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CONSERVATION

Research and conservation of historic decorative schemes in the built environment

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Project Name: Architectural Paint Research

Piccadilly Warehouses, Manchester

Client: Manchester Design & Build

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1.0: Introduction

Lincoln Conservation were commissioned by Manchester Design and Build to carry out architectural paint research, in two 19th century former warehouses on Minshull Street and Bloom Street in central Manchester. This research exercise complements an earlier paint toxicity survey carried out on site, by ourselves on April 27th 2021.

The two buildings examined were -

Mindel House, 10 Minshull Street, Manchester.

Listed Grade II (Historic England list entry no. 1197926)¹ and described as

Warehouse, constructed in simplified palazzo style in the mid to later C19; subsequently altered. Five storeys and basement with corner entrance with pilasters to the left and right with worn lettering "MANUFACTURERS AND PRINTERS".

¹ <https://historicengland.org.uk/listing/the-list/list-entry/1197926>

² <https://historicengland.org.uk/listing/the-list/list-entry/1208005>

11, Bloom Street, Manchester

Listed grade II (Historic England list entry no. 1208005)² and described as

Adjacent to Mindel house. Mid to later 19th century and used as various warehouses and pattern card factory. Forms a group with No.8 and No.10 Minshull Street.

The dates of construction for both buildings in the HE list entry are vague, but the description for the nearby grade II* City Police Courts on Minshull Street, does provide a construction date of 1868-71, with further evidence, outlined below supporting a build date for both warehouses during the 1860's

TO BE LET in Minshull-street, 40 yards from Portland Street, a large shipping warehouse (five storeys) containing about 700 square yards on each floor, newly erected. Would be fitted up to suit tenant. Apply to STARKEY & CUFFLEY, Princess Street. [Manchester Guardian Saturday 29 August 1863 Page 2]³

³ Although this reference does not appear to refer to the two buildings examined here; it does provide evidence, along with the construction of the nearby grade

2.0: Method

A number of complete paint samples have been removed from key features across all floors in both buildings, in order to provide a representation of the internal appearance since construction through to the latest phase of occupancy. Samples have been removed from the walls, stairs, supporting iron columns and radiators (where appropriate), ceilings (where possible), windows and other joinery elements.

All samples have been mounted in clear casting resin, polished back and examined in cross section under a high-powered microscope to reveal the stratigraphy of the paint layers applied over time. These paint 'cross sections' were viewed under both reflected white light and ultra-violet⁴.

Examination under white light provides an indication of the paint colours applied and identifies dirt layers between decorative schemes, helping to distinguish between primer layers and top coats.

⁴ II* listed City Police Courts in 1868, of building activity and development on Minshull Street during the 1860's. Source: Victorian Society, available on line from <https://manchestervictorianarchitects.org.uk/buildings/shipping-warehouse-minshull-street-attrib>

Ultra-violet light causes different types of paints and varnishes to fluoresce in a characteristic manner assisting the identification of varnish layers, traditional oil paints and the later alkyd paints, introduced after World War Two.

This microscopic examination creates a slice of decorative schemes through time, similar to an archaeological record with the earliest layers at the base of the image and subsequent layers stacked above as they were applied over time.

Further observations were made on site during the sampling exercise, with examples of historic wall paper and surviving historic decorative schemes noted and reported upon.

3.0: Presentation of Results

The following pages present the results in an illustrative format, displaying annotated colour images of the sample cross sections

⁴ Microscope: Leica DM2400M at magnifications X50 – X200. Long wavelength ultra-violet generator (380 – 580nm).

and their corresponding sample location. A condensed narrative accompanies the cross-sectional images to aid clarity and understanding (Section 5.0). The results are summarised in the following sections focussing on the historic decorative schemes and less so on those applied more recently.

4.0: Summary of Results

4.1: Bloom Street

Three main phases of decoration have been identified, that reflects the use of the building during its lifetime. The building is now entering the fourth phase of its history.

Phase I: the 19th century (c1870 – c1900)

Phase II: early 20th century (c1900 – c1939)

Phase III: post war (c1950 onwards)

The interiors across all floors have been stripped out, leaving behind open spaces revealing the perimeter brick walls, with traces of earlier paint schemes still clinging to the surfaces (see fig.1).

With the exception of the 4th floor, the original iron columns are still in place fixed beneath the massive beams supporting the floors above. There is a relatively modern steel framework supporting the roof above the 4th floor.

The floors are accessed via a horseshoe shaped historic stair, complete with the original lime plastered stairwell wall and wooden staircase, with newels, balusters and handrail all intact. There is a further stair in the southwest corner of the building, boxed in behind tongue and groove panelling.

The window sashes are relatively recent replacements, but many of the associated box frames are 19th century and appear to be original.

During the 19th century, the main entrance to the building was situated on Bloom Street. Visitors would arrive through a small but elaborate entrance vestibule. This area has remained largely intact and is an integral and historically important part of the building, retaining original tiling, wall plaster and ornate heavy plaster mouldings.

Figure 1: 2nd Floor 11 Bloom Street

4.1.1: Summary of decorative finishes

Phase I (19th century)

Brick perimeter walls: lime washed, initially in white, but with later lime washed layers tinted with blue pigment. Blue lime washes were a common feature in utilitarian buildings of the 19th century; the cleansing and sterilizing effect of lime was well known and frequently reapplied as a quick, low cost finish

'Horseshoe' stair and stairwell: paints applied uniformly across the entire wall face at both high and lower levels, without any distinction between the two. Firstly, in pale blue/green, followed by cream water paints. All the joinery was wood grained at this time.

Iron columns: cream lead oil paint with varnish layer above for added durability. The columns were later painted green during phase I.

Windows:

Internally - an examination of the paints applied the window frames reveals lead white oil paint as the earliest scheme, followed by pale

blue, with some later lime wash. The sample was removed from the edge of the frame, so the lime wash on the window frame may be a residue of the adjacent wall finish and should be considered a contaminant.

Externally - the metal frames (or Crittall⁵ windows) on the upper ground floor at Street level, appear to be late 19th century / early 20th century. Initially painted in predominantly deep red lead oil paints (potentially during the later phase I period). It may be safe to assume that deep red⁶ was the common colour used externally on the windows throughout the phase I period.

Note: the early paints on both internal and external faces of the Crittall windows have a high lead content, measured at approx. 100,000 ppm (or 10% concentration).

Ceilings & heavy beams: lead white and later pale blue, matching the window frames and presumably other joinery across all floors (now lost).

⁵ Metal framed Crittall windows were first manufactured in 1884 and became very popular into the early 20th century in areas subjected to extreme weathering and wear. This is the case here at Bloom Street, with the window at street level and susceptible to water run-off and passing traffic.

The Entrance vestibule: Walls and wall niches painted pale greens and pale blues during this earliest phase with the plaster mouldings picked out in contrasting stone colours.

Phase II (early to mid 20th century)

The paint finishes applied to the brick perimeter walls during the phase II period remain uncertain. This may suggest they were covered over at this time, with studwork or similar, only to be revealed later and repainted during the phase III period.

Horseshoe stair and stairwell: painted brown at lower (dado) level with cream above, separated by a thin black band. This brown and cream theme of decoration is common across many surfaces during the phase II period (including internal stud walls and supporting iron columns). This is revealed behind a later plaster board wall on the 1st floor (see fig 2)

⁶ *Pompeian Red* was a common colour used for windows and other external features during the mid to late 19th century. It did not discolour as readily as paler colours in the polluted industrial atmosphere of the time.

Figure 2: Revealed phase II stud wall on the 1st Floor



Windows:

Internally - softwood sash and Crittall windows (upper ground floor) painted cream and later pale blue.

Externally – predominantly green lead oil paints.

Ceilings & heavy beams: dark cream and stone colours

The Entrance vestibule: early during the phase II period, the walls were painted dark stone with the niches picked out in reddish brown. A later pink layer immediately above the brown *may* indicate a type of figuring inside the wall niches, but this will require further investigation to determine its true nature. Plaster mouldings picked out in contrasting stone colours.

4.2: Mindel House

Mindel House is adjacent to 11 Bloom Street, with the paint evidence uncovered strikingly similar to Bloom Street, with the interior represented by the three main phases of decoration already defined at Bloom Street.

The interiors across all floors have been stripped out, leaving behind open spaces revealing the perimeter walls, a central lift shaft and historic tongue & groove partitioning on some floors. (see fig.3). The partitioning dates to the phase II period.

Across all floors the walls are a patchwork of exposed painted brickwork with remains of later plasterboard (mainly phase III) and tongue & groove timber partitions dating to the phase II period

Figure 3: view of the 2nd floor



The main entrance to the building is accessed on the canted corner at the junction of Bloom Street and Minshull Street, with a stair leading off to access all floors. This (main) stair retains its original lime plastered stairwell wall and wooden staircase, with newels, balusters and handrail all intact (see fig.4). There is a further service stair in the corner of the building, with exposed brick walls that were originally lime washed blue and later white.

Figure 4: The Stairs & Stairwell



4.2.1: Summary of decorative finishes

Phase I

The Walls and ceilings:

The earliest decoration to the brick walls is a blue tinted lime wash applied consistently throughout the phase I period. At this time, the ceilings were painted using the lime wash applied to the walls, to

provide a utilitarian finish and appearance, reflecting the building's use.

The Stairs:

Painted uniformly across the lower and upper walls in cream and stone coloured water paints without any separation between upper and lower (dado) wall faces.

The stair joinery was stained and varnished.

Iron Columns

Painted using pale blue, grey and pale green lead oil paints

Windows

Cream and stone coloured lead oil paints

Historic Radiators

Evidence for the earliest decorative schemes is fragmentary and difficult to define, but traces of phase I cream oil paints were detected on the Gothic Radiator on the 1st Floor.

Phase II

The Walls

During this period the floors were partitioned and separated with tongue & groove panelling in many areas; painted brown (lower wall) & cream (upper wall). This is a common theme throughout the building, extending into the stairwell.

The joinery was stained and varnished.

The remaining paints on the wall plaster generally date to the phase III period and were painted in a myriad of colours that reflects the later use of the building whilst partitioned.

Some wall papers remain. One of particular note is a section of 19th century wall paper surviving largely intact in an area on the canted corner of the building on the 2nd floor; enclosed by phase II timber panelling and glazed screens (see fig.5). The wall paper here sits beneath the brown and cream oil paints and is clearly of the phase I period (possibly late 19th century).

Figure 5: Early enclosed office area on the 2nd floor

A variation on the brown and cream theme exists on the Upper Ground Floor, where there are traces of stencilling to the plaster wall surrounding the lift shaft (see fig. 6). This is a simple leaf design painted in green, immediately above the thin black line separating the lower and upper walls and provides further evidence for the extensive use of this colour scheme during the phase II period throughout the entire building.

Figure 6: Evidence for phase II stencilling on the Upper Ground Floor



Windows:

Many of the windows are early and may be coeval with the building's construction with approx. 13 layers of cream coloured lead and zinc oil paints applied throughout the phase I and II periods. The later phase III paints applied predominantly in white alkyd paints.

Ceilings:

The black painted early lath and plaster ceiling on the 4th floor was sampled and analysed to provide a representation of the ceiling's appearance across all floors.

Into the phase II period the ceilings were painted cream and white with evidence the ceilings on the 2nd and 3rd floors were lined with linen fabric and papered during the phase II or phase III period (see fig.7)

Figure 7: Evidence for patterned ceiling paper (3rd Floor)



Supporting Iron Columns

The removal of a later stud wall on the 4th floor has revealed the phase II painted decoration on one of the supporting columns, echoing the familiar scheme of brown and cream dating to the phase II period already identified at Bloom Street (see fig.8)

Figure 8: Phase II decoration revealed on iron column on 4th Floor

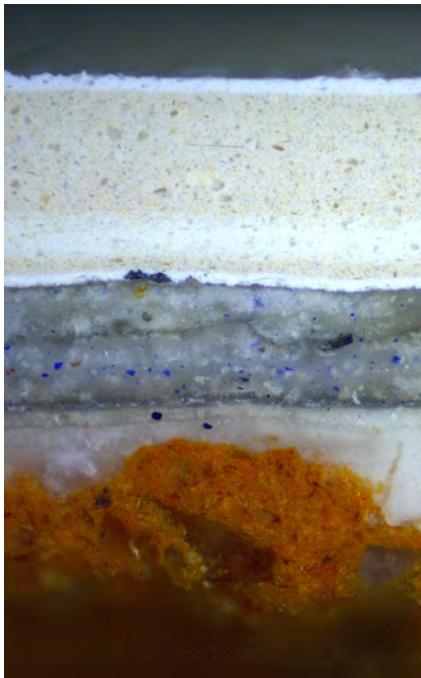


5.0: Paint Research Results

5.1: Bloom Street

5.1.1: The Walls

4th floor white painted wall



4th floor sample location (1)

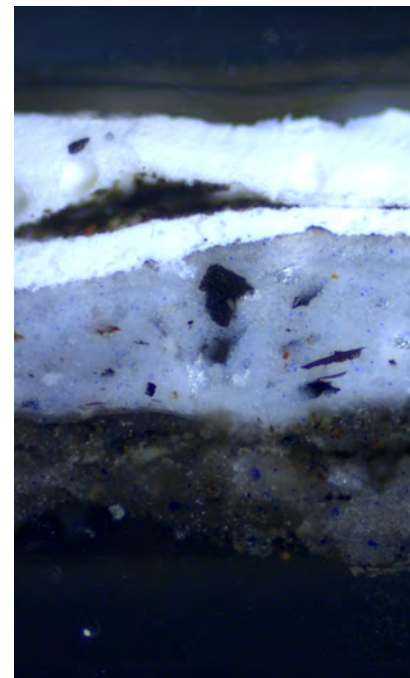


Brick substrate at the base of the sample with the earliest 19th century phases of decoration above.

Initially, white lime wash followed by further lime washes tinted with blue pigment

The later paints are modern alkyd masonry paints in cream and latterly white

3rd floor white painted wall



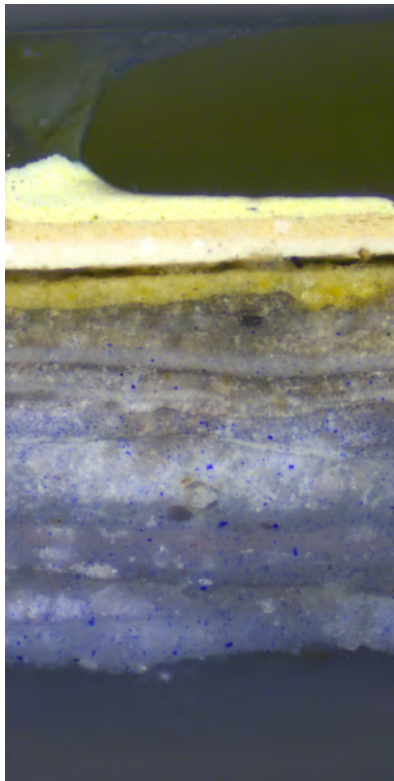
3rd floor sample location (3)



Earliest 19th century phases identical to the 4th floor above, in blue lime wash

The later paints are modern white alkyls.

2nd floor yellow painted wall



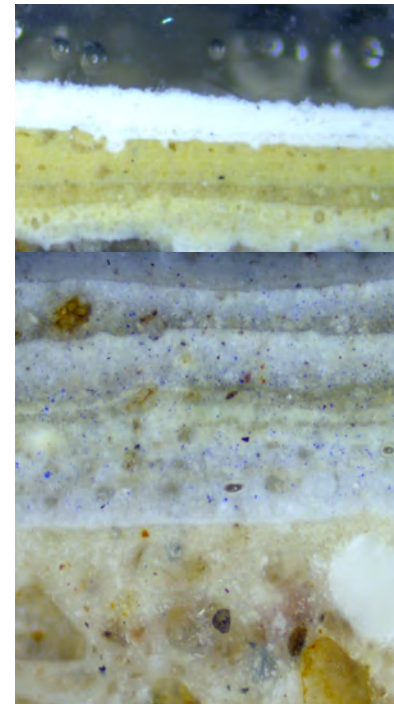
2nd floor sample location (7)



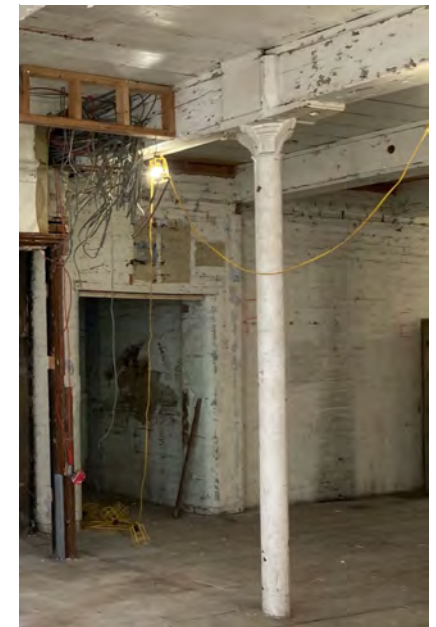
Further blue tinted lime washes during the early phases, providing evidence for a consistent theme across all floors.

Later alkyd paints in creams and latterly white.

1st floor white painted wall

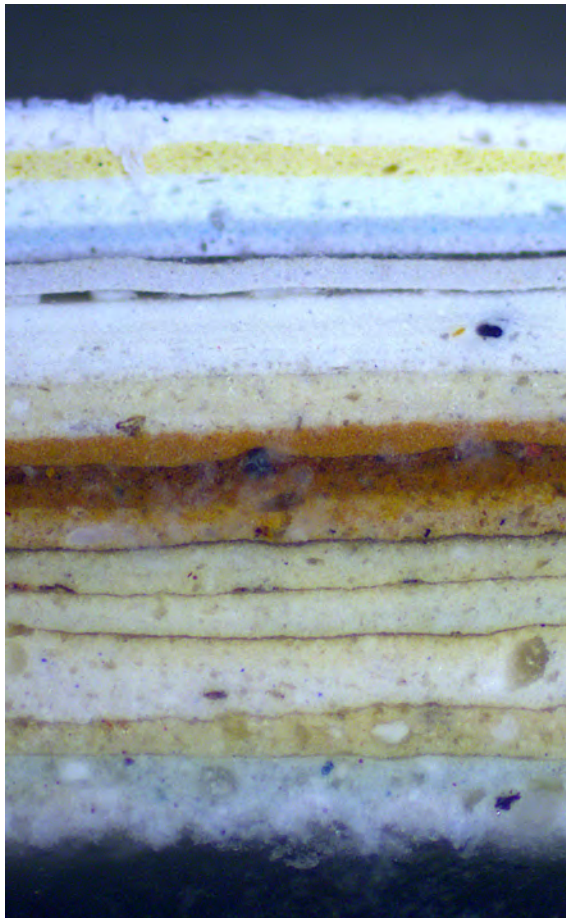


1st floor sample location (11)



5.1.2: Historic Stair & stairwell

Stairwell wall



Phase 3: post war paint schemes in blues and creams

Phase 2: browns and creams

Phase 1: 19th century schemes, initially in pale blue/green, followed by cream coloured lead oil paints

Sample location (13)

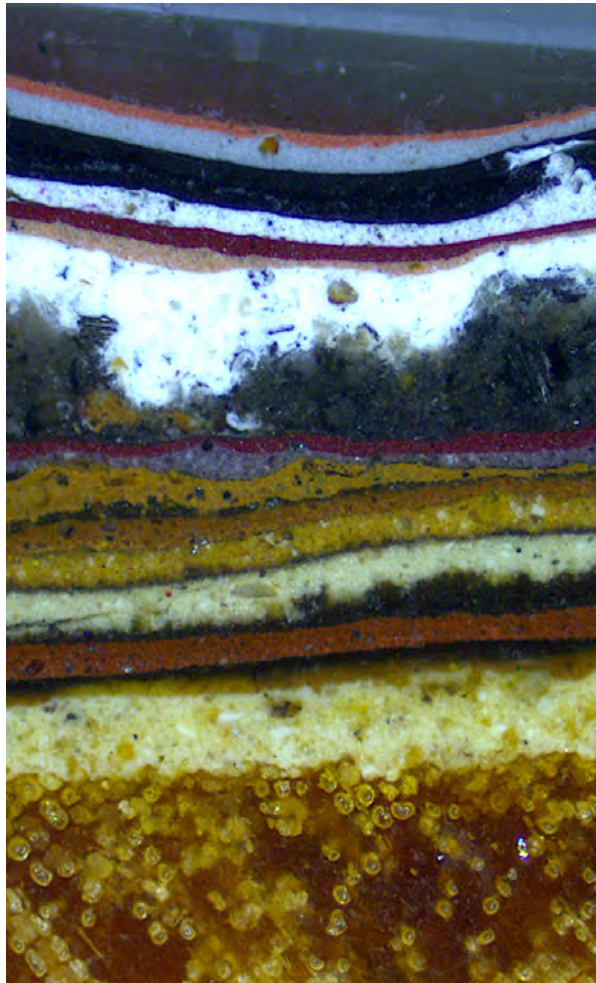


The sample displayed (left) was removed from a location on the stairwell wall as indicated. This is original plaster and displays a full chronology of decorative schemes applied throughout the 19th century and beyond.

During the 19th century, the wall was painted uniformly in pale blue green followed by creams.

The later phase 2 schemes were applied as brown to the lower wall with creams above the dado level, separated by a thin black band

Stairwell joinery



Phase 3: post war paint schemes in maroon, black & brown

Phase 2: browns and creams

Phase 1: 19th century scheme, wood graining with varnish above. One further scheme in reddish brown lead oil paint.

softwood substrate

Sample location (15)

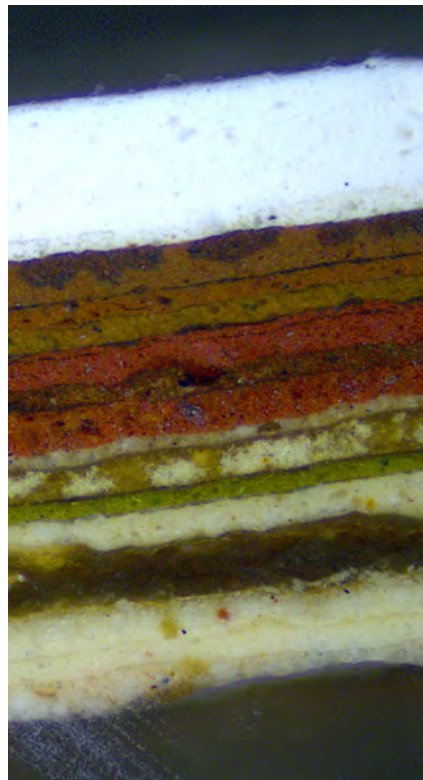


This sample is representative of all the stair joinery within the historic horseshoe stairwell.

The joinery was originally wood grained and varnished; a typical decorative effect for joinery of the period. This was left in place for some considerable time before being overpainted in reddish brown. Further brown oil paints were applied during the phase 2 period, prior to the modern finishes post war.

5.1.3: Supporting iron columns

Lower level (12a)



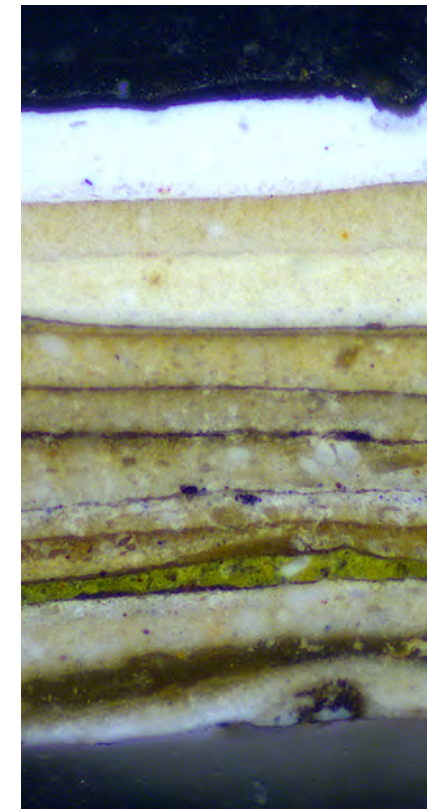
current paint scheme:
white alkyd

Phase II: reds and
browns

Phase I: cream (with
varnish) and later green



Upper level (12b)



current paint scheme:
white alkyd

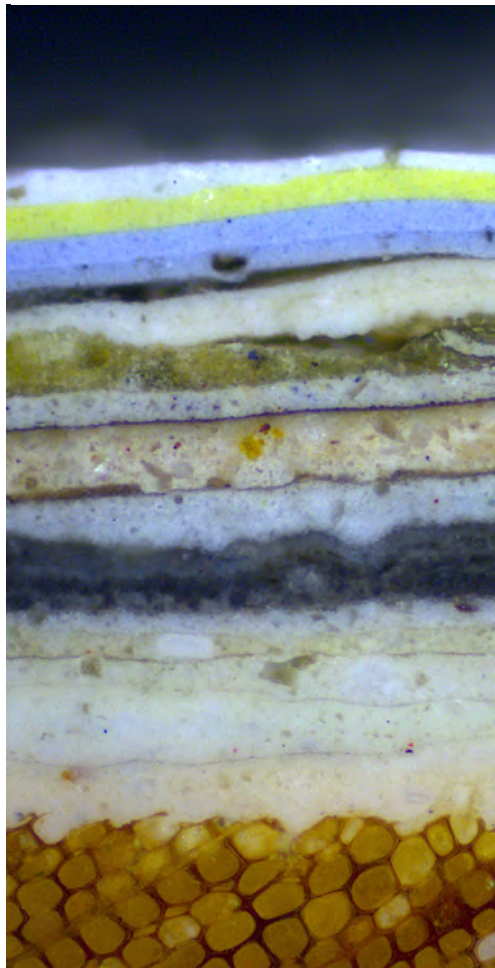
Phase II: creams

Phase I: cream (with
varnish) and later green

The paint layers indicated here are representative of all the supporting iron columns across all floors. During the phase I period painted uniformly in cream lead oil paints, with a varnish layer above to provide durability, then later in green. During the phase II period the columns were painted at lower level in reds and browns, with contrasting cream above, separated by a thin black band. A common phase II decorative feature throughout.

5.1.4: The sash windows (box frame only)

Box frame (8)



Phase III: post war paint schemes in white, blue & yellow

Phase II: cream & pale blue

Phase I: 19th century schemes, initially lead white with later pale blue

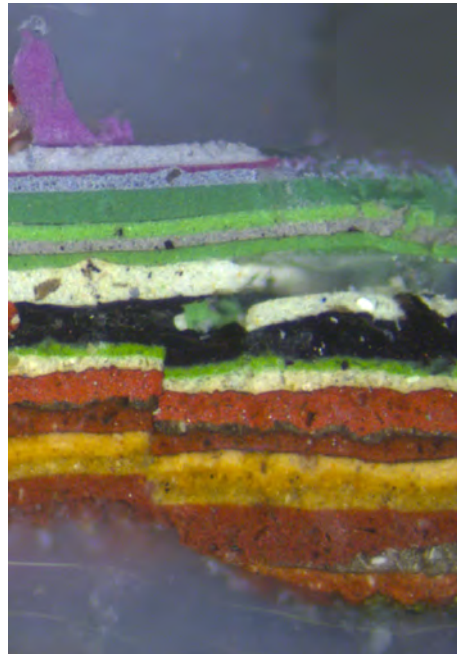
softwood substrate

sample location



Sample removed from the 19th century box frame. The sashes are relatively recent replacements.

5.1.5: Metal frame (Crittall) windows



EXTERNAL

Phase II: green lead oil paints

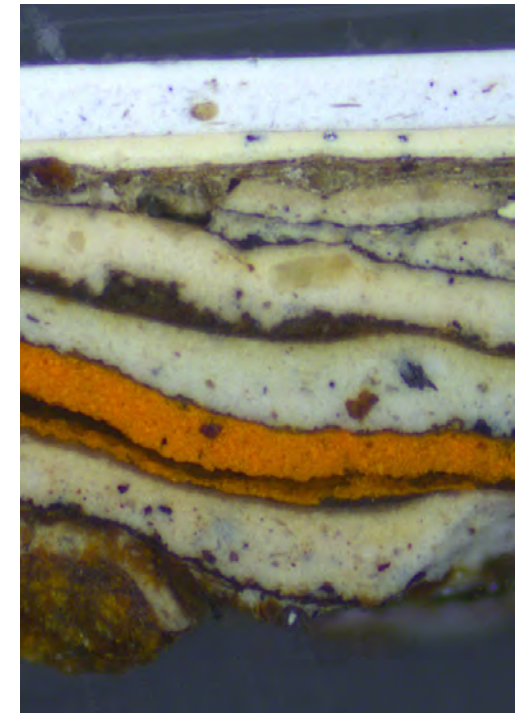
Phase I/II: deep red lead oil paints



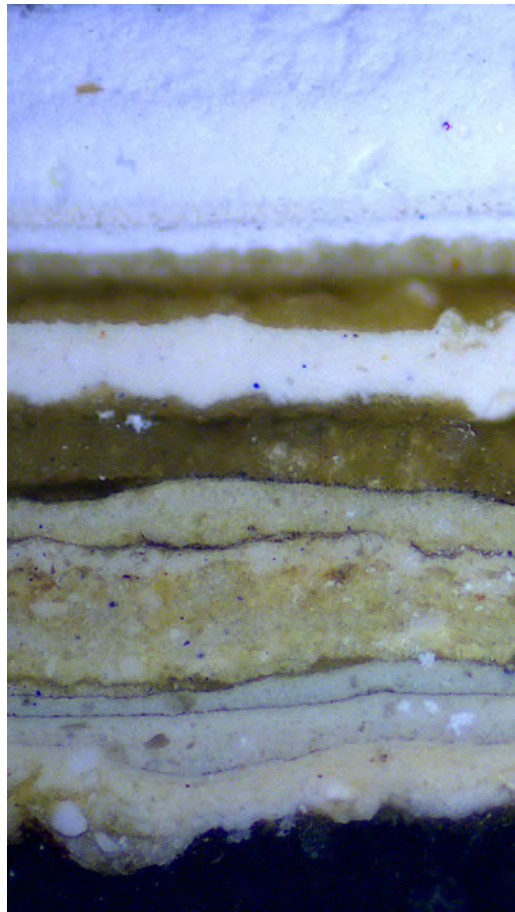
Sample locations

INTERNAL

Predominantly cream lead oil paints throughout the phase I and phase II periods.



5.1.6: The ceilings and supporting beams



Phase III: post war paint schemes in white

Phase II: dark cream/stone colour

Phase I: 19th century schemes, initially lead white with later pale blue

sample location (5)



The earliest paints applied here, in lead white and later pale blue match those on the window frames and may be considered representative of the phase I joinery colours.

The phase II paints are dark cream or stone coloured.

5.1.7: The Entrance Vestibule

View of the entrance at the foot of the main stair



The Entrance Vestibule faces into Bloom Street, and was the main entrance to the building. Upon arrival, visitors went up a short flight of steps, through a glazed door and into the entrance hall at the foot of the stairs.

Tiled walls



The stair walls within the entrance vestibule still have their original 19th century tiles in situ, although now covered in white paint.

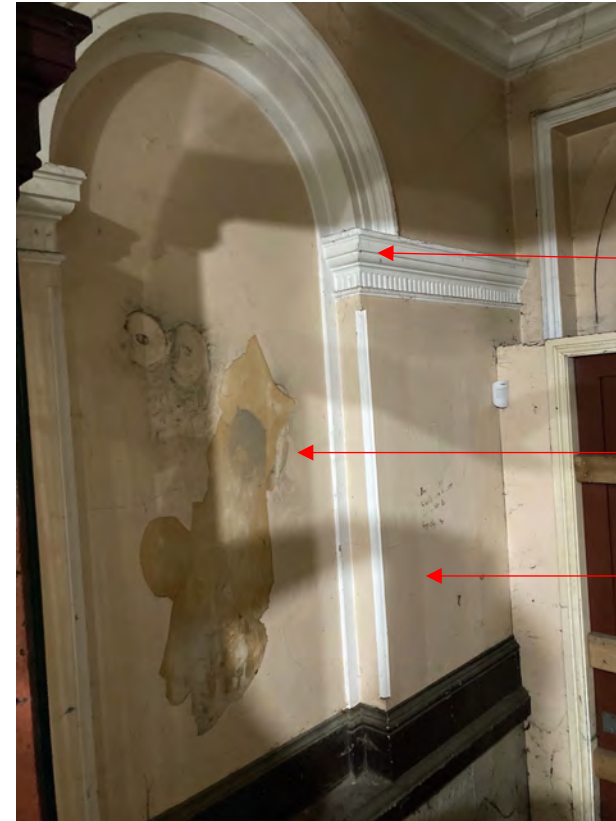
Vestibule ceiling



The heavy plaster ceiling mouldings in the vestibule with central rose, possibly used as a fixing for a hanging gas light (Gasolier). There are two wall niches (one each side) with framing plaster mouldings.

The niches and walls were sampled and examined, but no samples were removed from the ceiling due to safe access restrictions.

Wall niche & mouldings



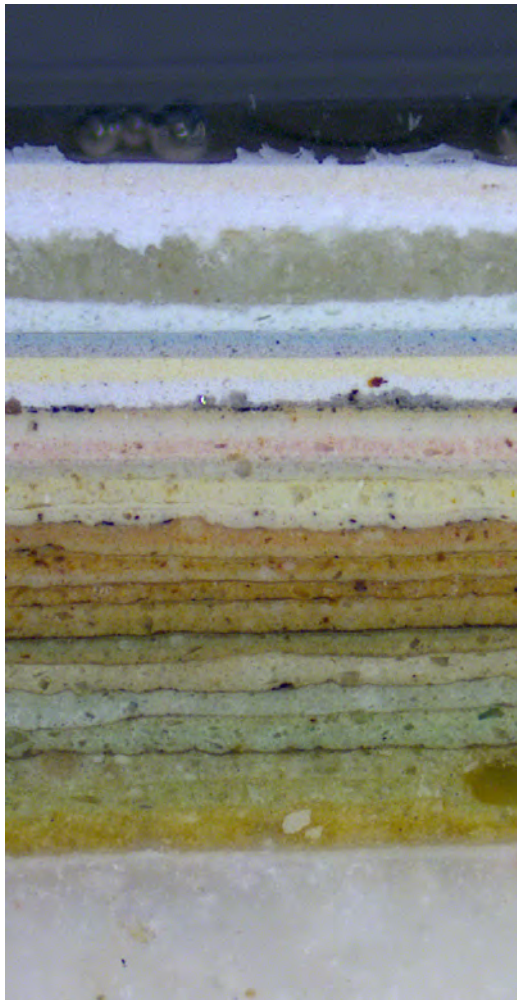
Sample locations
(see cross section images overleaf)

19

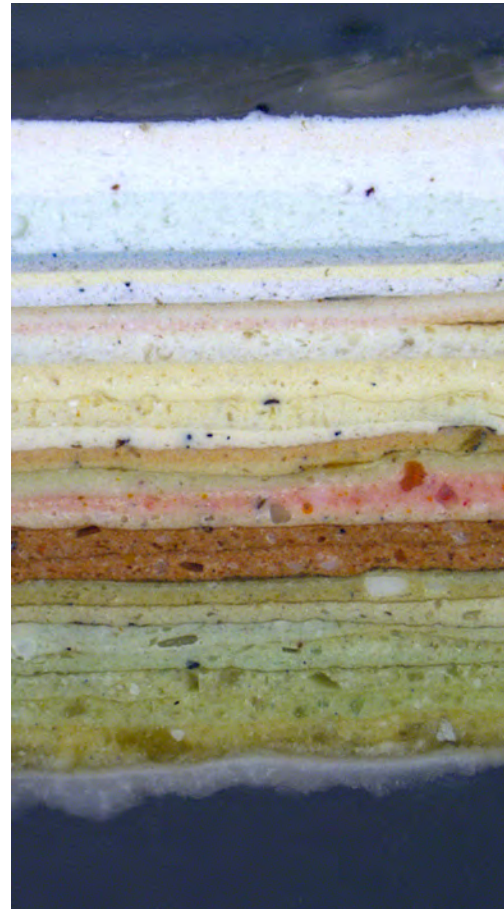
18

17

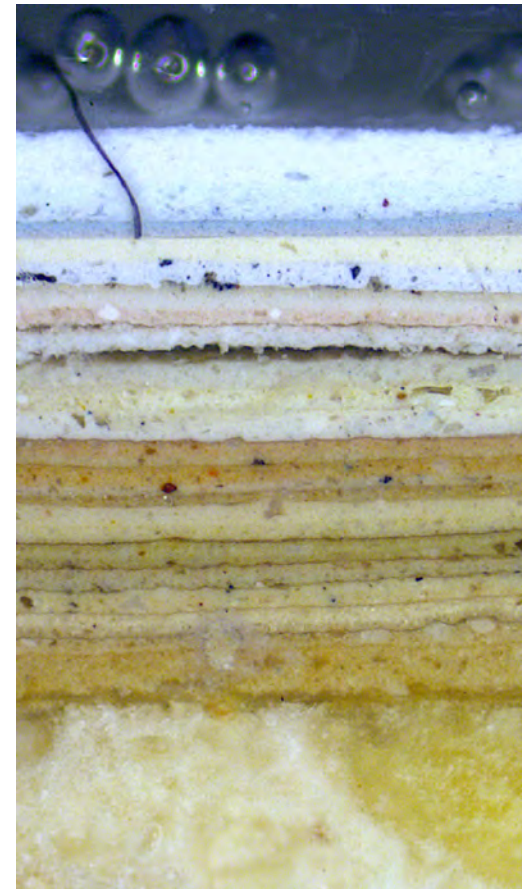
vestibule wall (17)



inside the wall niche (18)



plaster mouldings (19)



Phase III: post war
paint schemes in
creams and white

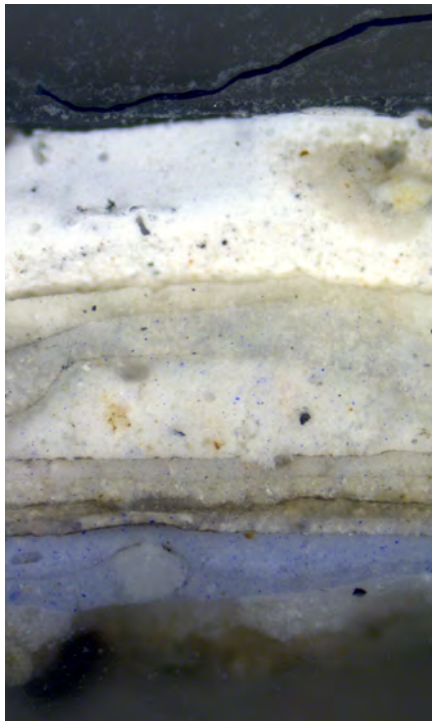
Phase II: stone
colours with
red/brown niches

Phase I: 19th century
schemes, pale green
and later blue walls
with mouldings
picked out in pale
stone colours

5.2: Mindel House

5.2.1: The Walls

Ground floor brick stairwell
wall (50)



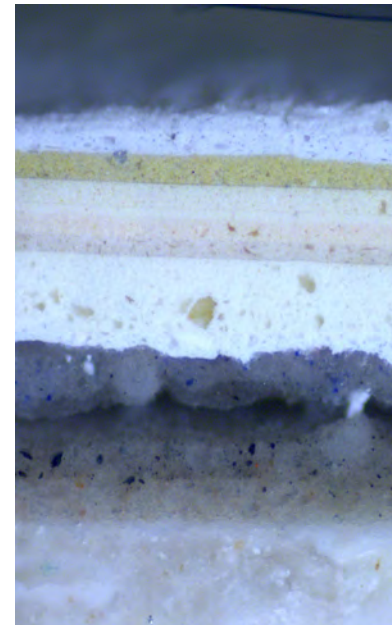
sample location (50)



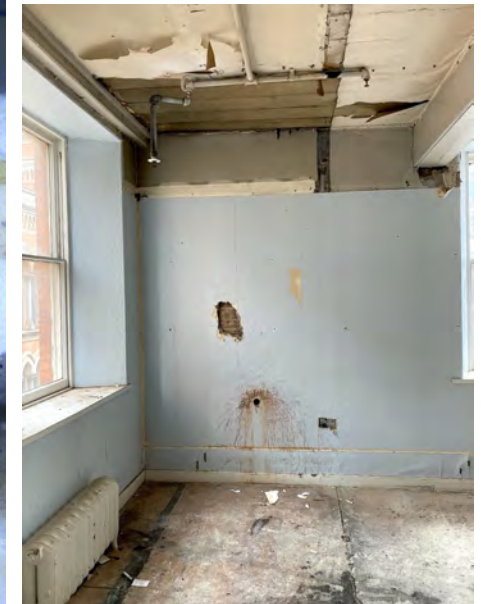
Phase I: several applications of lime wash tinted with blue pigment. Later white lime wash into the phase II period.

Latterly white alkyl masonry paints

2nd Floor wall

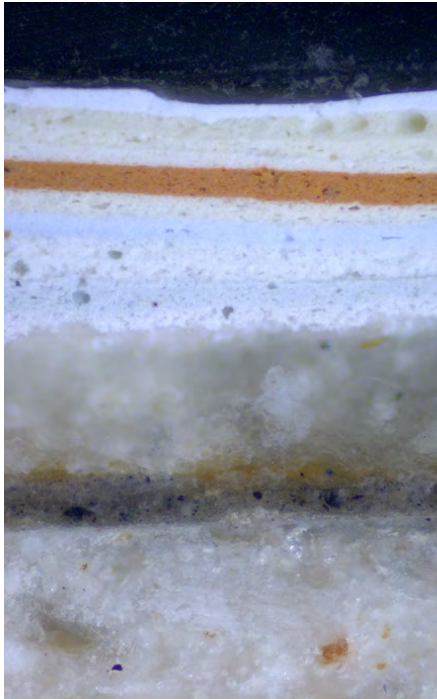


sample location (36)



Phase I: several applications of lime wash tinted with blue pigment. The phase II paints are missing from the record. The later paints are phase III

3rd Floor wall (28)

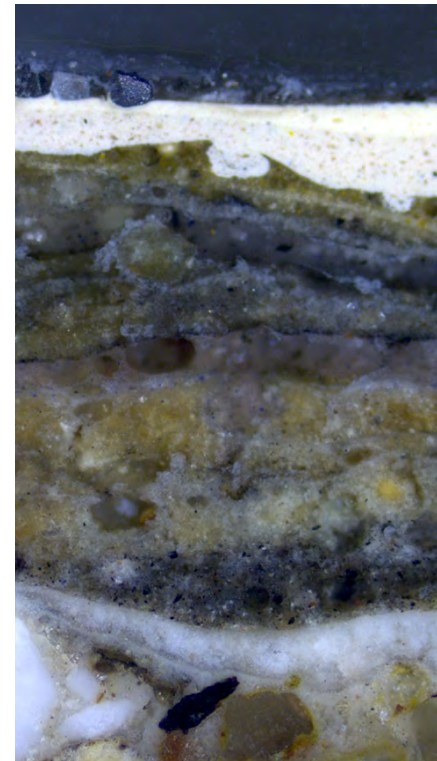


Sample location (28)



Phase I: Lime wash tinted with blue pigment.
Latterly white and rust alkyd masonry paints (phase III)

4th Floor wall (20)



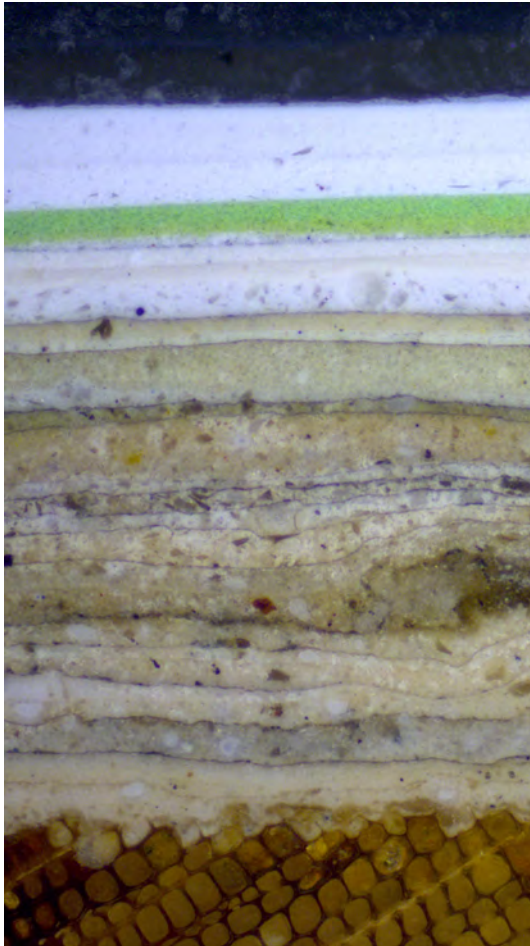
Sample location (20)



Phase I: several applications of lime wash tinted with black & blue pigment.
Latterly white alkyd masonry paints (phase III)

5.2.2: The Windows

4th floor window sash



Phase III: post war paint schemes in white and green.

Phase I & II: approx 13 applications of predominantly cream and stone coloured lead and zinc oil paints.

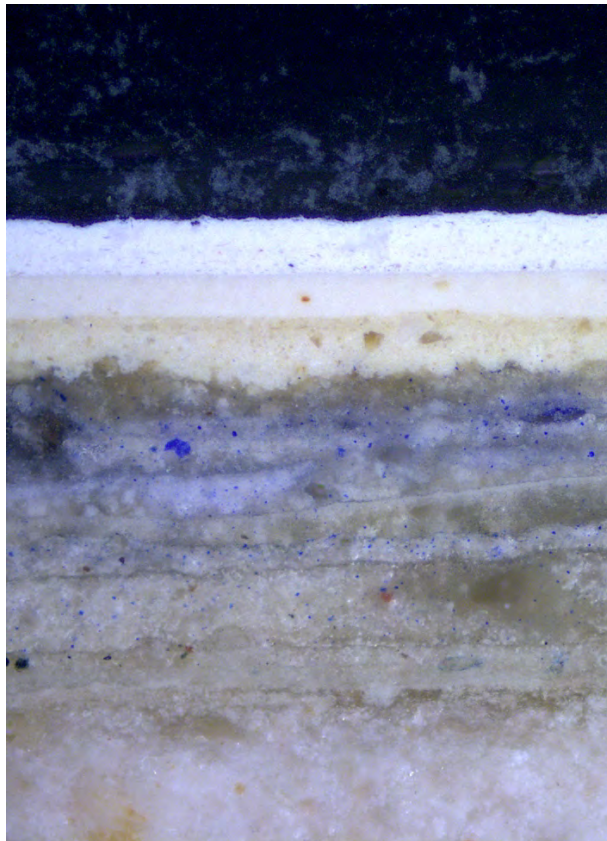
Sample location (22)



Sample removed from two light sash of the window as indicated. This is typical of the windows throughout Mindel House and may be considered representative of all.

5.2.3: The ceilings

4th floor black painted ceiling



Phase III: post war paint schemes in cream, white and black.

Phase I & II: several applications of blue tinted lime wash

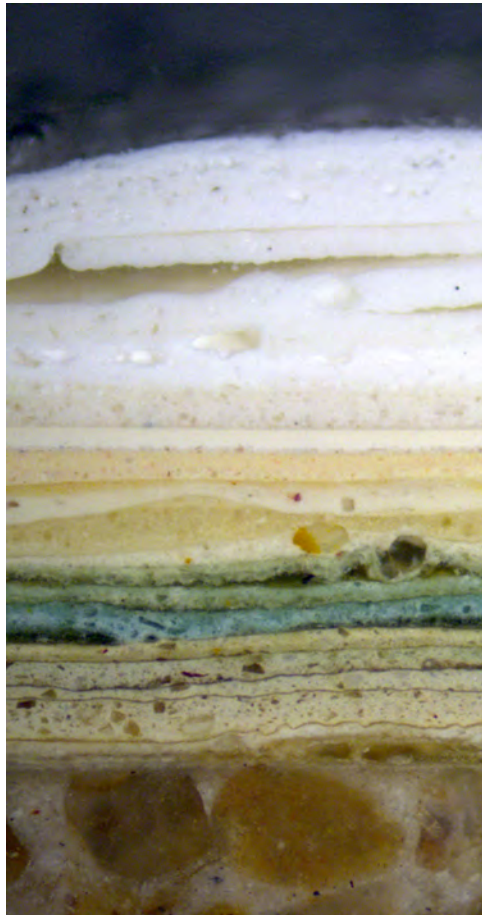
sample location (23)



The lath and plaster ceiling on the 4th floor is 19th century and with evidence for several coatings of the blue tinted lime washes detected on the walls.

5.2.4: The Stairs and Stairwell

1st floor stairwell wall



Phase III: post war paint schemes in white and pale cream

Phase II: cream water paints (upper wall) with brown at dado level (lower wall)

Phase I: cream and stone coloured water paints

Sample location (45)

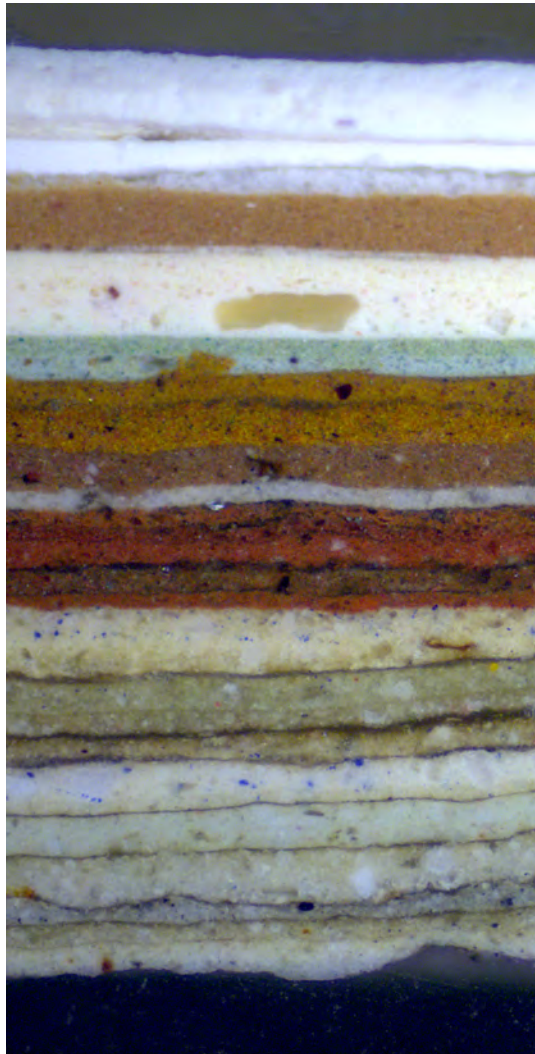


Phase II: creams

Phase II: brown

Throughout the phase I period the stairwell was painted uniformly in stone coloured water paint. Into phase II two colour theme was introduced with brown water paints at dado (lower) level with cream above.

5.2.5: Supporting iron columns



Phase III: post war paint schemes

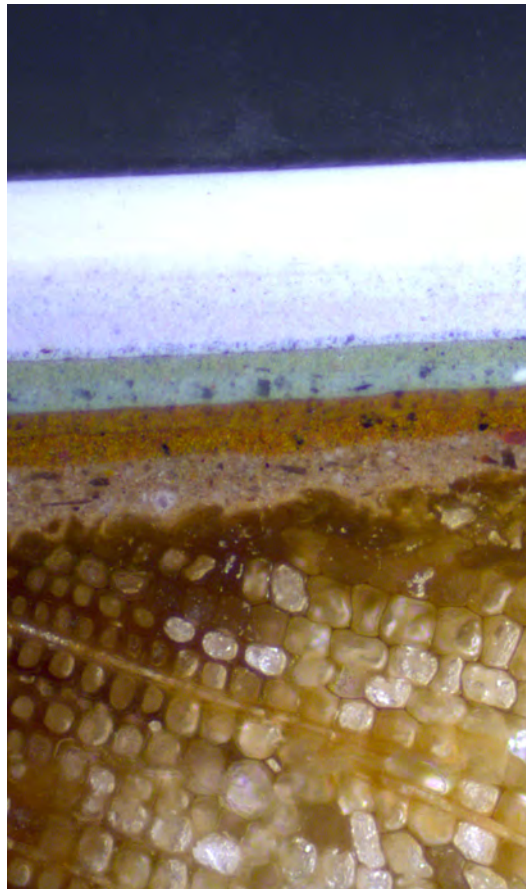
Phase II: red and later brown at lower level with cream above

Phase I: pale blues and greens applied uniformly across the length of the column shaft

Sample location (21)



5.2.6: Representative sample of the joinery



Phase III: pale blue,
latterly white

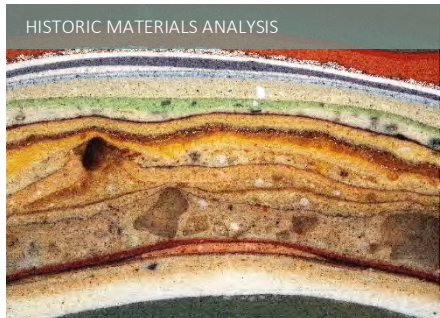
Later Phase II:
initially brown then
green.

Glazed partition on the 1st floor

Dating to the phase II period. Traces
of varnish on the surface of the
softwood substrate, with later
brown and green lead oil paints



HISTORIC MATERIALS ANALYSIS



HISTORIC INTERIORS



ARCHITECTURAL CERAMICS AND TILES



OBJECT CONSERVATION



DIGITAL HERITAGE



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