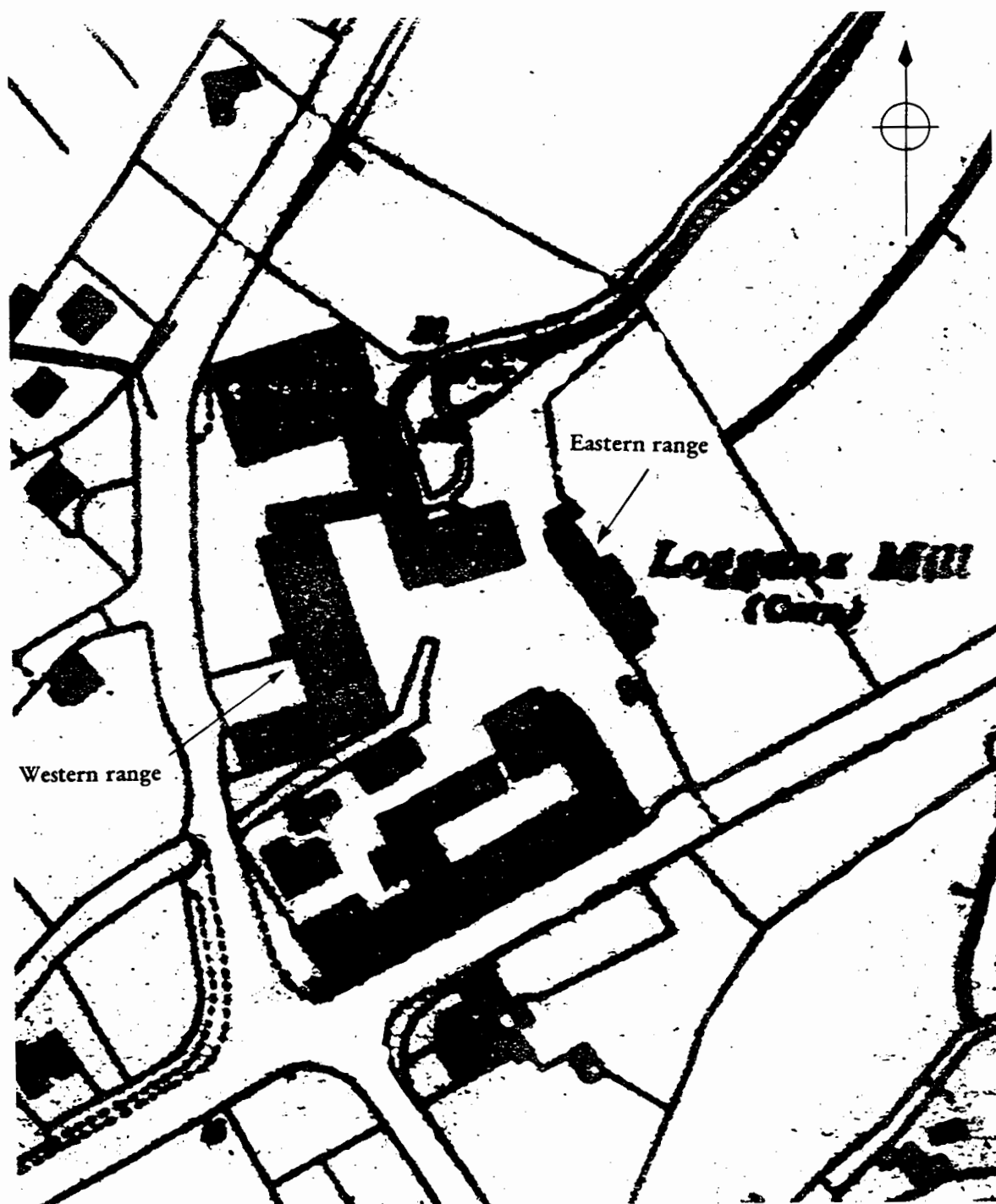


Figure 9

Loggans Mill in 1936. By this time the mill was probably redundant, as HTP moved their milling operations to Plymouth before selling this part of the business to Spillers in 1936. Nevertheless the Loggans site was still active, being a depot of Farm Industries, the successor to HTP. A new range of buildings had been added on the west side of the site and another smaller range on the east side. The western site boundary appears to have been revised, indicating that the surviving stone boundary walls had been built by this date.

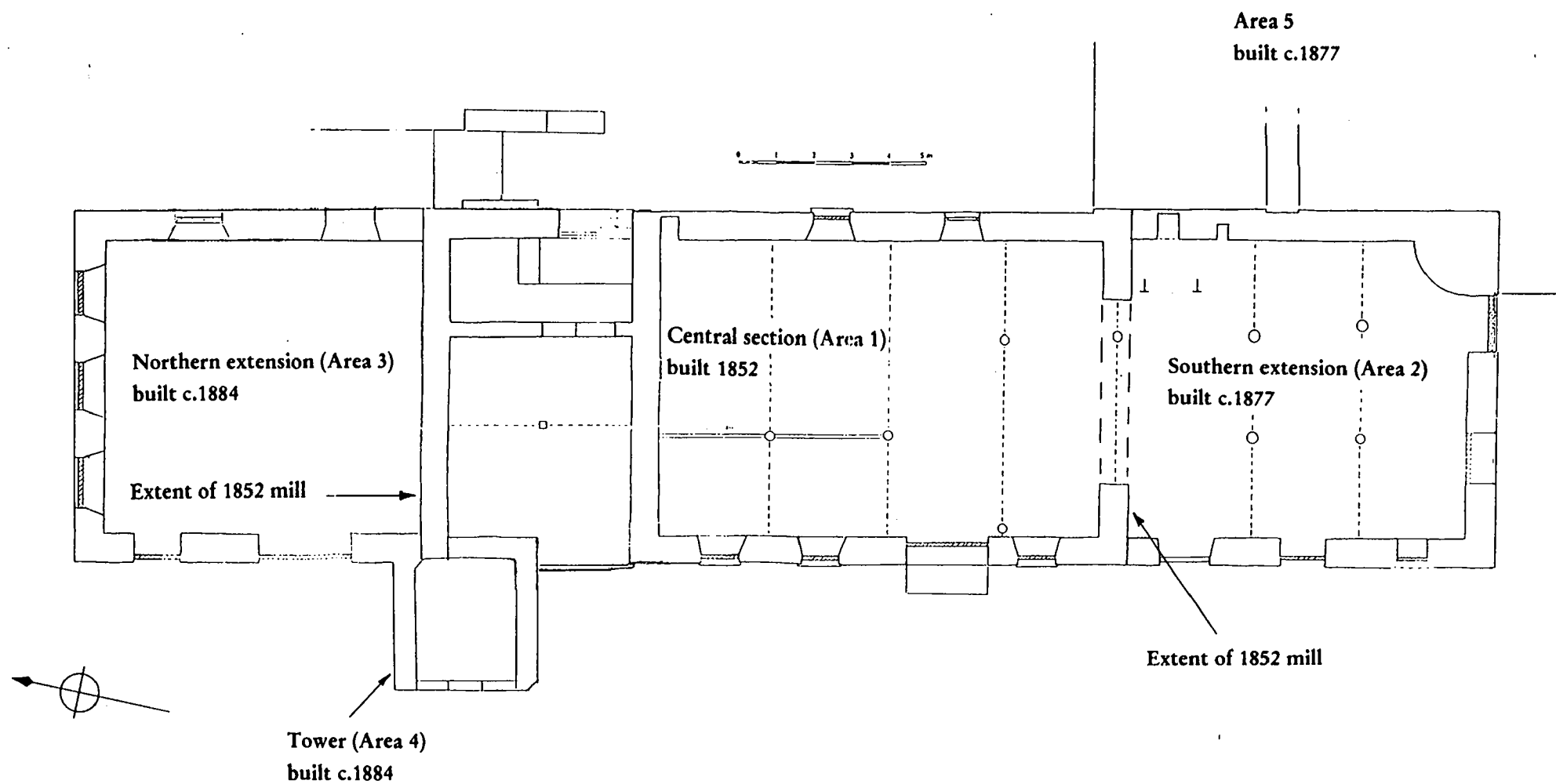


Figure 10 Explanatory ground plan, showing Area and build dates given in the text (plan based on a survey by Robin Smyth, Bristol).

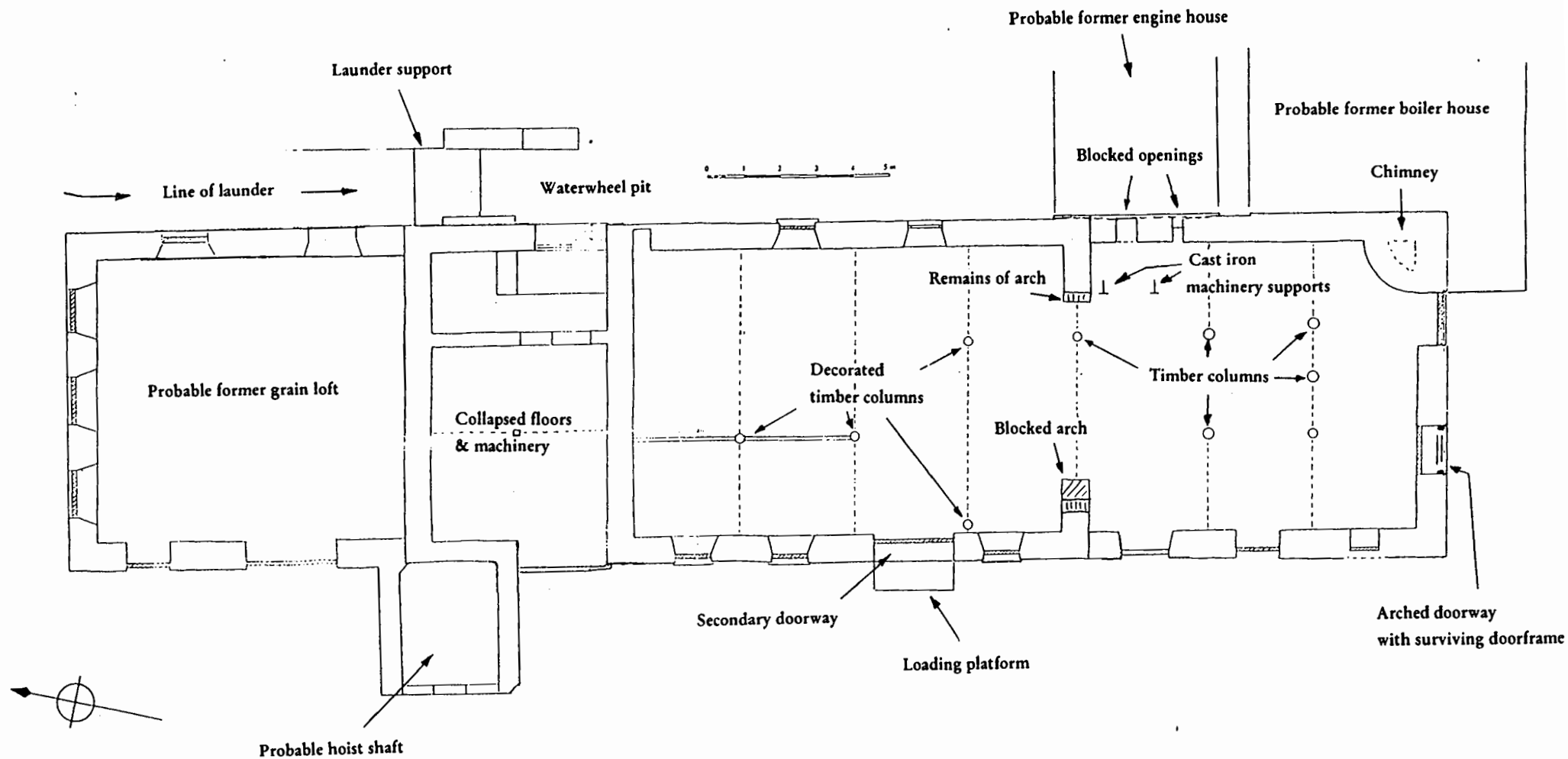


Figure 11 Interpretation plan, also showing features surviving on the ground floor (based on a survey by Robin Smyth, Bristol).

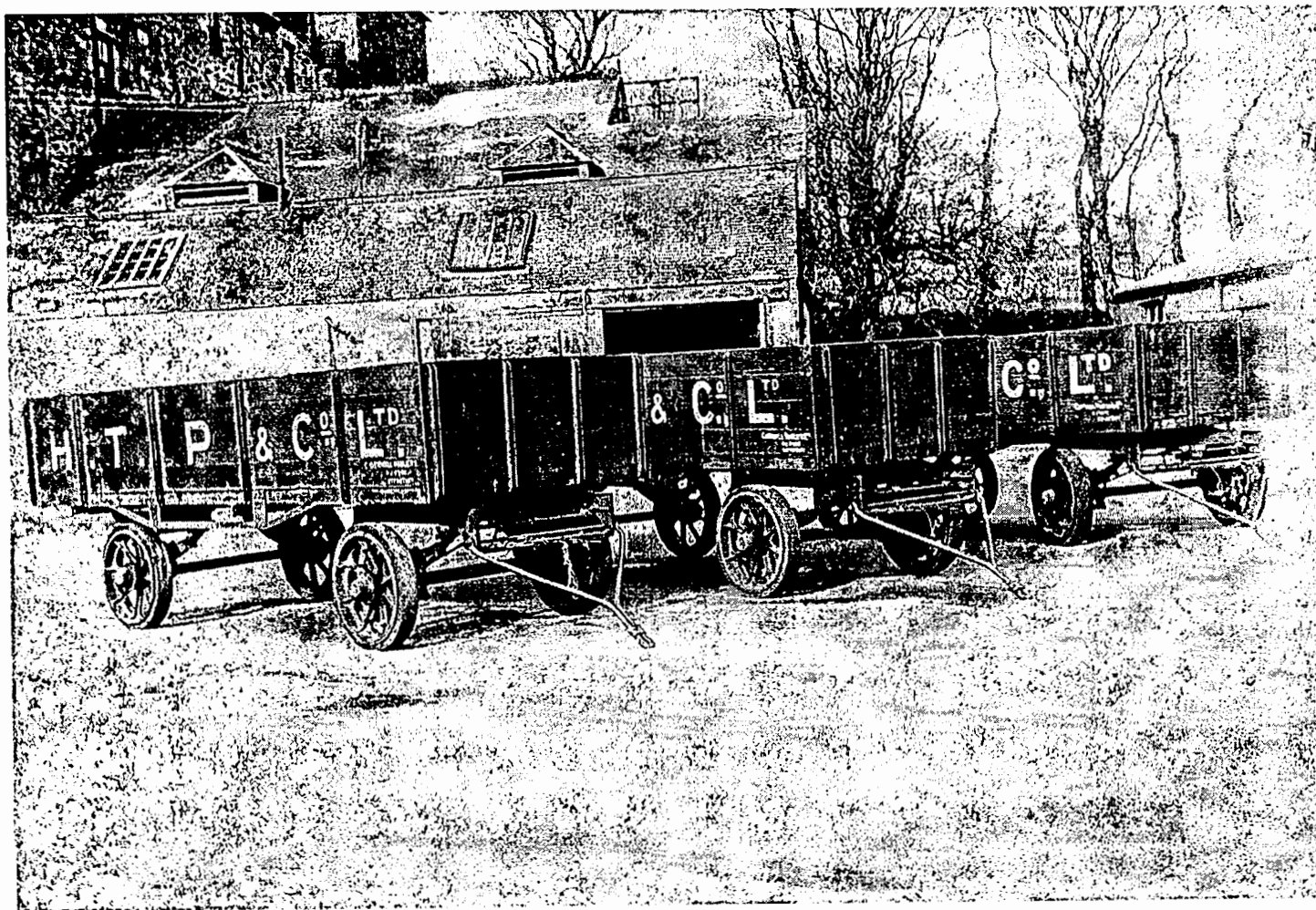


Figure 12 Buildings on the southeast side of the mill (Area 5) in the 1930s. The building with the two hipped ventilators is probably the boiler house, with the engine house behind (photo reproduced by courtesy of the Royal Cornwall Museum).

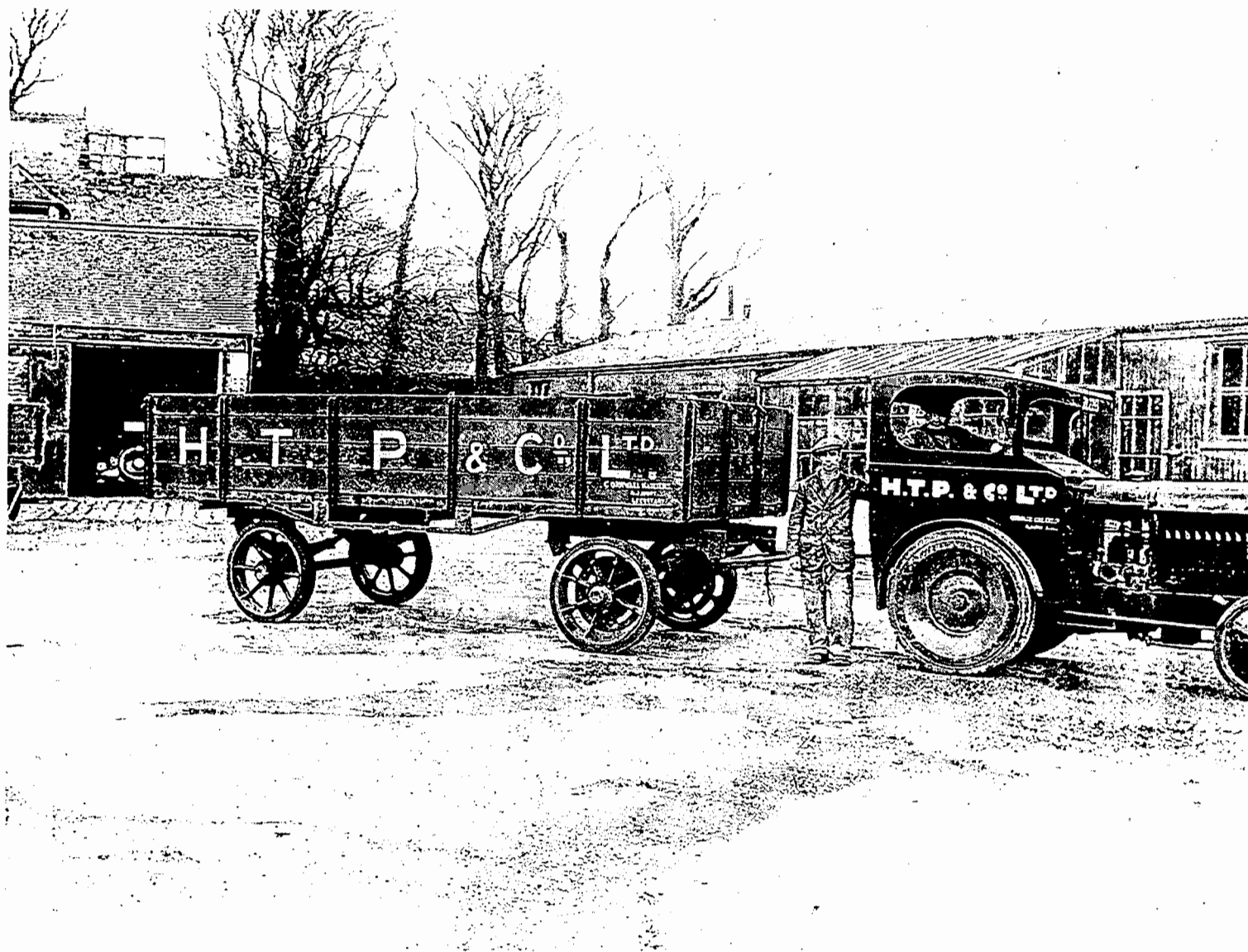


Figure 13 HTP's traction trucks being manoeuvred around the yard. The single storey range to the right is that shown on the 1936 OS survey (photo reproduced by courtesy of the Royal Cornwall Museum).

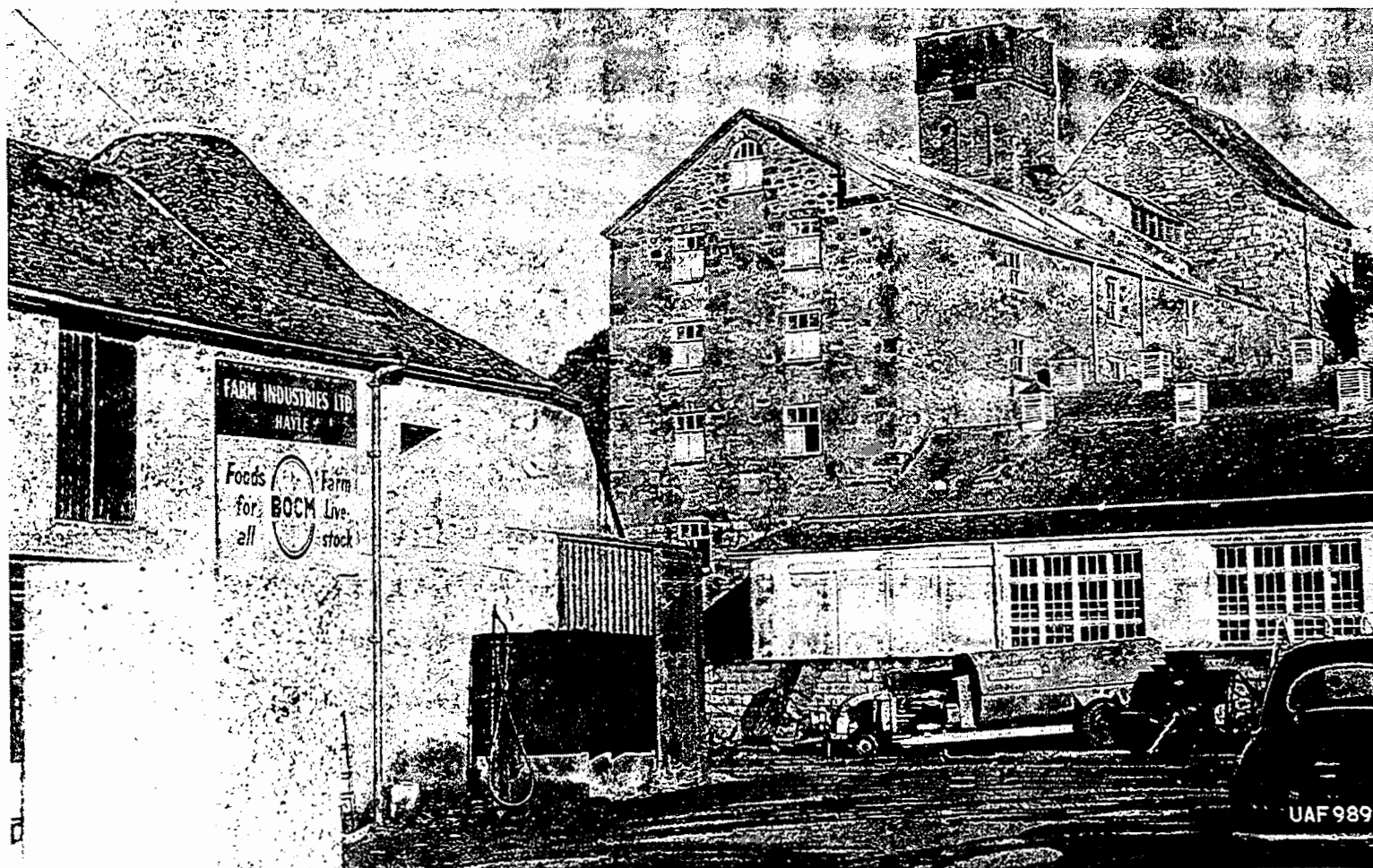


Figure 14 Loggans Mill in 1967. The chimney stack at the south east corner had been removed by this date and the southern part of the mill re-roofed. The ventilators on the range to the right also differ from the 1930s view, suggesting some changes of use had occurred (photo reproduced by courtesy of the Royal Cornwall Museum).

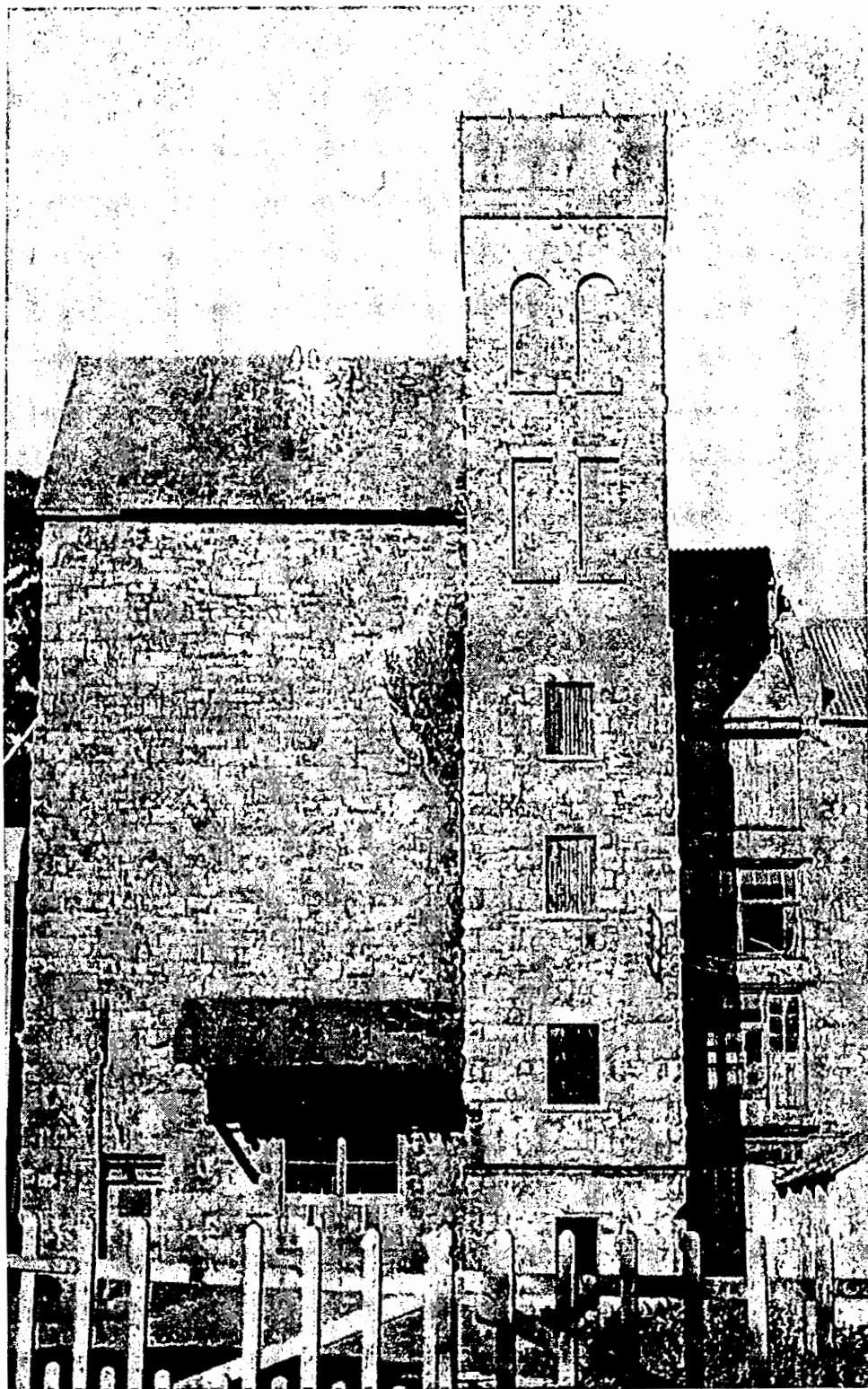


Figure 15

A view of the west side of Loggans Mill, taken about 1973. The northern extension retained its slate roof and the tower stood to its full height. Some decay is evident from the ivy, and missing slates and glazing. Remains of the gates in the foreground are still extant on the site (photo reproduced by courtesy of the Royal Cornwall Museum).

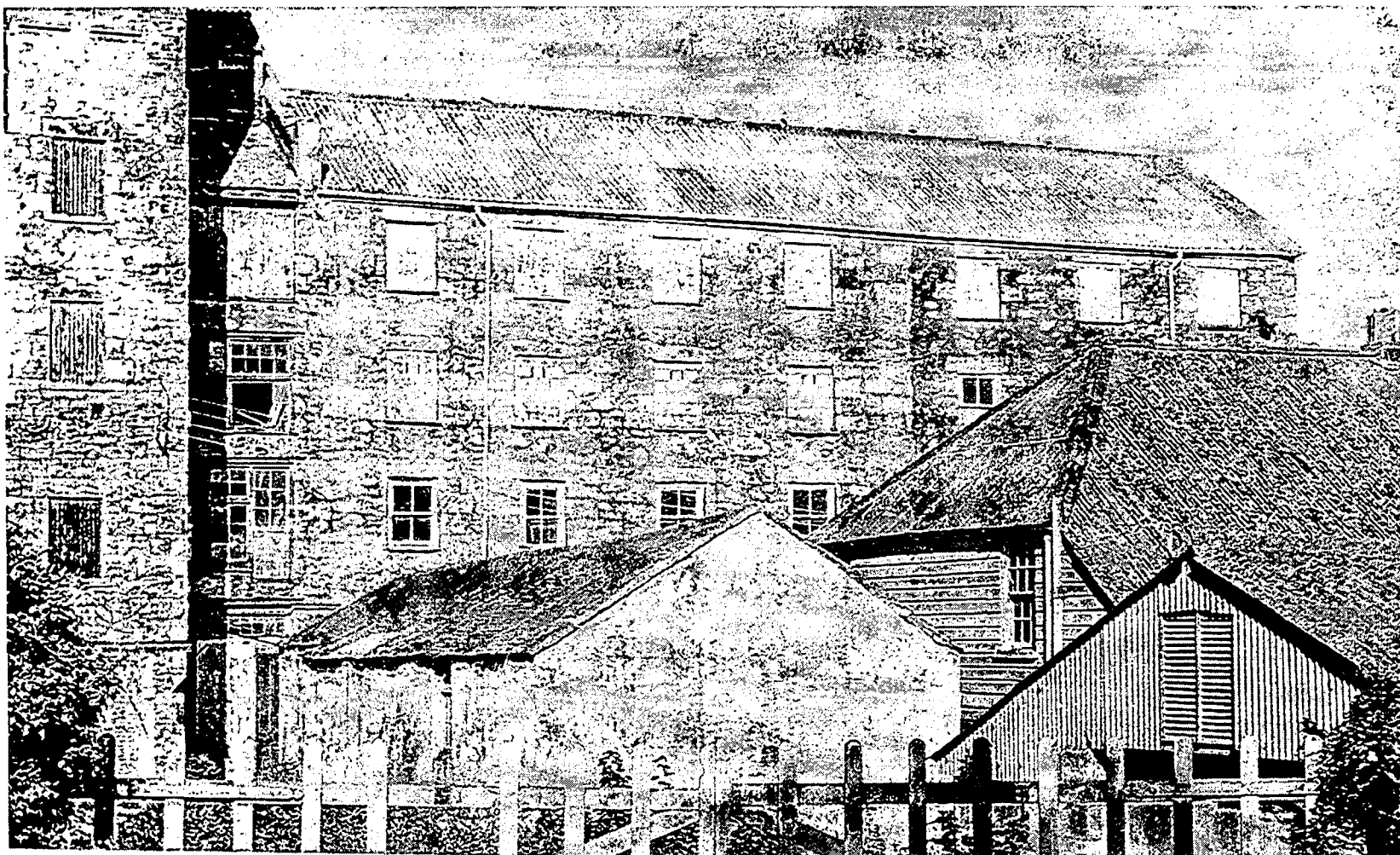


Figure 16

The southern part of the mill, photographed 1973. Blockings are visible in the upper windows, probably to 'mothball' the site when it became redundant. The half hipped roofed building in the foreground is part of the 1930s range. The rendered building in the centre occupies the same plan as the mill dwelling in 1842 and may be remains of it (photo reproduced by courtesy of the Royal Cornwall Museum).

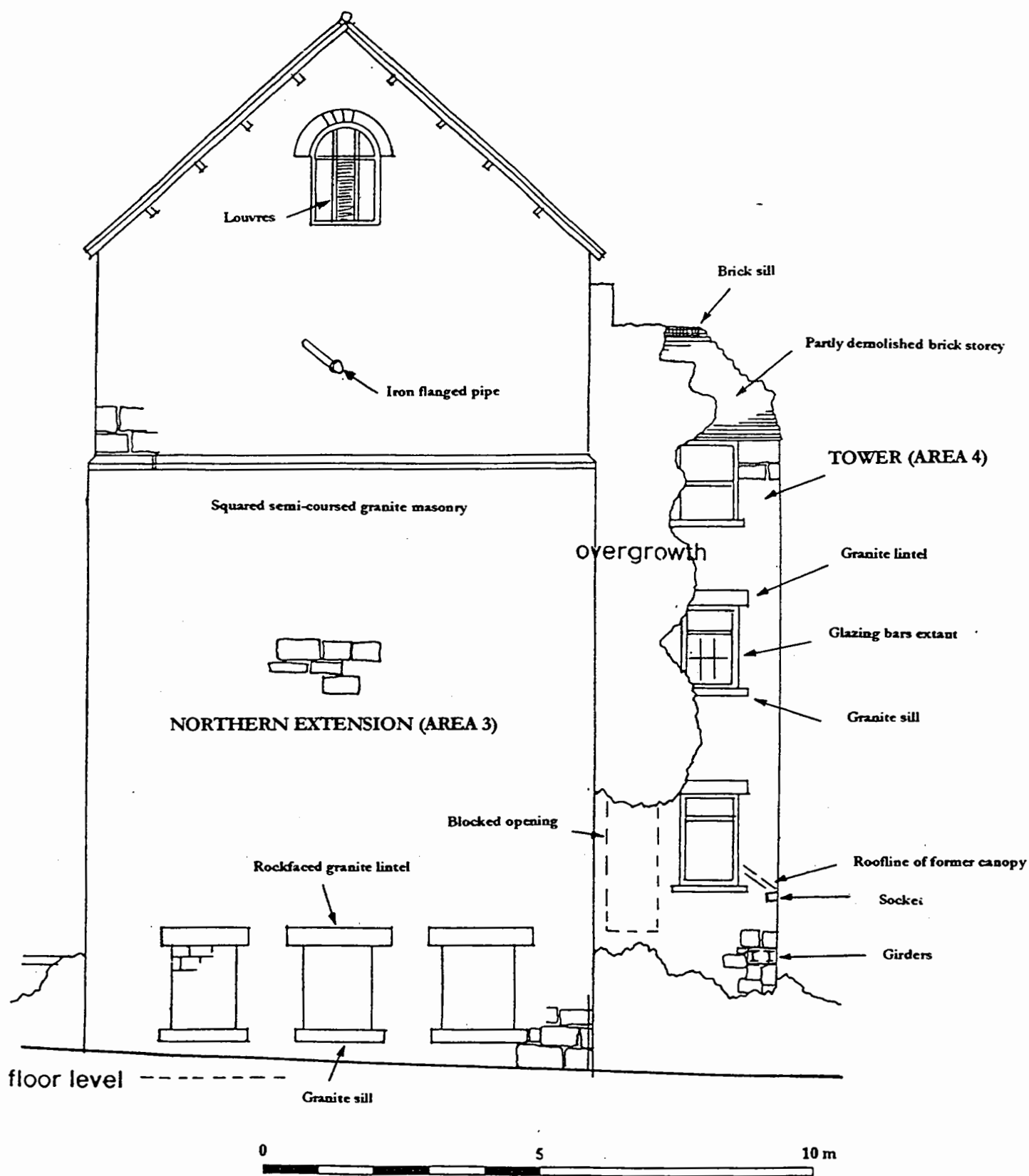


Figure 17 North elevation of Loggans Mill (based on a survey by Robin Smyth, Bristol, with CAU annotation).

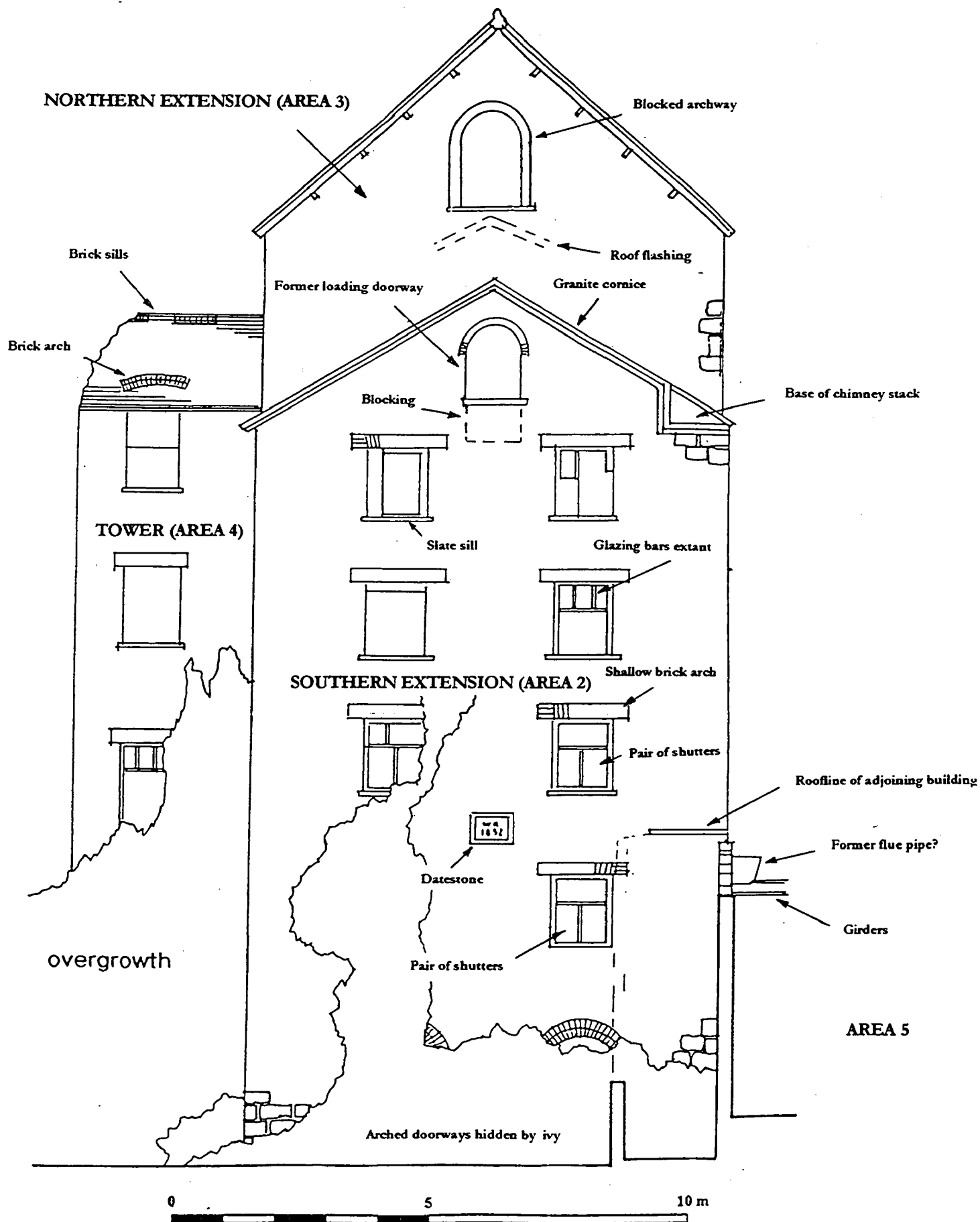


Figure 18 South elevation of Loggans Mill (based on a survey by Robin Smyth, Bristol, with CAU annotation).

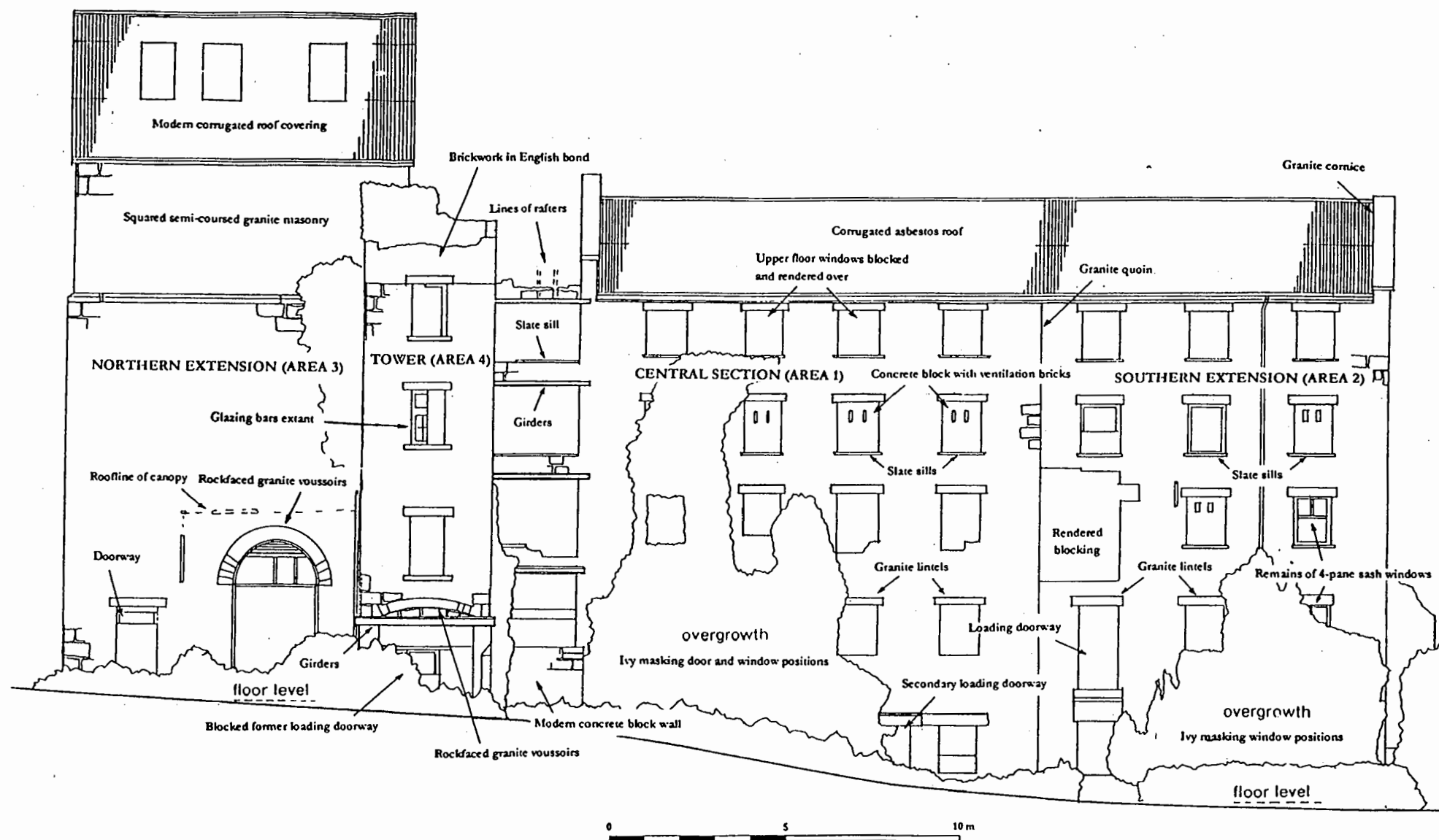


Figure 19 West elevation of Loggans Mill (based on a survey by Robin Smyth, Bristol, with CAU annotation).

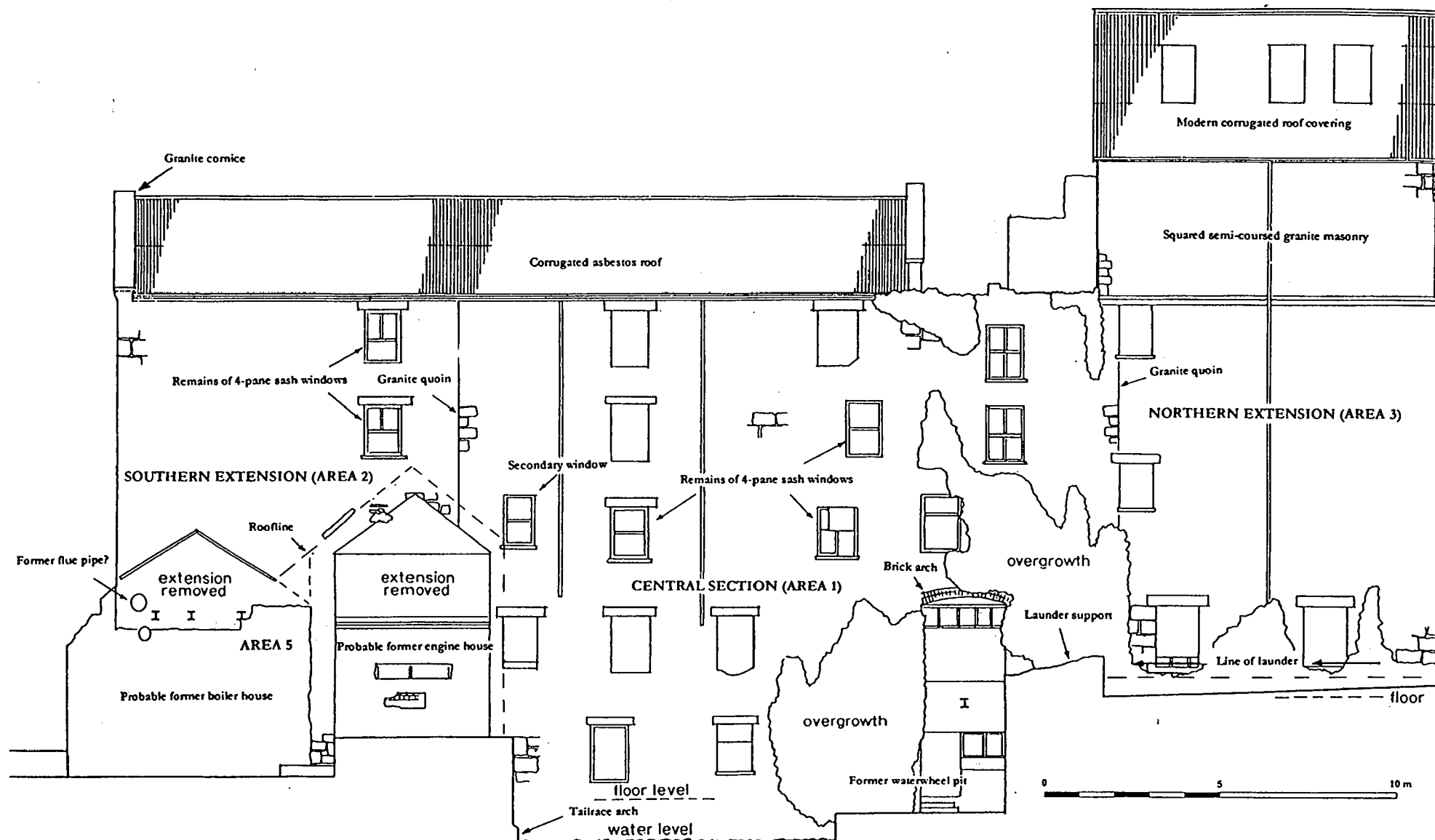


Figure 20 East elevation of Loggans Mill (based on a survey by Robin Smyth, Bristol, with CAU annotation).

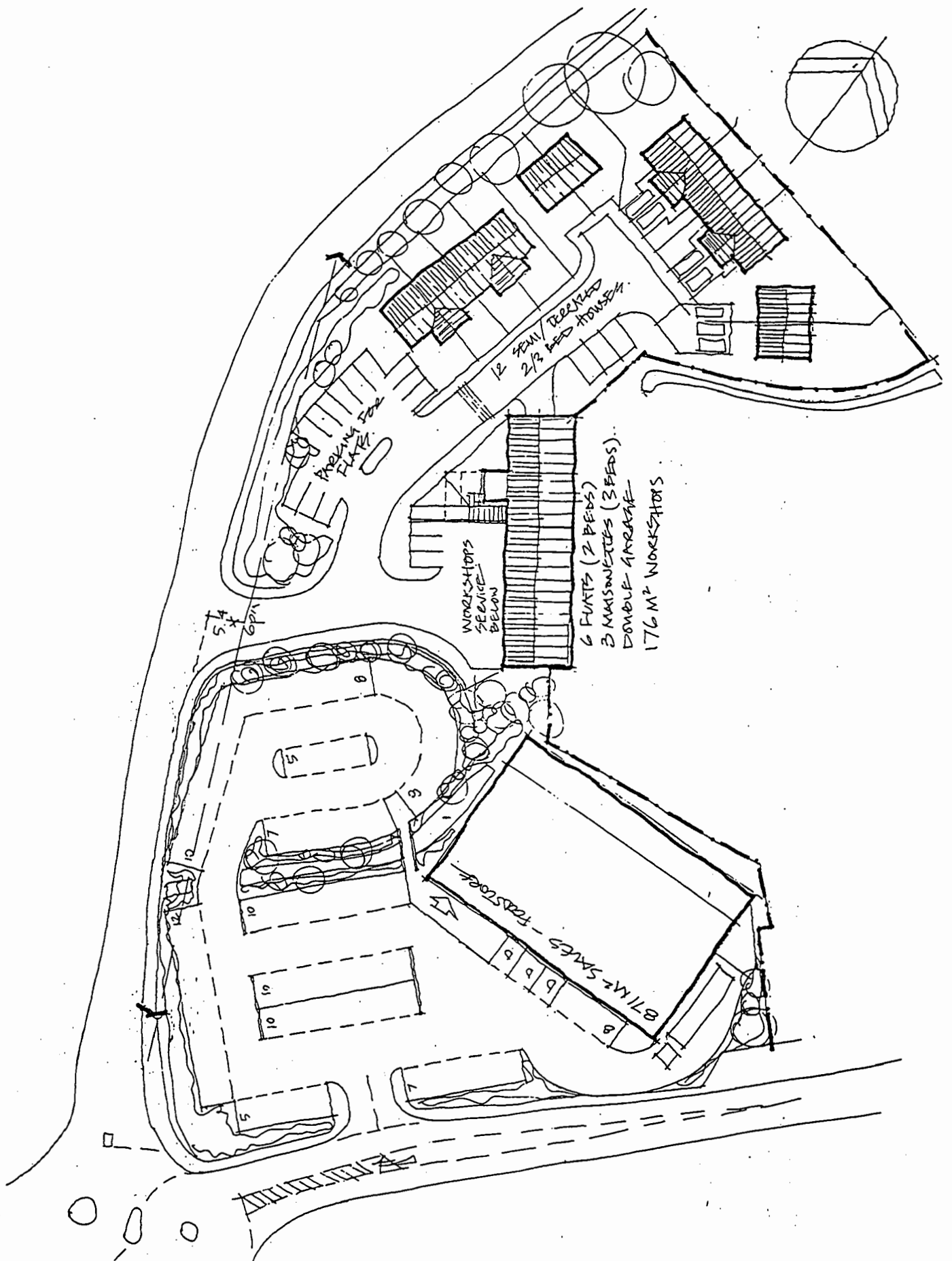


Figure 21 Development proposals: outline plan, drawn by Atkins Walters Webster, Bristol.

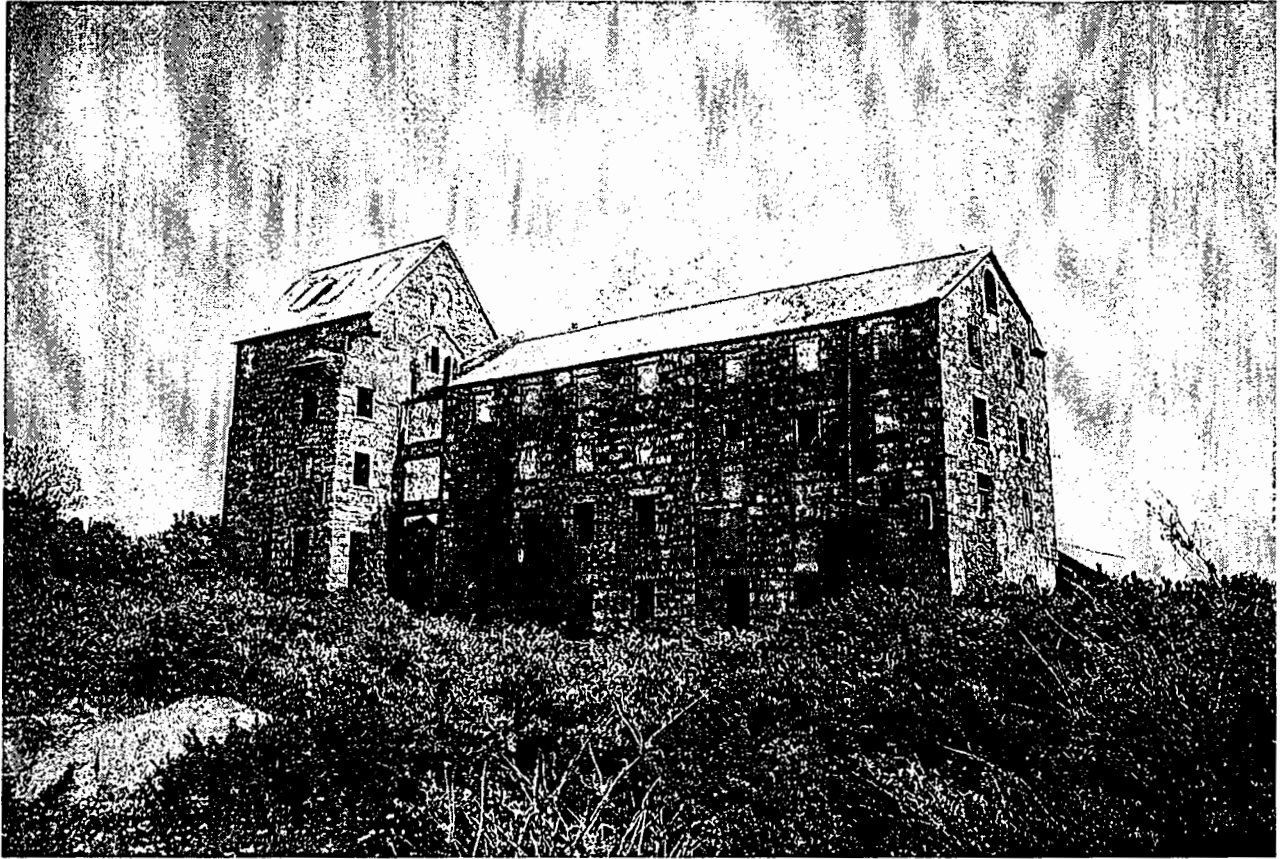


Figure 22 View of Loggans Mill from the southwest in 1998. The area in the foreground of the photo was occupied by ancilliary buildings until the 1980s.

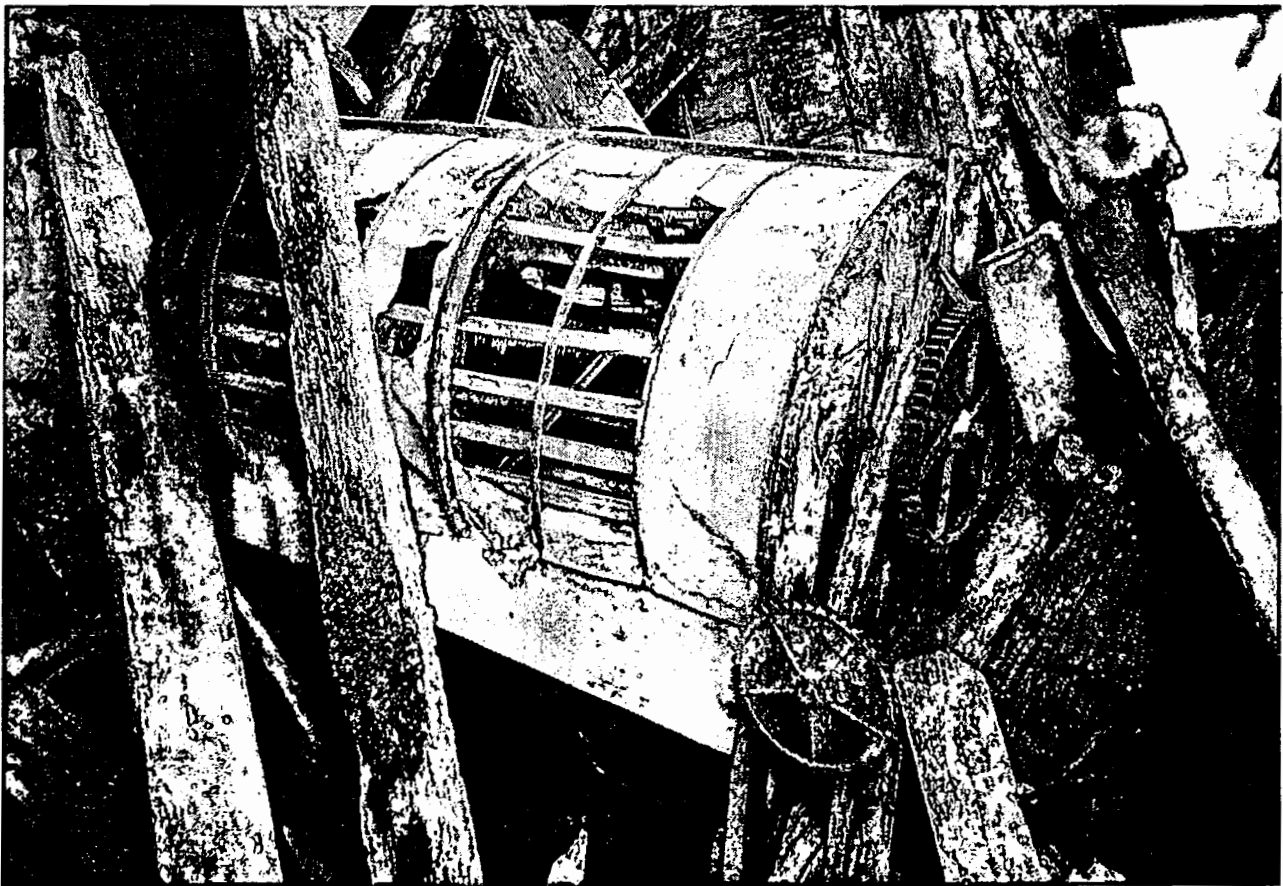


Figure 23 Remains of machinery on a collapsed floor in the now roofless central section.

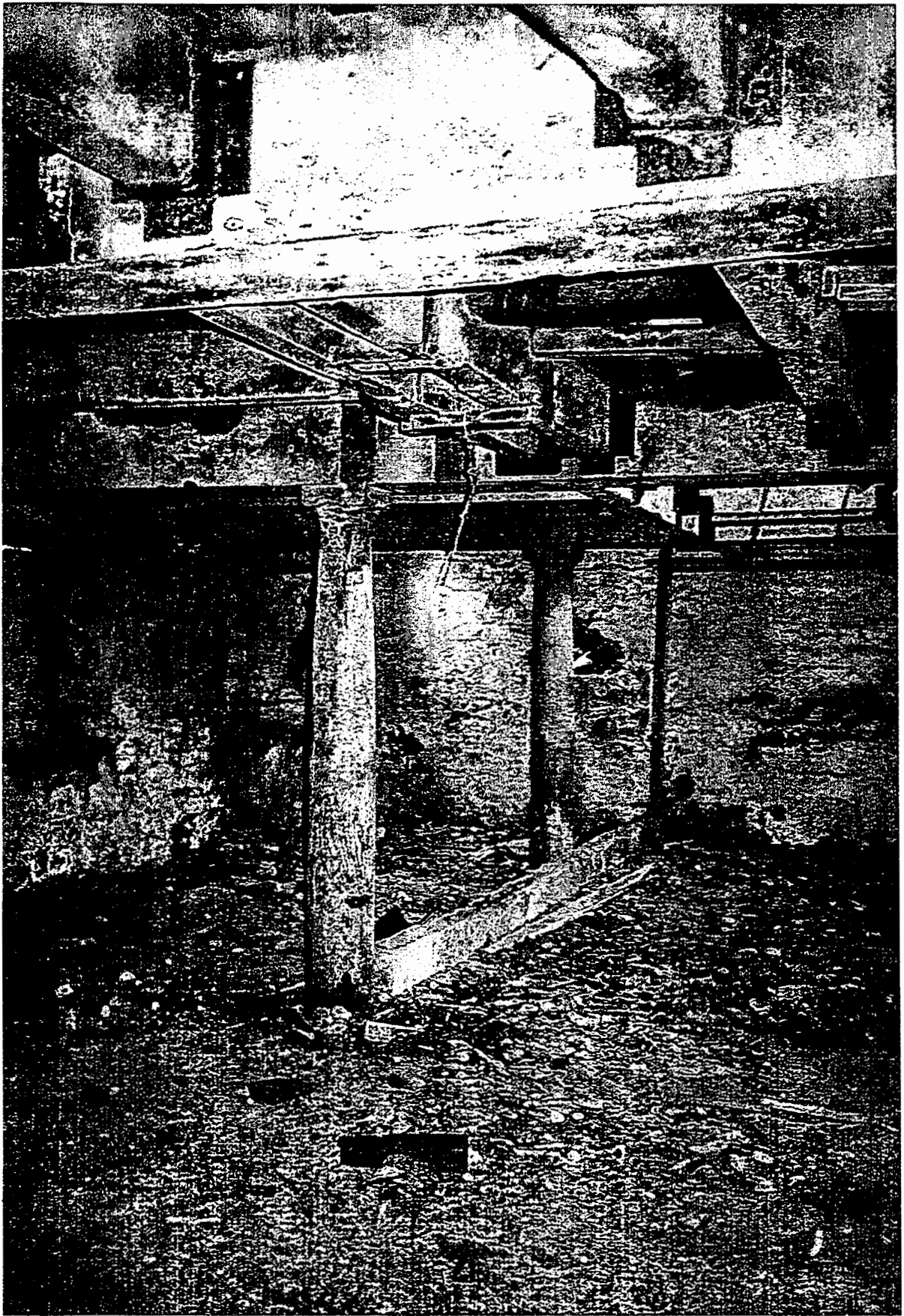


Figure 24 *A pair of decorated wooden columns support the heavy beams of the first floor.*