

No 24 Foundry Square, Hayle, Cornwall

Historic Building Analysis



Historic Environment Service (Projects)

Cornwall County Council

A Report for
Stride Treglown Limited

**No 24 Foundry Square, Hayle,
Cornwall**

Historic Building Analysis

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The views and recommendations expressed in this report are those of the Historic Environment Service projects team and are presented in good faith on the basis of professional judgement and on information currently available.

Cover illustration

No 24 Foundry Square and its distinctive clock tower, before refurbishment of the building (November 2002).

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Abbreviations

CRO	Cornwall County Record Office
HER	Cornwall and the Isles of Scilly Historic Environment Record
HES	Historic Environment Service, Cornwall County Council
NGR	National Grid Reference
OS	Ordnance Survey
PLA	Parkes Lees Architects

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1 Summary

No 24 Foundry Square (NGR 5582 3716) once formed the offices and showroom of Harvey's Foundry in Hayle, Cornwall. This 18th and 19th century foundry site is of international significance for the role it played in the production and export of mining equipment such as beam engines, waterwheels, compressors and ore processing machinery. The Harvey company also had links with steam engine pioneers such as Trevithick, Woolf and West.

The building has now been refurbished under a regeneration scheme to house Hayle Community Archive and a branch of Cornwall Record Office, and the ground floor of the building restored as a shop/showroom facility. Planning permission for the conversion and refurbishment of the building was given by Penwith District Council, with Listed Building consent from English Heritage, subject to conditions for appropriate historic building/archaeological recording to be undertaken while work progressed. Archaeological investigation of the standing building and brief examination of related structures to the rear of the property was carried out by the projects section of the Historic Environment Service, Cornwall County Council, during the winter months of 2002-3, when contractors commenced work on site.

Archaeological investigation revealed at least 6 building episodes or phases of use. The earliest structures were found at the rear of the property, and represent fragments of the early foundry complex, probably dating from the late 18th century. The majority of the office building and shop frontage dates before 1842, and seems to be associated with a period when the foundry was rapidly expanding. Although the footprint of the building did not change significantly in the late 19th century, there is abundant evidence of internal changes of plan. The most significant (and certainly the most visible) external alteration was the addition of the first floor wooden drawing office, built on cast-iron piers above a tramway that ran through the rear yard of the building.

The archaeological work confirmed earlier observations of the significant rise in ground level to the rear of the property, and underlines the potential for buried remains in this area of the former foundry complex.

2 Project background

No 24 Foundry Square and the drawing office to the rear (NGR 5582 3716) once formed the headquarters of Harvey's Foundry in Hayle, Cornwall. This 18th and 19th century foundry site is of international significance for the role it played in the production and export of mining equipment such as beam engines, waterwheels, compressors and ore processing machinery. This foundry also had links with steam engine pioneers such as Trevithick, Woolf and West.

The foundry site itself, which dates from the 1780s, lies to the rear of Foundry Square. Although a considerable amount of demolition and re-use of the site has occurred since the foundry closed in the early 20th century, several significant buildings still exist here. These remaining buildings, which include No 24 Foundry Square, are protected by designation as listed structures. No 24 Foundry Square is listed at grade II*, meaning that the building is of national significance. The whole of the former Harvey's Foundry site is also within one of the bid areas for the Cornish Mining World Heritage Site.

Along with some adjacent buildings, No 24 Foundry Square forms part of a shop frontage to the foundry site. The ground floor of the building once served as a showroom/shop for Harvey's Foundry and the upper floor was designed as a suite of offices and accompanying strongrooms. On the roof of the building is a clock tower which still contains its clock. This clock presumably once governed the lives of all who worked in the foundry, the adjacent shipyard and indeed this end of Hayle, most of which was owned by the Harvey company. A tramway linking the Harvey's shipyard complex with the foundry once ran through an arched corridor to the rear of the showroom. The ground floor of the rear wing of the building (beyond the tramway) contains fabric from the early foundry site. A wooden wing structure at first floor level and supported on iron piers above the tramway once formed the drawing office for the foundry.

The Harvey Company left 24 Foundry Square in 1960 and the site was then occupied by Slades Metal Co. Despite unsympathetic re-use as an Arthurian theme restaurant/pub (Excaliburs Medieval Meadery) in the 1980s, survival of early features in the building is remarkable. The whole foundry site is now part of an urban regeneration scheme (under the guiding principles of the *Harvey's Foundry Action Plan*), which is being co-ordinated by Penwith District Council. No 24 Foundry Square is the first building to be refurbished and re-used as part of this scheme.

A design for the building's refurbishment was drawn up by Stride Treglown Limited, as managing architects for Penwith District Council. The proposals include conversion of the upper floor to become Hayle Community Archive and a branch of Cornwall Record Office, to house the existing Harvey Company archive. The ground floor of the building is to be restored as a shop/showroom facility. Planning permission for conversion and refurbishment of the building was given by Penwith District Council, with Listed Building consent from English Heritage, subject to conditions for appropriate historic building/archaeological recording to be undertaken while work progressed. A brief for archaeological and historic building recording during the proposed works has been prepared by Simon Thorpe (Historic Environment Advice Team). Preparation of a Written Scheme of Investigation (WSI) was required in the brief to satisfy the planning and Listed Building consents; a project design containing the WSI was subsequently prepared by HES.

Refurbishment works were designed to remove 1980s additions to the building, and aimed to restore the structure approximately as it appeared at the time of the foundry's closure (1904). Modern wall and floor surfaces were to be removed, which could expose earlier features. A section of wooden floor which was removed during the building's use as a

restaurant was to be replaced. The design included significant changes towards the rear of the building, where the area once occupied by the tramway was to be re-opened (including removal of 1980s enclosing walls and floor levels).

Stride Treglown's design also included provision of a few modern facilities, including access for disabled persons and a lift between the ground and first floors (the latter to be installed in the rear part of the building within former storerooms). Existing toilets in the rear wing were to be upgraded and a new disabled persons toilet installed in the rear part of the shop/showroom area.

3 Aims

The main purpose of the archaeological work was to ensure that an adequate record was made of built fabric and archaeological remains affected by or exposed by the development. The following areas were identified in the WSI as requiring particular attention:

Below-ground remains

- Evidence for the character and potential of archaeological deposits.
- Evidence for features and deposits associated with the foundry, particularly in the area of the rear wing.
- Survival of any below-ground evidence for the former tramway (surfaces etc).

Built fabric

- Any exposed features and fittings which could help to clarify the uses and layout of the accommodation.
- Changes to fabric, eg blockings, rebuildings, which reflect the building's history and evolution.

4 Working methods

Fieldwork included a photographic record of the building and an archaeological watching brief. Work was undertaken during the period from November 2002 to February 2003. No desk-based historical research was undertaken as part of this project as several earlier studies of Harveys Foundry have been carried out (see References section). The concluding sections of this report draw on the results of previous documentary research work.

4.1 Photography

A photographic record was made of external and internal elevations. This was carried out using a Pentax medium format camera (set up on a tripod) and loaded with archive quality (100 ASA) monochrome film. Detailed shots of particular architectural features were taken with a 35mm Pentax camera (also using monochrome film). Illustrative views (including those used in this report) were taken with a 3MP Fuji digital camera. Flash photography and artificial lighting were used where possible to supplement the available lighting in the building.

The photographic record was gained by undertaking several site visits. The external views were taken in November 2002 before the building became covered in scaffolding. Internal photographs, particularly of elevations, were taken in December 2002 after many of the

1980s partitions and wall coverings had been stripped out. This generally enabled larger room spaces to be viewed and for historic fabric to be revealed, free of much of the 1980s alterations. Some areas of the building, however, proved difficult or impossible to photograph due to health and safety considerations, and the problems of recording visible fabric at the times of the different site visits. The rear wall of the main shop and office was particularly difficult in this respect, as this area was seriously affected by dry rot. After stripping out and minor demolition, the remainder of the wall was immediately propped and the surface covered with shoring boards.

4.2 Watching brief

An archaeological watching brief was focussed on two parts of the site:

1. Within the rear ground floor of the building in areas where ground levels were to be slightly reduced by removal of 1980s floor levels.
2. Where modern features/coverings were to be removed from walls in the former office and shop area.

Due to the confined nature of the rear of the site and the need to work predominantly inside a building, the contractor's excavation works were limited to what was achievable with hand tools. The building programme was also designed to be relatively non-intrusive, so observed stratigraphy was only possible in shallow service trenches and beneath modern floor levels.

The principal forms of archaeological recording during the watching brief were photography, descriptions and limited measured survey (annotation onto existing plans/elevations as needed). 35mm photography and monochrome film was used for recording throughout, with supplementary digital photography. Layers and features were assigned numbered contexts on drawings and fully described. Provision was made in the project design for retention for cataloguing, analysis and conservation of finds if needed but in the course of fieldwork no finds were made. Similarly no industrial residues were revealed that could provide additional information.

4.3 Post-fieldwork tasks

Materials gathered as part of this study were catalogued and collated as a site archive. These include:

- monochrome photographs (accompanied by an annotated plan showing photographic viewpoints used)
- digital photographs
- field notes, descriptions and contexts
- annotated plans and elevations.

5 Results

A good description of 24 Foundry Square has been given in the Conservation Plan (Parkes Lees Architects 2002) and does not need to be repeated here. The comments given below relate to observations made during the watching brief where these add to the understanding of the structure or where the previous description requires updating.

5.1 Shop area

Removal of debris and boarding revealed the extent of a tiled floor within the former shop area (see Fig 15). This comprised a pattern of cream and red-brown square tiles laid in a diagonal pattern within a rectangular border of smaller similar tiles. These tiles, and their pattern, resemble those often found in entrance halls of late 19th century houses. The floor extended from the former entrance in the late 19th century shop front (visible in a 1880 photograph) to the rear of the shop where a doorway gives access to the rear granite cobbled passageway. The tiled floor and rear doorway are noticeably aligned with the doorway to the principal stairs. It therefore seems that this was the main thoroughfare in the ground floor of the building in the later 19th century. The tiled floor was partly overlain by an area of tongue and groove floorboarding supporting on joists, probably laid here when the shop was used as a grocery store in the 1930s. Refurbishment plans for the shop included extending this later floor to the full width of the shop area, which would retain the tiled area.

The extent of the former shopfront at the north corner of the building, and extending along the eastern side, could easily be seen after 1980s alterations and disguising work were removed (Fig 16). The upper floor of the building in this area (built of lightweight timber framing and lath and plaster cladding) is supported on decorative cast-iron columns.

Two former doorways were visible in the wall separating No 24 Foundry Square from No 23. One of these was a designed opening, with large granite jambstones, and which had been blocked with brickwork with occasional horizontal timber lacing. The other blocked doorway was clearly secondary, and had been cut through the wall close to the front entrance. This had jambs of red brick, and the opening had later been infilled with buff bricks and stone masonry. It is likely that these blockings were made after the separation of the Harvey and Trevithick businesses in 1852, as Trevithicks had once occupied the shops adjoining No 24.

5.2 Former offices

The north corner of the upper floor of the building is, as Parkes Lees Architects observed, built of lightweight timber framing with lath and plaster cladding. The wall thickness is made to resemble traditional masonry with deep window reveals as used elsewhere (Fig 19). Within the smaller front office (at the north corner of the building) are two built-in cupboards, one each side of the window facing the square, which use most of the wall thickness.

Either before or at the time of the 1980s re-use as a restaurant, the walls of the former offices were covered in softboard supported on battens. This probably provided a degree of insulation and also (fortunately) largely preserved earlier wall finishes. Beneath the battens in the inner office were areas of two different but heavily patterned faded red wallpapers, perhaps of late 19th century date but more likely to represent a decorative scheme of the early to mid 20th century (Fig 20). In the smaller front office traces were found of imitation pine planking. As the renovation scheme includes the creation of new plasterboard surfaces over the existing battens, elements of these former decorations will survive and again be hidden.

In the inner room are traces of a doorway connecting through to No 23 Foundry Square, the opening later converted to a recess with shelving. The size of this room, together with its location affording a more private space, and its former rich décor suggests that it may have served as a board room. Access to this room was via the smaller first floor office, itself probably a manager's office, and also via the rear external stairs and lobby.

The first floor strongroom towards the front of the building may be an addition, taking its space from the 'board room'. Some evidence that this may be an addition can also be seen downstairs as the cast-iron columns supporting the main wall are decorative, whereas those supporting the strongroom are plain, and therefore do not seem to be a part of the original design.

5.3 Rear passageway/tramway

The principal features of the rear passageway are its two brick arches and an area of granite cobblestones (see Fig 18). In the 19th century a tramway from the Harveys shipbuilding area and quayside ran through this area to connect with the foundry complex. This tramway is depicted on a plan of 1853 (Fig 6) and was still in existence in 1877 when the First Edition OS 25 Inch Map was surveyed. It would be expected that some trace of this tramway would be visible in the surviving cobblestones. Instead the cobbles are laid in continuous courses and do not have any indications of alterations, aside from minor patched disturbances associated with installation of services. It therefore appears that the cobbles were laid after the tramway had been removed.

At the inner (southern) end of the passageway removal of the slightly raised 1980s floor was expected to reveal a continuation of the cobbled surface. When the modern surface was removed, a layer of dark brown sand and ash was uncovered. Small excavations revealed that this make up material surrounded the cast-iron columns supporting the drawing office, whose footings were on a more compact surface c250–300mm further down. As removal of the sandy make up material was not needed as part of the development, this area was not explored further.

The tramway foundations, and the contemporary 19th century ground surface, therefore lie at greater depth than was anticipated. The existing cobbled surface also post-dates the use of the tramway, and also appears to have been laid over a slightly raised ground surface.

5.4 Foundations of casting shops

To the rear of the passageway and beneath the wooden first floor drawing office are several fragments of walling that relate to elements of the casting shops. These were partially exposed and examined as part of the watching brief, particularly after 1980s walling and roofing had been removed from this area. The numbered structures are shown on Fig 11.

5.4.1 Building 1

Building 1 was a fragment of a probably rectangular building, oriented NNW – SSE. Visible remains comprised the outer face of one wall 5.20m long (its longer eastern side) with returns at both corners (Fig 21). Construction was principally of semi-coursed granite blocks with smaller infill, bonded with lime mortar. Quoins were of dressed granite blocks. Approximately central to the visible wall were traces of a blocked doorway. This had been blocked in two phases, the first being a narrowing of the opening by a column of brickwork and the remainder later entirely blocked with stone masonry.

An area immediately east of this building (comprising Buildings 1 and 2, together with stone pier 3) was crudely roofed over and utilised as a cellar during the 1980s. All walls that formed the interior of the cellar were then covered with white masonry paint.

Very little of the interior of Building 1 was visible due to the higher level of the modern ground surface on this side. Towards the southern end of the interior face a head of a shallow brick arch was visible, the purpose of which could not be determined. As this

feature is not visible on the exterior it appears to be an interior recess rather than an opening.

The interior wall face of the building has experienced intense heat, with many of the stones reddened and damaged. This suggests it is part of the casting shop.

Refurbishment plans for this area included measures to keep the early walls intact. After the watching brief was undertaken it was recommended that the majority of the structure could be reburied both to protect the masonry and to prevent this area from becoming a void which could become a litter trap. Plans were made to install a new property boundary wall and a retaining wall so that this could be achieved. Exposed masonry of the wall top was to be cleared of 1980s masonry and cement-based repairs, the joints raked out and then repointed with lime-based mortar.

5.4.2 Building 2

The major part of Building 2 comprises a wall 7.50m long containing two wooden lintelled window openings. The wide reveals of the windows, as well as quoin masonry and the wall returns, indicate that the building's interior was to the west. This building is well constructed of granite blocks to the quoins and predominantly granite semi-coursed masonry elsewhere. Wall faces are heavily limewashed, with indications of numerous coats. This wall was later used as a foundation for the wooden drawing office built above. There is a strong likelihood that this structure was originally two storey, but that all traces of any higher levels have disappeared.

Inside the building are remains of a heavily cambered granite cobbled surface, probably relating to a drain running along the long axis of the building. Like Building 1, there has been a significant increase to the interior ground level here. Levels of dumped material in this building above the cobbles comprise deposits of ash and cinders, as well as lime mortar and building debris.

Building 2 lies to the south and east of Building 1 but the relationship between the two structures is not entirely clear (Fig 22). A blocked arch visible at the junction of the two buildings is clearly secondary to Building 2, as the jamb is not well constructed. It appears that the arch springing was also cut into the quoin of Building 1. The arch is not visible on the interior face of Building 2 but there has been subsequent crude refacing of the wall here. The arch was blocked with brickwork and stonemasonry, leaving a recess. This feature has been discussed in previous CAU reports as possibly representing an arch of a limekiln. This interpretation is now known to be incorrect, as its relationship with Building 2 is now clear. The mapped position of the limekiln shown in 1815 is further south.

Recommendations for treatment for the building under the refurbishment scheme included removal of 1980s cement-based repairs and renewing the pointing with lime-based mortar.

5.4.3 Stone pier 3

A substantial pier of granite masonry with dressed granite quoins is situated beneath the wooden first floor drawing office. This is linked to the northern corner of Building 1 by a thinner and less well built section of walling. It is also abutted by further granite walling framing a doorway or gateway (4).

As the pier runs on a different alignment to both Buildings 1 and 2 its purpose is unclear, although it is certainly later.

5.4.4 Doorway 4

A probably doorway or gateway c2m wide is flanked by a pair of walls each with dressed granite quoinstones. The southern flanking wall abuts the northern side of stone pier 4 whilst the northern flanking wall is abutted by a granite walled foundation of a strongroom built above.

The tops of the pair of walls were used later to directly support the wooden superstructure of the first floor drawing office.

5.4.5 Structure 5

In 1999 officers from CAU visited the site and commented on a surviving oven-like feature at the rear of the property, perhaps part of the main casting shop. This structure comprises a dressed granite quoin and partly infilled recess to its right which contains a column of brickwork and an arch. The brick arch voussoirs have all been reset in cement-based mortar so are clearly relatively modern, and probably a part of the 1980s Excaliburs makeover. The older masonry has not been clearly identified, but is a composite of features, including walling supporting a small room off the stairs above. This upper space was used as a WC for the first floor offices in the mid 20th century, and the soilpipe from the toilet was still extant when the building was examined.

5.4.6 Furnace structure 6

To the south of the strongrooms/toilet block in the rear of the building is a roughly square and apparently solid pier of rubble masonry. This rises above the ground floor storey but stops short of eaves height of this end of the building. A brick-lined channel is evident in the outer face of the pier, itself later infilled with brickwork (see Fig 23).

It is apparent that the rubble wall of the strongroom/toilet block has been constructed between earlier walls in this area and also runs above the masonry pier. It is also evident that the masonry pier is not functionally related to the structures which now surround it. The balance of evidence suggests this is part of the original casting shop, perhaps a furnace.

5.4.7 Outer wall and arches 7

The rear wall of No 24 Foundry Square is associated with earlier structures in this area. The southern end of the wall has the springing of a brick arch above dressed granite quoins and an angle, now forming a sloping buttress and extending the party wall between No 24 and the neighbouring Whites Building, also has an edge of an opening with dressed granite quoins and indications of an arch. This was probably once the party wall between the casting shops and the site of Trevithicks Stores, as mapped in 1864.

Both of the visible arches, as well as other blocked openings, indicate that the ground level has increased by about a metre since the foundry buildings were in use. It is likely that this represents a deep deposit of demolition material which would in turn hide structures associated with the foundry. As the adjacent modern warehouse (Bookers Cash and Carry) has been built at the present level, there appears to be a great deal of archaeological potential in this area.

5.5 Rear strongrooms and toilets

The rear part of No 24 Foundry Square includes a stairwell, together with two strongrooms on the ground floor, and toilets and a further storeroom on the first floor. These spaces are lit by two lantern windows in the roof, one lantern above the toilet block and the other over the stairs.

Map evidence indicates that in 1864 this area was part of Trevithick's Stores, which backed onto the narrow rear yard containing the course of a tramway. There is structural evidence to show that the southern wall of this part of the building is a rebuild, apparently part of a re-development to include these rooms. Inside the ground floor the dividing walls of the strongrooms and stairwell are of brickwork, which abut the earlier outer walls. Partitions separating the toilets are of similar construction. The first floor, above the strongrooms, is built upon iron rails, with the narrow spaces between infilled with mortar. These rails are set into the southern outer wall, indicating that these elements are of coeval construction. The conservation plan comments that the rails are Barlow rails, as were used on the West Cornwall Railway until the 1860s (Parkes Lees Architects 2002).

5.6 Drawing office

The drawing office to the rear of No 24 is a peculiar first floor wooden extension, built partly upon walling from earlier ground floor buildings with the remainder supported by floor beams resting on cast-iron columns. The majority of the columns, particularly in the area of the former tramway and the original entrance to the office complex, are purpose-made decorative columns. Other supports are re-used sections of rising main (as used for pumps used in mines, quarries and clayworks) and were probably in abundant supply when Harvey's Foundry was operational.

The superstructure of the office is timber framed and clad, with a scantle slate roof. All windows in this extension have 12 panes, with hornless sashes. The majority of the office has a simple rectangular plan, but the end is a parallelogram, evidently an extension. The original rectangular shape of the drawing office is shown in 1864 and 1880, and the extended version first mapped in 1907. As Parkes Lees Architects observed, the original hipped joists for the roof, indicating the earlier extent, are still visible in the roof. Inside, the added structure can also be seen from where the floorboards change angle.

The reason for creating the parallelogram shape is obscure, but it probably indicates that this comparatively late structure needed to respect some pre-existing feature. Inside the end of the building the shape is complicated further by partitioning within the acute angle to accommodate a stovepipe.

The office was sub-divided in the 1940s into a group of smaller rooms. Partitions created at this time are narrow and are built of lightweight sheets composed of straw and cement mix (locally called 'stroyle block'), a common material used from the 1940s to 1960s. A combination of partitions used in the parallelogram section formed a blind space; the reason for creating this is obscure.

6 Chronology

A combination of structural and historic evidence is now available to interpret the development of 24 Foundry Square. Although the available maps are not particularly large scale, sufficient detail is readable to determine the evolving footprint of the building. See also Figs 13 and 14 for graphical representations of the chronology of the ground and first floors.

Company background	Plan/illustration	Structural evidence
1779 John Harvey opened the first foundry at Hayle		
1803 Henry Harvey took over the business. Richard Trevithick (John Harvey's son-in-law) produced designs for steam engines	1815 foundry plan shows gated yard to rear of 24 Foundry Sq, the main entrance to the foundry. The shop front area was curved at this date.	Phase 1 Fragments of buildings [1] and [2] to the rear of the tramway appear to be part of the early casting house complex.
1816 Arthur Woolf became foundry superintendent. Foundry expanded. Richard Trevithick left for South America		A wall with remains of red brick arches [7] and furnace structure [6] may also be associated with expansion of the foundry. Stone pier [3] and doorway [4] are also likely to be part of phase 1, but are clearly later than building [1]
1827 Richard Trevithick returned penniless from S America		
1833 Nicholas Oliver Harvey became foundry superintendent. Death of Richard Trevithick at Dartford.	1835 foundry plan shows the frontage with a squared footprint.	Phase 2 The wide brick arches over the northern end of the rear yard appear to be represented on this map. The footprint of the offices and probable shop are not easy to interpret on the ground, as if the front elements were subsequently rebuilt.
	1842 Tithe map – shows squared footprint of the main office	Phase 3 Main offices built, same as the 1845 view.
	1845 engraving of Foundry Sq shows foundry offices and cupola above clock. Wooden shop frontage.	Wooden shop front and timber-clad first floor frontage may represent a rebuild of the curved frontage mapped in 1815.
1850 death of Henry Harvey. Company reconstituted with Harveys, Wests, Rawlings and Trevithicks as partners but Trevithicks later withdrew. Separation of Harvey/Trevithick business interests in Hayle		Blocking of doorways between 23 and 24 Foundry Square probably represent division of the office and shop premises to become independent business properties.
	1853 foundry plan shows the foundry offices at the front of 24 Foundry Sq, with Harvey's offices over Trevithick's Shop. This does not seem to be a very accurate plan, as	

Company background	Plan/illustration	Structural evidence
	the preceding Tithe Map and engraving show the outline of the shop area more accurately, with the neighbouring 23 Foundry Sq projecting forward slightly. This map is the first to show a tramway running into the foundry site from the quayside.	
1861 death of N O Harvey, succeeded by William Husband		
	1864 plan shows Trevithick's Stores behind 24 Foundry Square	
1868 closure of Copperhouse Foundry, acquired and demolished by the Harveys in 1875		
	1877 OS First Edition 25" map surveyed. First floor rear drawing office in place.	Phase 4 Strongrooms off main first floor office were probably constructed around this time, although the two strongrooms, being of different construction, need not have been built at the same time. The front strongroom appears to have taken space from a large heated inner room, perhaps an earlier drawing office or a board room. The rear strongroom may be coeval with the construction of the wooden drawing office.
	c1883 Photo shows front of 24 Foundry Sq with modified shop front. A window had been added to the upper floor.	The tiled floor in the shop area is evidently coeval with the shop front.
1903 Foundry closed, but other Harveys businesses continue.		
	1907 OS Second Edition 25" map surveyed. Foundry depicted as disused but most buildings still extant. Tramway from quayside into foundry (through 24 Foundry Sq) removed.	Phase 5 Probable reflooring of cobbled area where the former tramway was situated.

Company background	Plan/illustration	Structural evidence
	The 'Whites' building, adjacent to 24 Foundry Sq on the site of the old Trevithick's Stores, appears to have been built by this time, perhaps a response to the widening/dualling of the railway viaduct.	Construction of new main stairs, toilets and strongrooms in the rear part of 24 Foundry Sq evidently post-dates the 1864 plan, and the Trevithick's Stores seems to have existed until at least 1877. Feature [5], previously interpreted as a possible furnace, seems to be a foundation for a room created off the half landing of the new staircase. This feature abuts the side of furnace [6]. Drawing office was extended southwards with parallelogram section.
	1936 OS map revision shows that substantial demolition had occurred on the foundry site, particularly the casting shops to the rear of 24 Foundry Sq	Phase 6 The tongue and groove wooden floor in the shop partly covers the earlier tiled floor. It is pre-WWII, perhaps installed when this part of the building was Houses Grocery store.
		Partitions in the wooden first floor drawing office are reputed to have been added in 1947. Similar ceiling detail associated with these is also visible in the front office.
		The slated gabled top of the clock tower replaced the former cupola structure in 1951.
1960 Harvey business leaves 24 Foundry Sq		

7 Conclusions

Results from this project have contributed greatly to the understanding of the building and to the overall interpretation of Harvey's Foundry:

- What has been uncovered at the rear of 24 Foundry Sq are a few building fragments on the edge of what is clearly a much wider area of buried archaeological remains. This includes the earliest foundry buildings (dating from the late 18th century) and the early 19th century enlargement of the casting shops. The ground level immediately to the rear of the property has been built up between 0.6 – 1.0m, mostly comprising furnace and casting waste, plus demolition material from the works itself. This debris probably masks foundations of the casting shops and furnace complex.
- The adjacent Bookers warehouse which covers the bulk of the former casting shops area is a modern lightweight building, probably built on rafts of concrete which mask earlier material.
- A fragment of a wall to the rear of 24 Foundry Sq (which now serves as a buttress) is part of the division between the casting shops and furnaces as mapped in 1853.
- The office/shop on 24 Foundry Sq had gained its present footprint by the 1840s; it probably relates to the time the foundry was greatly expanded as an engineering works under Arthur Woolf.
- The wooden shop front and timber framed first floor front wall may be a remodelling of the curved structure mapped here in 1815.
- Later 19th century changes to 24 Foundry Sq included addition of the first floor strongrooms and wooden drawing office extension. The drawing office may have previously been accommodated within the main part of the building, in what became an inner office or perhaps a boardroom.
- The shop front visible in an 1880s photograph appears to be a modification of another depicted 1845. An area of tiled floor within the shop area provides a link to a rear door crossing the yard. Opposite it is another doorway, subsequently re-used for the rear stairway; this is likely to have originally led into Trevithick's stores.
- Access to the first floor offices was probably originally via the granite exterior steps from the rear yard.
- Creation of the rear stairwell, ground floor strongrooms and first floor toilets are part of a single building episode. They are likely to have been built in the late 19th century, probably when the adjoining 'Whites' building was built to replace the Trevithick's stores, which occupied a similar site. Trevithick's stores was in existence in 1864 and appears to have still been extant in the late 1870s when the area was mapped by the OS. The 'Whites' building was constructed shorter than the previous building, perhaps to accommodate widening of the railway viaduct. It may even be possible that the replacement building was commissioned following a compensation claim from the railway company.
- The rear stairwell provided a new covered access to the first floor offices. WCs were also provided; earlier toilets (situated elsewhere) are likely to have been simple latrines/earth closets.

8 Recommendations

If the Bookers building is relocated at a future date, then the whole of the former casting shop and furnace complex of the foundry will become available for archaeological investigation. All buildings in this part of the foundry complex were demolished before 1936. Should the opportunity arise, trial pits should be undertaken to evaluate the depths and survival of stratigraphy, followed by a full area excavation if necessary.

9 References

9.1 Primary sources

Ordnance Survey, c1880. *25 Inch Map* First Edition (licenced digital copy at HES)
Ordnance Survey, c1907. *25 Inch Map* Second Edition (licenced digital copy at HES)
Tithe Map and Apportionment, c1840. *Parish of St Erth* (microfiche copy at HES)

9.2 Publications

Gordon Lewis Associates, 2000. *Harveys Foundry Action Plan*
Parkes Lees Architects, 2002. *24 Foundry Square and former Drawing Office. Draft Conservation Plan*
Smith, JR and Buck, C, 1995. *Foundry Square, Hayle: an Archaeological and Historical Evaluation* CAU
Thomas, N and Sturgess, J, 2001. *Harvey's Foundry, Hayle, Cornwall: Historic Buildings Survey and Archaeological Evaluation* CAU
Thorpe, S, 2002. *No 24 Foundry Square, Hayle: Brief for Archaeological & Historic Building Recording*

9.3 Websites

<http://www.imagesofengland.org.uk/> English Heritage's online database of Listed Buildings

10 Project archive

The HES project number is **2002059**

The project's documentary, photographic and drawn archive is housed at the offices of the Historic Environment Service, Cornwall County Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. Field plans stored in an A2-size plastic envelope (GRE 516).
3. Electronic drawings stored in the directory G:\CAU\Drawings\CAD Archive\Sites H\Hayle 24 Foundry Sq 2002059
4. Black and white photographs archived under the following index numbers: GBP1663 to GBP 1670 inclusive

5. Digital photographs stored in the directory G:\CAU\Images\SITES.E-H\Hayle, 24 Foundry Sq
6. This report held in digital form as: G:\CAU\DOCUMENT\THE PROJECTS\SITES\SITES H\HAYLE 24 FOUNDRY SQUARE 2002059\NO 24 FOUNDRY SQUARE REPORT.DOC

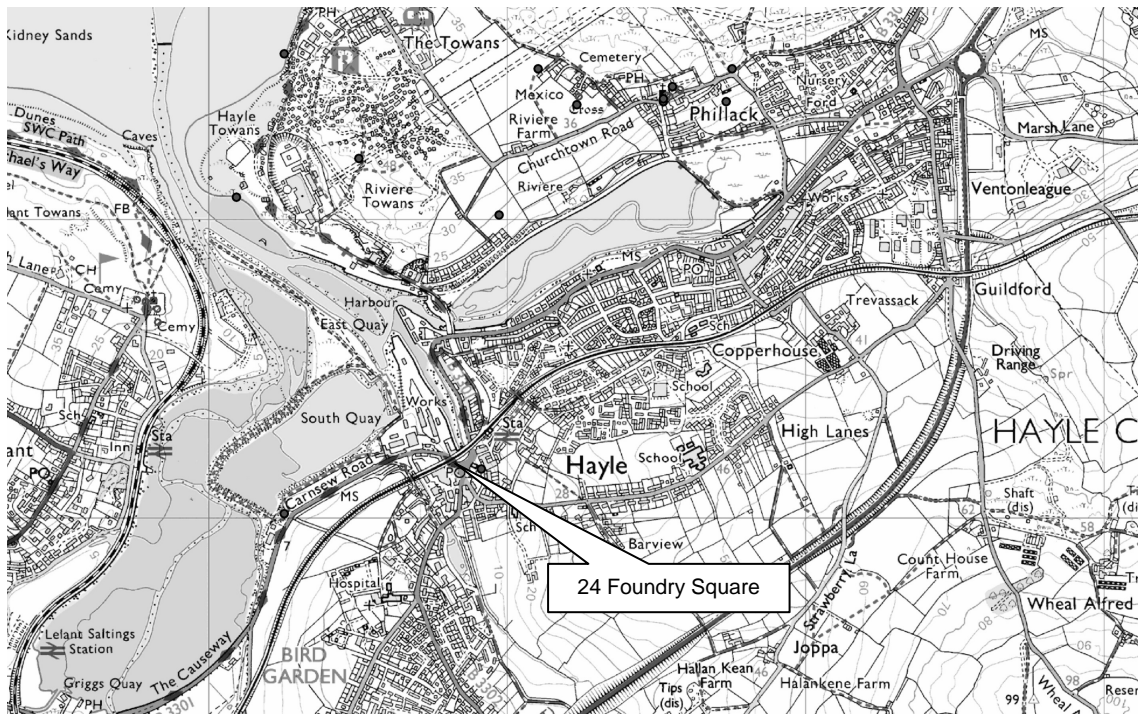


Fig 1 Location map

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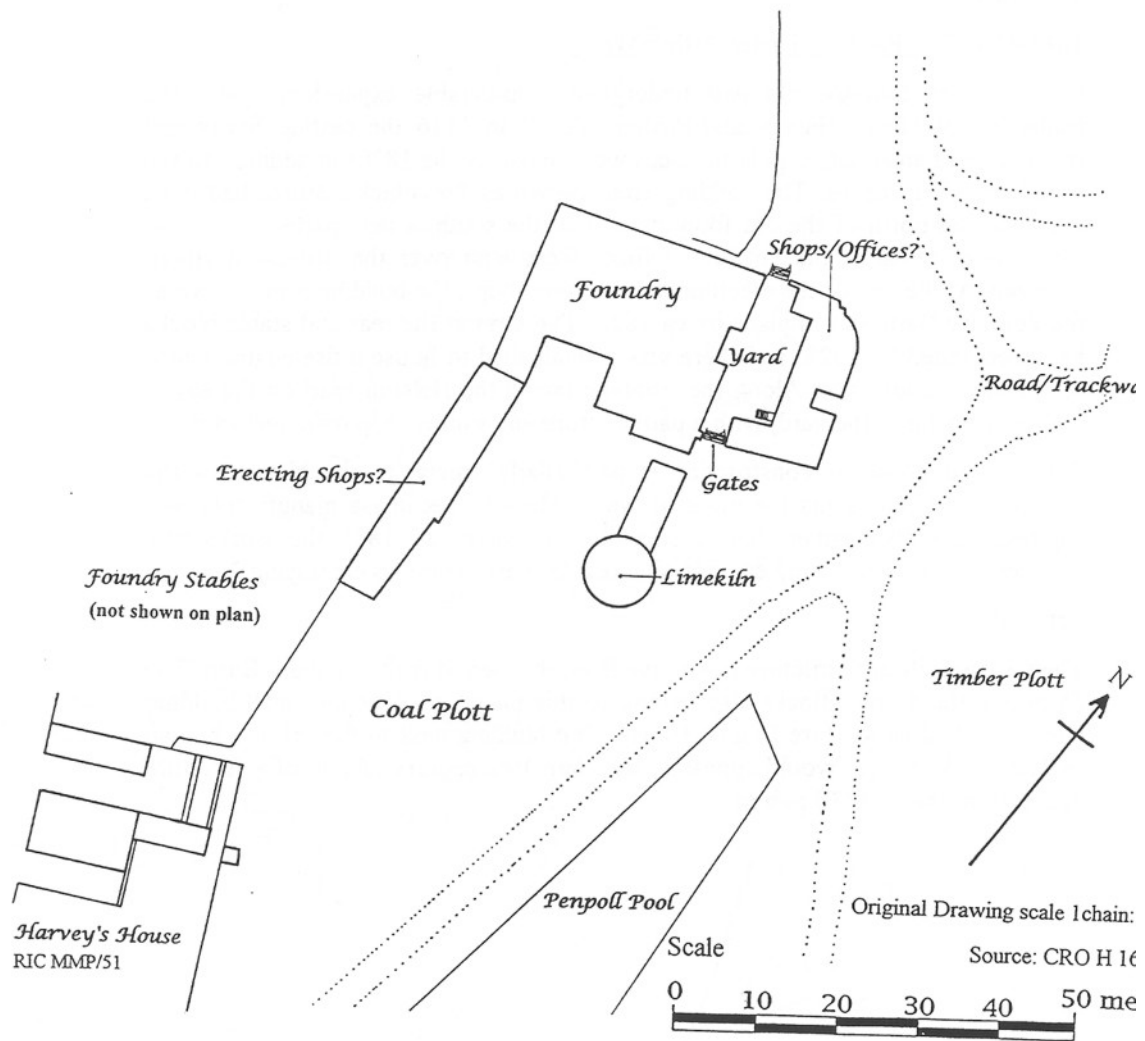
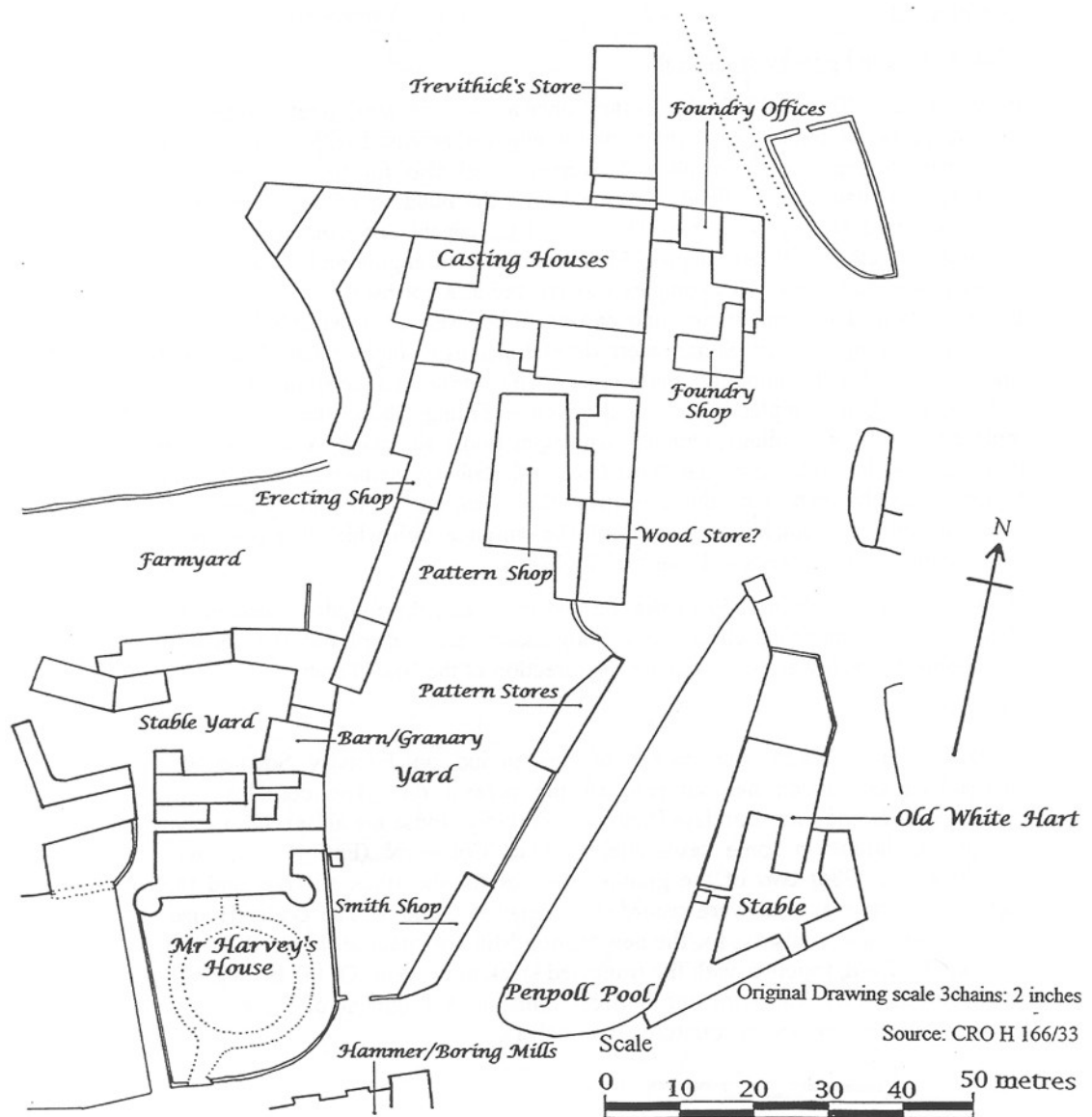


Fig 2 Plan of the foundry in 1815
(from Smith and Buck 1995)



*Fig 3 Plan of the foundry in 1835
(from Smith and Buck 1995)*

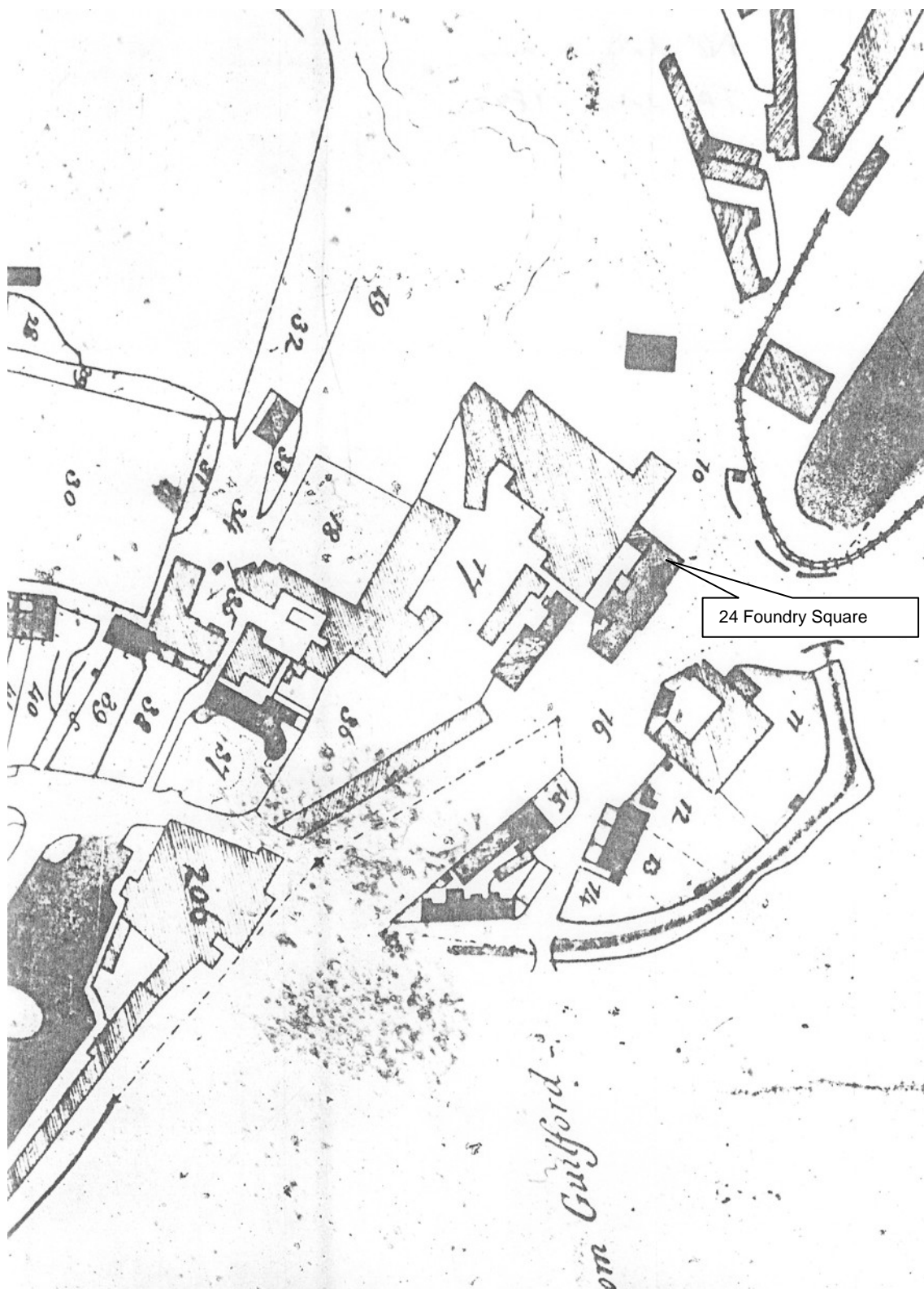


Fig 4 Tithe Map, c1842

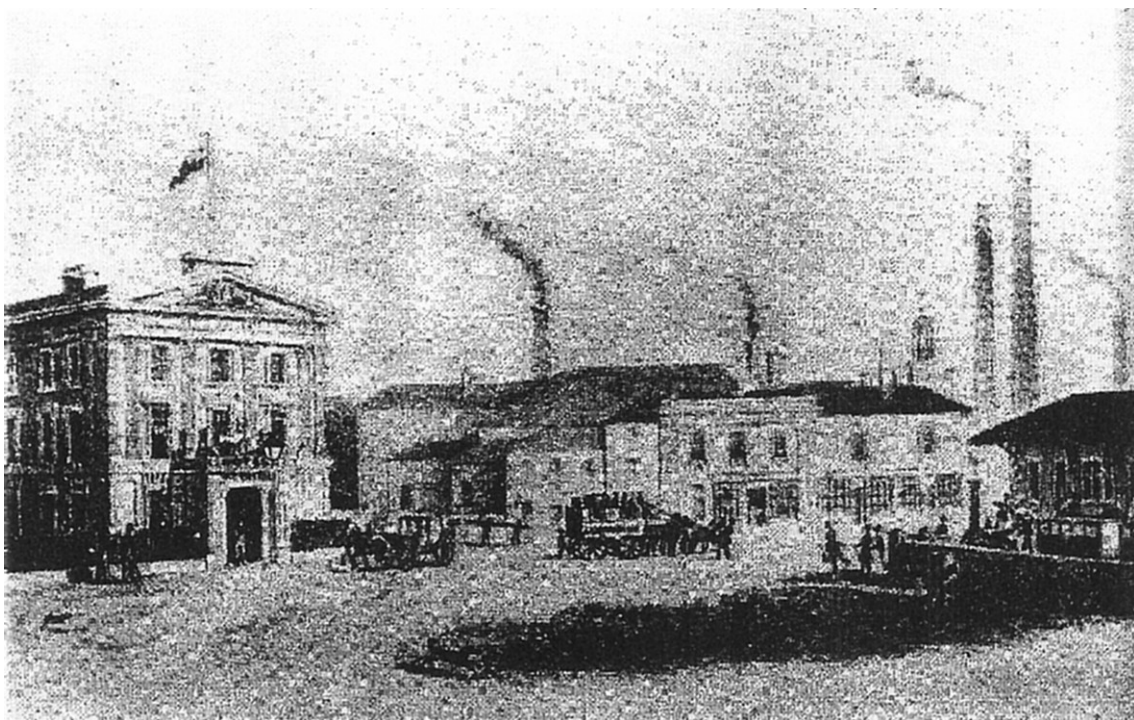


Fig 5 Engraving of Foundry Sq 1845

The shopfront of No 24 is visible behind the station (from PLA 2002)

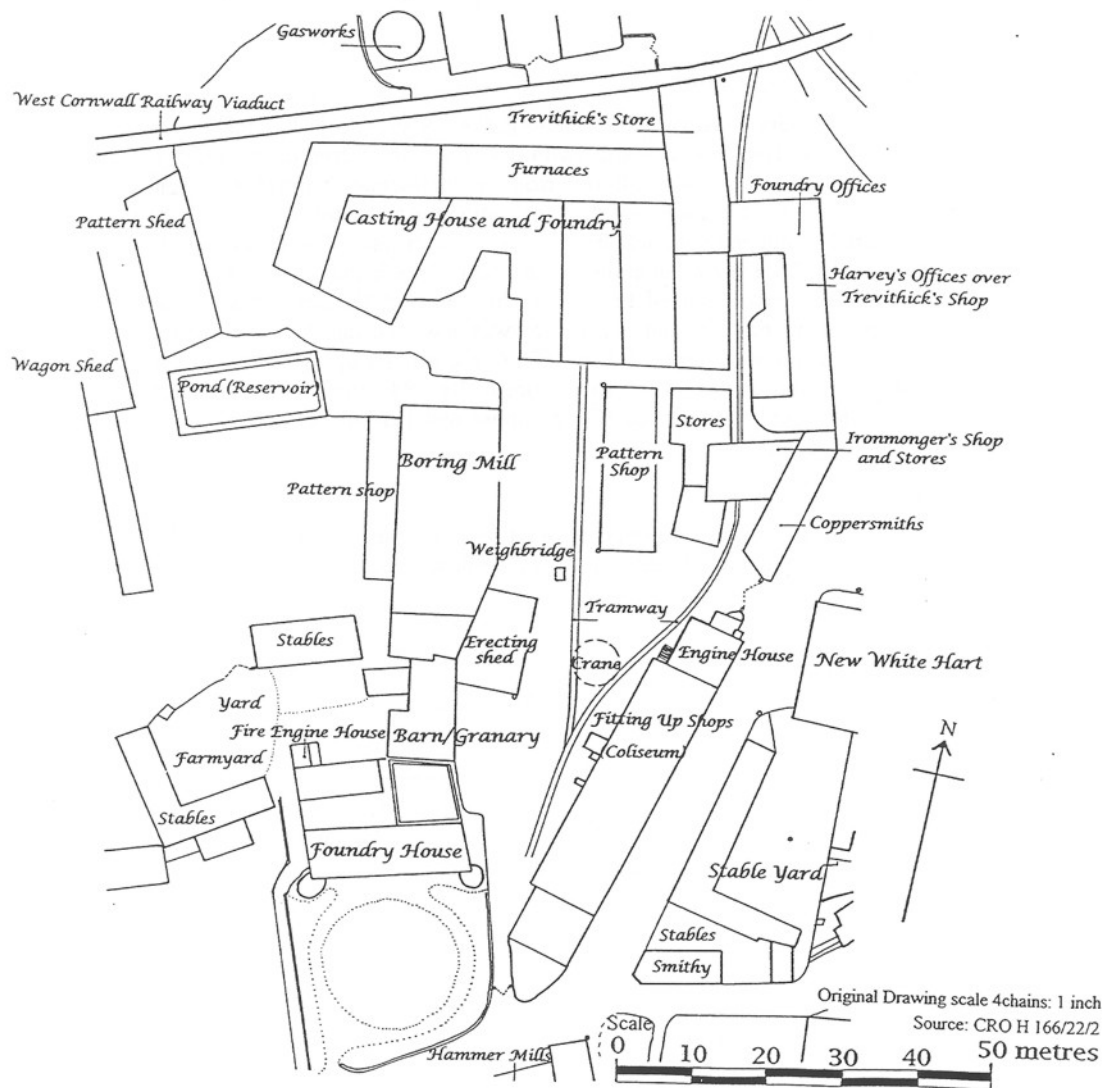


Fig 6 Plan of the foundry in 1853
(from Smith and Buck 1995)

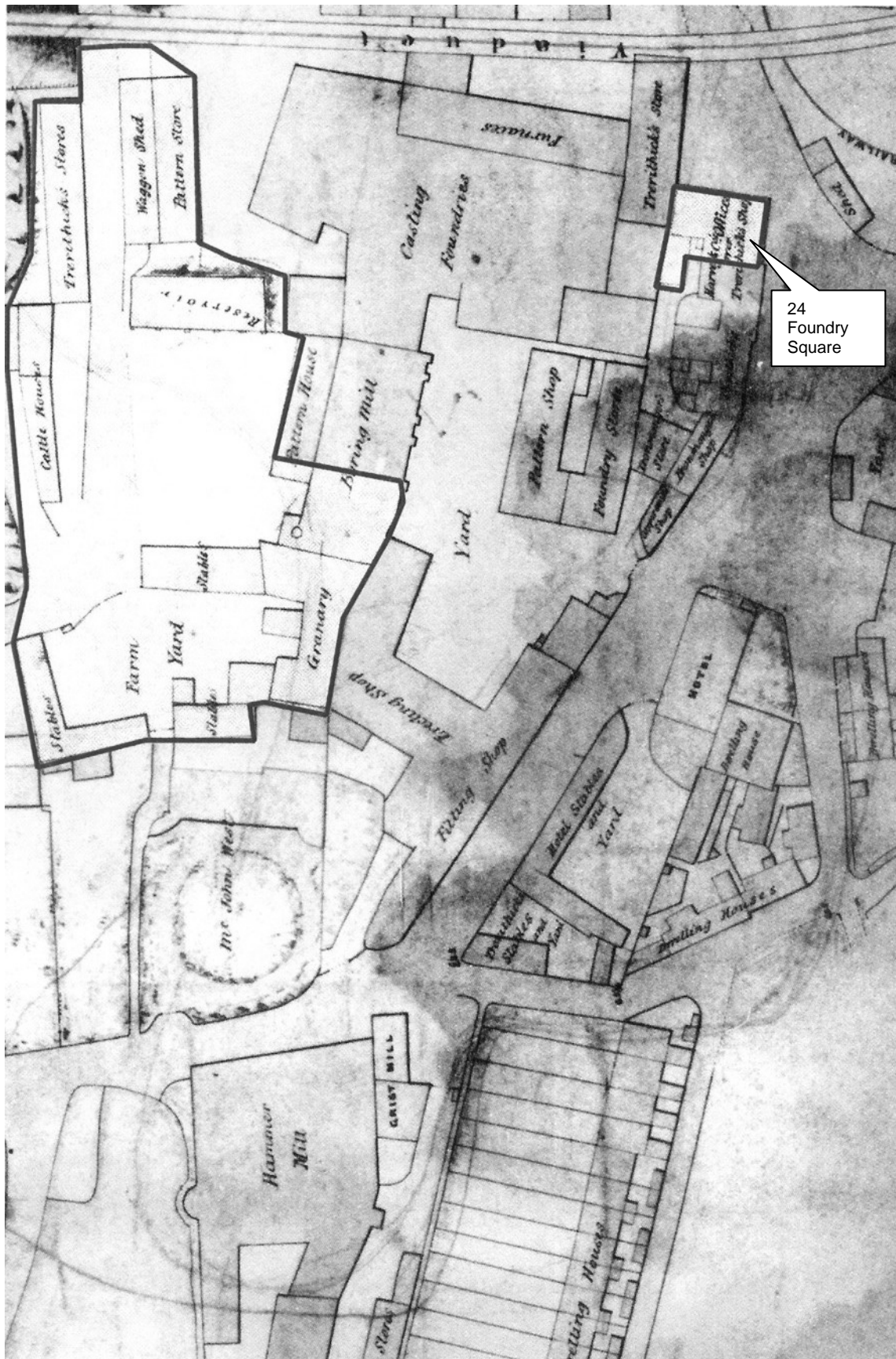


Fig 7 Foundry plan 1864
(from Thomas and Sturges 2001)

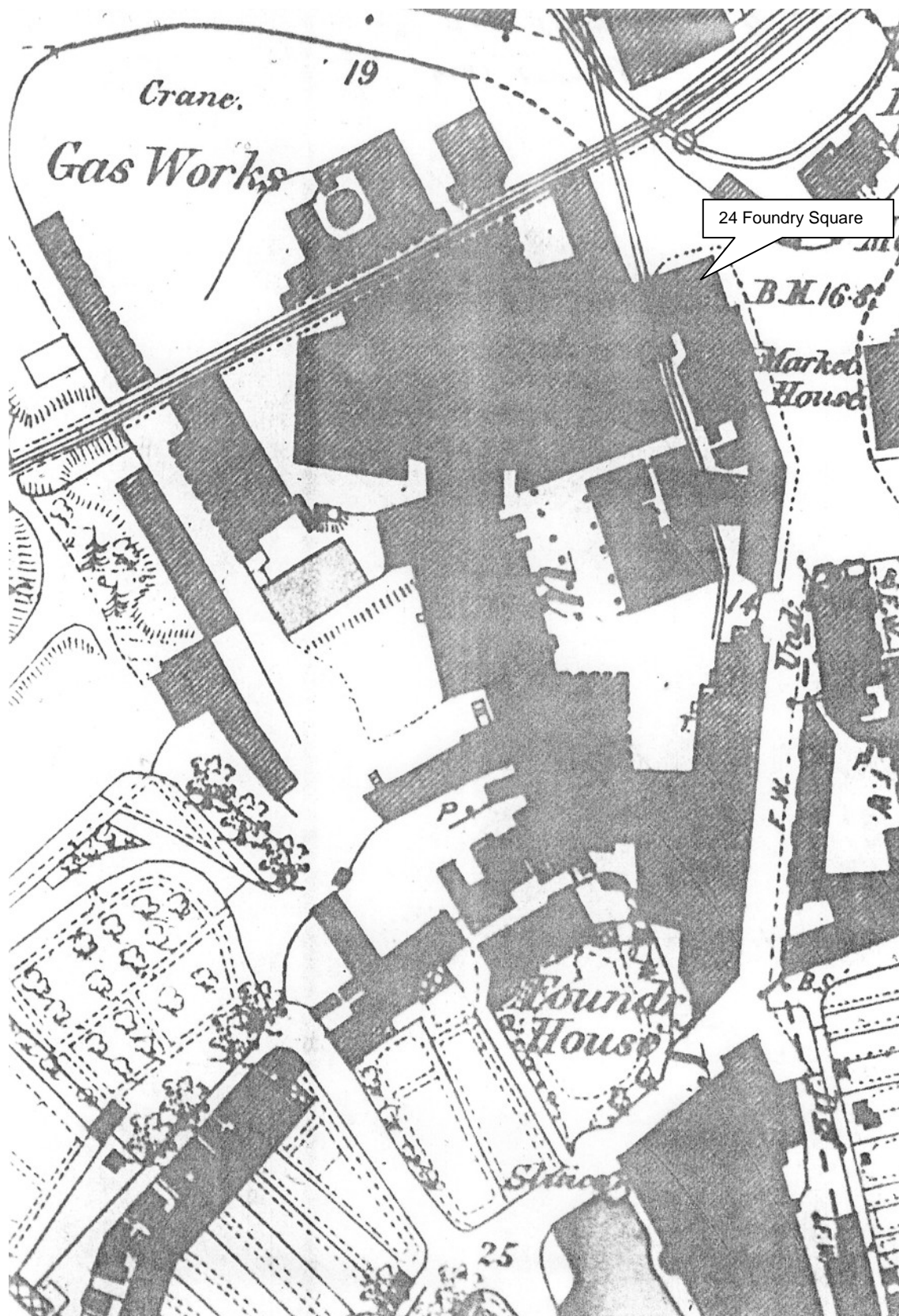


Fig 8 First Edition of the Ordnance Survey 25 Inch Map, surveyed 1877



Fig 9 View from Foundry Square c1880

Note the cupola on the office roof (from PLA 2002)

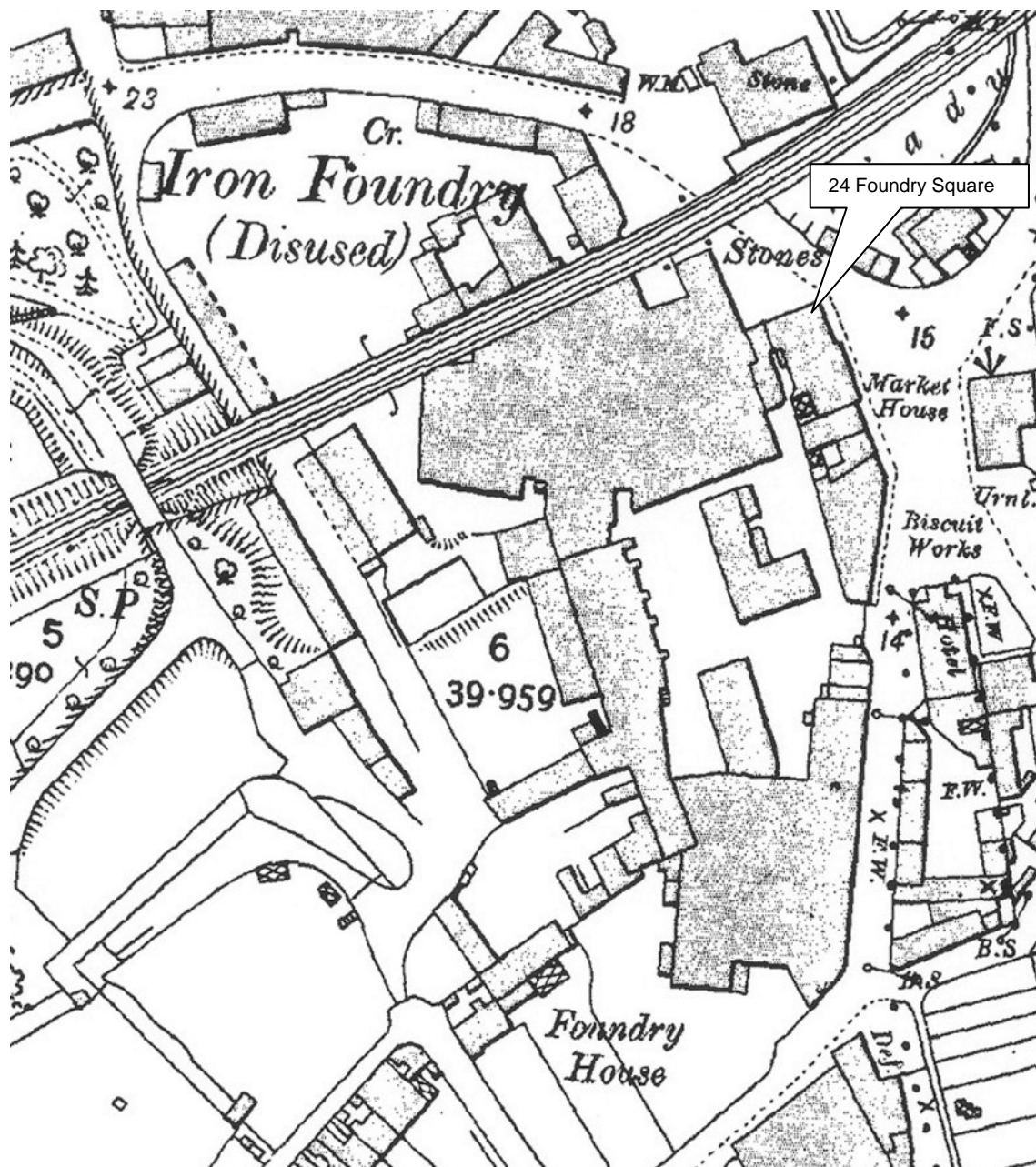


Fig 10 Second Edition of the Ordnance Survey 25 Inch Map, 1907

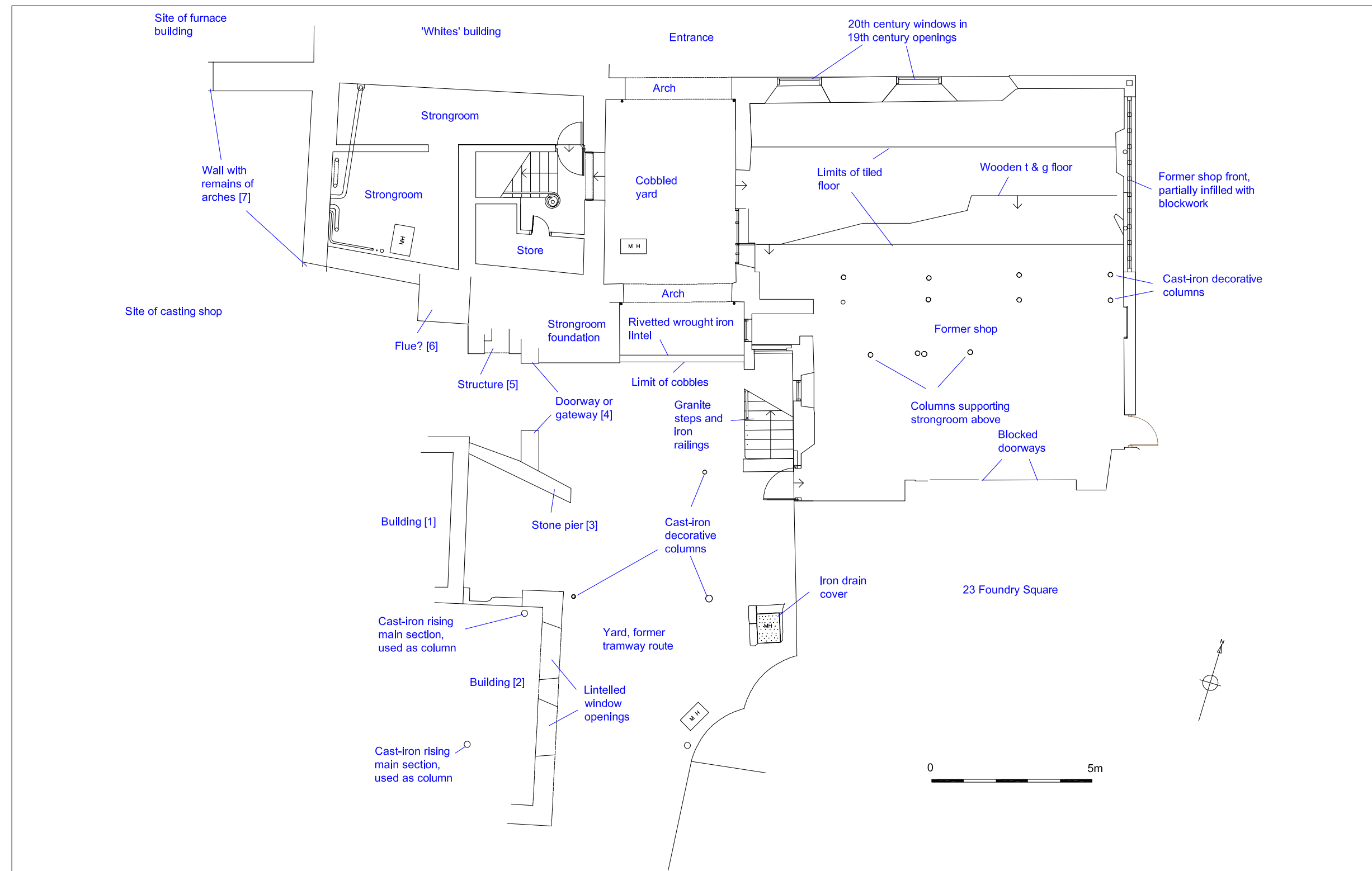


Fig 11 Ground floor plan (PLA) with labelling showing principal spaces

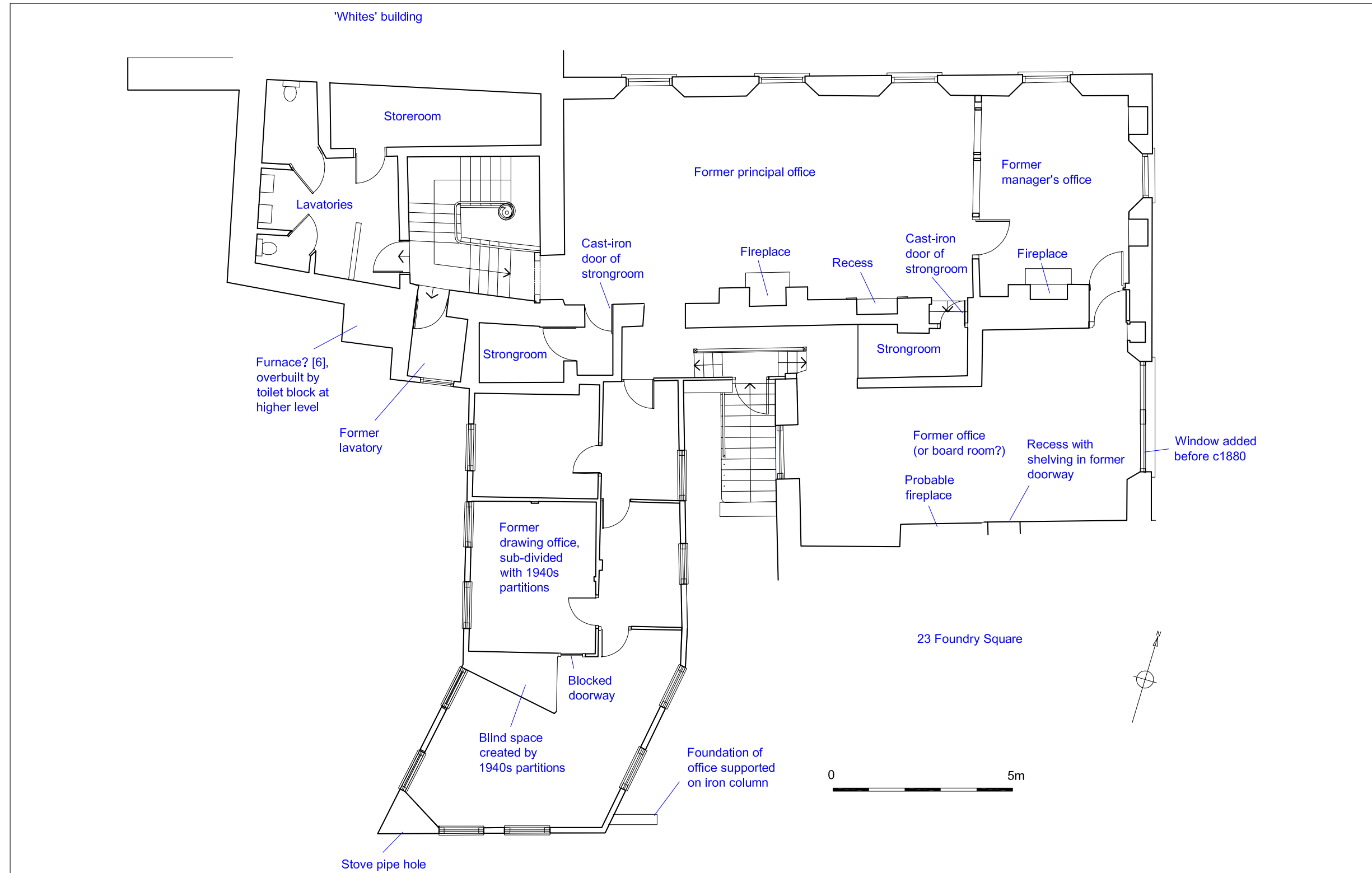


Fig 12 First floor plan (PLA) with labelling showing principal spaces

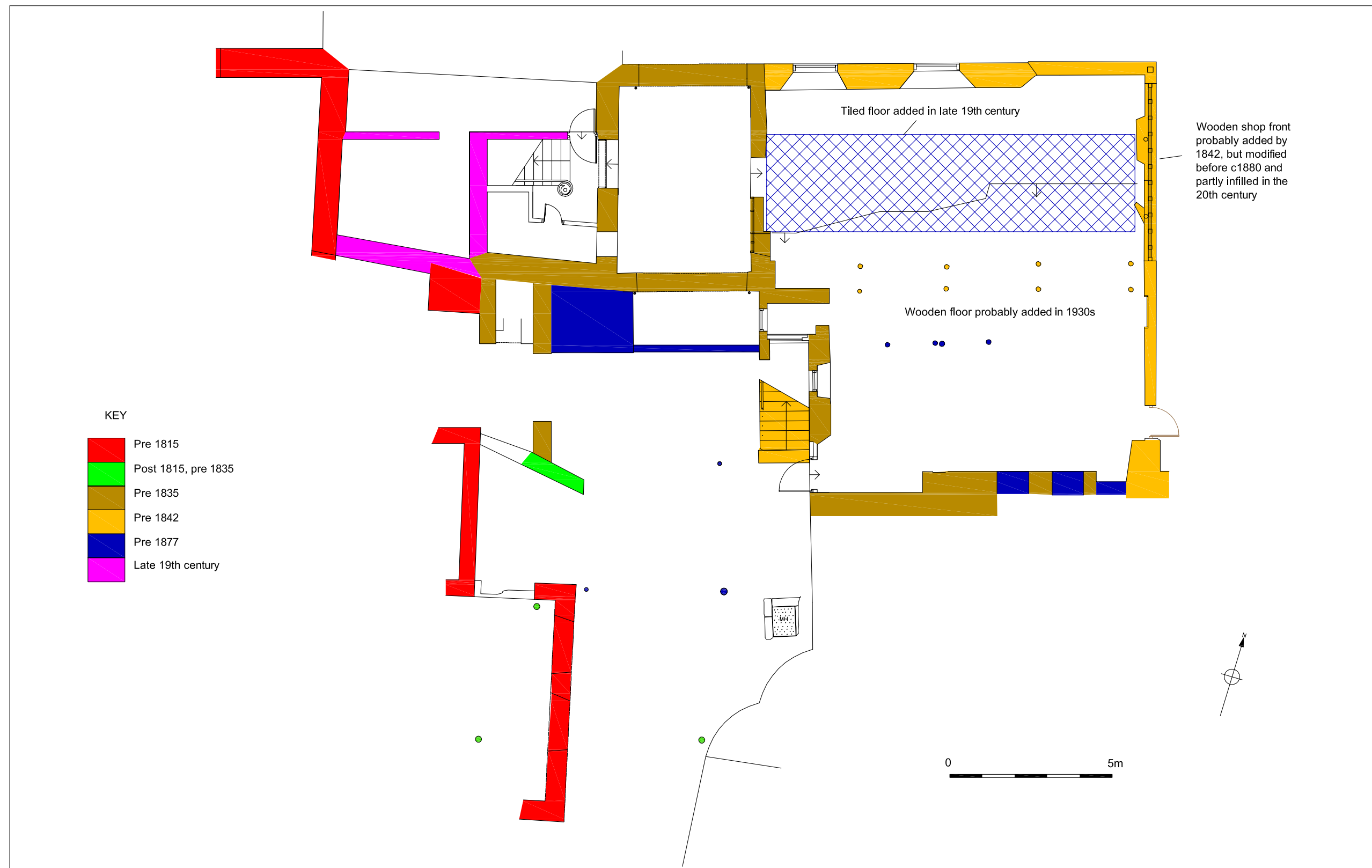


Fig 13 Ground floor phase plan

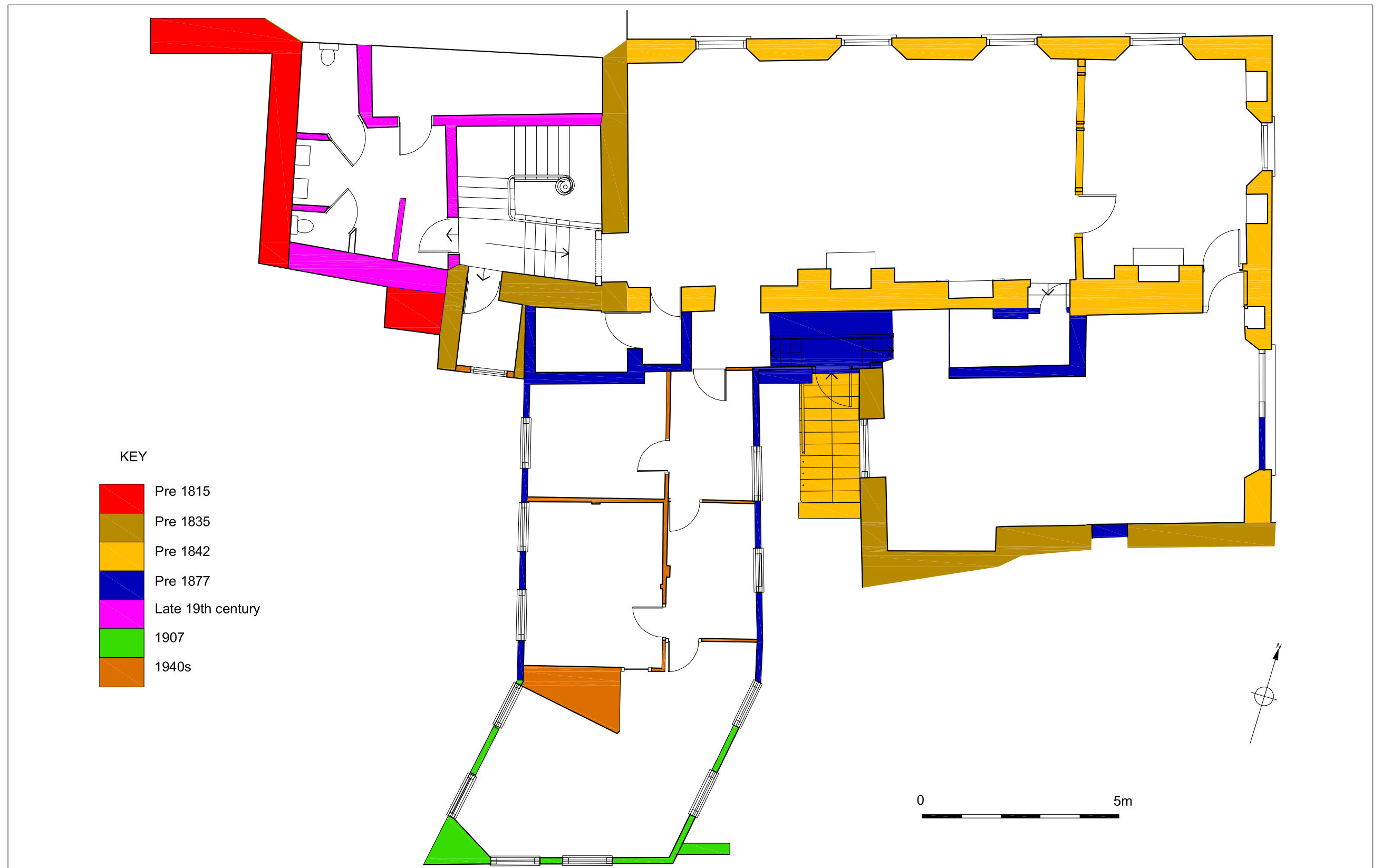


Fig 14 First floor phase plan



Fig 15 Photo of tiled floor

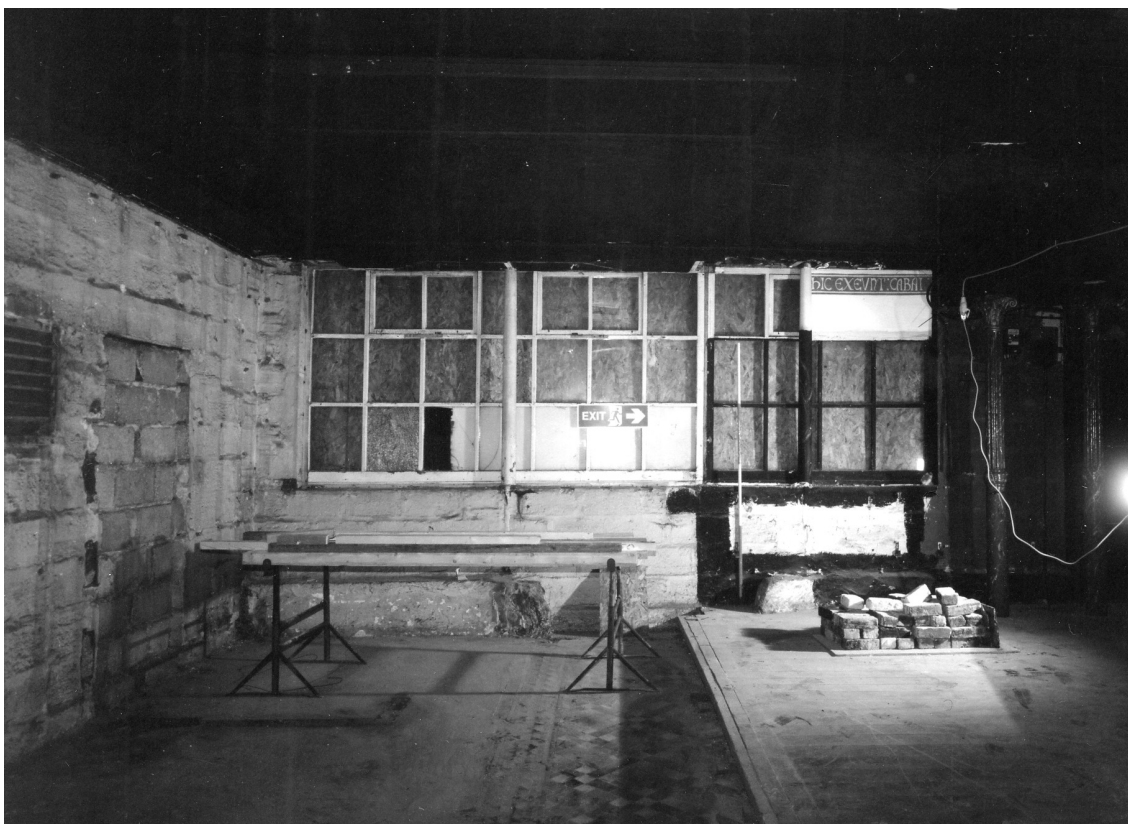


Fig 16 Photo of infilled shopfront



Fig 17 Cast-iron columns within the shop area, used to support the first floor



Fig 18 Rear cobbled yard and brick arch



*Fig 19 Rear office showing battened walls and wallpaper behind
Walling to the left of the window is entirely constructed of timber framing and cladding.*



Fig 20 Close up view of wallpaper



Fig 21 Photos of Building [1]

Top: interior view, with arched recess towards the right.

Bottom: exterior view from the north-west. The quoin of Building [1] is visible at the centre of the photo; doorway [4] is to the left.



*Fig 22 Interior of Building [2] and its cobbled floor, beneath the wooden drawing office
A cast-iron rising main has been used as a pillar to support the drawing office.*



Fig 23 Rear of the property, viewed from the south

A brick-lined flue structure [6] is in the centre of the photo, overbuilt by the taller walls of the toilet block and stairwell. A granite quoin of Building [1] is in the foreground.