

Archaeological Building Investigation and Recording,  
Royal Worcester Porcelain Works, Building J:  
The Gilding Shop

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Revised version number 2  
Issued 18/11/2008



## archenfield archaeology ltd

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Archenfield Archaeology Ltd is a multidisciplinary archaeological consultancy, offering a complete range of archaeological advice and services to the public and private sector. We specialise in giving archaeological advice to developers, housing associations and private individuals. We also undertake archaeological intervention, from monitoring to full-scale excavation; building survey; landscape and geophysical surveys and community-based historical and archaeological projects.

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Royal Worcester Porcelain Works, Building J: The Guilding Shop*

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*Archenfield Archaeology Ltd would like to thank the following for their kind assistance:  
Berkeley Homes for supplying architect's drawings and general assistance on site;  
the Trustees of the Worcester Porcelain Museum, for allowing the reproduction of archival material; Wendy Cook, curator of the Worcester Porcelain Museum, for providing advice and making available archival material; and James Dinn, Archaeological Officer of Worcester City Council, for monitoring the fieldwork, giving advice and making corrections to the report.*

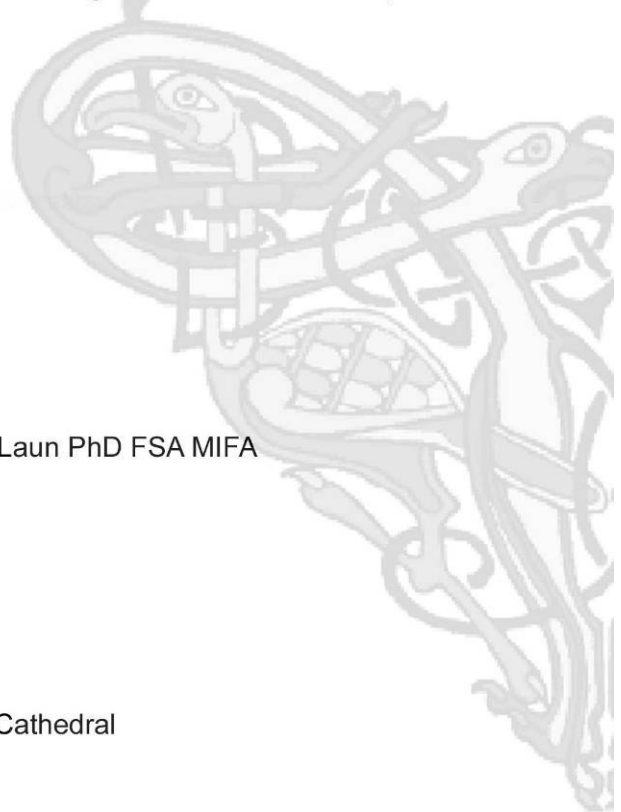
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Cover Photograph: Building J, looking towards Worcester Cathedral



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## **Summary**

*Archaeological building investigation and recording was undertaken by Archenfield Archaeology Ltd at Royal Worcester Porcelain Works, Severn Street, Worcester, on behalf of Berkeley Homes (Oxford & Chiltern) Ltd prior to re-development of the site. This report deals with Building J (Gilding Shop), an elegant, long, rectangular brick-built three-storey range with a basement. The building consists of eleven bays of which the eastern five will be re-developed, and the western seven bays are to be retained by the Royal Worcester Porcelain Works. Therefore, the eastern side was recorded and properly studied. The degree of recording work was carried out to English Heritage level 3.*

*The building investigation and recording identified that the original construction took place in the early 1840s. This building appears in an 1842 plan of the Works and it is labelled as the 'Burnishing and Potting Rooms'. Later re-development took place around 1853 when the original building was extended eastward. It is unknown whether the original fabric was retained, but the present outer shell of the whole building appears to have been built at the same time. A plan of the Works, dating to 1863, identifies the building as the 'New Workshops'. Most of the original fabric of the 1850s building survives in good condition. Later alterations entailed the removal of the second floor windows, but the majority of the remaining elaborate fenestration is currently extant. Internally the workshops are practically empty except the basement, which still has two kilns and a long worktop area. A high proportion of internal original fittings, including carpentry and masonry detailing, still survives in excellent condition. The building is an interesting example of mid 19th century factory construction and is of national, historical and architectural importance.*

## 1 Introduction

**Site name:** Royal Worcester Porcelain Works  
**Location:** Severn Street, Worcester, Worcestershire  
**NGR:** SO 8515 5425  
**SMR/HER:** WCM 96186  
**Type:** Building Investigation and Recording  
**Date:** November 2006 – September 2007  
**Location of archive:** Worcester City Museum  
**Planning authority:** Worcester City Council  
**Planning reference:** P05D0432, L05D0074  
**Developer:** Berkeley Homes (Oxford & Chiltern) Ltd  
**Site Code:** AA\_70

Archenfield Archaeology Ltd was commissioned by Berkeley Homes to undertake a programme of archaeological building investigation and recording prior to the redevelopment of the Royal Worcester Porcelain Works, Severn Street, Worcester. The development site constitutes approximately three-quarters of the whole Severn Street site and the remaining quarter is to be retained by Royal Worcester Porcelain Works. The development scheme involves the demolition of 26 large buildings and 6 small sheds, and the modification of 10 existing buildings in order to build 356 dwellings (comprising 317 apartments and 39 houses), a hotel, B1 space and A3 restaurants. The site is located on the south side of Worcester city centre and is bounded by Sidbury, St Peter's Street, King Street, Severn Street, Mill Street and the Worcester and Birmingham Canal (Figures 1 and 2). The majority of the buildings were built parallel or perpendicular to the central lane of the Works (Prince's Drive) which runs north-west to south-east. Thus a site north was established for the survey at approximately the same orientation (Figure 2).

This report (number 14 of a series) deals with Building J: the Gilding Shop. An initial assessment of the building recognised that it is of historic and architectural importance. The archaeological work was conducted in accordance with the written scheme of investigation (WSI) issued by Archenfield Archaeology Ltd (2006), which was in response to a brief issued by Worcester City Museum Archaeology Section (2006). The WSI was issued to fulfil a condition in the planning approval which stated that a programme of archaeological work must be carried out before the re-development works commence. This document gives details of how the archaeological project was conducted and includes any conclusions drawn from the investigation.

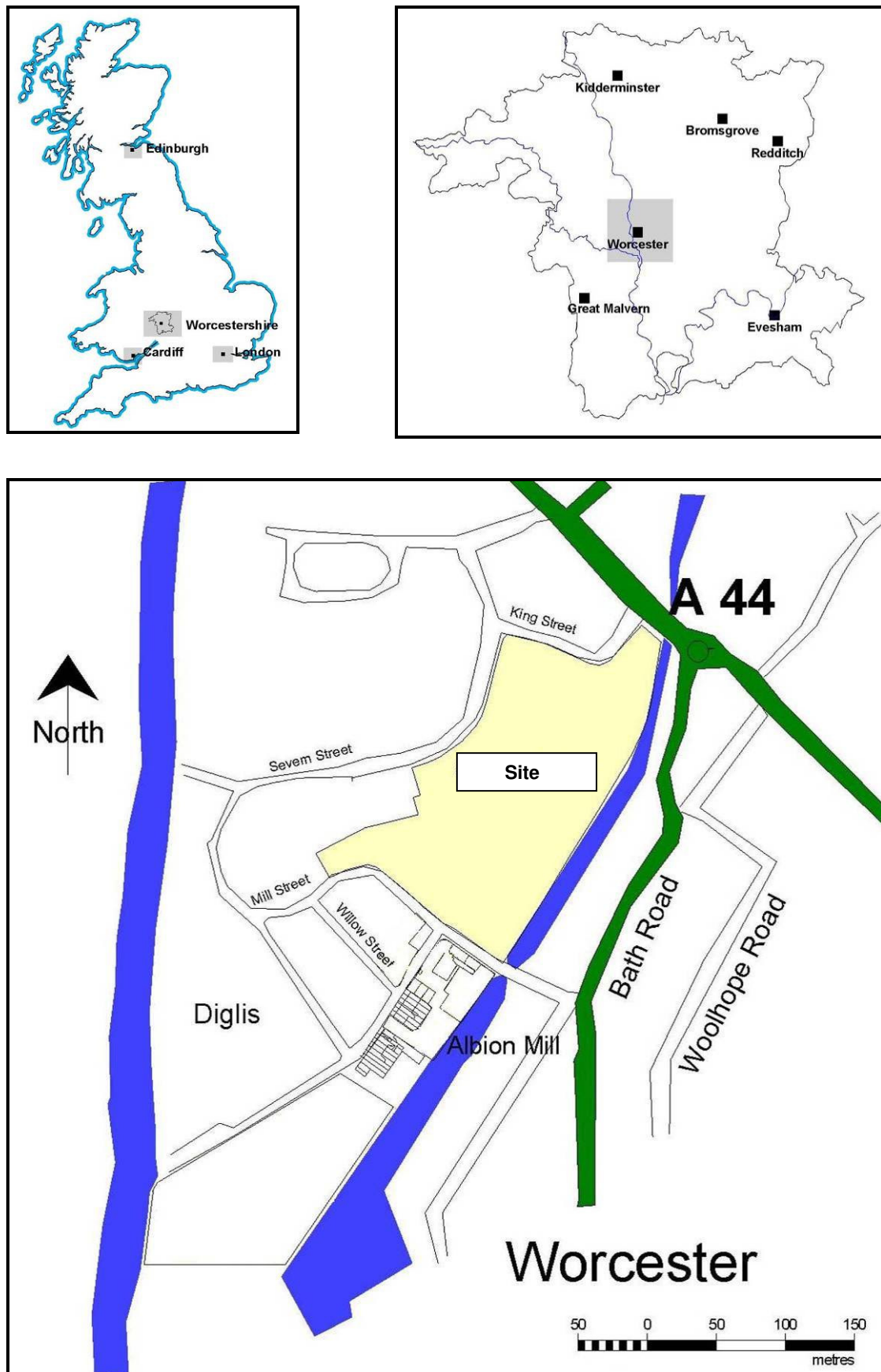


Figure 1: Site location

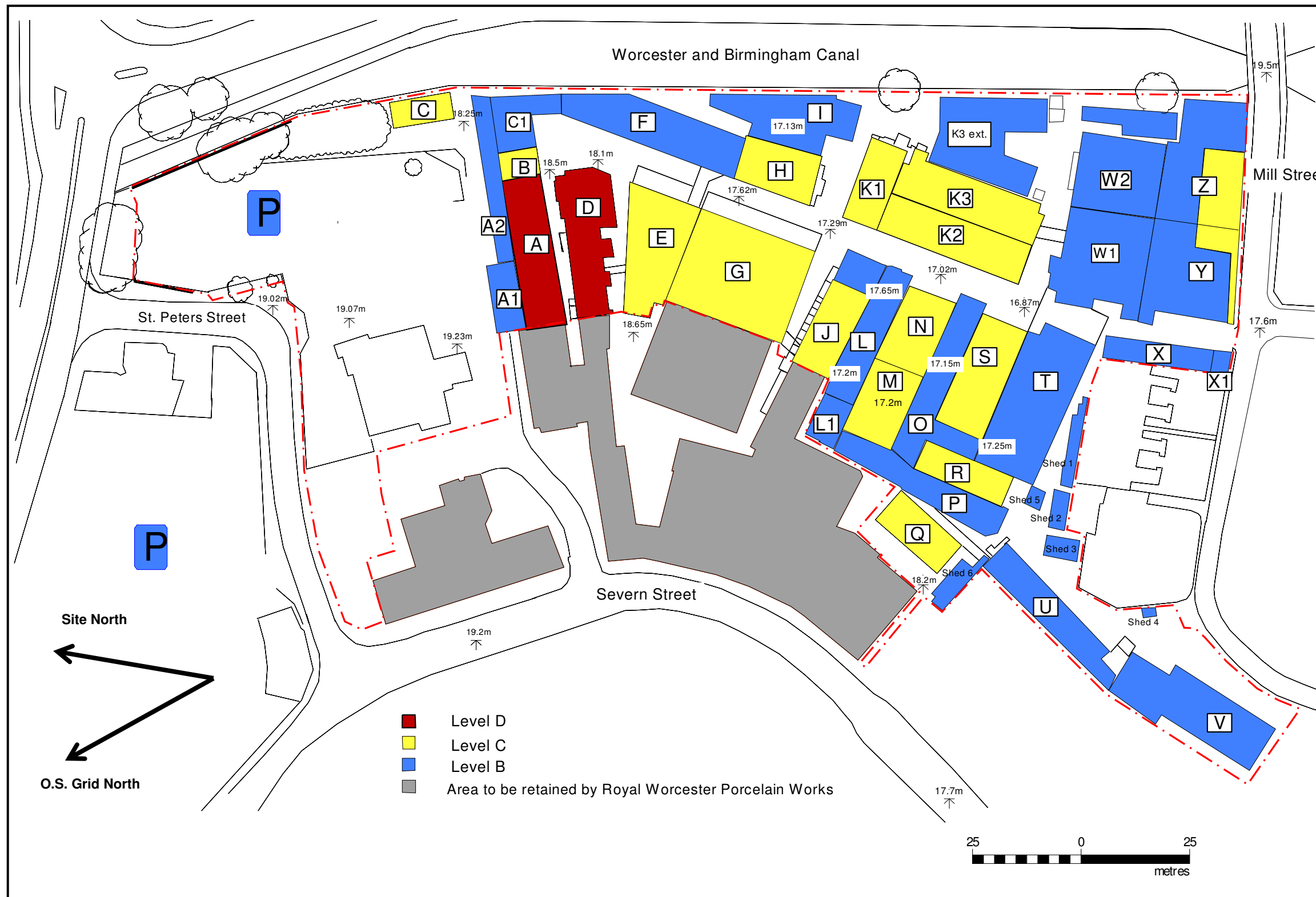


Figure 2: Detailed plan of site, building codes and levels of recording (scale 1:1,000 based on architect's drawing provided by Berkeley Homes)



## **2 Project aims**

The aims of the programme of archaeological building investigation and recording, as defined by the project brief, consisted of the following:

- To make an appropriate record, as identified by the levels of building recording stipulated by the brief, of all the standing buildings at the Royal Worcester Porcelain site.
- To record different phases of all the buildings affected by the development and identify features for conservation.
- To annotate available architects' drawings to include archaeological features such as blocked windows and doors, etc.
- To produce original drawings of important elevations and features.
- To conduct a photographic survey of the major components of the buildings that are directly affected by the development. This should include general views of the exterior of the buildings, all exterior and internal elevations, selective internal views and any detailed coverage of the buildings deemed to be fitting with the character and setting of the buildings. Photographs of any machinery and fittings associated with the working life of the buildings should also be taken.
- To maintain close liaison with the curator of the Worcester Porcelain Museum (henceforth abbreviated as WPM), Wendy Cook, to enable access to the museum archives and give advice on specific aspects of the operation of the manufactory.
- To create a detailed project archive and deposit it with Worcester City Museum after completion of the project.
- To disseminate the results obtained.

## **3 Geological, historical and archaeological background**

### **3.1 Geology and land use**

Worcester lies in the valley of the River Severn, just to the north of its confluence with the River Teme. The eastern bank of the Severn is a sand and gravel terrace. The site lies in the valley of a former tributary of the Severn, the Frog Brook, whose former course was partially used in the creation of the Birmingham and Worcester Canal, which forms the eastern boundary of the site. The underlying geology of the site consists of beds of alluvial drift deposit over the Eldersfield mudstone formation (British Geological Survey).

### **3.2 Historical, archaeological and architectural background**

Two archaeological desk-based assessments have been produced which examine the historical and archaeological background to the Royal Worcester Porcelain Works, Severn Street site (Feryok and Sherlock 2004; Lovell and Pikes 2004). These include cartographic regressions and reproduce the results of documentary studies of the historical evolution of the site. In addition two assessments of the nature, architectural merit and relative importance of the building have also been undertaken (Morriss and Sherlock 2004; Robinson 2005). These four documents have previously been

submitted to the local planning authority in support of the planning application for re-development, and thus they should be used in conjunction with this report. However, this report includes revised and updated facts, which have been revealed during the site work and where discrepancies appear, then this document supersedes previous statements.

## 4 Methodology

A detailed project design was prepared by Archenfield Archaeology Ltd (2006a). The recording of the Building J conformed to level C (specified in Worcester City Museum Archaeology Section brief 06/22) which is based on English Heritage level 3 (EH 2006). Building J consists of the eastern side of a longer range. The entire building consists of eleven bays of which the eastern five (Building J) will be re-developed, and the western seven bays are to be retained by the Royal Worcester Porcelain Works. Therefore, the eastern side was recorded and properly discussed here. Nevertheless, the general description of the building refers to the entire range and the central bay, with a staircase for both sides of the building, is widely included in the results (section 5).

The requirement for the archaeological building investigation and recording on the Royal Worcester Porcelain site is in line with government guidance and with the archaeological policies in the adopted City of Worcester Local Plan (1991 – 2001; saved policies BE21, BE24, BE26 and BE27). All work was undertaken to the standards specified in the *Recording Historic Buildings: A Descriptive Specification* (RCHME 1996); *Measured Survey and Building Recording for Historic Buildings and Structures* (Dallas 2003); *Understanding Historic Buildings: A guide to good recording practice* (English Heritage 2006) and in accordance with the standards set out by the Institute of Field Archaeologists' *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* (IFA 2001). All stages of the project were carried out in accordance with the guidelines established in the *Management of Archaeological Projects (MAP 2)* (English Heritage 1991).

The project archive will be compiled in accordance with the guidelines contained in *Guidelines for the Preparation of Excavation Archives for Long-Term Storage* (UKIC 1990) and *the Standards in the Museum Care of Archaeological Collections* (Museum and Galleries Commission 1992).

The project complied with all Health and Safety requirements stipulated by Berkeley Homes Ltd and those outlined in the *Health and Safety in Field Archaeology Manual* (SCAUM 2002) and in the project's *Risk Assessment* (Archenfield Archaeology Ltd 2006b).

The fieldwork was managed by Alvaro Mora-Ottomano (Gamba). Brenainn Morley and Robert Williams assisted in the fieldwork. The report was written by Gamba. The historic and industrial research was conducted by Dr John van Laun and Wendy Cook, and it is included as an appendix. The survey photographs reproduced in the report were taken by Gamba.

The illustrations were digitised by Abby George. The report was edited by Julie Phillips. The subsequent result comprised the following elements:

### 4.1 The written record

A written record of the buildings was carried out by annotating plans and elevations and by completing *pro-forma* building recording sheets. The presence of any significant artefacts was recorded with a description of their type, quantity and original

location. In order to identify obscured areas, soft-stripping of surfaces was carried out using hand tools.

#### **4.2 The drawn record**

A metric survey was initially based on architects' elevations and plans, which were annotated to include archaeological sequences and architectural features. Further survey drawings were carried out using tapes and a laser distance meter. Dumpy and laser levels were also employed. The drawn survey comprised measured floor plans, elevations and sections at 1:50 scale. Detailed features were drawn at appropriate scales ranging from 1:20, 1:10 and 1:5.

#### **4.3 The photographic record**

A detailed photographic survey comprised high resolution digital photographs (6 megapixels or above). A further 35mm colour print photographic survey of general exterior views was also conducted. Where possible, photographs included a graduated scale and cameras were mounted on tripods for extra stability. Details of the photographs were recorded on *pro-forma* index sheets, which included location, subject and orientation. The location and direction of the photographs were plotted on scaled plans.

#### **4.4 Documentary research**

A further programme of documentary research was undertaken by John van Laun Associates (Industrial Archaeologists) and is included in this report as an appendix. The research dealt with the buildings' form, function, date and sequence of developments. The name and date of former architects involved in the developments of the site were included. Archival research included consultation of relevant secondary sources pertinent to the study area located at the Worcester Porcelain Museum. The archive enabled further specific historic map regression analysis; and relevant contemporary photographic materials were reproduced.

### **5 Results**

The photographic record of Building J consists of 154 digital images recorded on *pro-forma* index sheets and plotted on 4 plans. The drawn survey comprises 11 scaled drawings at 1:100 and 1:50 of which 7 are illustrated in the report at 1:100. The complete list of drawings are included in section 8 (Archive deposition).

#### **5.1 Building analysis and interpretation**

The Gilding Shop (Building J) is a long rectangular building aligned east/west. It consists of three-storey and a basement. It is situated between the Biscuit Kilns Site (Building G) on the north, and the Glost Inspection Range (Building L) on the south (Figure 3). It is perpendicular to the west side of the factory's central lane (Prince's Drive), which runs approximately from north to south of the Severn Street site (Figure 2).

The building consists of eleven bays of which the eastern five will be re-developed, and the western seven bays are to be retained by the Royal Worcester Porcelain Works. Therefore, the eastern side was recorded and properly discussed here.

Nevertheless, the general description of the building refers to the entire range and the central bay, with a staircase for both sides of the building, is widely included in this section.

It has an overall dimension of c. 41 metres long (east/west) x 9.8 metres wide (north/south) and 13 metres high. It is built of a very dark reddish brown bricks (9½" x 4½" x 3½") bonded with flush light orangey brown mortar (up to 10mm thick) and laid to English bond. The eastern half (five bays and central staircase bay) are slightly wider on the south elevation than the western five-bay portion. The eastern section has an unusual roof shape consisting of a pitched form with a flat top (c. 2 metres wide), whereas the roof of the western side is a common pitched. This difference occurs because the eastern section is wider than the western section and in order to have a symmetrical roof line, a flat top was designed for the eastern part. This variation of width between the western and eastern sides of the building is the result of a sequential development. Indeed, the earliest structural evidence is exhibited in the 1842 plan of the Works (see Appendix), which shows a building labelled as 'Burnishing and Potting Rooms', situated where the western half of the present building lies. The eastern extension was built wider than the existing structure. Although this sequential development is well attested from cartographic material, the present outer shell of the building seems to have been constructed at the same time and has no construction breaks. It is suggested that original western structure was modified to its current state or perhaps only the foundation was retained to support the new additional three storey high structure.

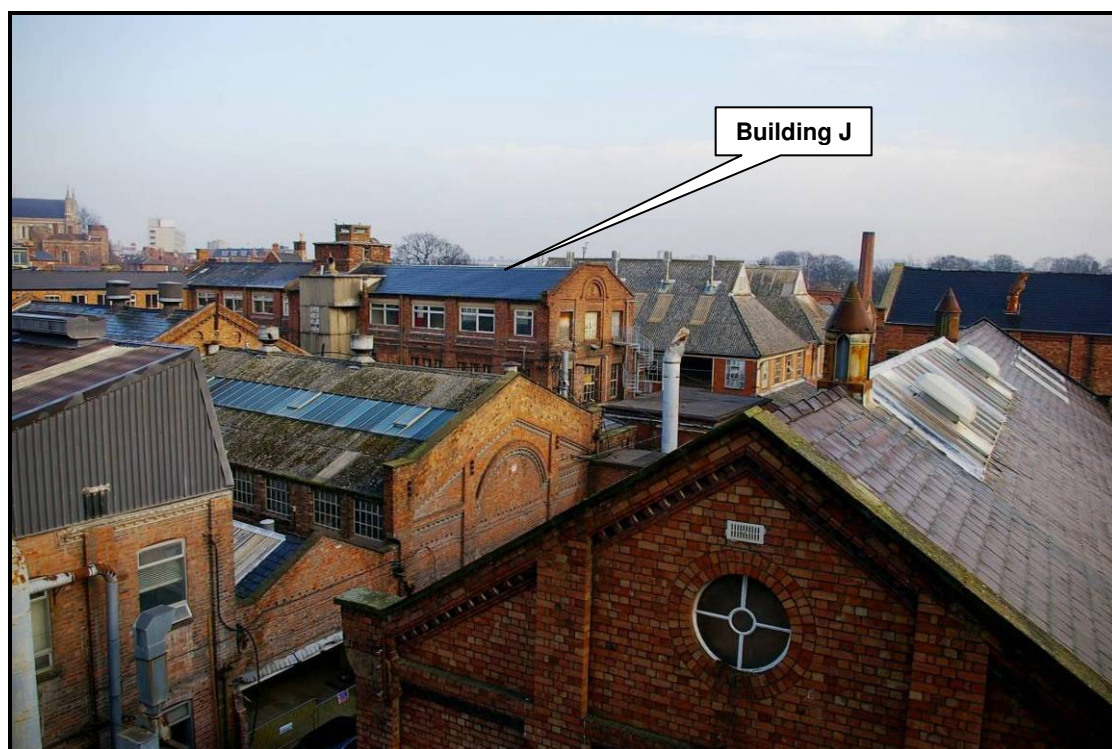


Figure 3: General view of the Works with Building J in the centre

## 5.2 Exterior

### 5.2.1 North elevation

The north elevation (Figures 4 and 38) is virtually symmetrical although the easternmost bay is narrower than the others. The bays are articulated by brick pilasters projecting upright from a plinth. The resultant recessed panels have plain brick cornices, and the continuous plinth is topped with a single course of chamfered bricks. Midway along the wall is a later lean-to porch for the main entrance, which leads directly into the hallway containing the main staircase (Figure 7). The porch has a mono pitch glazed roof and the half gables have concrete coping. The walls are built with mid orangey brown bricks (9" x 4¼" x 3") bonded with medium coarse pinkish flush mortar up to 20mm thick and laid to Flemish Garden bond. The porch has a doorway with a flush concrete lintel and threshold in which a double timber door is set. The doors have three upper rectangular glazing panes. The porch has a small half-pitched (east/west) lean-to structure leading to the basement staircase made of the same fabric; and on the east, there is a shed attached to it which is made of timber boards topped with corrugated metal sheeting.



Figure 4: North elevation

On this elevation the basement windows are lit by square light wells and they are made of cast iron topped with segmental brick heads (Figure 5). The easternmost window has been removed and the arched head has been re-inserted slightly further east and instead of having a window, there is an iron double door vent.

The ground floor has encasement wooden windows with rubbed brick flat-arched heads and projecting brick sills (Figures 6, 21 and 22). The narrower eastern bay shows traces of an earlier external doorway, which consists of a flush green sandstone threshold set in the wall at the level of the plinth. The area between the threshold and the sill of the window above is blocked up with later bricks. An 1884

Ordnance Survey plan shows an external staircase situated exactly where the door's remains are, confirming its former existence (Figure 46).



Figure 5: Basement window and light well



Figure 6: Ground floor window



Figure 7: Central doorway

At first floor level there are wider tripartite wooden windows in each bay, apart from the narrower bay which has a single rectangular window. These have individual flat rubbed-brick heads and projecting sill (Figure 6). The windows situated in the centre of the bays have inwards hopper openings on the upper panes, and the ones on the sides have pivotal central hinges (Figure 25). Although supported by two mullions in each window, internally there are relieving arches. The window on the fifth bay (from east to west) has been converted into a doorway from which a covered bridge links the first floor with the Finished Goods Warehouse (Building G) on the opposite side of the narrow alley that separate these buildings.

At second floor level the windows have been replaced and are all modern. These have wooden frames and awning openings of which the upper ones are much shorter than the lower main ones. The windows have concrete lintels and, because they are smaller than the original windows, they have later brickwork supporting their sills. An earlier photograph reveals that some of the original windows were similar to the ones on the first floor (tripartite with mullions) but shorter (Figure 10). There were also two loading doorways of which the projecting canopies and flush thresholds still survive. The canopies are made of light yellowish limestone with cavetto moulding and supported by *cyma reversa* console brackets, and the thresholds are made of light greenish sandstone blocks (Figure 8).



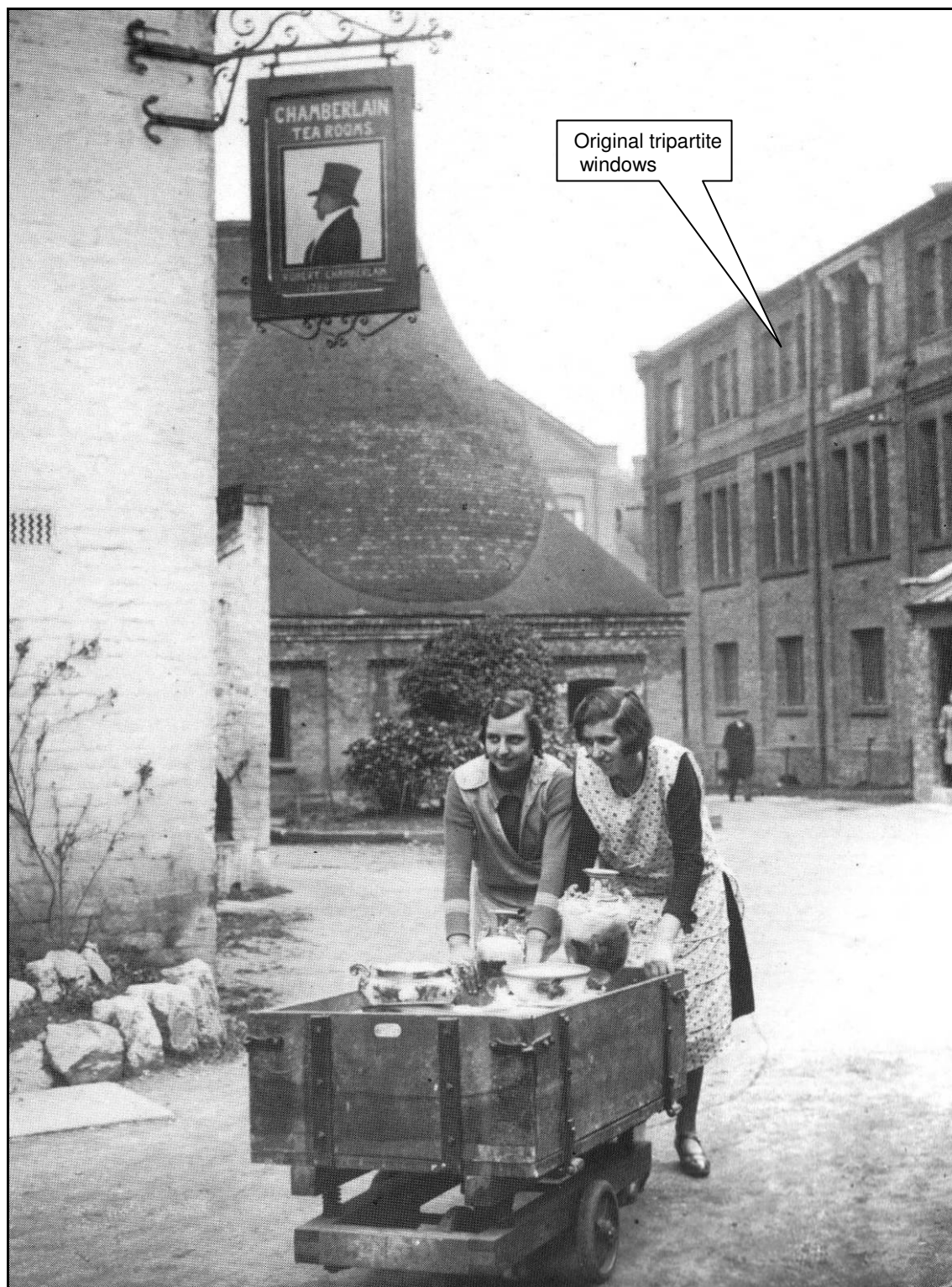
Figure 8: North elevation showing modern windows



**Figure 9: Clock tower**

The roof is made of natural slate, but the flat top on the eastern section has a felt membrane. The roof has plain close eaves with cast iron guttering and the eastern verge has a parapet. At the junction of the two halves of the building is a projecting block of brickwork rising from the roof ridge which is the base of an earlier chimney which tops the platform part of this canted roof over the eastern section. The chimney base is made of bricks laid to English bond and has chamfered plinth and cornice reinforced with white limestone quoins. Lead flashing covers its flat roof. On this elevation there are the remnants of a former clock consisting of a circular limestone moulded edge (Figure 9). A later brick structure with small wooden windows was built on top of this chimney base. The historic research (see Appendix) identified it as being a look-out tower during the Second World War.





**Figure 10: 1930s photograph showing Building J on the right with original windows on the second floor (WPM)**

### 5.2.2 South elevation

The south elevation is similar to the north wall, except for large sash windows in the main stair hallway (Figures 11 and 39). However only the second floor's window survives intact, whereas the ground and first floors' former windows have later inserted doorways. These windows have flat-arched heads made of rubbed bricks the same as the ones on the ground floor. Also visible at the lower levels of the wall are more surviving and some blocked window openings. The lower level (basement and ground floor) is abutted by a later structure (Building L). The entire fifth bay (from east to west) was completely modified when a later lift was built against it (Figure 3). The lift was made of a steel structure with corrugated asbestos sheeting which was demolished as part of the re-development work.



Figure 11: South elevation

### 5.2.3 East elevation

The east elevation is of three bays and the panels between the pilasters are topped with the same plain brick cornices as on the side walls (Figures 12 and 40). The central bay is wider than the side ones. There are two blocked up windows on the basement level with flush concrete lintels, which are probably later insertion when the windows were blocked. The windows on the ground floor have flat arched-heads and projecting sills. These windows have been partially blocked up and only the upper sections survive, which have awning outwards openings. The windows on the first floor have flat rubbed-brick heads and projecting brick sills. The window on the southern bay has been modified with the insertion of a small encasement window in the lower section of the original window. This alteration was carried out to provide fire escape access. On the second floor the windows are similar to those on the first floor with flat rubbed-brick heads, but they are shorter and instead of having projecting sills, they have flush chamfered plinths. On the southern bay, the window has been removed and the opening is boarded up. This window was modified for fire escape

access in 1953 as it is shown on an architect drawing of the building (see figure 18 of the Appendix). The window on the northern bay has also been taken out and replaced by a later fire exit door accessed via a metal spiral staircase. The staircase was dismantled during the demolition work concurrent with the re-development of the site and is partially illustrated on the elevation (Figure 40). Above the central window, there is a square cast iron vent within a blank lunette with brick, topped by a semicircular drip mould. The gable has a flattened top with a coping made of two projecting courses of bricks, laid to header bond. There are two ovolo moulding kneeler red sandstones forming a termination at the eaves of the coping.



Figure 12: East elevation

### 5.3 Interior

The main entrance leads to a cantilever dog-leg staircase with winders (Figure 14). The steps are made of solid stone blocks and are in good condition. The wrought iron balustrade is simple but elegant with a moulded handrail and stick balusters. The ceiling of the stair hallway consists of a brick barrel vault, whose maximum height is 3.95 metres from a large stone landing (Figure 13). The central staircase leads to large workshops. The western ones are to be retained by Royal Worcester Porcelain Works, and thus are not described; and the eastern workshops are included below.



Figure 13: Vaulted ceiling of the stair hallway



Figure 14: Cantilever staircase

### 5.3.1 Basement floor

This floor is accessed from an external straight staircase situated immediately on the right-hand side of the main entrance (Figure 34). It is an open room with two kilns situated on the north-eastern side on a raised concrete platform, and a long worktop along the south wall. Internally it measures c. 18 metres long (east/west), 7.5 metres wide (north/south) and 2.5 metres high. There are central columns supporting cast iron I beams aligned east/west (Figures 14 – 17). Two of these columns are original and are made of cast iron with decorated Tuscan capitals. The other two are RSJ replacements. The room has painted brickwork, a concrete floor, and a lath-and-plaster ceiling. The north wall retains most of its original cast iron windows.



Figure 15: Basement floor



Figure 16: Kilns on the basement floor



Figure 17: Inside a kiln



Figure 18: Cast iron column

### 5.3.2 Ground floor

This floor is accessed from the main central stair hallway from the west, and from a later straight staircase on the south elevation that leads to an inserted doorway (Figure 35). This floor is an open large workshop, labelled 'Senior Painters' with a separate storage section at the east end whose partition is made of light-weight wooden boards. The floor measures c. 18 metres long (east/west), 7.5 metres wide (north/south) and 2.75 metres high. The internal five bays are divided by four (north/south) large scantling sawn timber beams, resting on *cyma reversa* moulded limestone corbels on either side and supported by central timber posts. The beams and posts are flat chamfered with flat stops (Figure 19 – 22). The room has painted brickwork, a lath-and-plaster ceiling and the floor is covered with cement-based screed. A lift shaft opening on the south elevation is concealed with brickwork. Most of the original windows still survive, although the ones on the east elevation have been shortened and only two are present on the south wall.

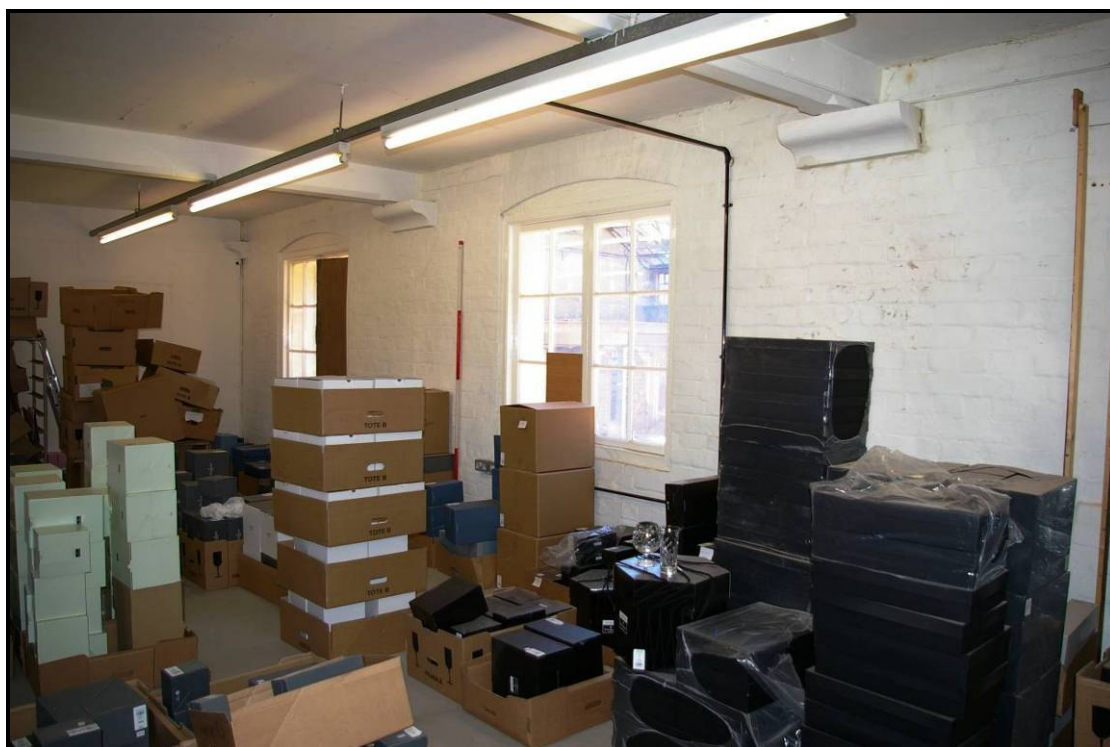


Figure 19: Ground floor, looking east



Figure 20: Central post and ceiling beam



Figure 21: Example of window

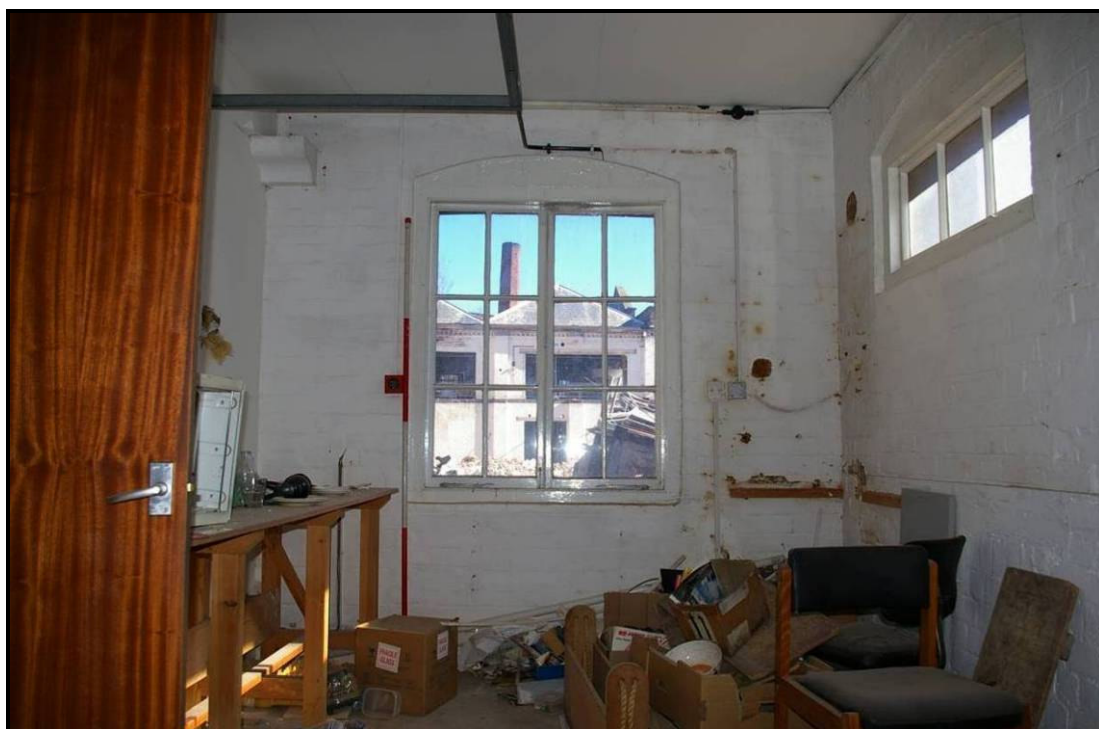


Figure 22: Storage room on ground floor, looking north

### 5.3.3 First floor

The same plan of one large open room is repeated on the first floor, except for its height which measures 3.65 metres (Figure 36). This floor has a similar ceiling structure but the central posts are thinner and taller, and instead of having flat chamfer stops, they have thin bead moulded corners (Figures 23, 24 and 26). Most of the original windows still survive although there are some later insertion such as a conveyor, linking material to the adjacent building, and a blocked up lift on the south wall. Another window has been removed and converted into a large bridge on the north elevation. The tripartite windows (described on the external elevations) have relieving arches at 3.20 metres from the floor level (Figure 25). The easternmost bay has plastic ceiling, the westernmost has hardboard, and the rest of the ceiling consists of lath-and-plaster. The workshop is practically empty with debris scattered and some large tables piled up. The wall has painted brickwork and the floor consists of cement-based screed possibly over wooden boards as early depictions and photographs reveal (Figures 28 and 29).



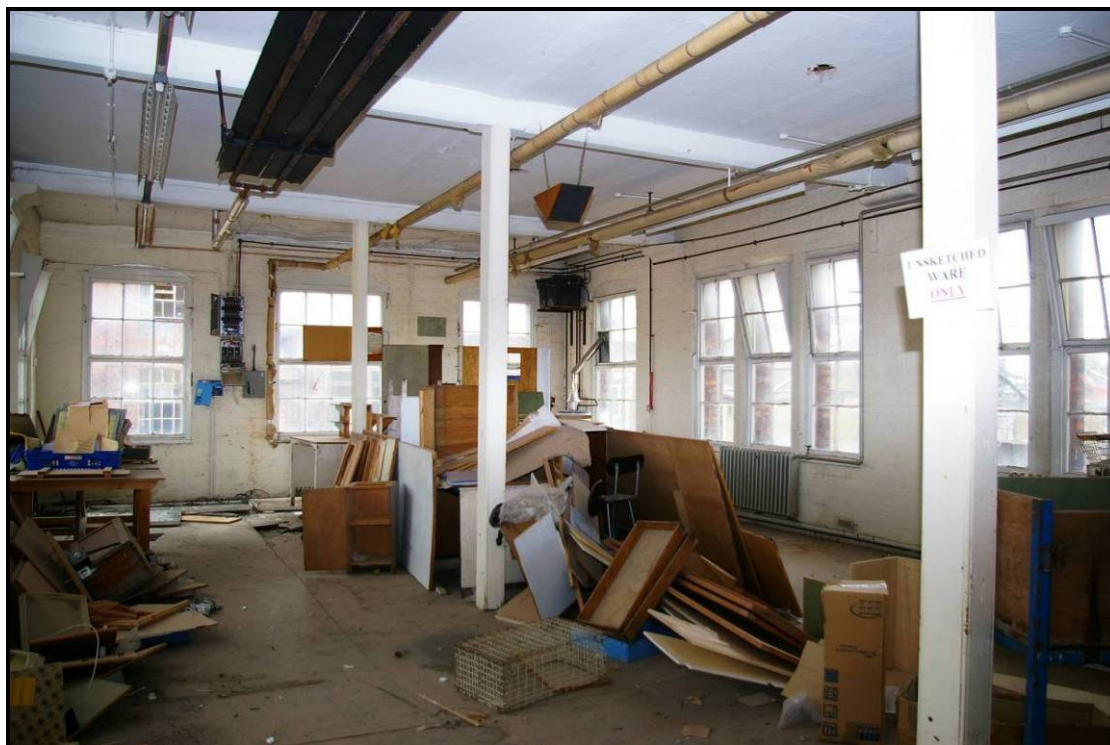


Figure 23: First floor, looking south-east



Figure 24: First floor, looking east



Figure 25: Detail of window on the first floor



Figure 26: Detail of flat chamfer stop and vertical post with bead moulding



Figure 27: Limestone *cyma reversa* corbel



Figure 28: First floor during the late 19th century (WPM)



Figure 29: Photograph of the first floor in the late 19th century (WPM)

### 5.3.4 Second floor

This level was also originally an open large room, but it has small sub-divisions on the western end (Figure 37). These consist of two small rooms with a corridor between them, which are made of light-weight boards. The southern room has an opening for the inserted lift shaft on the south wall, and the northern room has a blocked up window on the west wall, which was joined to a small office on the central stair hallway. The majority of the workshop is empty, but the replaced modern windows and the decoration suggest that this floor was used lately as a large office (Figures 30 – 32). The eastern side of the workshop has a suspended false ceiling and plasterboards over the east brick wall. The east wall has a fire escape door on the northern bay that leads to an external spiral staircase and on the southern bay, there is also a former fire escape door boarded up. The remaining wall has painted brickwork. The floor consists of tongue-and-groove boards covered with screed. The roof over the whole floor comprises five bays (all regular except the easternmost one which is narrower) demarcated by four composite kerb principal trusses which carry two tiers of purlins. The trusses consist of timber tie beams, truncated principal rafters topped by long collars, with raking struts rising to the kerb principals from either end of an additional straining sill on top of the tie beams. The whole arrangement is stiffened by wrought iron bolted suspension bars acting as queen struts (Figure 33). The top timbers are 4.3 metres high and the main tie beams are 2.6 metres high. In the western section of the building (retained by Royal Worcester Porcelain Works), the trusses are timber king posts with wrought iron braces.



Figure 30: Second floor, looking east



Figure 31: Second floor, looking south



Figure 32: Second floor, looking south-west



Figure 33: Example of roof truss

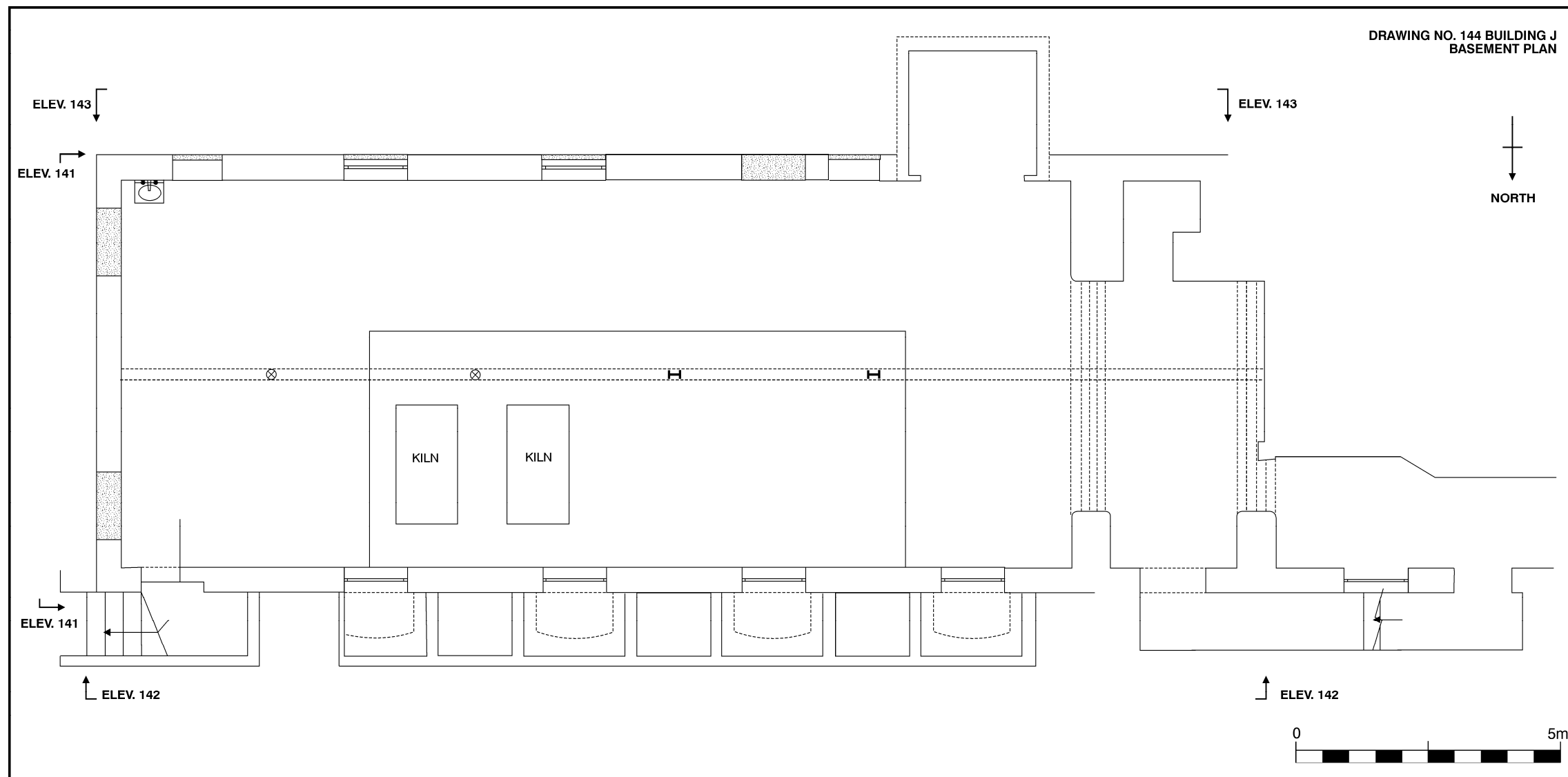


Figure 34: Basement plan (scale 1:100)

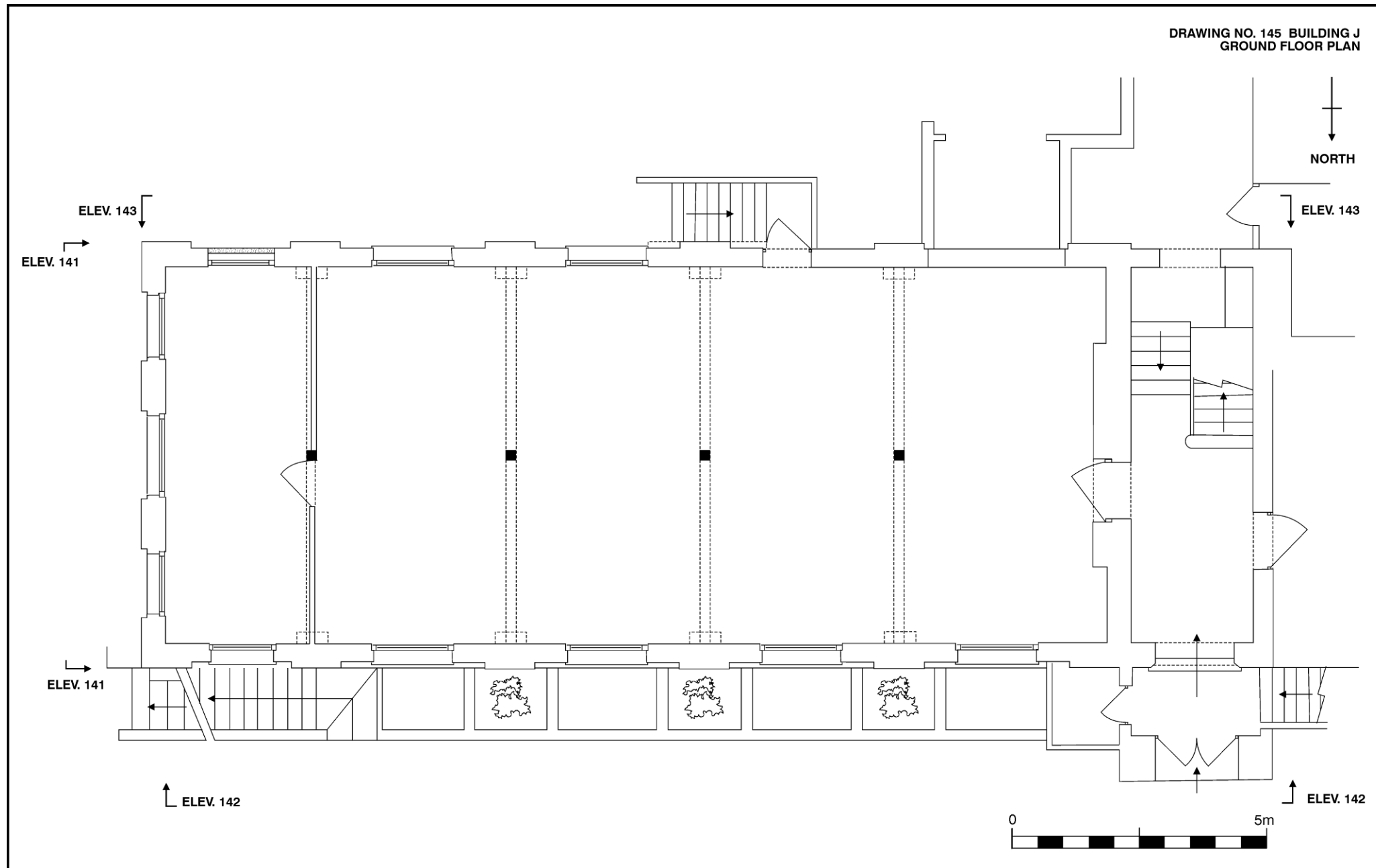


Figure 35: Ground floor plan (scale 1:100)



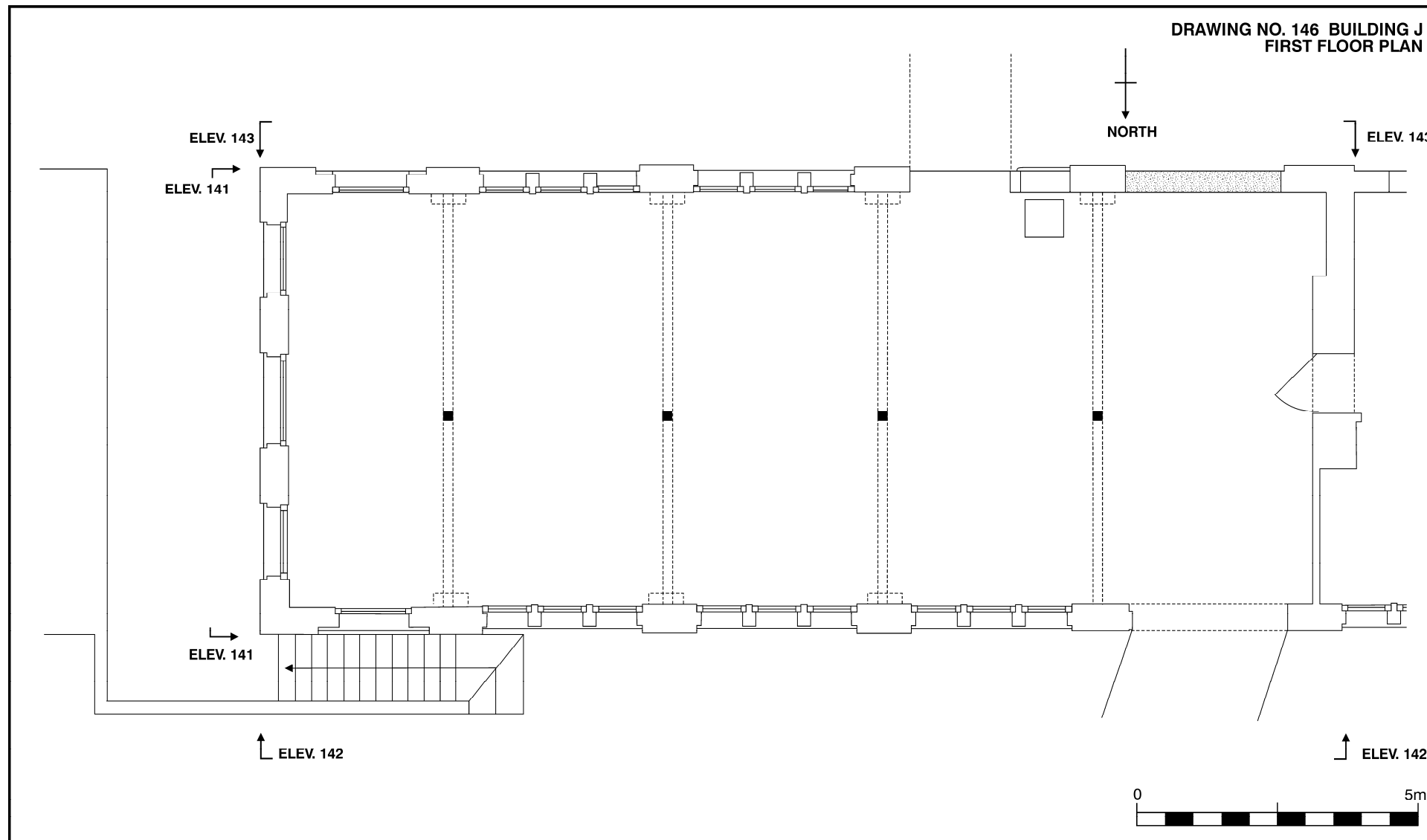


Figure 36: First floor plan (scale 1:100)

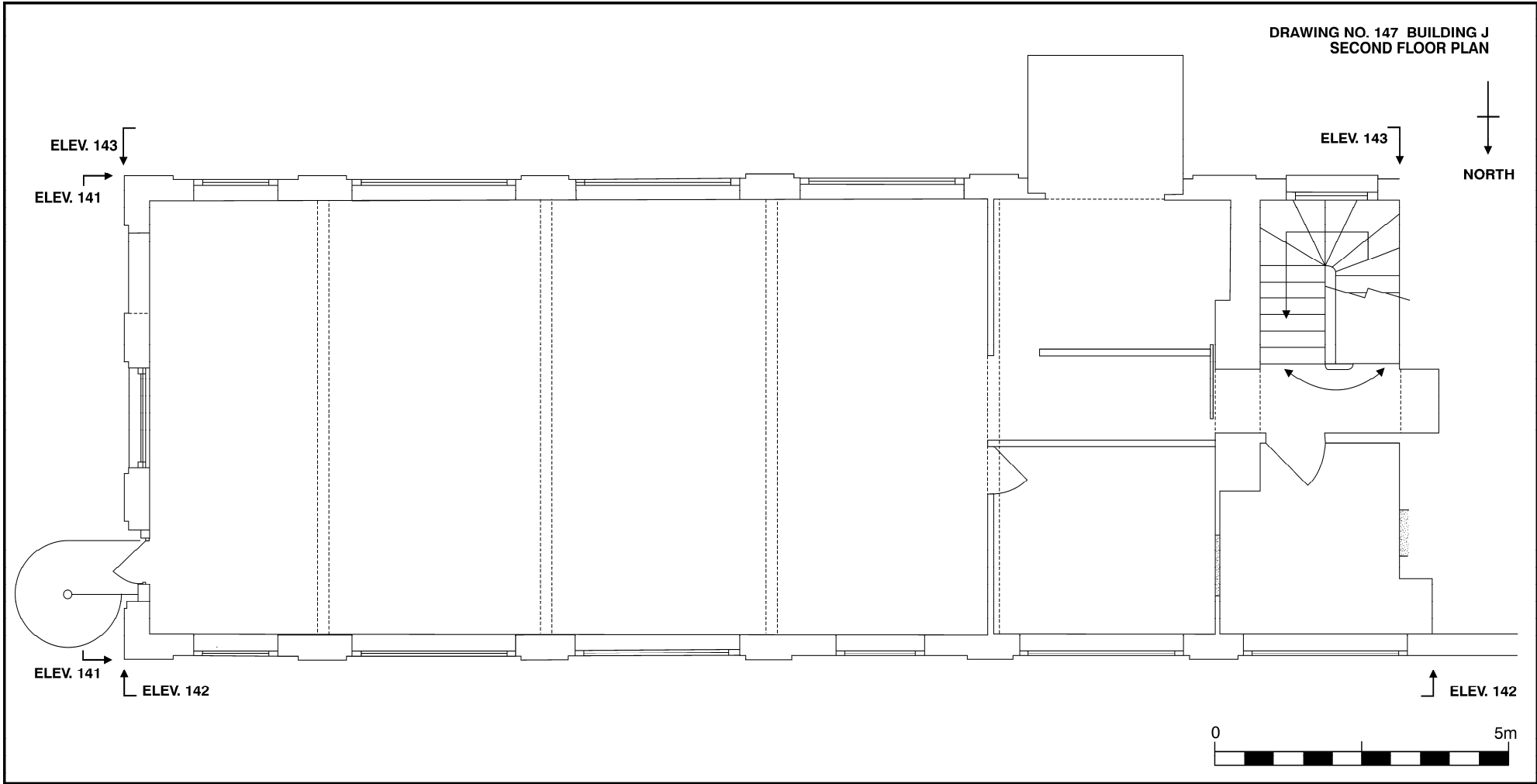


Figure 37: Second floor plan (scale 1:100)

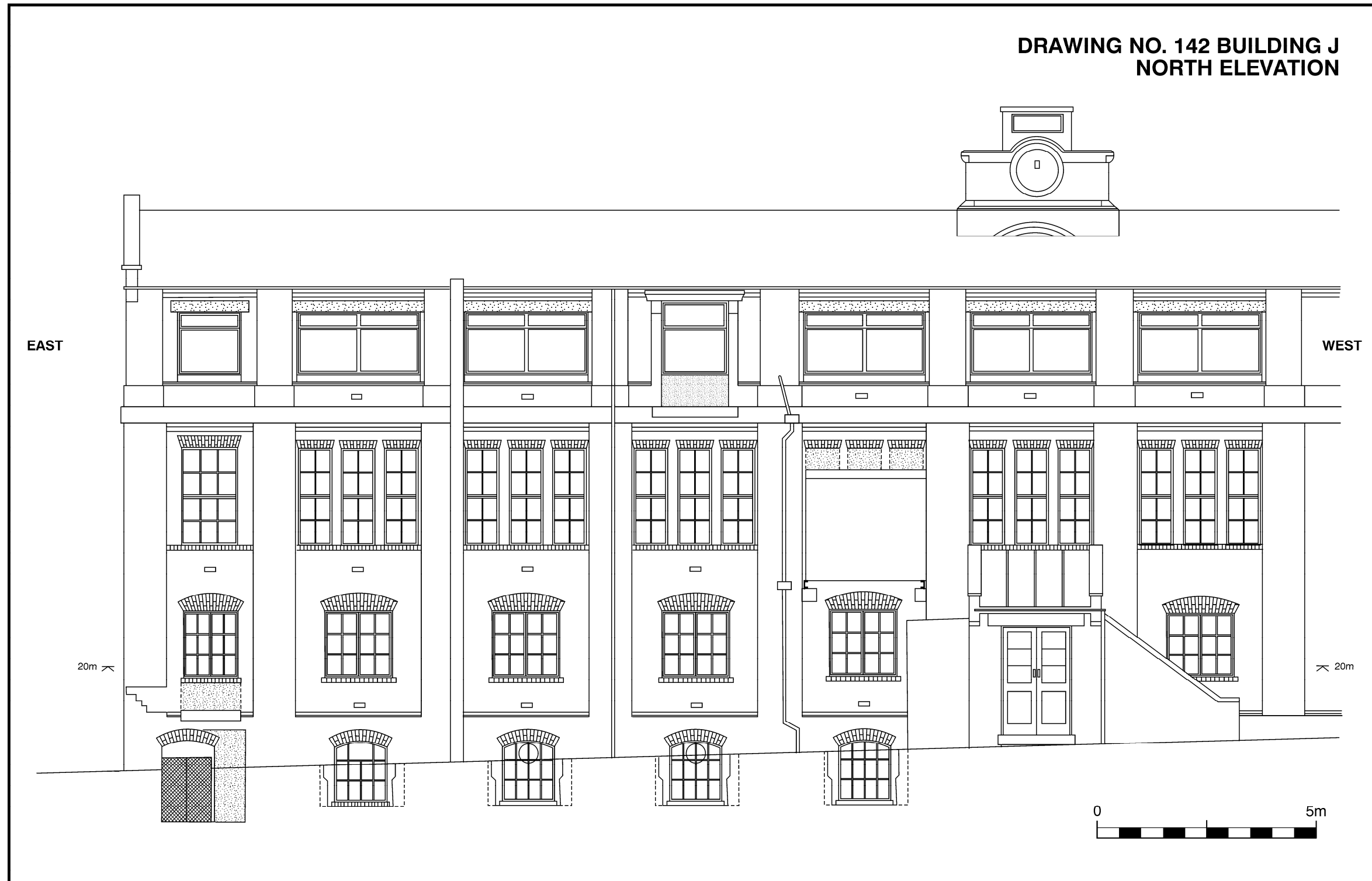


Figure 38: North elevation (scale 1:100)

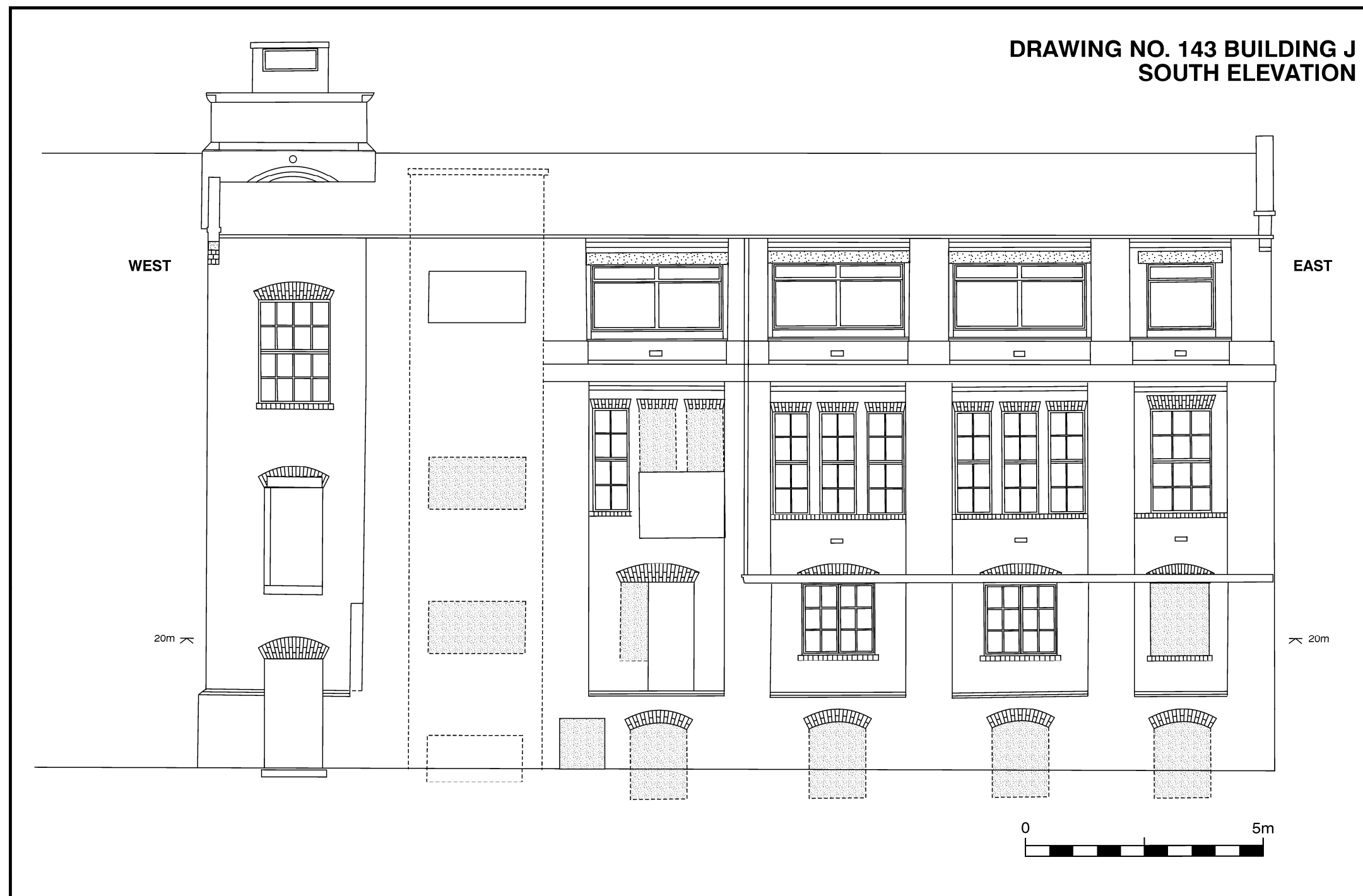


Figure 39: South elevation (scale 1:100)

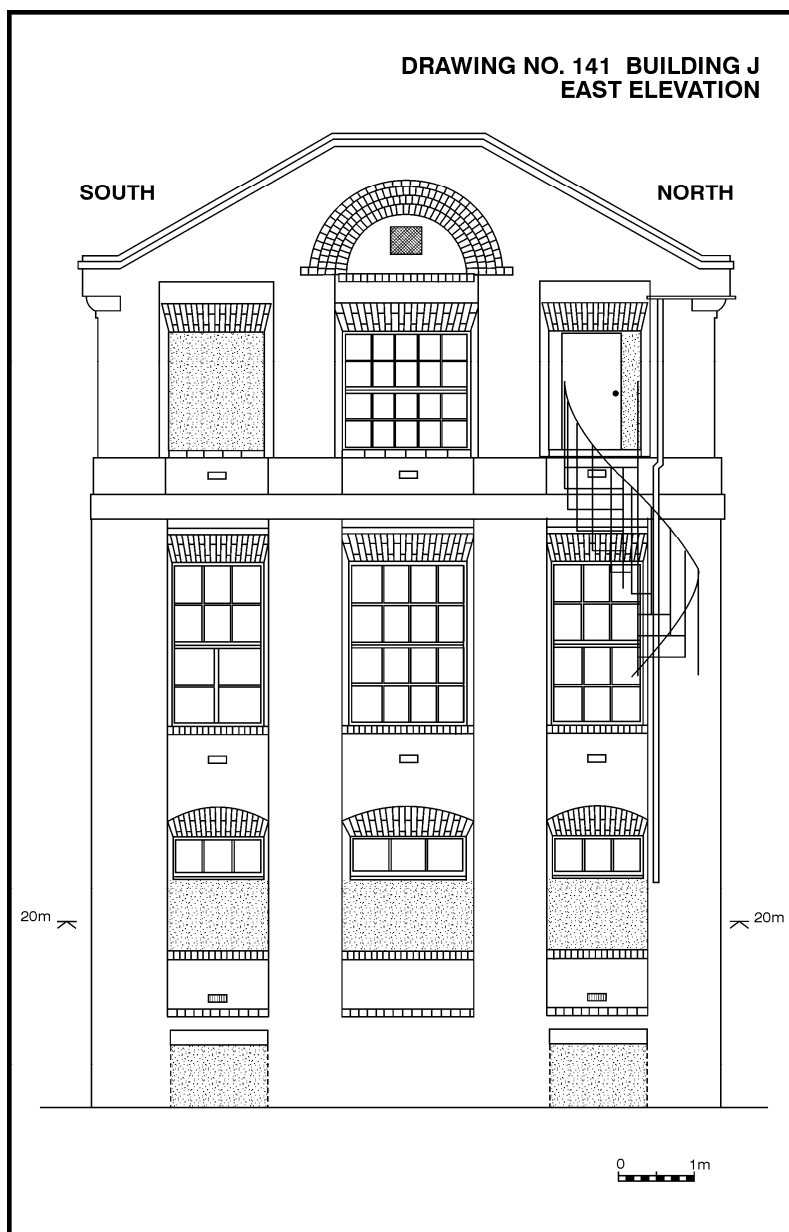


Figure 40: East elevation (scale 1:100)

## 6 Discussion

An outline of the historical development of the factory can be found in *The Severn Street Factory 1788 - 1900* (Cook 2007) and also in the *Porcelain in Worcester 1751 - 1951: An Illustrated Social History* (Jones 1993). In order to further our knowledge of the factory, Archenfield Archaeology Ltd commissioned John van Laun Associates (Industrial Archaeologists) to carry out a historical and industrial research of the site. The research is included in this report as an appendix. The result of the research, together with previous archaeological desk-based assessments (prepared by Archenfield Archaeology Ltd), cartographic material, historic photographs and illustrations and the archaeological building survey, successfully identified clear evidence of different phases of construction. This is represented mainly by changes in the building plan, with additional extension and construction breaks showing use of different building materials.

### 6.1 Phase 1 (1840s)

The earliest construction equated to the present building is the 'Burnishing and Potting Rooms' shown on a plan of the Works in 1842 and outlined in yellow in Figure 41. This building corresponds to the western side of the present Building J, but it is likely that the former structure was significantly modified as the present outer shell of the building does not show any indication of construction breaks between the original western side and the later eastern extension. Moreover, the 1842 plan shows the width of the building being 15ft and 6" which is 4.72 metres, but the present western side is 6.5 metres wide. Although the plan has slight inaccuracies in relation to later plans of the Works, the dimensions stated above are actually written on the drawing, which suggests plausible measurements. Therefore, the early building might have been rebuilt considerably and its foundation (or part of it) was utilised to support the present structure. It is not known how many storeys this building had, but the external quarter-turn staircase shown on the north-west corner of the building suggests that it might have been at least two storeys high. Indeed, external access to the upper floors of the factory's buildings was very common in the early days. A good example of this is exhibited in a contemporary illustration of the former 1840s 'Printing House and Glaze and Biscuit Kilns' (later Chamberlain Tea Rooms) situated opposite to Building J (Figure 42).

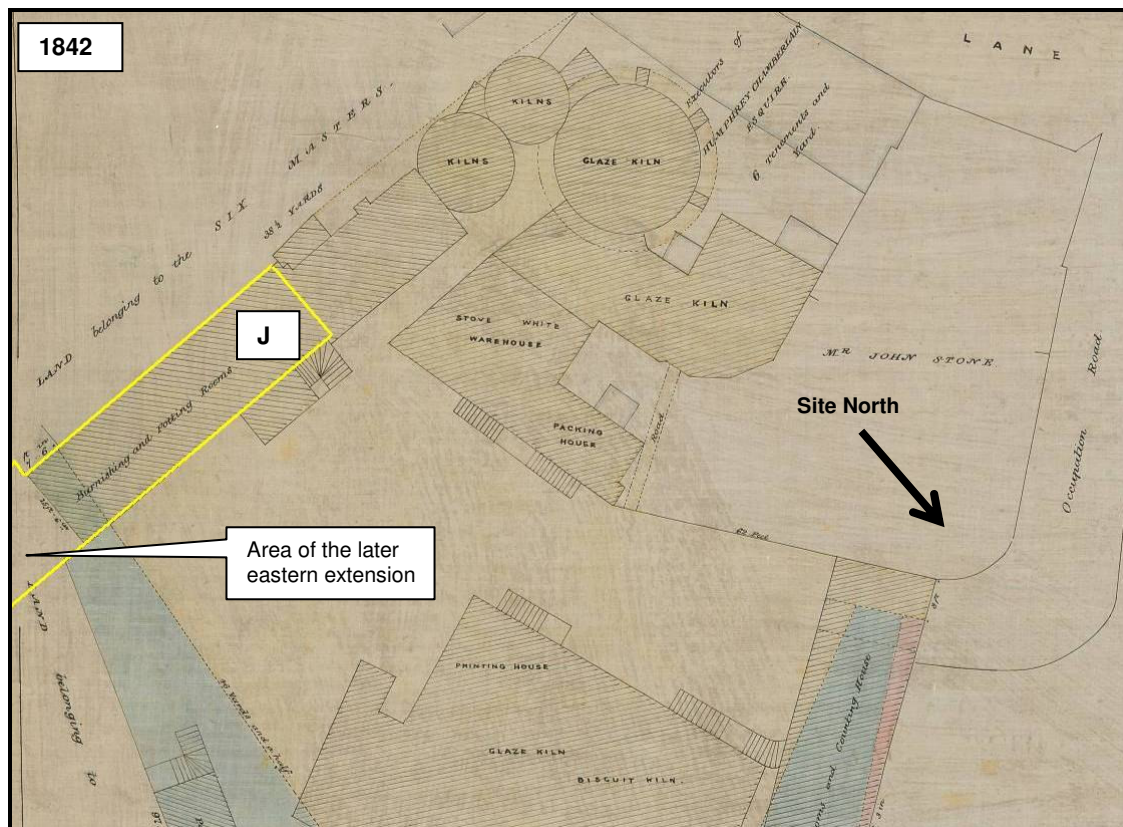


Figure 41: Plan of the Works in 1842, showing Building J before the eastern extension was built (WPM)

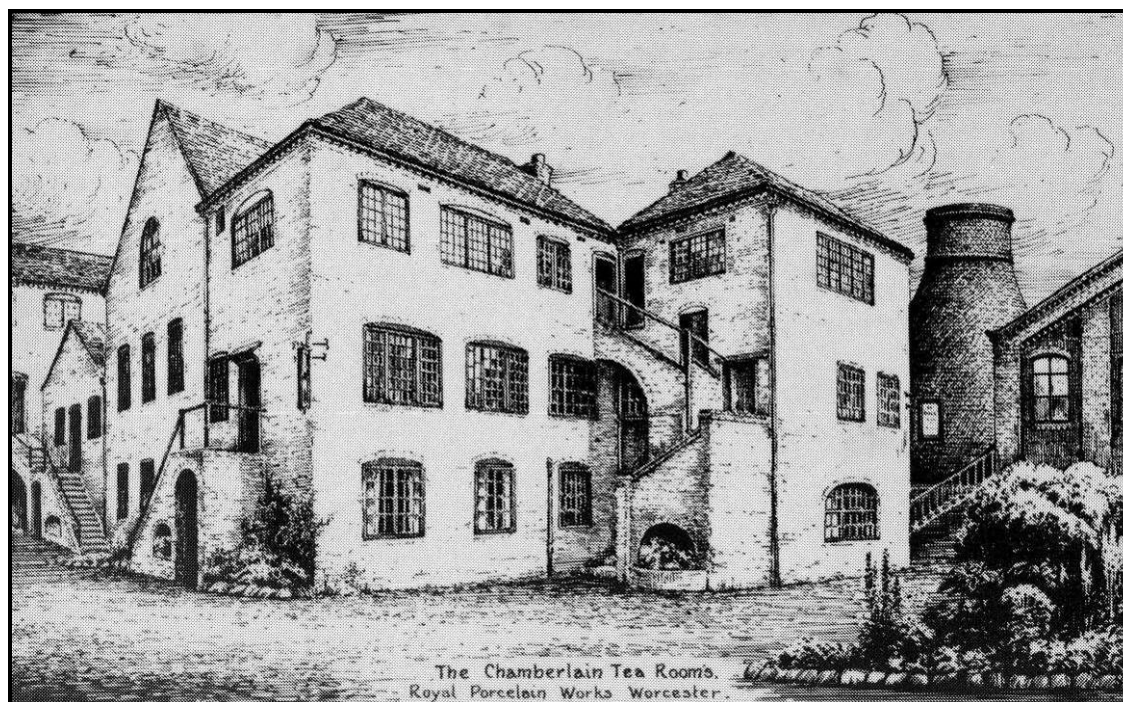


Figure 42: Illustration of the former 1840s Printing House and Glaze and Biscuit Kilns (WPM)

## 6.2 Phase 2 (1850-60s)

The historical research identified the acquisition of the land east of the original 'Burnishing and Potting Rooms' (shown on Figure 41) which was purchased in order to extend the building eastwards. This seems to have taken place in 1854, but the construction of the new extended building might have started earlier as the main entrance of the building has an inscribed sign stating that it was erected in 1853 (Figure 7). A plan of the Works in 1863 shows the extended building marked as plot number 16 which refers to the 'New Workshops' (Figure 44). The location and dimension of that plot matches the current Building J, but the definite fabric is not clear as a 1850s depiction of the Works shows some resemblance with the present building but also some clear differences (Figure 43). It is possible that the differences shown in the illustration (windows, number of bays, roof type, central pediment, etc) are the result of the artist's impression but the nature of these discrepancies remain unknown and should be born in mind. The majority of the original fabric survives in good condition. The slated roof has been mostly repaired and/or replaced by newer slated tiles. It is possible that some of the roof rafters and battens have also been replaced, but close examination was not accessible. The roof trusses are genuine and well-preserved. The floors are covered with cement-based screed thus it was not possible to determine whether the original fabric survives still underneath. However, earlier photographs indicate that the ground floor was made of bricks laid east/west on bed to a stretcher bond (as seen in Figure 17 of the Appendix); and the upper floors were made of floorboards (Figures 28 and 29). Amongst the fittings, the majority of the surviving fenestration, except for the second floor's and the ones modified for fire escape, are original. The central staircase's handrail is also original. Doors, on the other hand, seem to have been mostly replaced by later types, including heavy iron sliding doors intended for fire retarding purpose.

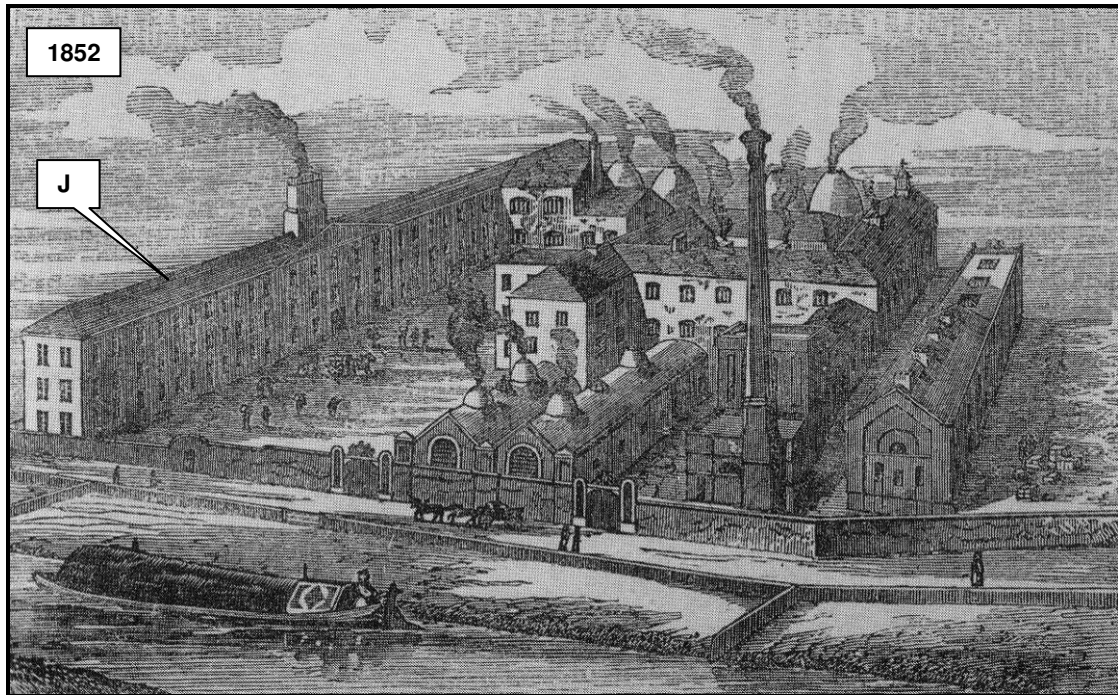


Figure 43: Illustration of the Works at around 1852 (WPM)





### 6.3 Phase 3 (1870s)

In 1875, the name of the building changed to the 'Decorating Range' as seen in a plan of the Works (Figure 45). The building was used as gilding, painting and decorating studios. The only development identified from the 1875 plan is the addition of a bridge in the middle of the south elevation connecting the 'Placing House and Enamelling Kilns' (Building M). This bridge appears to have been built against the first floor window of the staircase bay and thus the window itself was converted into a doorway which is still visible on the south elevation.

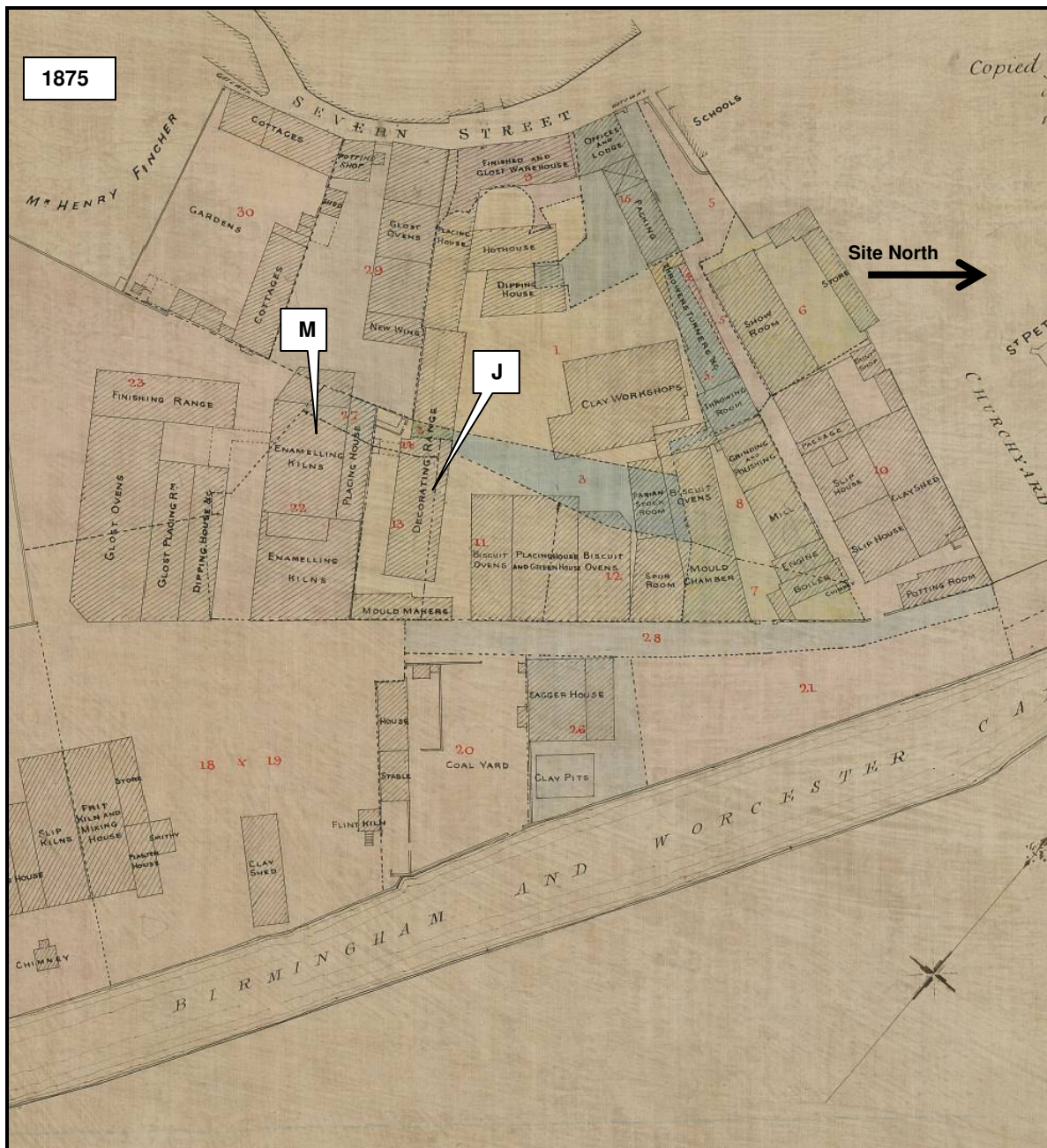


Figure 45: Plan of the Works in 1875 showing Building J (WPM)

#### 6.4 Phase 4 (1880s)

An Ordnance Survey map of 1884 shows the Works in more detail. The extract selected below (Figure 46) shows also the bridge mentioned in the above section. On the north elevation of the building, there are light wells for the basement windows, which currently exist. There is also an external staircase next to the main entrance that leads to the basement floor, which is currently enclosed with a later porch lean-to structure. The plan also illustrates a further external staircase near the north-east corner. This staircase no longer survives but there are visible traces of it described in the building analysis and shown on the north elevation (Figure 38). These series of features might have existed before the production of the Ordnance Survey map, but the previous plans did not show them. However, this 1884 plan certainly exhibits details that are attributed to the current fabric. Moreover, the Appendix includes a photograph of the Works taken before 1884 which shows Building J with the eastern flat roof and gable and the western pitched top as it is currently (except for a central chimney which was removed later). The roof structure as its present state is also shown on a drawing by James Callowhill around 1881 (Figure 47).

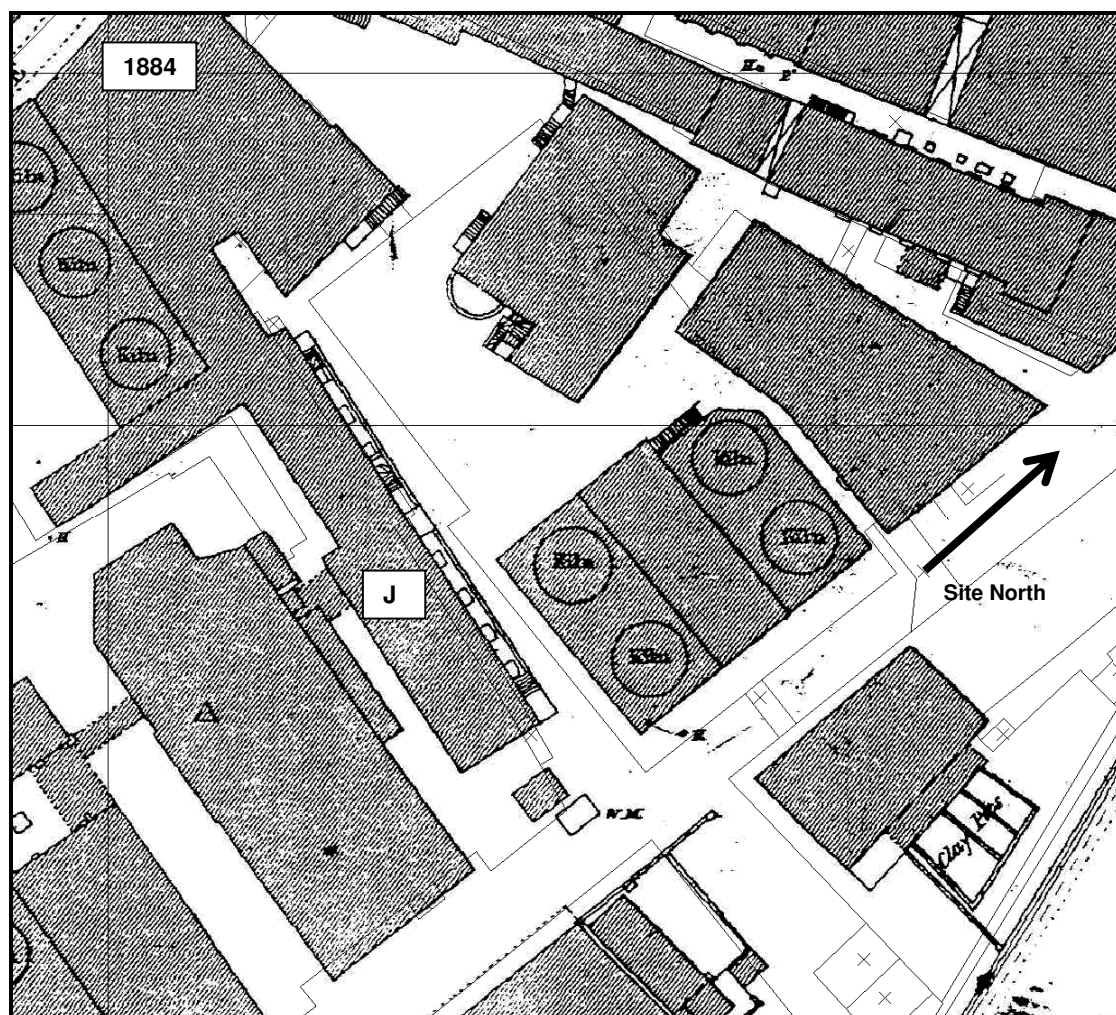


Figure 46: Plan of the Works in 1884 showing Building J (OS map)

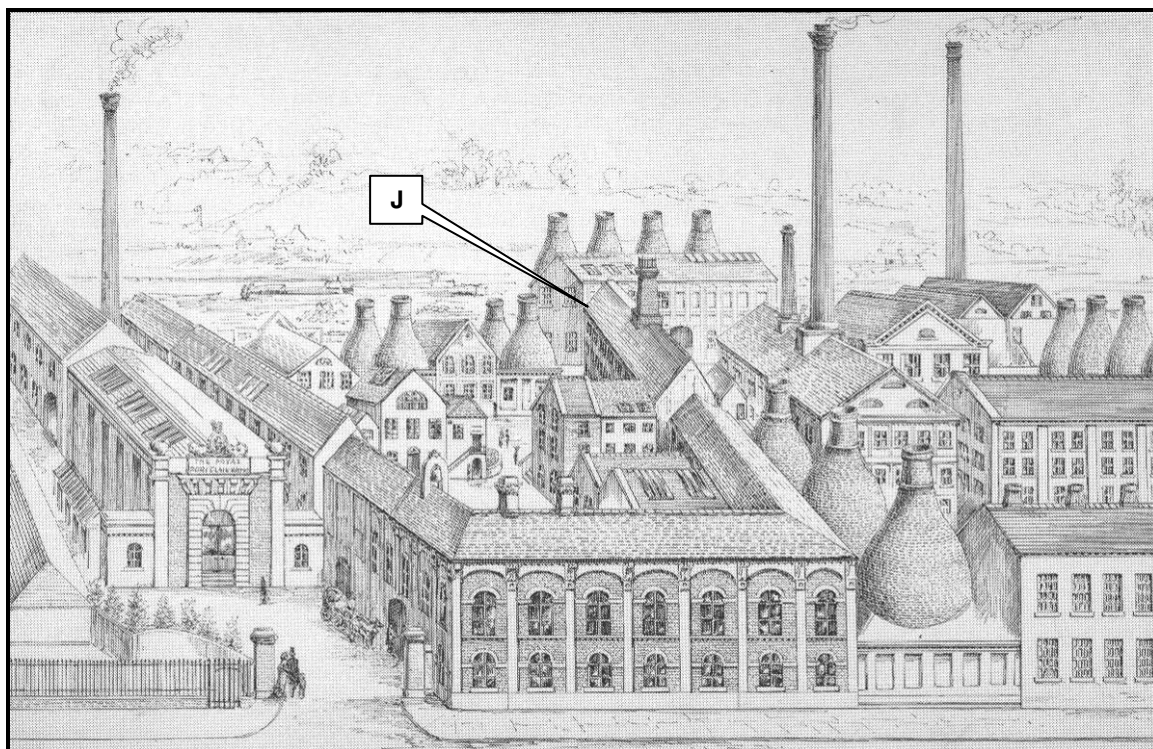


Figure 47: Drawing of the Works in 1881 by James Callowhill (WPM)

### 6.5 Phase 5 (1920-30s)

The main entrance's lean-to porch was built in the first quarter of the 20th century and it is partially shown on a 1930s photograph (Figure 10).

### 6.6 Phase 6 (1940-50s)

The 1940 Ordnance Survey map shows the additional porch (Figure 48). Before or during the Second World War a central chimney stack, shown on early illustrations (Figures 43 and 47) and photographs included in the Appendix, was removed and its base converted into a look-out tower. This look-out is shown on the 1941 plan of the Works (Figure 49) and is still extant. The access to the look-out tower was through a small doorway which is situated on its eastern wall. This doorway would have been accessed from the second floor, but the opening on the ceiling is blocked up.

The fire places connected to the former removed chimney can be seen today in the central offices of the second and first floors. These are blocked up with bricks. Although the offices are within the area retained by the Royal Worcester Porcelain Works, they were checked to establish the nature and state of the chimney course.

In 1951 a new tunnel kiln structure was built against the eastern side of the south elevation of Building J. As a result, some of the windows on the basement and ground floors were removed and blocked up and the window on the fourth bay (from the east) of the ground floor was turned into a doorway which was accessed from a raised external staircase. Figure 50 shows the architect's proposal drawing with annotated instructions, including the removal of windows and insertion of walls, etc. Some of these later alterations can be seen today on the south elevation (Figure 39).

Around this time a lift shaft was built against the fifth bay (from the east) on the south elevation which enabled carrying ceramic material straight to each floor of Building J

(Figure 3). This entire bay was thus modified for such a purpose which can be seen after the removal of the lift took place as part of the demolition programme (Figure 11). An architect's plan of the basement dating to 1953 shows the insertion of the lift (Figure 51). This plan also exhibits additional alterations which consist of a small north/south staircase on the first bay (from the east) on the south wall that would have connected the basement to the adjacent building's ground floor and a much larger east/west staircase on the west wall. The former no longer exists and it has been blocked up, and the latter was not examined as it is beyond the study area.

A small two storey block was built in 1953 against the east elevation (see Appendix). Although that later building was not connected to Building J, part of its roof was used as a large landing for a fire escape staircase, which led to the second floor window on the south bay of the east elevation (see Figure 18 of the Appendix). This staircase was later on replaced by a galvanised metal spiral type, which enabled fire escape access from the second floor through an inserted door on the north bay of the east elevation. The spiral staircase was extant during the building recording but it has been dismantled as part of the demolition programme. The construction of this later building caused further alterations of the original windows, which were mostly blocked up at the lower level (see east elevation Figure 40).

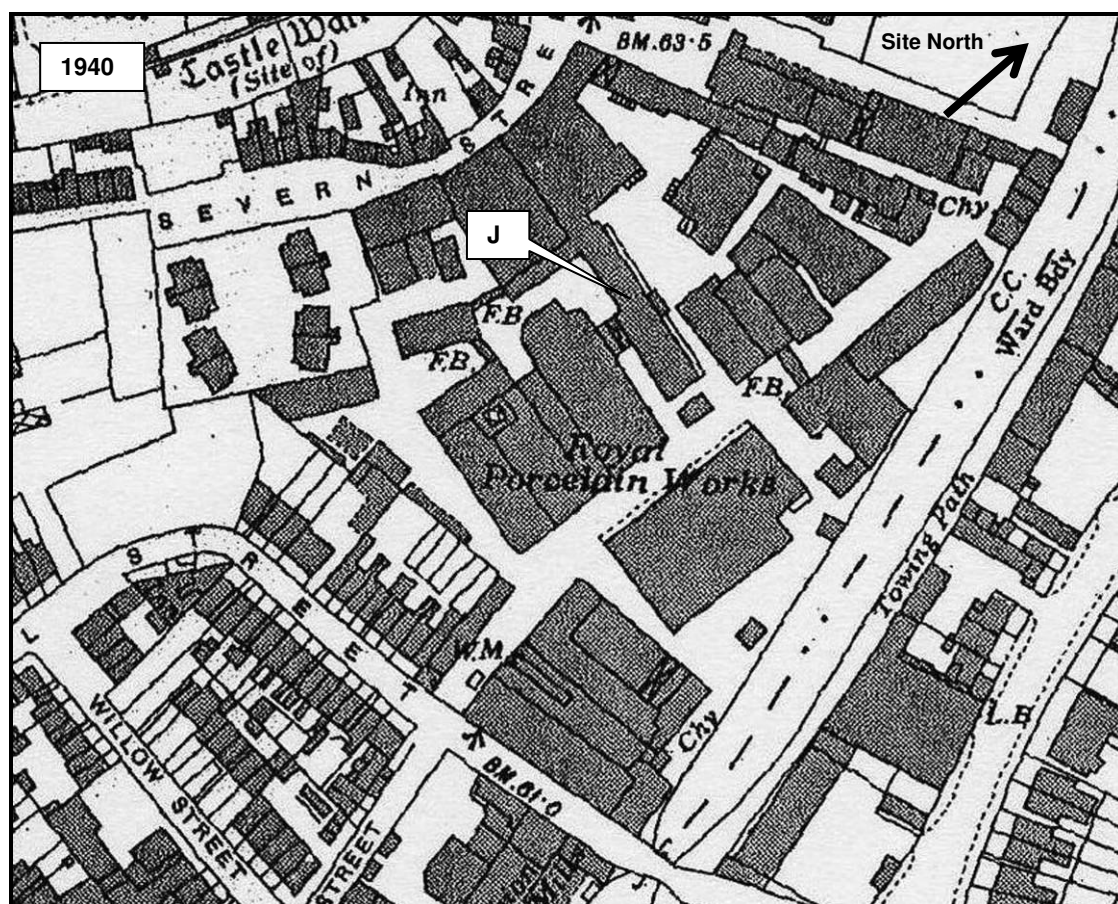


Figure 48: Plan of the Works in 1940 showing Building J (OS map)



Figure 49: Plan of the Works in 1941 showing Building J (WPM)

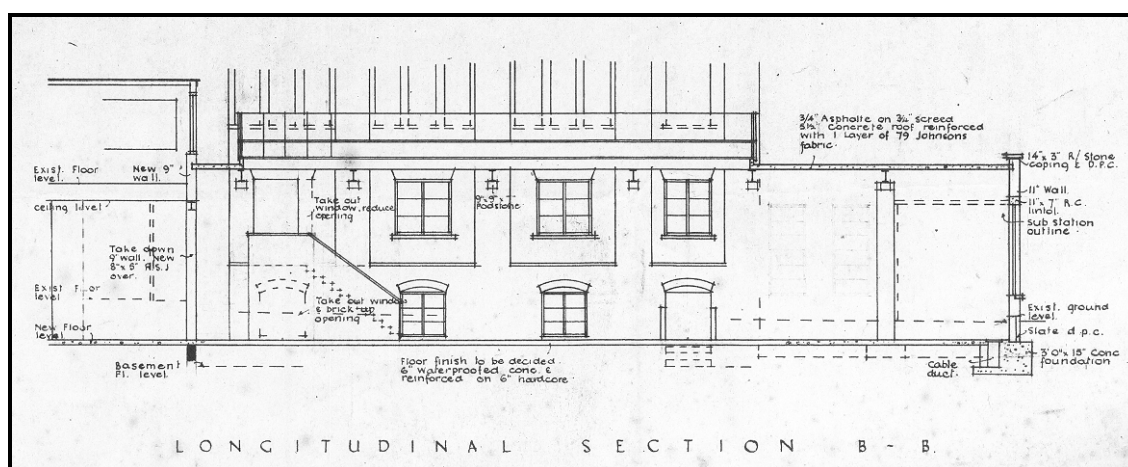


Figure 50: Proposed new tunnel kiln structure adjacent to the south elevation of Building J in 1951 (WPM)

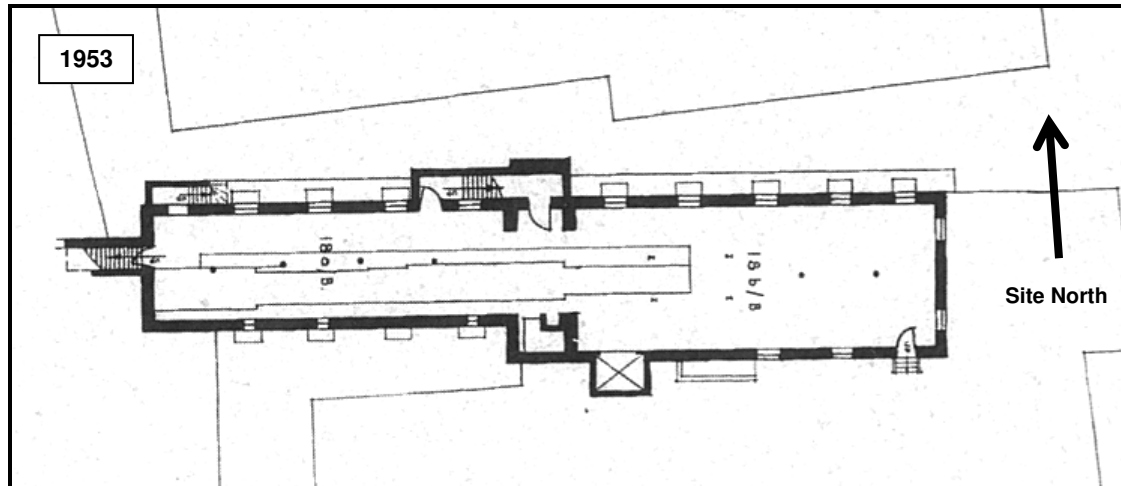


Figure 51: Architect's plan of the basement in 1953 (WPM)

## 7 Conclusion

The earliest phase of the building appears to have been the 'Burnishing and Potting Rooms' shown on a plan of the Works dating to 1842, which corresponds to the current western side of Building J. It is not known how many stories this building consisted of but the plan shows a quarter-turn external staircase on the west corner of the north wall which indicates that the building was at least two-storey high. In the early 1850s the land east of the original building was acquired in order to extend the building. A plan of the Works dating to 1863 shows the extended building which names the plot as 'New Workshops'. This later construction has the same layout of the current building and therefore it is probable that the present Building J corresponds to the one shown on that plan. The main entrance of the building has an inscribed sign stating that it was erected in 1853. It is possible that the Burnishing and Potting Rooms was largely modified or possibly re-built, as the present outer shell of the building does not exhibit signs of construction breaks between the western and eastern sides.

In the 1870s the factory expanded considerably as it is shown on a 1875 plan of the Works. Around this time the building changed its name to the 'Decorating Range' and a bridge was added to its south wall connecting the 'Placing House and Enamelling Kilns' (Building M). The building was used as gilding, painting and decorating studios. The only major alterations to the building in the 20th century were the addition of a porch for the main entrance around the late 1920s, and the removal of its central chimney during the Second World War, which was converted into a look-out tower. Some construction took place around the building which required small scale alterations, such as the insertion of doorways, blocking and removal of windows, etc. The most important of these modifications was the replacement of the second floor's windows with a modern type.

Despite some alterations the building retains the majority of its original fabric, including the principal roof structure, exterior and interior brickwork. The floors are probably original but obscured by later screed. Internally the workshops are practically empty except the basement, which still has two kilns and a long worktop area. A high proportion of internal original fittings, including carpentry and masonry detailing, still survives in excellent condition. The building is an interesting example of 1850s factory construction whose architectural style, including fenestration, is unique in the factory.

## 8 Archive deposition

The project archive, consisting of scaled drawings, digital photographs, photographic records, building recording sheets and computer discs will be prepared and stored in accordance with the guidelines laid down in the Institute of Field Archaeologists' guidelines for the preparation and storage of archives. The archive will be placed at Worcester City Museum.

The archive of the entire project consists of:

- 41 Building record sheets
- 7 Context register sheets
- 212 Photographic record sheets
- 3495 Digital photographs
- 30 35mm colour prints
- 14 Computer discs
- 11 Drawing register sheets
- 262 Scaled drawings

The photographic record of Building J consists of 155 digital images recorded on *pro-forma* index sheets and plotted on 4 plans. The drawn survey comprises 11 scaled drawings of which 7 are included in the report. The drawings are listed below:

- No 141: East elevation (1:50). Included in the report (1:100).
- No 142: North elevation (1:50). Included in the report (1:100).
- No 143: South elevation (1:50). Included in the report (1:100).
- No 144: Basement plan (1:50). Included in the report (1:100).
- No 145: Ground floor plan (1:50). Included in the report (1:100).
- No 146: First floor plan (1:50). Included in the report (1:100).
- No 147: Second floor plan (1:50). Included in the report (1:100).
- No 242: Cross section (1:100).
- No 243: Longitudinal section (1:100).
- No 244: East elevation with maintenance bloc (eastern extension), Buildings L and N (1:100).
- No 245: North elevation with maintenance block (eastern extension) (1:100).

## 9 Publication and dissemination proposals

Paper copies of this report will be lodged with the Archaeological Adviser to Worcester City Council, Worcester Sites and Monuments Record and Worcester City Library. A short note on the project will be prepared for publication.

CDs of this report, together with the supporting archival material will be available from Archenfield Archaeology Ltd. Information will also be available on OASIS, after completion of the report and an OASIS form (<http://.ads.ahds.ac.uk>).

The complete photographic record and database will be retained by Archenfield Archaeology Ltd and a digital copy will be included in the archive.



## 10 Bibliography

- Archenfield Archaeology 2006a *Programme of archaeological work at Royal Worcester Porcelain Factory.* Unpublished Project Design.
- Archenfield Archaeology 2006b *Programme of archaeological work at Royal Worcester Porcelain Factory.* Unpublished Risk Assessment.
- British Geological Survey Geological map 1:50000 Worcester Area. Sheet 199.
- Cook, W 2007 *The Severn Street Factory 1788-1900. The Melting Pot.* Spring No 10:2-5.
- Dallas (ed.) 2003 *Measured Survey and Building Recording for Historic Buildings and Structures.* Edinburgh: Historical Scotland.
- English Heritage 1991 *The Management of Archaeological Projects (MAP2).*
- English Heritage 2006 *Understanding Historic Buildings. A guide to good recording practice.*
- Feryok, M and Sherlock, H 2004 *Royal Worcester Porcelain Factory and St. Peters.* Desk-based Assessment. Unpublished report by Archenfield Archaeology.
- IFA 2001 *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures.*
- Jones, R 1993 *Porcelain in Worcester 1751-1951. An Illustrated Social History.* Worcester: Parkbarn.
- Lovell, C and Pikes, P J 2004 *Royal Worcester Porcelain Factory. An Archaeological and Architectural Heritage Assessment.* Unpublished report by Archenfield Archaeology.
- Morriss, R K and Sherlock, H 2004 *Royal Worcester Porcelain Factory. An Architectural and Archaeological Assessment of the Buildings.* Unpublished report by Archenfield Archaeology.
- Museum and Galleries Commission 1992 *Standards in the Museum Care of Archaeological Collections.*
- RCHME 1996 *Recording Historic Buildings: A Descriptive Specification 3<sup>rd</sup> Edition.*
- Robinson, J 2005 *Royal Worcester Porcelain Factory. Former St Peter's Infant School Building. Desk-top Assessment.* Unpublished report by Archenfield Archaeology.
- Standing Conference of Archaeological Unit Managers (SCAUM) 2002 *Health & Safety in Field Archaeology Manual.*
- UKIC 1990 *Guidelines for the Preparation of Excavation Archives for Long-Term Storage.*
- Worcester City Museum Archaeology Section 2006 *Brief for archaeological building investigation and recording, Royal Worcester Porcelain Works, Severn Street, Worcester.* No. 06/22.

## 11 Cartographic material

Ordnance Survey 1884	1st edition 1:500 plan. County Series, Worcestershire Sheet XXXIII.8.11
Ordnance Survey 1940	County Series, Worcestershire Sheet XXXIII NE
Ordnance Survey Superplan Data 2007	Licence Ref. number HEMC 00495300

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## **APPENDIX**

### **ROYAL WORCESTER PORCELAIN WORKS, HISTORIC AND INDUSTRIAL RESEARCH**

**John van Laun Associates**

Text by John van Laun and Wendy Cook

Edited by Julie Phillips and Jerry Newby-Vincent