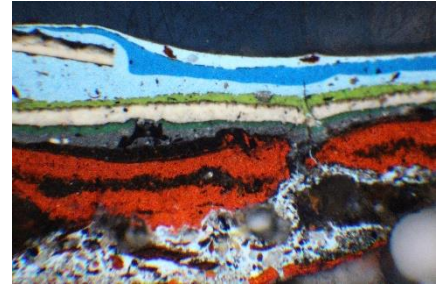
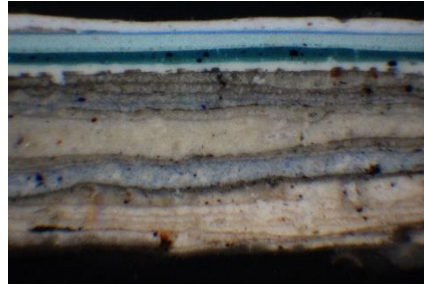
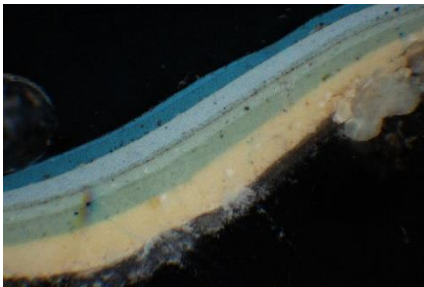


Neptune Mill, Manchester - Paint Analysis



Report on Findings Report No HPMLNM01

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1.0 Introduction

Heritage Project Management were requested to undertake some limited paint analysis to the internal plaster surfaces of Neptune Mill.

The building is not specifically listed with Historic England. However, it has been deemed to be curtilage to the adjacent Grade II* listed Crusader Works.

The sample locations were reviewed with the project team to determine a reasonable understanding of the decorative paint schemes to each of the floor levels and the external ironwork.

The analysis will be used to inform Manchester City Council's Planning Authority as part of the Condition Discharge for the proposed works.

The samples were taken on site on the 23rd of November 2023.

The sample works were intrusive although this was very minor and only very small samples of the existing paint finishes were removed for analysis.

The works were deemed not to fall under the definition of *demolition*, *alteration* or *extension*, in terms of Section 7 of the Planning (Listed Buildings and Conservation Areas) Act 1990, as they will not affect the character, architectural or historic interest of the listed building.

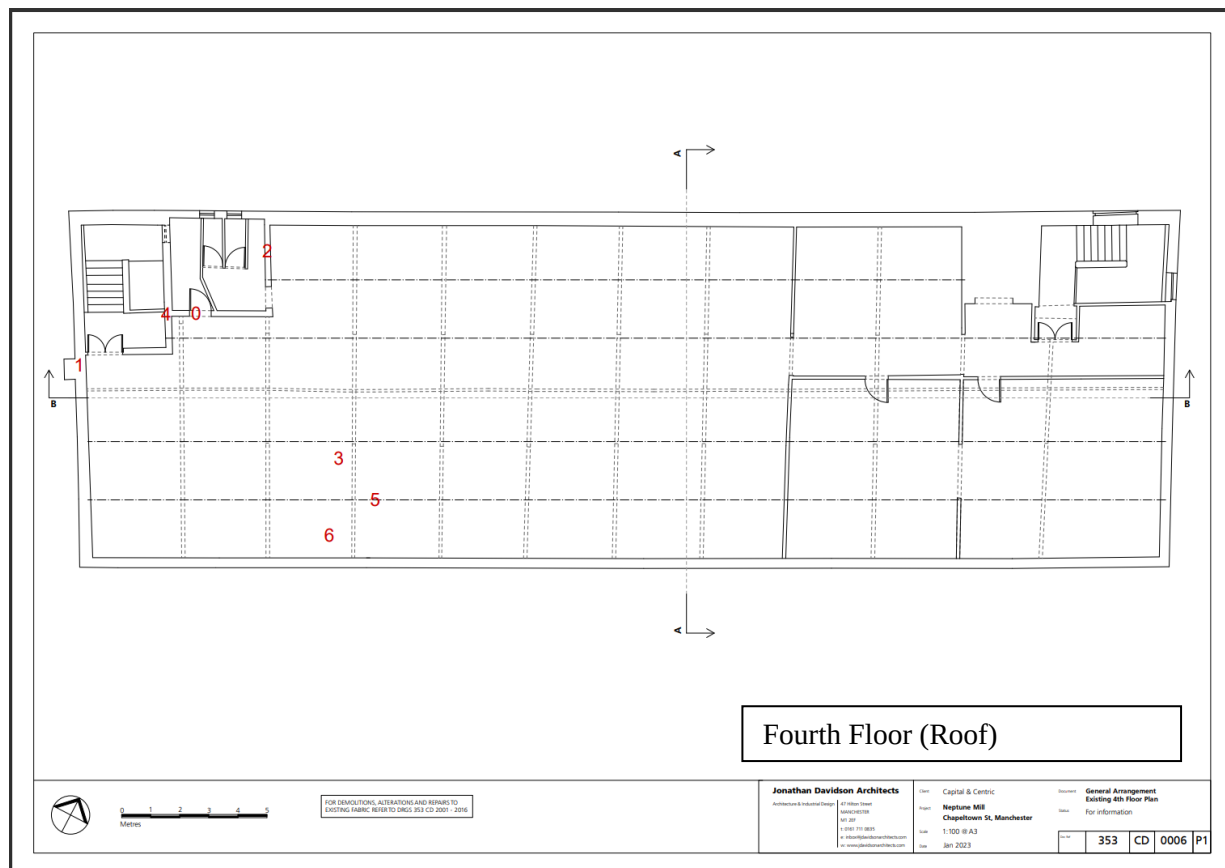
2.0 Sample Locations

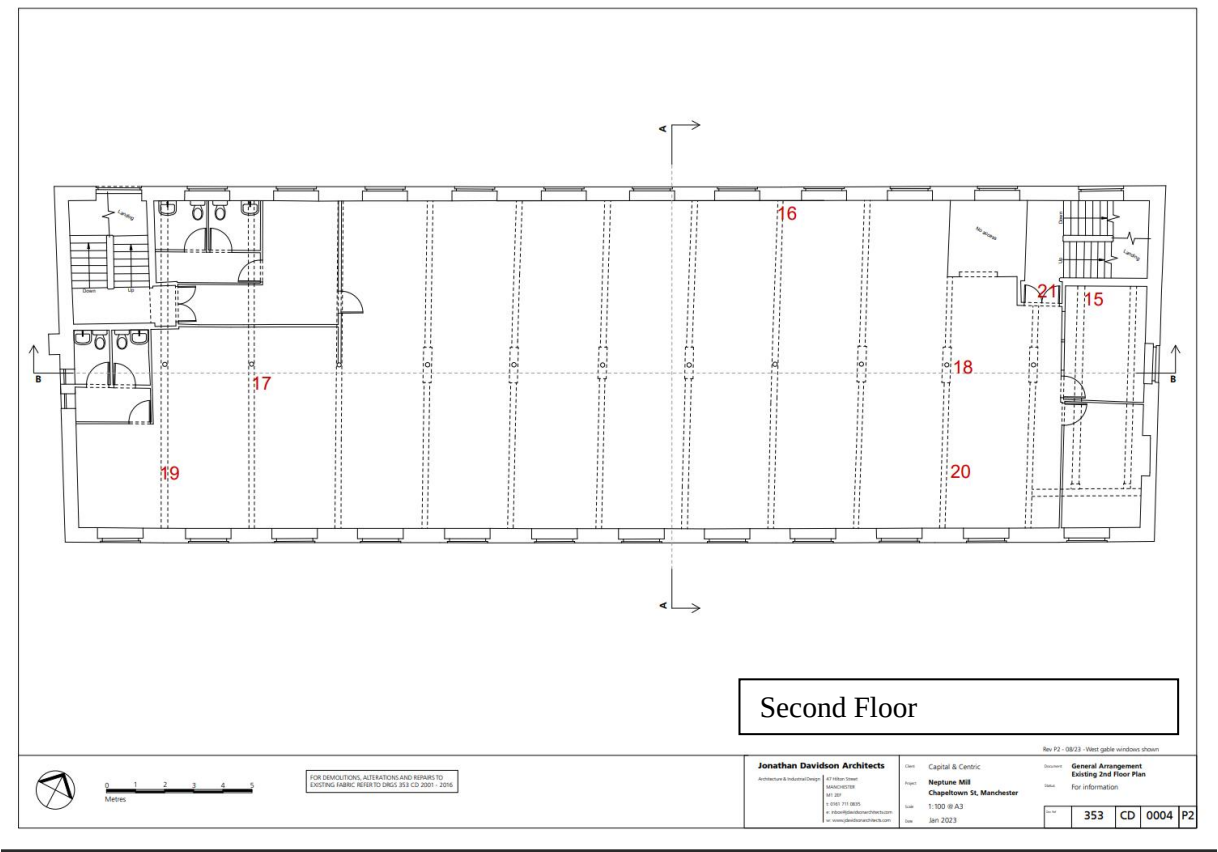
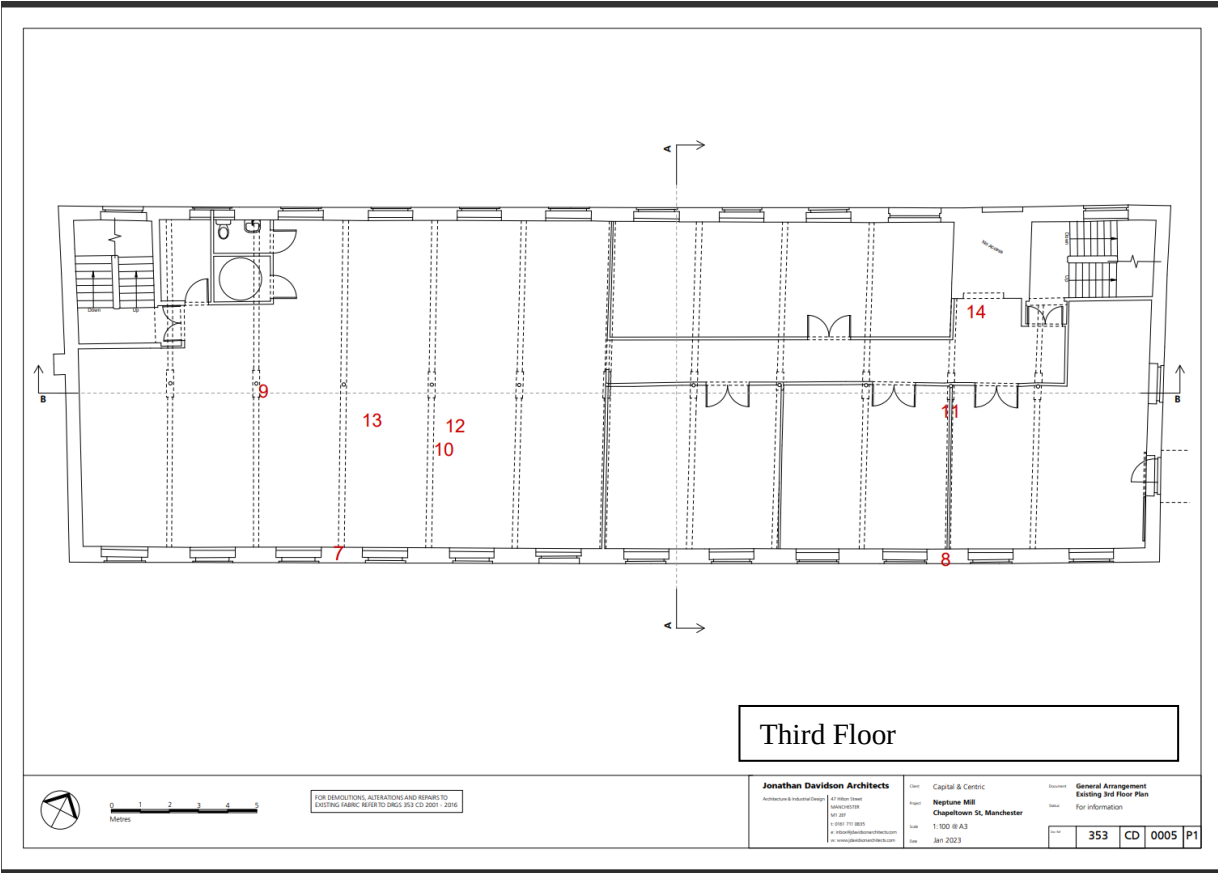
A total of 36 paint samples were taken from the plaster detailing. The following schedule notes the locations of the samples:

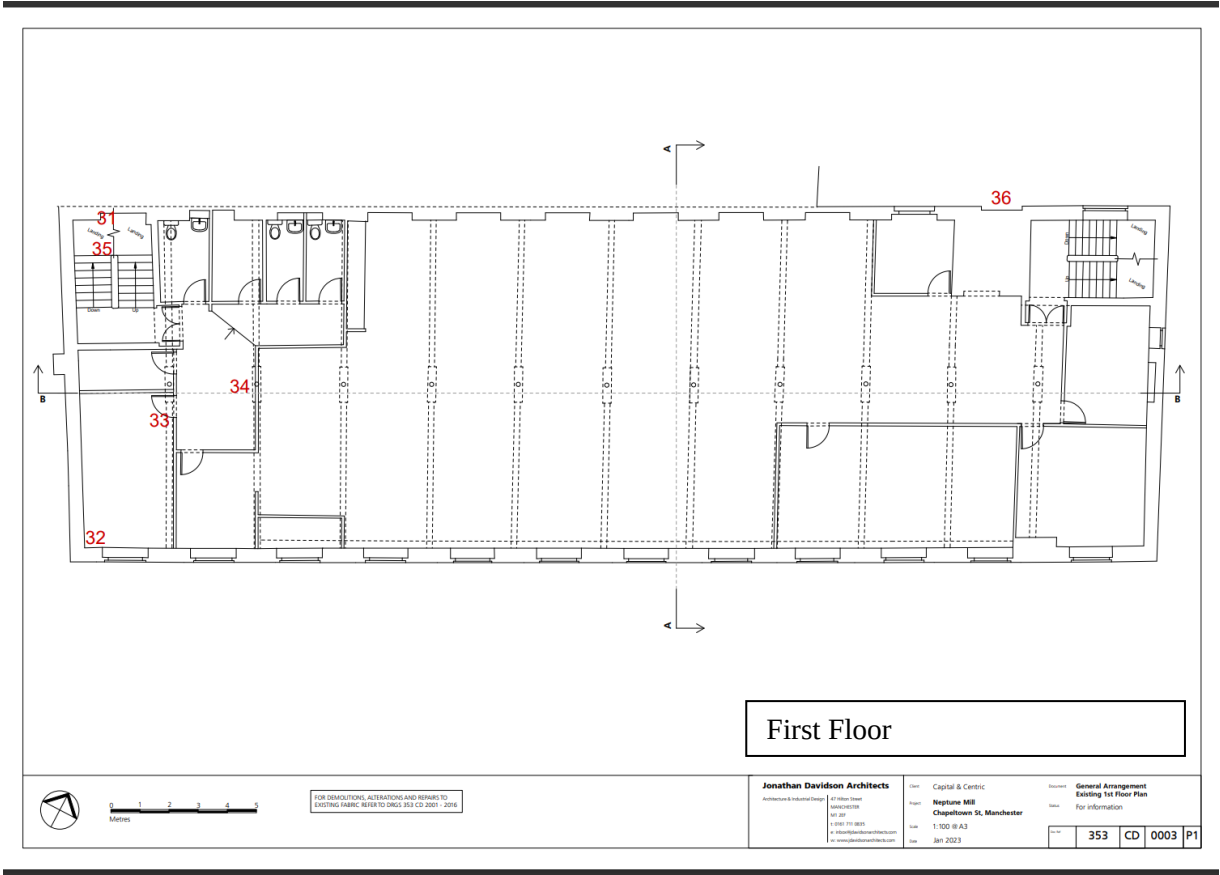
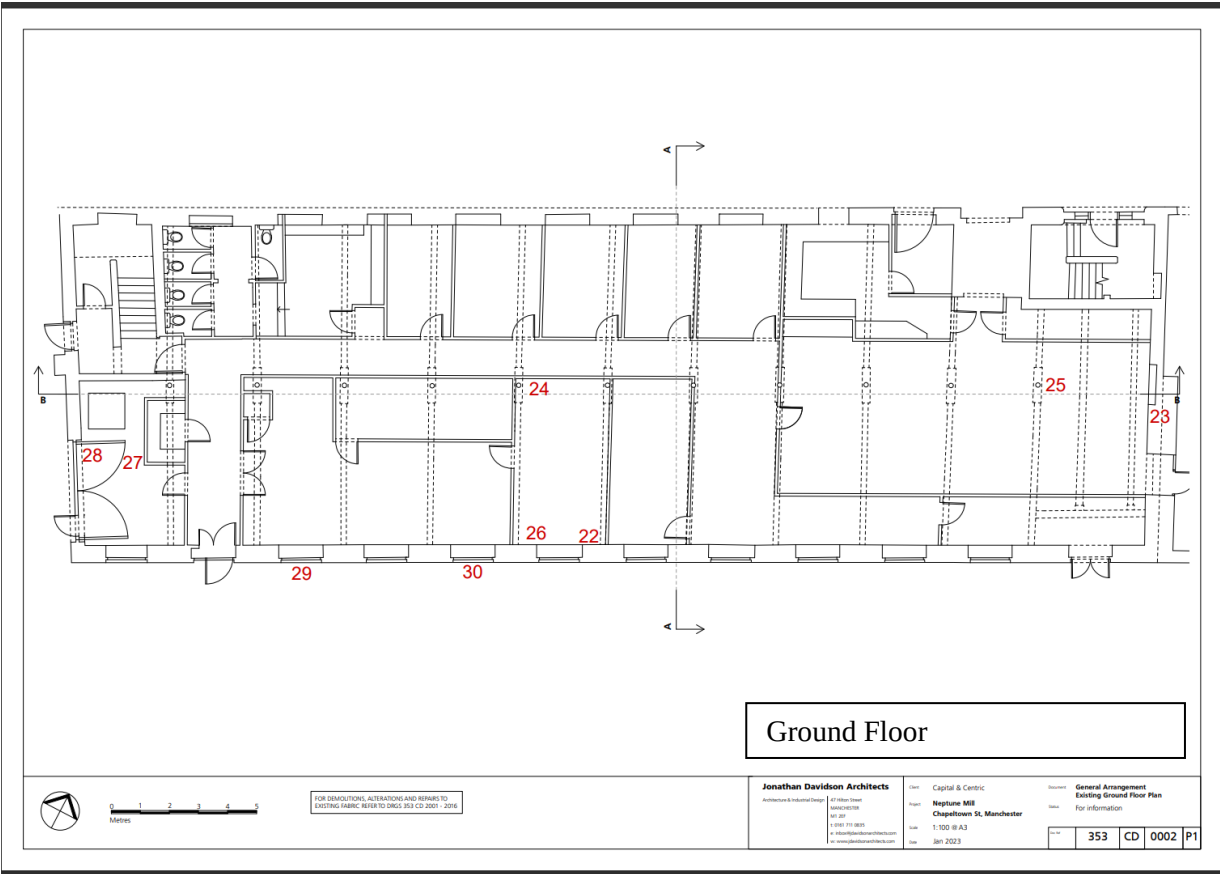
Sample Ref:	Location:	Comment
01	4 th Floor brick wall.	
02	4 th Floor brick wall.	
03	4 th Floor iron tie bar.	
04	4 th Floor timber door architrave.	
05	4 th Floor roof beam.	
06	4 th Floor ceiling boarding.	
07	3 rd Floor brick wall (above dado).	
08	3 rd Floor brick wall (below dado).	
09	3 rd Floor cast iron column.	
10	3 rd Floor timber beam.	
11	3 rd Floor cast iron column.	
12	3 rd Floor ceiling.	
13	3 rd Floor underside of floor boarding.	
14	3 rd Floor lift door.	
15	2 nd Floor brick wall (above dado)	
16	2 nd Floor brick wall (below dado).	
17	2 nd Floor red cast iron column.	

18	2 nd Floor green cast iron column.	
19	2 nd Floor ceiling boarding.	
20	2 nd Floor timber beam.	
21	2 nd Floor timber door.	
22	Ground floor wall (above dado).	
23	Ground floor external wall.	
24	Ground floor blue cast iron column.	
25	Ground floor blue cast iron column.	
26	Ground floor timber beam.	
27	Ground floor timber ceiling boarding.	
28	Ground floor timber door.	
29	Ground floor external window.	
30	Ground floor rainwater pipe.	
31	1 st Floor stairway brick wall.	
32	1 st Floor brick wall.	
33	1 st Floor timber beam.	
34	1 st Floor cast iron column.	
35	1 st Floor joinery (handrail bracket).	
36	1 st Floor outside door frame.	

The location of the samples is noted on the following drawings:







3.0 Analysis Methodology

Samples were collected from the walls, ceilings and architectural elements.

Each sample was removed by the most appropriate methods to retain as far as practicable all paint layers within the sample. Each sample location was photographed, sample identified and bagged for analysis.

4.0 Sample Preparation

Each sample was visually inspected in the workshop to identify any salient features and pieces selected for sectional analysis.

The samples were set in a clear coat polyester resin and then cut and polished to enable them to be inspected under microscope. The resin holds the paint layers together and allows a polished flat plane for viewing at high magnification.

Samples were also viewed under UV magnification to identify high fluorescent materials such as historic resins and zinc oxide based paints.

In addition, a proportion of the samples were physically tested for lead content. Samples were tested with a solution of Sodium Sulphide which in the presence of lead turns dark brown in colour.

The interpretation was carried out by Richard Baister of Heritage Project Management.

5.0 Historical Context

Given the age of the building (1860 - 1870) there would have been a limited choice of materials that could be used for the decorative coatings and the majority of original paints would have been individually mixed by the painters based on traditional recipes and techniques.

Coating systems typically available for the early decorative coatings were:

Lime Washes – these are made from pure white lime mixed with water. They were used for common walls and ceilings especially where for sanitary reasons a frequent fresh application was required. Lime washes were readily removed when rubbed, will not stand rain and do not adhere well to smooth or non-porous surfaces.

Distempers – were made of whiting (lime whiting - limewash with added tallow) mixed with size which was allowed to become jellylike before

application. Although more durable this coating was easily removed and used for interior decoration. Prior to redecoration the distempers would typically be fully removed before new coats were applied. The addition of oil with an emulsifier such as borax (sodium borate) created a more durable and often washable distemper depending on its formulation, which can be considered a predecessor of modern resin based emulsions. It became popular as an interior paint in the early 19th century when a number of manufacturers began to produce it commercially, and it remained in common use until after the Second World War when it was finally superseded by vinyl and acrylic emulsion paints.

White Lead Based Paints – Lead carbonate (white lead) was extensively used as the basis for white and light coloured paint coatings. Being either mixed with Whiting or Linseed oil it was a more durable coating than distempers and was able to provide good coverage and opacity.

Red Lead Based Paints – Lead tetroxide (red lead) paints were also extensively used for darker colours where they offered good opacity and the ability to carry darker pigments well. Typically mixed with oils including linseed, they were used on metalwork and joinery. Also often used as a primer coat on metalwork.

Iron Oxides – Red iron oxide was also seen in the period as a good protective coating for ironwork over lead-based paints as they did not set up any perceived galvanic action as was believed to occur between lead paints and iron surfaces. Often cheaper than lead tetroxide due to it being extracted and processed in the UK it was very popular for metalwork and joinery.

Zinc oxides – these were being introduced in the 1870's as a replacement for the more injurious white lead bases as they provided a good level of whiteness and were comparable in cost. They were however, considered not to combine so well with oils and were not favoured by many decorators.

Lithopones (Barium Sulphide) – these were introduced at the turn of the twentieth century as alternative to white lead due to its good covering properties however it was only used internally as it is not durable externally as it darkens and rapidly chalks away.

Varnishes – these were a solution of resin in either oil, turpentine or alcohol. The oil dries, the alcohol evaporates leaving a solid transparent film of resin over the surface varnished.

Lead based paints were known to be injurious to health. However, their use was extensive until alternative materials such as zinc oxides could offer the same workability and coverage to that of the traditional lead paints. Even after this time the lead paints were preferred by traditional decorators.

The investigations took a total of 36 samples of paint from the building. These have been analysed to identify the nature and colours of the original and subsequent paint layers that have been applied.

6.0 Summary of Findings

General:

The building is considered to have been constructed during the 1860 to 1870's possibly part of the Crusader Mill complex of buildings. It is believed to have been used for a variety of uses over its life from machinery manufacture, cotton spinning, manufacturing and storage.

Unusually, there were no plastered walls evident within the building and the building layout retained much of its original configuration. Paint samples were taken from all floor areas covering the different materials that were evident on each floor.

All wall areas had a painted brick finish with no other finishes evident. The paint layers had built-up over the life of the building and in areas upto 30 separate paint layers were visible in the analysis. Much of the early paint layers however were lime washes with relatively poor adherence and the thickness of the paint was patchy depending on the extent of earlier detachment.

Timber ceilings had similarly been painted with lime washes and distempers although a number of the ceilings had been over-boarded with either timber or hardboard at some time.

Level 4 – Summary

Two wall samples were taken from this floor area each of these showed modern paints over very fragile earlier lime wash paint layers. The sample taken from the gable wall indicated a greater number of paint layers than the sample taken from the former toilet area brickwork – possibly indicating that the construction of the toilet area was a later addition to the building. The earliest paint coatings were white lime washes.

The iron ties were originally decorated in a red iron oxide oil paint – this scheme was replicated on a further four occasions during the early life of the building.

The ceiling boarding to this floor also appears to be a later construction as only 8 separate paint layers were identified on the boarding as opposed to the beams that had 20 separate paint layers. The timberwork appears to have been decorated in white lime washes for the majority of its life although 3 separate blue lime washes were identified on the timber beams.

The joinery to the doors had 11 separate paint layers identified with the earliest decorations being in the red iron oxide oil paints similar to that applied

to the iron ties. The red decorations had been abraded back for the application of a single green colour and later modern colours.

Level 3 Summary

The wall areas were originally decorated in white lime wash with 7 separate early paint layers being identified in sample 08 before the introduction of a blue limewashes. Blue limewashes were often used where sanitary or clean conditions needed to be maintained, they were more expensive than standard white limewash and colours varied depending on the amount of pigment used.

Up to 20 separate paint layers to the walls were identified on the floor area although the sample taken from location 07 had only 14 paint layers as the earlier and more friable lime washes were not present. These may have been removed (or detached) during one of the subsequent decorations.

The cast iron columns were originally decorated in red iron oxide oil paints over a thick carbon black foundry paint. Ironwork was typically delivered to site with a protective black oil paint from the foundry which was retained before the decorative coatings were applied. The columns show that there were 4 separate applications of the red iron oxides before more modern colours were introduced.

The timber ceilings were similarly decorated to the external walls with up to 22 separate paint layers being identified. The early decorations were white lime washes however lightly tinted and blue colours were present. Over time the limewashes would have been modified to become more durable and the whites brighter. The introduction of small amounts of Prussian Blue pigment into the lime wash brought forward a brighter white although as can be seen in the samples much brighter zinc oxide pigments were also used.

The lift door has a single decorative scheme with a grey undercoat and blue finish coating. These are modern alkyd paints.

Second Floor – Summary

Less original paint layers were discovered to the second floor wall areas with the two samples having only 11 and 14 paint layers present. The early lime washes evident on the upper floors were not present and were perhaps removed as part of a building decorations. The earliest paint layers show both white and light blue lime washes before more modern paints were applied.

The cast iron columns show a similar red iron oxide oil paint was used for the early decorations with upto 8 separate schemes identified.

Ceiling boarding on this floor level appears to be a later addition as only 5 separate paint layers were identified. The early paint layers were lime washes in white and light blue similar to the timber beams.

The timber joinery to the doors shows only 3 paint layers are present and it is likely that these doors are a later fitment to the building.

First Floor – Summary

The stairway has only 9 paint layers applied with many of the early lime washes evident on the floors not present. On the floor area sample 32 identified 30 separate paint layers indicating that this area had been regularly redecorated (perhaps office use). The early decorative schemes (12no) were in a white limewash although blue colours were also introduced for a period before returning to the earlier white schemes.

The timber beams on this floor level showed similar decorative schemes to the wall areas although the overall number of applied coatings was less with 20 separate layers being identified.

The cast iron columns were originally decorated on 6 separate occasions with the red iron oxide oil paint before more modern white, blue and grey schemes were introduced.

Ground Floor Summary

The earliest decorative paint layers internally were white lime washes and 15 separate paint layers were identified with majority being similar white or light blue in colour.

One sample was taken externally in the covered adjacent building – this sample indicated 25 separate paint layers again using white and light blue lime wash colours.

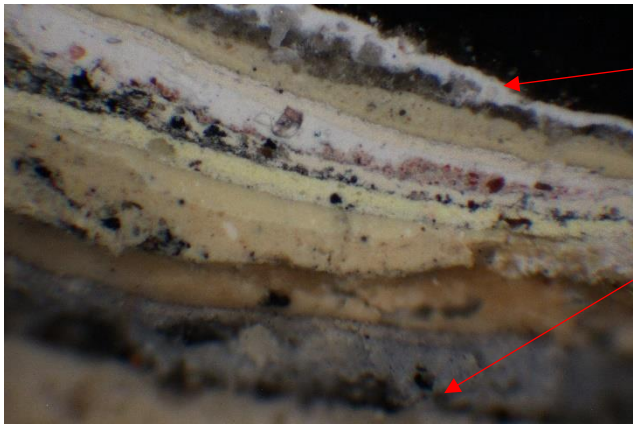
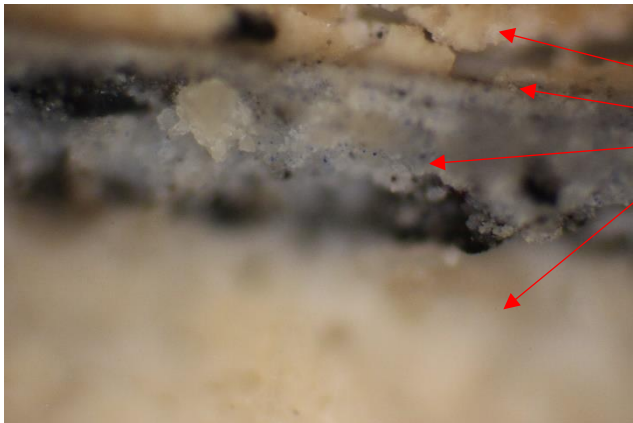
The cast iron columns were decorated on a number of occasions (upto 8) with the red iron oxide oil paint before more modern whites and blues were introduced.

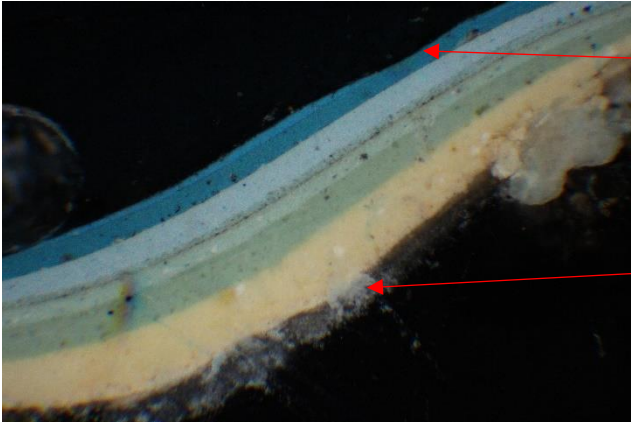
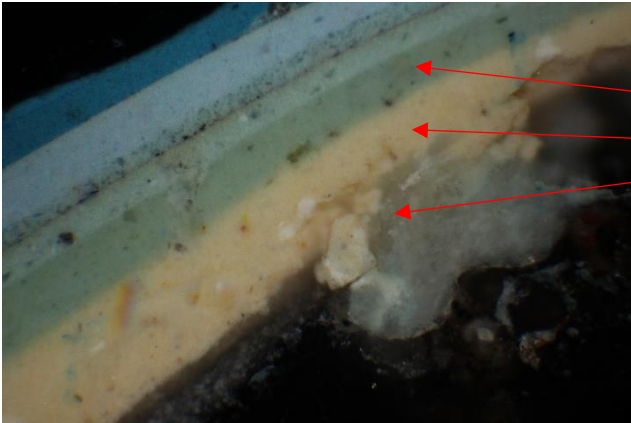
The ceiling boarding and joinery in this area appears to be modern with very limited paint coatings applied. The modern doors appear to be in their original decorative colours.

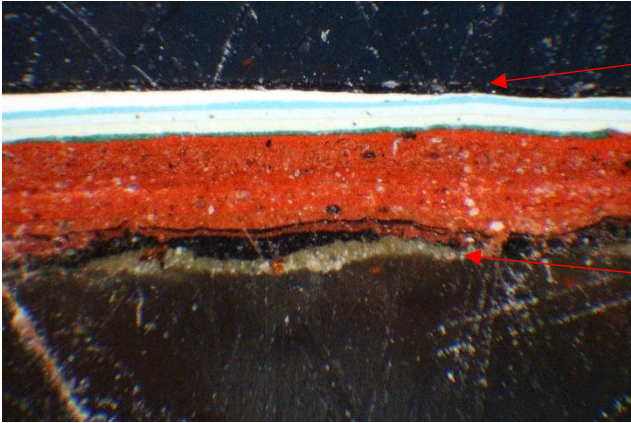
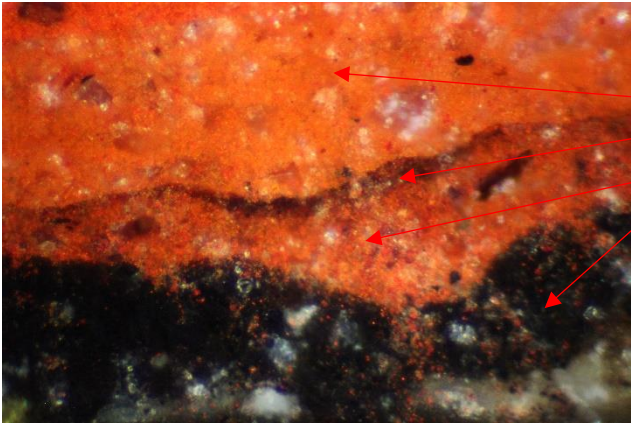
The external windows were originally decorated in the red iron oxide oil paint similarly to the cast iron columns before green and blue schemes were introduced.

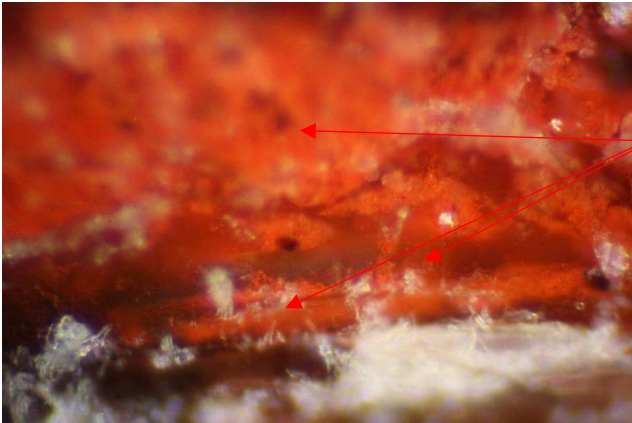
The rainwater pipe only has a single application of black alkyd paint.

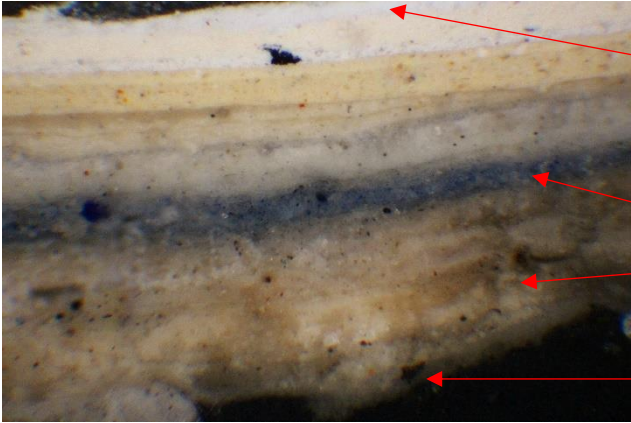
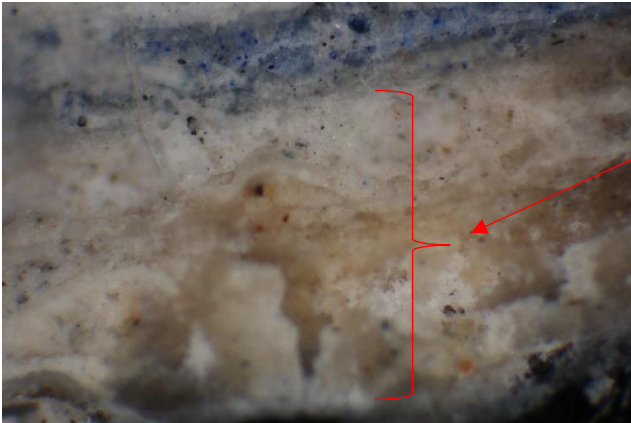
Appendix A – Sample Analysis Sheets

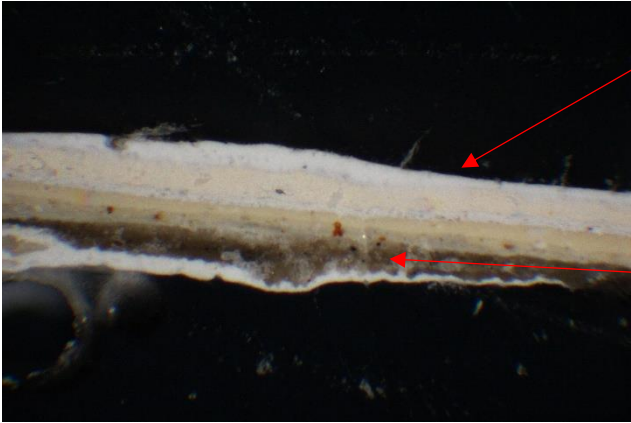
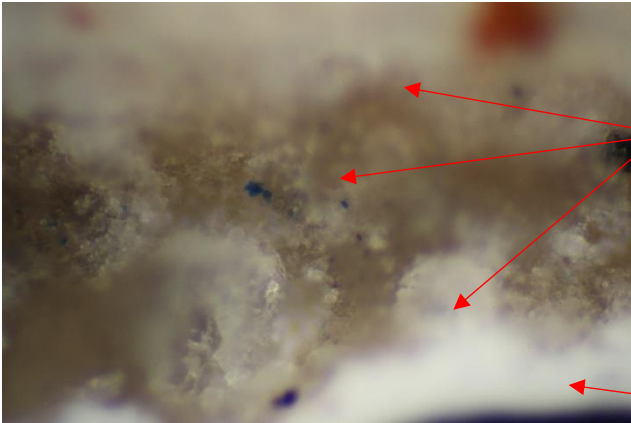
Sample Ref: P01 – (Level 4 Wall)		Location: Neptune Mill	
Paint sample removed from: Location: P01- Paint on brick wall to level 4.			
Sectional Photographs		Description	
		100x Magnification. Current visible paint layer 20 No. Total paint layers. Earliest paint layer.	
		Earliest paint layers 400x Magnification. Off White (Lime wash) Off White (Lime wash) X2 Blue (Lime wash) X3 White (Lime wash)	
Lead Test			
Yes.		No lead-based paints present.	

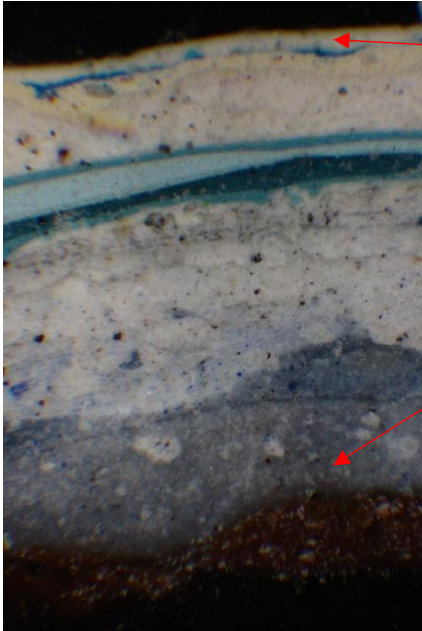
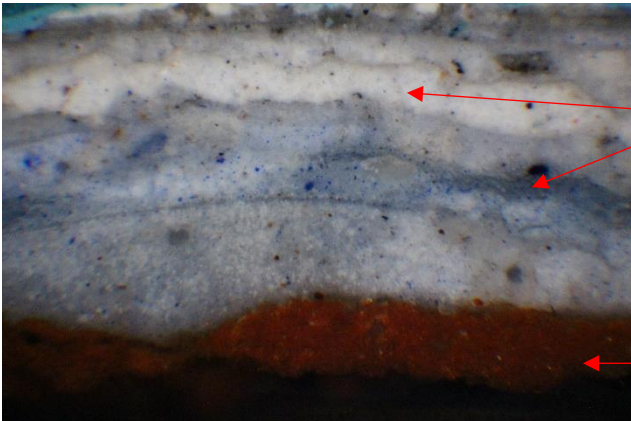
Sample Ref: P02 – (Level 4 Wall)	Location: Neptune Mill
Paint sample removed from: Location: P02- Paint on brick wall to level 4. (RN. Exterior of former toilet block)	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer 8 No. Total paint layers. Earliest paint layer. Earliest paint layers 400x Magnification. Green Off white White (Lime wash) Note: Wall may be a later construction as only 1 limewash paint layer was discovered.
Lead Test	
Yes.	No lead-based paints present.

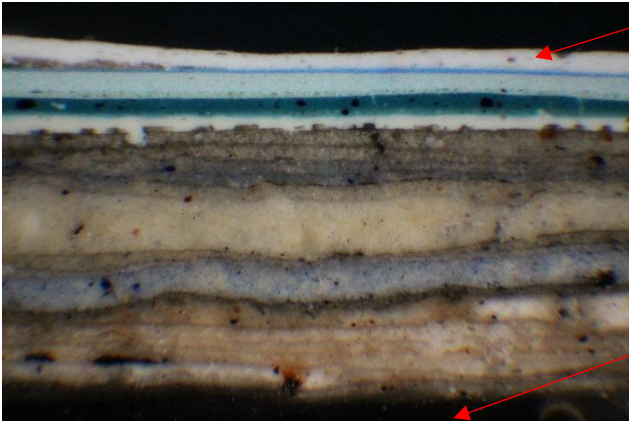
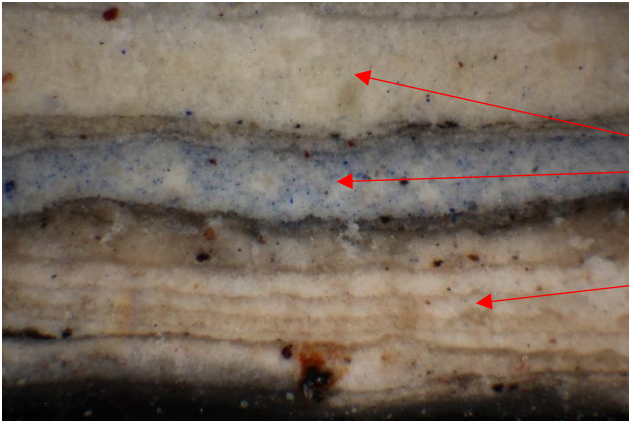
Sample Ref: P03 – (Level 4 Tie Rod)	Location: Neptune Mill
Paint sample removed from: Location: P03- Paint on tie rod from roof.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer 15 No. Total paint layers. Earliest paint layer. Earliest paint layers 400x Magnification. 5x Iron Oxide Red oil paints. Trace of varnish oils to earliest paint coating Red Iron Oxide oil paint (earliest paint scheme). Carbon black oil paint – foundry paint.
Lead Test	
Yes.	No lead-based paints present.

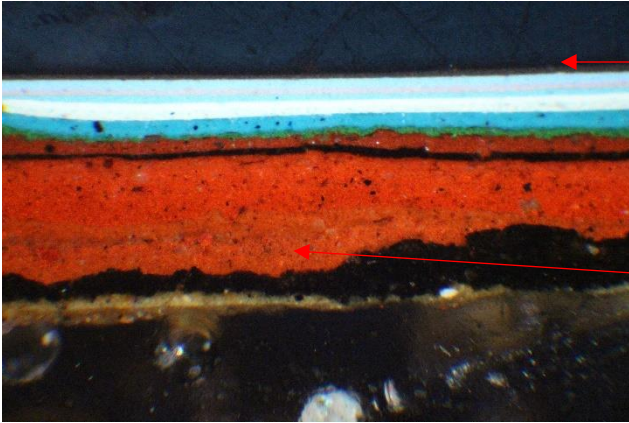
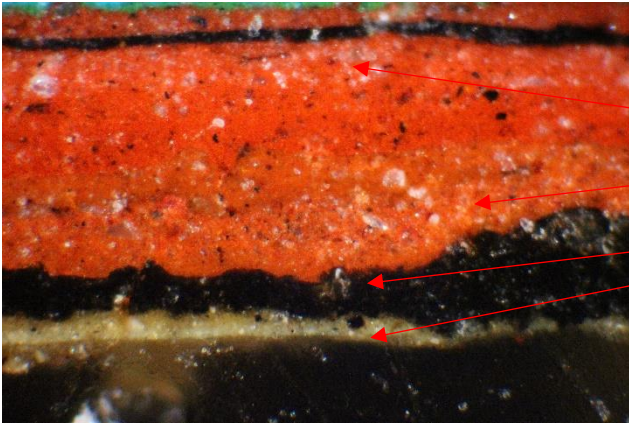
Sample Ref: P04 – (Door Architrave)	Location: Neptune Mill
Paint sample removed from: Location: P04- Timber Architrave to door to stairs.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer 11 No. Total paint layers. Dirt on early paint layers. Earliest paint layer. Earliest paint layers 400x Magnification. 3x Red Iron Oxide oil paints (original decorative scheme) Note: Iron oxide paints have been abraded to key for other paint layers and some layers may be missing.
Lead Test	
Yes.	No lead based paints present.

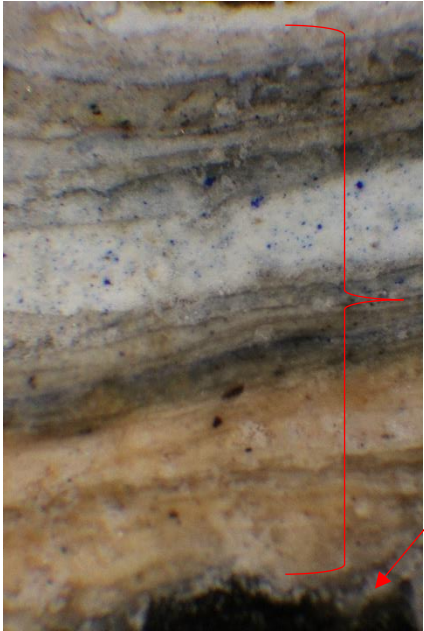
Sample Ref: P05 – (Roof Beam)	Location: Neptune Mill
Paint sample removed from: Location: P05- Painted Timber Beam to roof. 20 No Paint layers visible in the sample.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (modern Titanium White) 3 Blue Limewash layers 6 White Limewash layers Earliest paint layer. Earliest paint layers 400x Magnification. 6x Off white (Lime wash)
Lead Test	
Yes.	No lead based paints present.

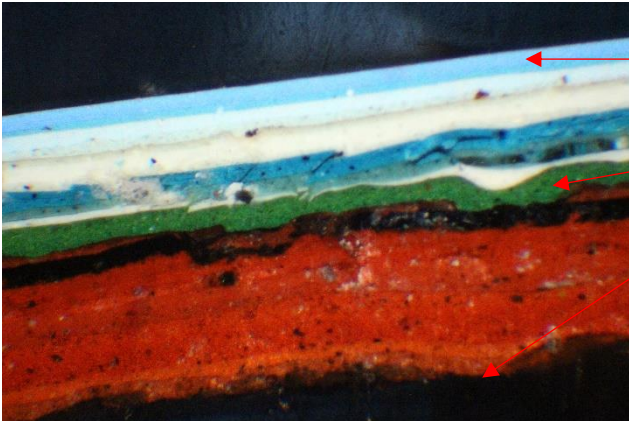
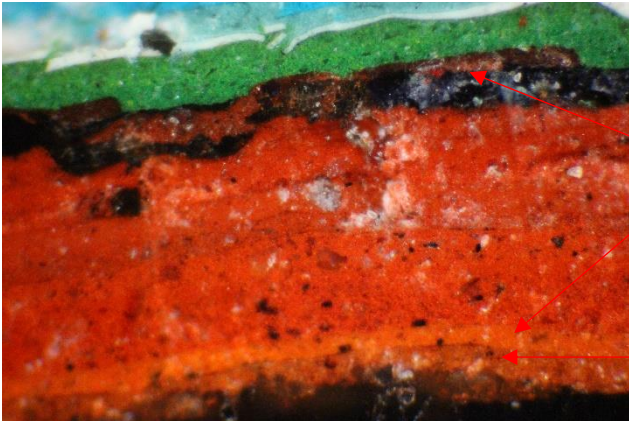
Sample Ref: P06 – (Roof Ceiling Boarding)	Location: Neptune Mill
Paint sample removed from: Location: P06- Painted timber boards to ceiling. 8No total paint layers.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (modern Titanium white). Earliest paint layers. Earliest paint layers 400x Magnification. 3x White Lime Wash paint coatings. Note: The limewash has been slightly tinted with a small amount of Prussian Blue to make a bright white colour. Titanium white under creep from later paint layer.
Lead Test	
Yes.	No lead-based paints present.

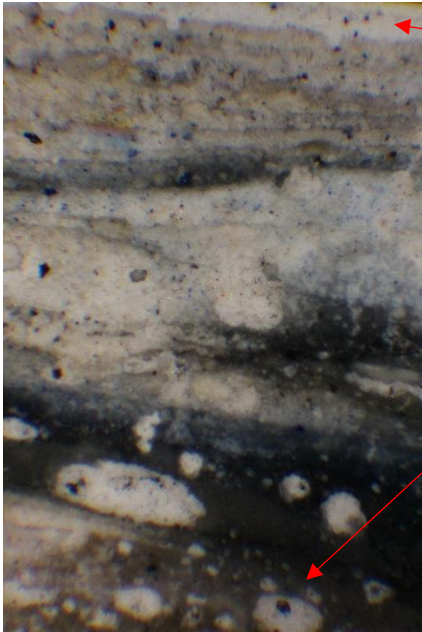
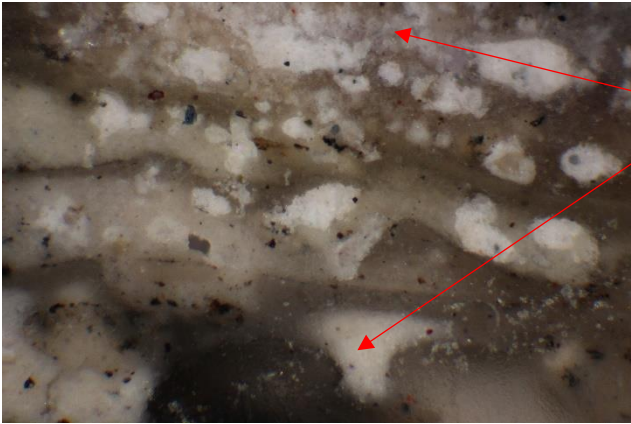
Sample Ref: P07 – (Third Floor Wall)	Location: Neptune Mill
Paint sample removed from: Location: P07- Paint wall to third floor brickwork wall (above dado height). 14 No total paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (modern Titanium white). Earliest paint layer. Earliest paint layers 400x Magnification. 3x White Lime Wash layers. 3x Blue Lime Wash layers. Brick fragment
Lead Test	
Yes.	No lead-based paints present.

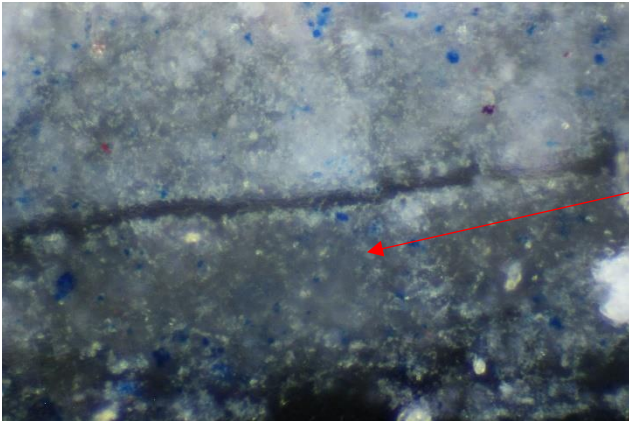
Sample Ref: P08 – (Third Floor Wall)	Location: Neptune Mill
Paint sample removed from: Location: P08- Painted brick wall to third floor (below dado height). 22 No paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white). (17 layers of white and blue limewash coatings). Earliest paint layer. Earliest paint layers 400x Magnification. 2x White Lime Wash layers. Single Blue Lime Wash layer. 7x White Lime Wash paint layers.
Lead Test	
Yes.	No lead-based paints present.

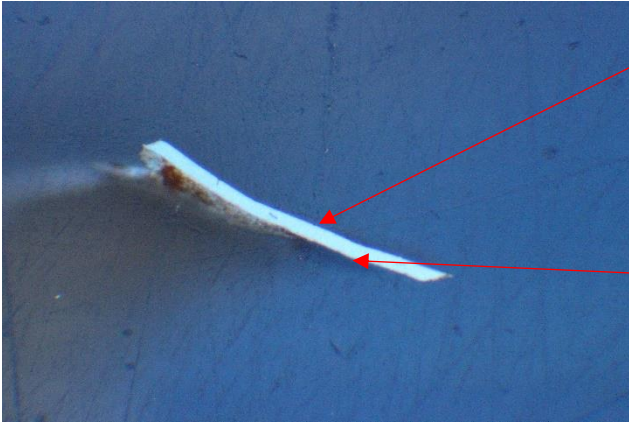
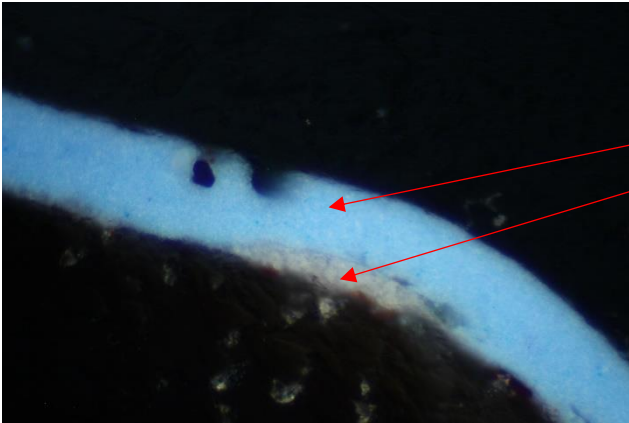
Sample Ref: P09 – (Third Floor Column)	Location: Neptune Mill
Paint sample removed from: Location: P09- Paint on cast iron column to third floor. 16 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (dark grey alkyd paint) Earliest paint layers. Earliest paint layers 400x Magnification. 4x Red iron oxide oil paints. First decorative scheme. Carbon black oil paint (foundry paint). White Primer Note: Ironwork was typically delivered in a carbon black oil protection paint. The red iron oxide paint is the first decorative layer.
Lead Test	
Yes.	Primer layer is a lead-based paint.

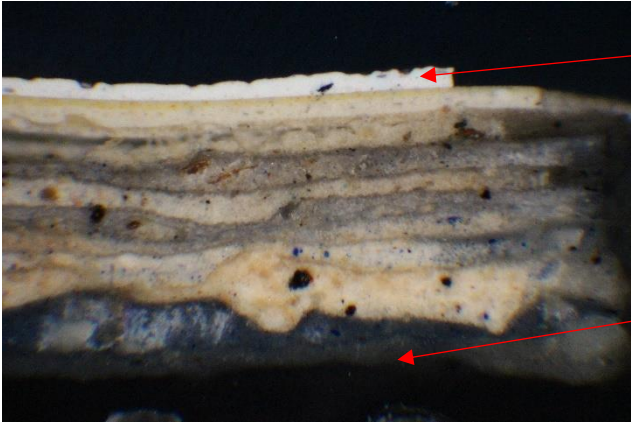
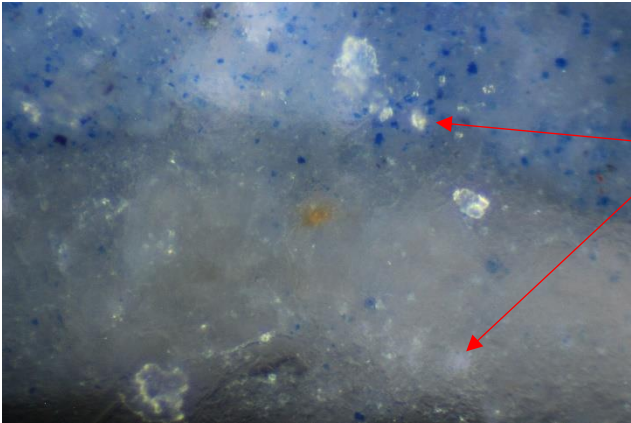
Sample Ref: P10 – (Third Floor Beam)	Location: Neptune Mill
Paint sample removed from: Location: P10- Paint on timber beam to third floor. 22No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white paint). 21 layers of white and blue Lime Wash. Earliest paint layers. Earliest paint layers 400x Magnification. 5 No light blue Lime Wash layers. 7 No white Lime Wash layers.
Lead Test	
Yes.	No lead-based paints present.

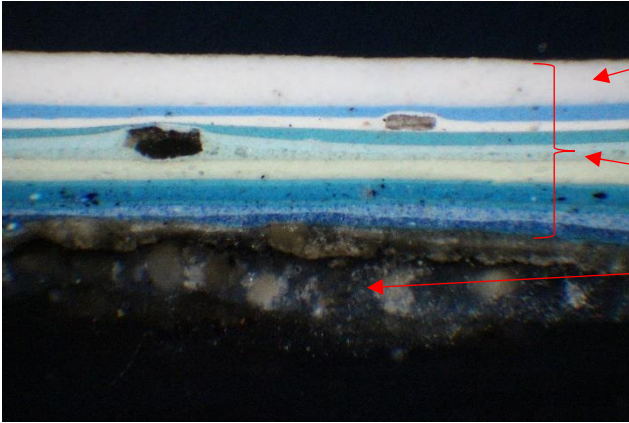
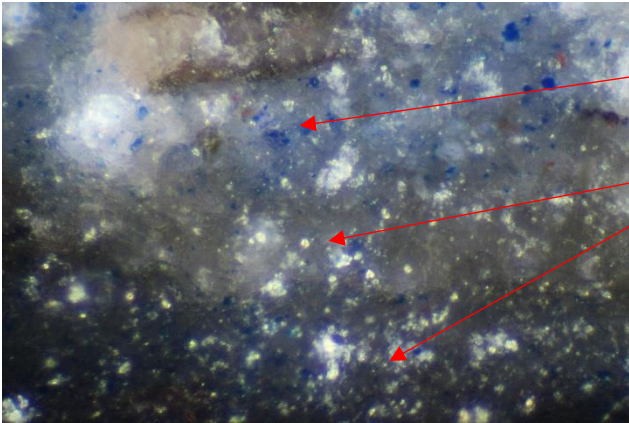
Sample Ref: P11 – (Third Floor Blue Column)	Location: Neptune Mill
Paint sample removed from: Location: P11- Painted cast iron column to third floor. 16 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern blue alkyd paint). Single green paint layer (probably the first post WW2 paint layer). Earliest paint layer. Earliest paint layers 400x Magnification. Varnish layer over red iron oxide paint layer (gloss finish). 7 No Red Iron Oxide oil paints layers. Earliest decorative paint layer.
Lead Test	
Yes.	No lead-based paints present.

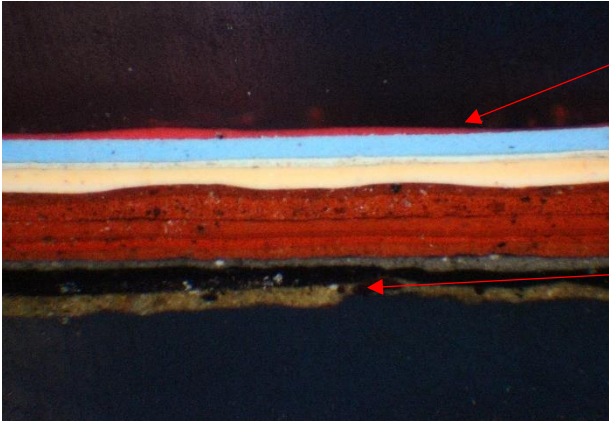
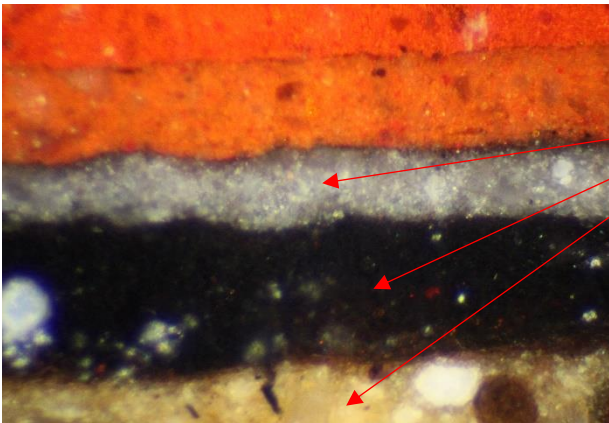
Sample Ref: P12 – (Third Floor Ceiling Boards)	Location: Neptune Mill
Paint sample removed from: Location: P12- Painted underside of timber floor boards. 16No separately identified paint layers.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). (14 separate white and blue Lime Wash layers). Earliest paint layers. Earliest paint layers 400x Magnification. 4No White Lime Wash layers (poor condition).
Lead Test	
Yes.	No lead-based paints present.

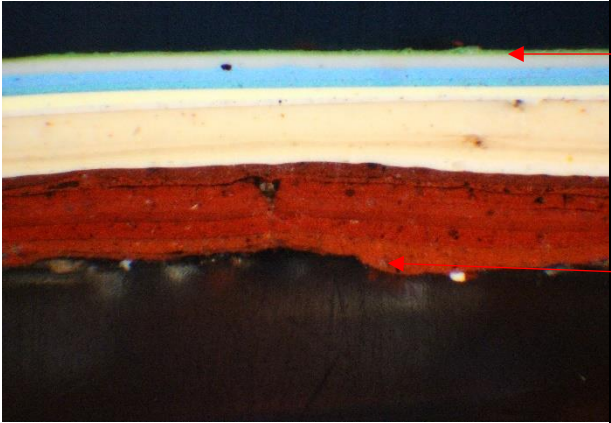
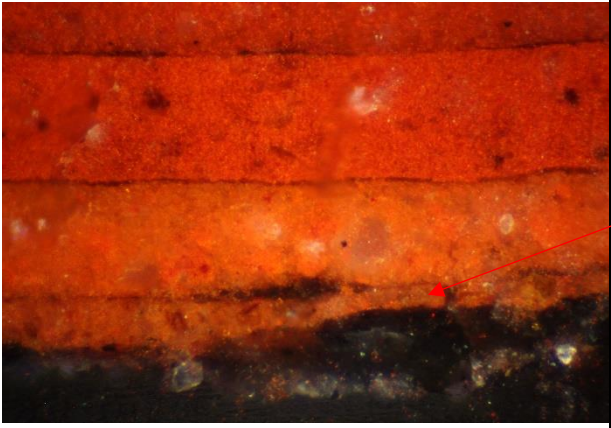
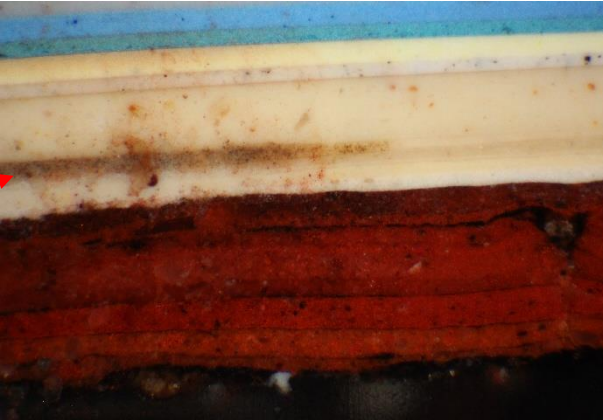
Sample Ref: P13 – (Third Floor Ceiling Boarding)	Location: Neptune Mill
Paint sample removed from: Location: P13- Paint on underside of floor boards to third floor. 11 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). (9No white and blue Lime Wash paint layers). Earliest paint layers. Earliest paint layers 400x Magnification. 5No Blue Lime Wash paint layers. Note: Lime Wash is tinted with Prussian Blue pigment.
Lead Test	
Yes.	No lead-based paints present.

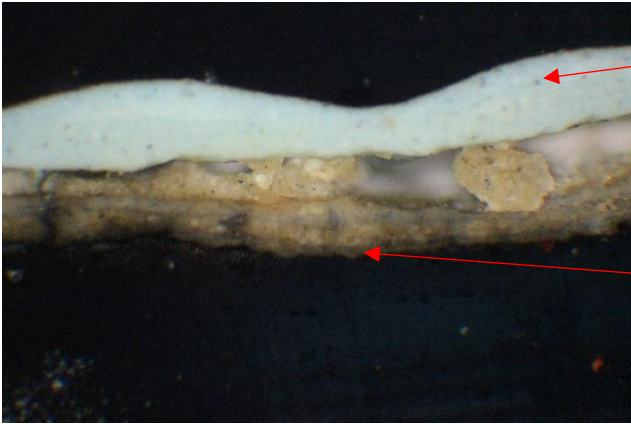
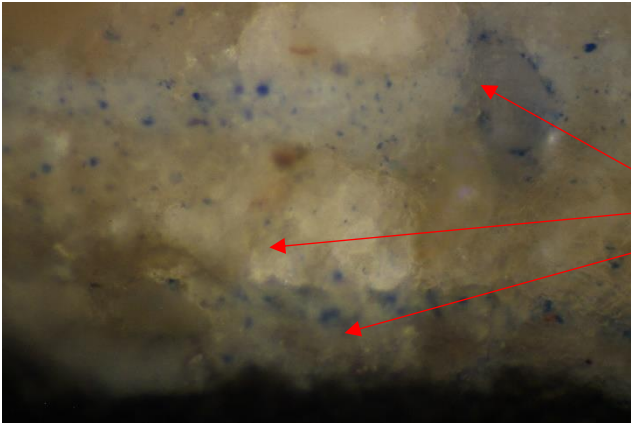
Sample Ref: P14 – (Third Floor Lift Door)	Location: Neptune Mill
Paint sample removed from: Location: P14- Paint on lift door to third floor. 2No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Fine Blue alkyd paint). Earliest paint layer. Earliest paint layers 400x Magnification. Modern blue alkyd paint. Grey undercoat / primer layer. Note: Current visible paint layer is the original decorative colour applied.
Lead Test	
Yes.	No lead-based paints present.

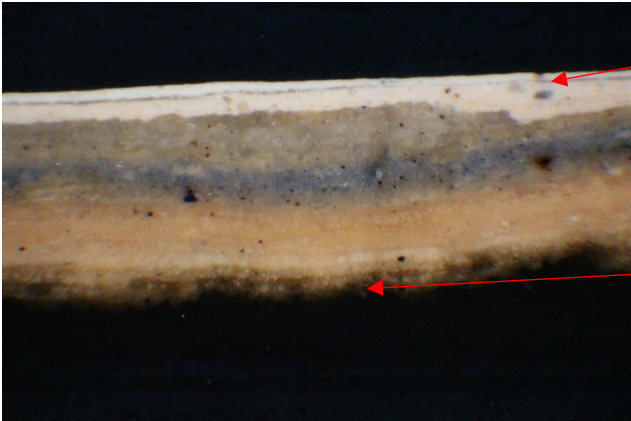
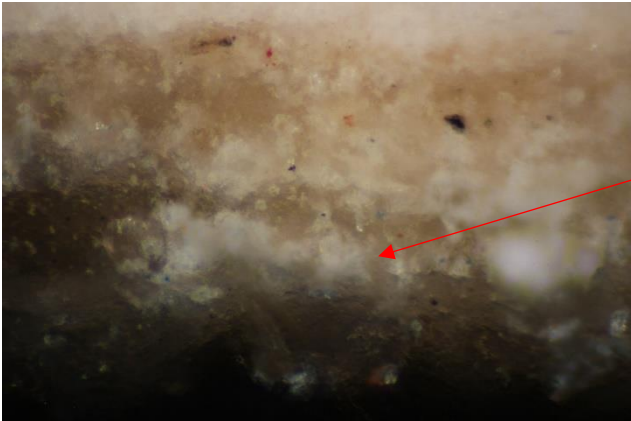
Sample Ref: P15 – (Second Floor Wall)	Location: Neptune Mill
Paint sample removed from: Location: P15- Paint on brick wall to second floor (above dado height). 11No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). Earliest paint layers (Lime Washes). Earliest paint layers 400x Magnification. Blue Lime Wash layer White Lime Wash paint layer. (First decorative scheme).
Lead Test	
Yes.	No lead-based paints present.

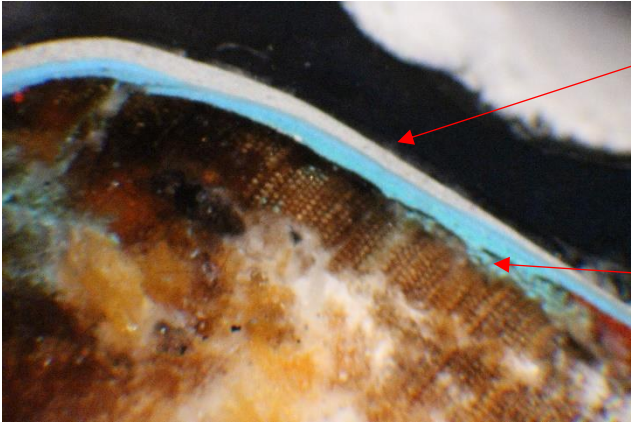
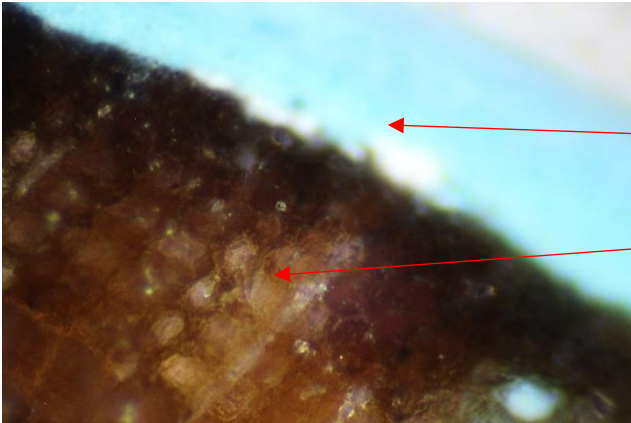
Sample Ref: P16 – (Second Floor Wall)	Location: Neptune Mill
Paint sample removed from: Location: P16- Paint on brick wall to second floor (below dado height). 15No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). Post WW2 paint layers. Earliest paint layers. Earliest paint layers 400x Magnification. Blue Lime Wash paint layer. White Lime Wash paint layer Blue Lime Wash paint layer. (earliest decorative scheme).
Lead Test	
Yes.	No lead-based paints present.

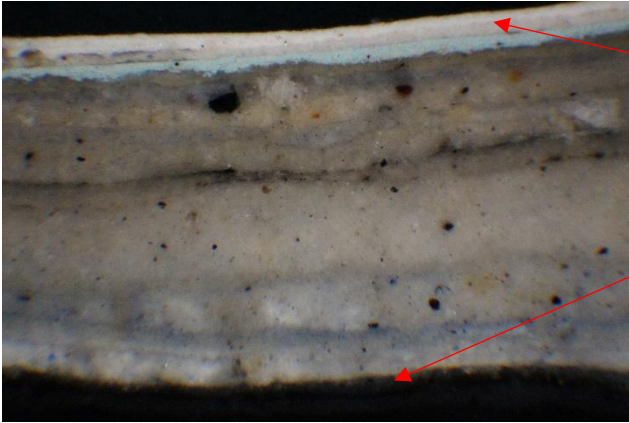
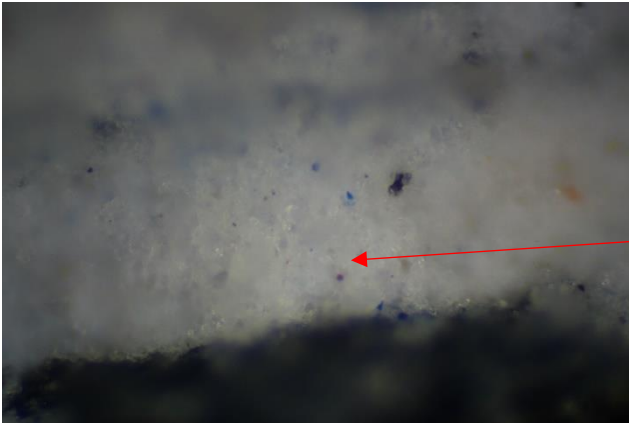
Sample Ref: P17 – (Second Floor Column)	Location: Neptune Mill
Paint sample removed from: Location: P17- Paint on cast iron column to second floor. 13 No separate paint layers identified.	
Sectional Photographs	Description
	100x Magnification. Current visible paint layer (red alkyd paint layer). Earliest paint layers.
 Note: - Dirt on the surface of the grey paint indicates that it was a visible paint layer ie the first decorative paint scheme. However repainted on 5 separate occasions with an Iron Oxide red.	Earliest paint layers 400x Magnification. Grey oil paint with dirt on surface of paint layer. Carbon Black oil paint (foundry paint). Primer 
Lead Test	
Yes.	Positive identification for lead carbonate in primer and early grey paint layers (see above).

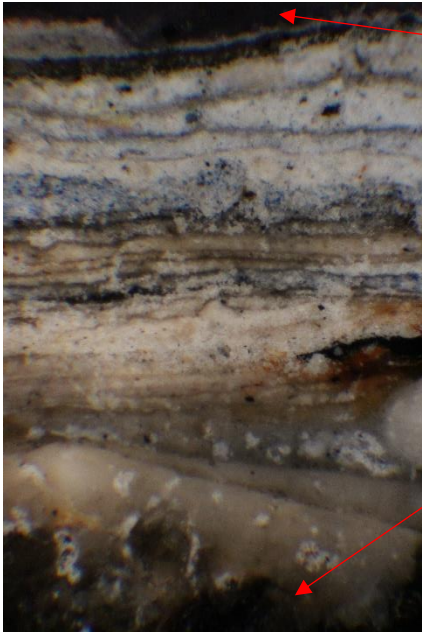
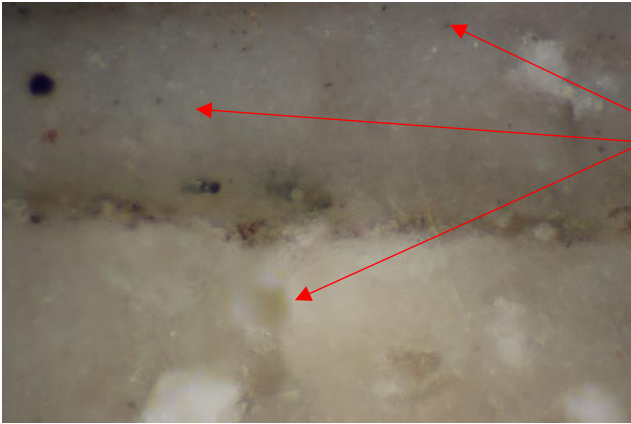
Sample Ref: P18 – (Second Floor Column)	Location: Neptune Mill
Paint sample removed from: Location: P18- Paint on green cast iron column to second floor. 19 No separate paint layers identified.	
Sectional Photographs	Description
	100x Magnification. Current visible paint layer (Thin layer of green alkyd paint). (8No red iron oxide decorative schemes) Earliest paint layers.
 Note: Indication of lead carbonate within layer 11.	Earliest paint layers 400x Magnification. 8 No Red Iron Oxide oil paints Earliest decorative scheme. 
Lead Test	
Yes.	Positive for single off-white paint layer.

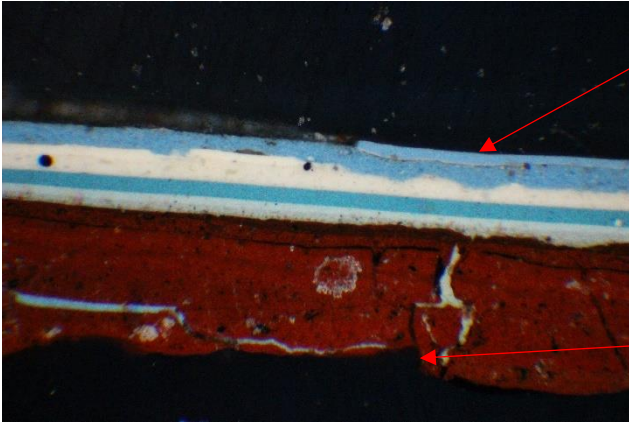
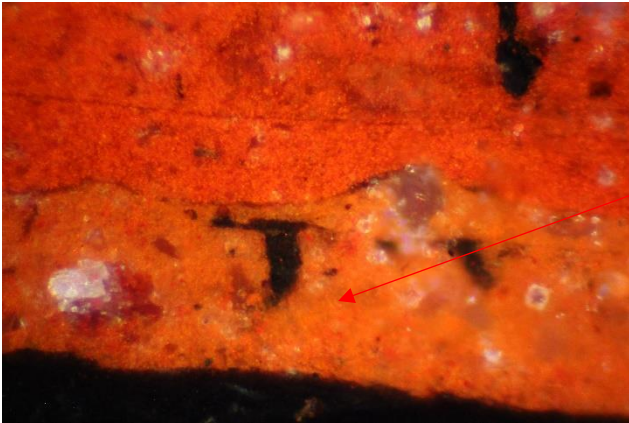
Sample Ref: P19 – (Second Floor Ceiling Boards)	Location: Neptune Mill
Paint sample removed from: Location: P19- Paint on ceiling boards to second floor. 5No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (modern off-white decorative scheme). Earliest paint layers. Earliest paint layers 400x Magnification. Blue Lime Wash paint layer. White Lime Wash paint layer. Blue Lime Wash paint layer. Note: Boarding is likely to be a later fitment to the mill.
Lead Test	
Yes.	No lead-based paints present.

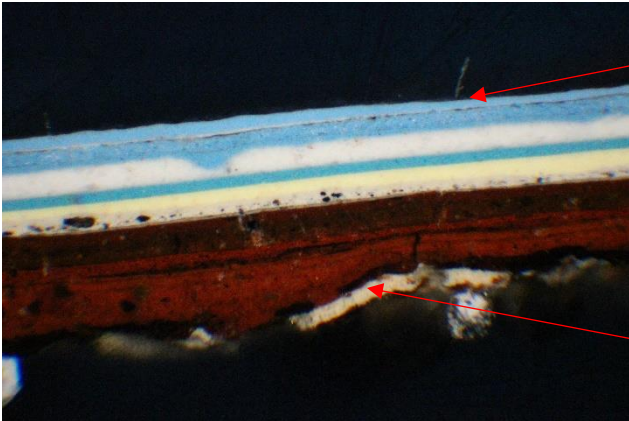
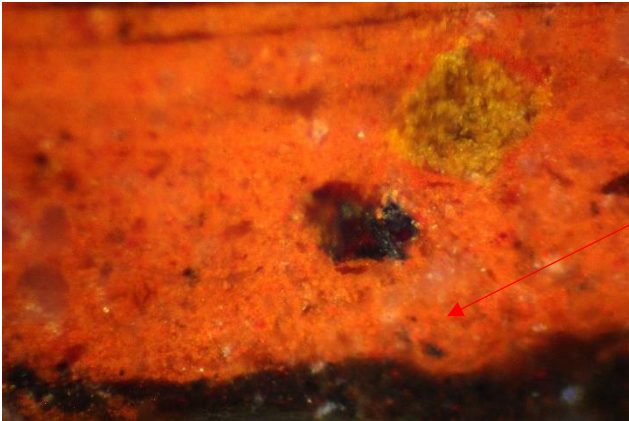
Sample Ref: P20 – (Second Floor Timber Ceiling Beam)	Location: Neptune Mill
Paint sample removed from: Location: P20- Paint on timber beam to second floor. 16 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). (2No blue Lime Wash paint layers) (9No white Lime Wash paint layers). Earliest paint layers. Earliest paint layers 400x Magnification. 9x White Lime Wash paint layers. Earliest decorative scheme – white Lime Wash.
Lead Test	
Yes.	No lead-based paints present.

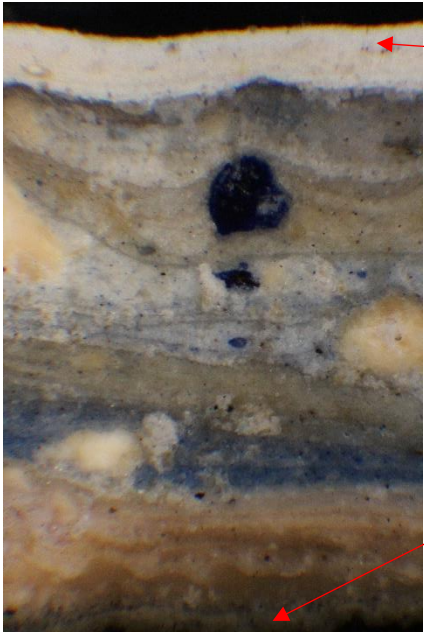
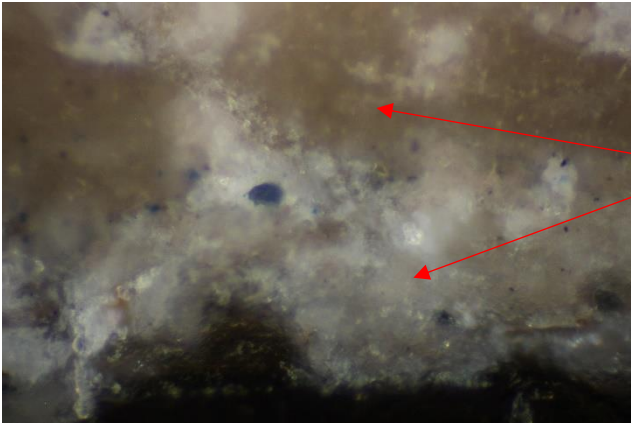
Sample Ref: P21 – (Second Floor Door)		Location: Neptune Mill	
Paint sample removed from: Location: P21- Paint to door on second floor. 3No separate paint layers identified.			
Sectional Photographs		Description	
		100x Magnification. Current visible paint layer (Grey alkyd paint). Earliest paint layer.	
		Earliest paint layers 400x Magnification. Blue alkyd paint over blue undercoat. Timber of door.	
Lead Test			
Yes.		No lead-based paints present.	

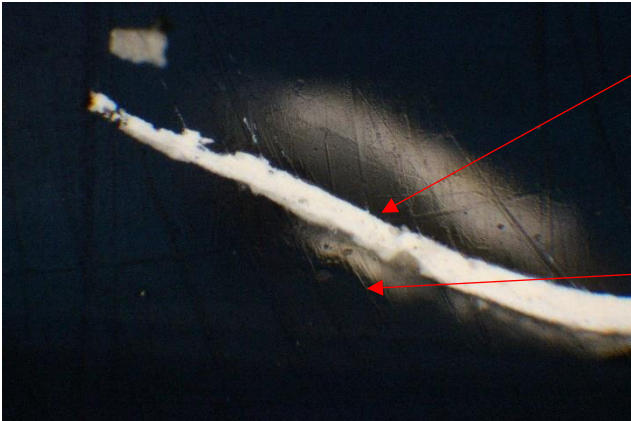
Sample Ref: P22 – (Ground Floor Wall)	Location: Neptune Mill
Paint sample removed from: Location: P22- Paint on brick wall to ground floor (above dado height). 15 No paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). (12 layers of white and blue Lime Wash). Earliest paint layers. Earliest paint layers 400x Magnification. 2 No white Lime Wash paint layers. (earliest decorative scheme). Note: The white Lime Wash is lightly tinted with Prussian Blue to a bright white colour.
Lead Test	
Yes.	No lead-based paints present.

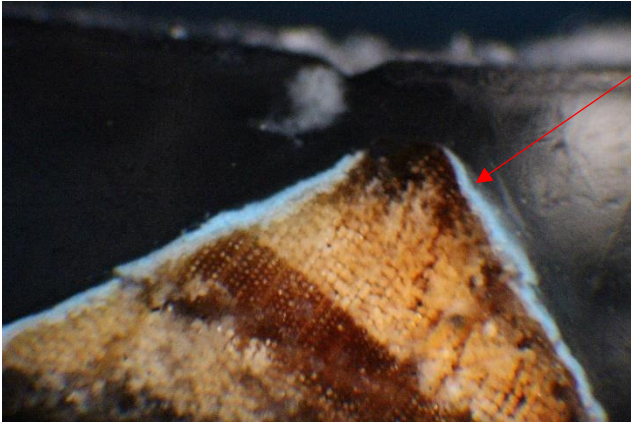
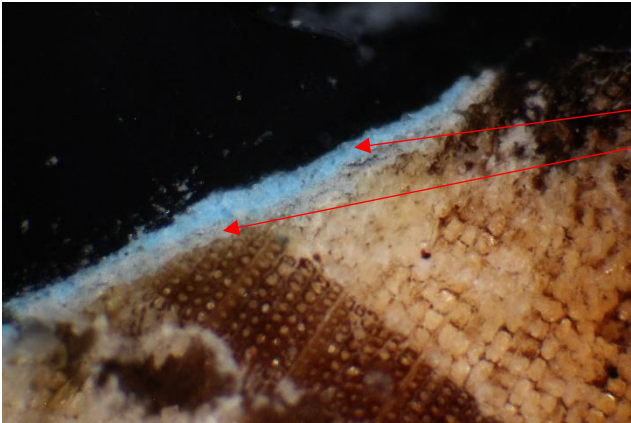
Sample Ref: P23 – (Ground Floor External Wall)	Location: Neptune Mill
Paint sample removed from: Location: P23- Paint on exterior wall to ground floor covered area. 25 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Purple painted mural). (23 layers of white and blue lime wash and later similar paint layers). Earliest paint layers. Earliest paint layers 400x Magnification. 2No white Lime Wash paint layers.
Lead Test	
Yes.	No lead-based paints present.

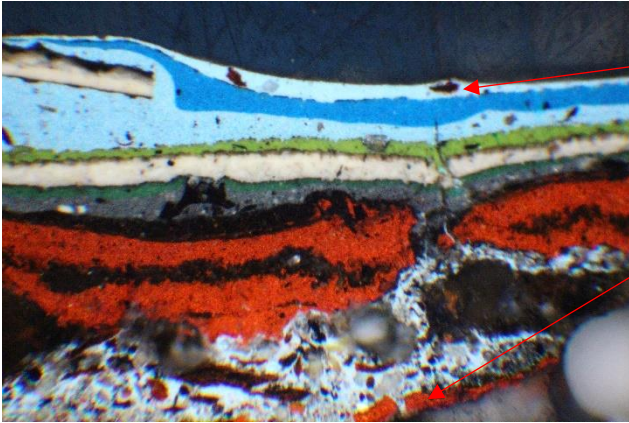
Sample Ref: P24 – (Ground Floor Column)	Location: Neptune Mill
Paint sample removed from: Location: P24- Paint on blue cast iron column to ground floor. 10 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern blue alkyd paint). (5No modern post WW2 blue / Titanium white paint layers) (5No red iron oxide oil paint layers). Earliest paint layer. Earliest paint layers 400x Magnification. Red iron oxide oil paint (earliest decorative scheme).
Lead Test	
Yes.	No lead-based paint present.

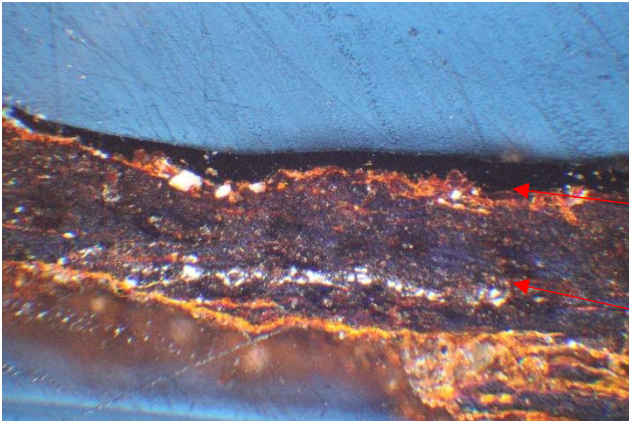
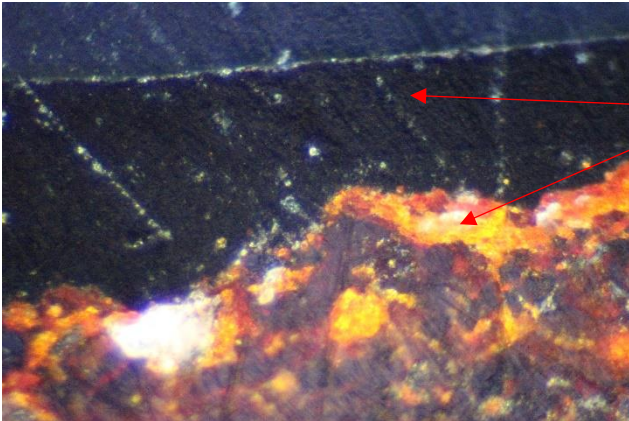
Sample Ref: P25 – (Ground Floor Blue Column)	Location: Neptune Mill
Paint sample removed from: Location: P25- Plaster on blue cast iron column to ground floor. 16 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern blue alkyd paint). (9 No modern post WW2 blue / white and single yellow paint layers). (7 No red iron oxide oil paint layers). Earliest paint layer. Earliest paint layers 400x Magnification. Red iron oxide oil paint. (Earliest decorative scheme).
Lead Test	
Yes.	No lead-based paints present.

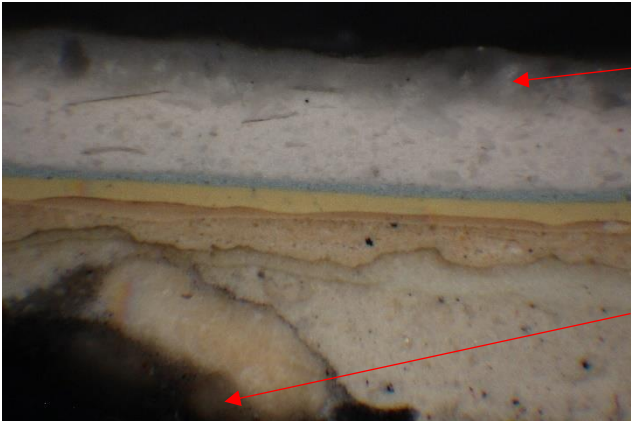
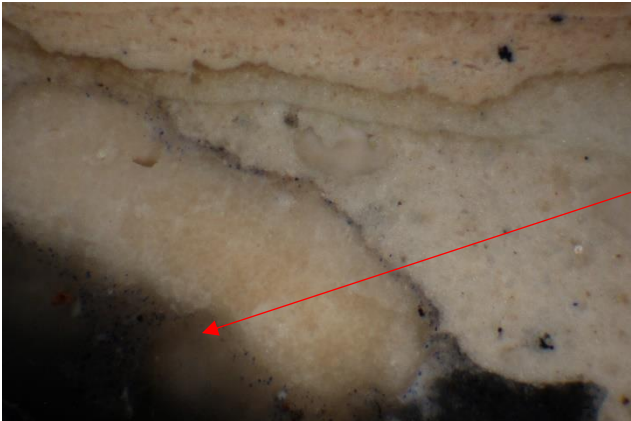
Sample Ref: P26 – (Ground Floor Ceiling Beam)	Location: Neptune Mill
Paint sample removed from: Location: P26- Paint on ceiling beam to ground floor. 25 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). (21 white and blue Lime Wash paint layers) Earliest paint layer. Earliest paint layers 400x Magnification. Later white Lime Wash paint layer. White Lime Wash paint layer – earliest decorative layer (tinted with a small amount of Prussian Blue pigment).
Lead Test	
Yes.	No lead-based paints present.

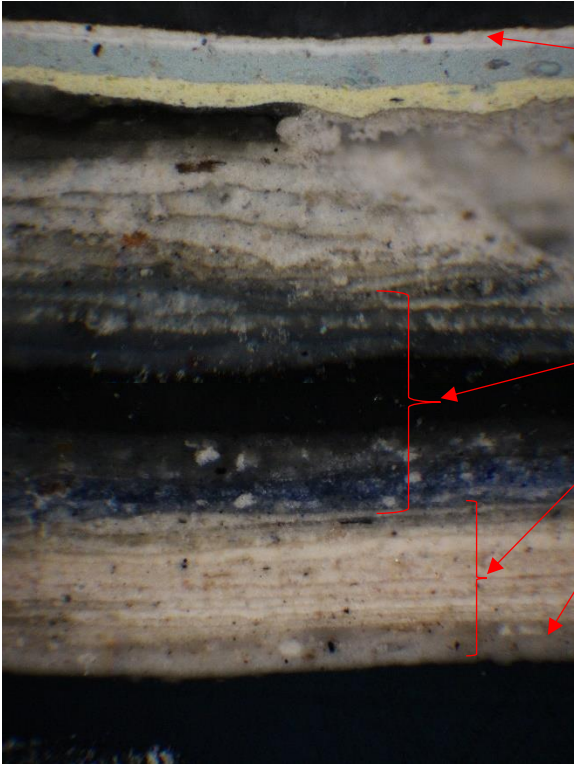
Sample Ref: P27 – (Ground Floor Ceiling Boarding)	Location: Neptune Mill
Paint sample removed from: Location: P27- Paint on ceiling boarding to ground floor. 3No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white alkyd paint) Earliest paint layer. Earliest paint layers 400x Magnification. Modern Titanium white paint scheme. Note: Boards are not original to the Mill construction – only 3No modern paint layers present.
Lead Test	
Yes.	No lead-based paints present.

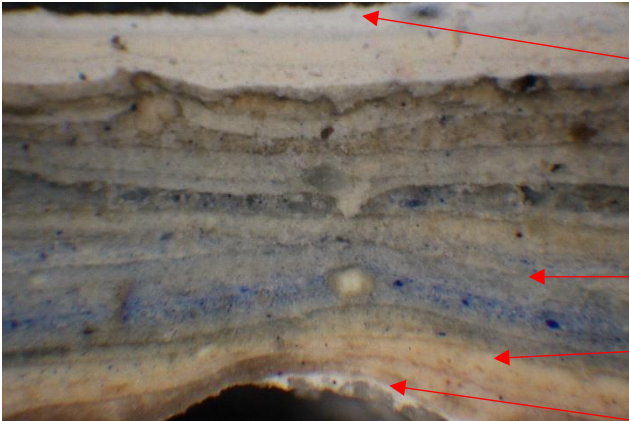
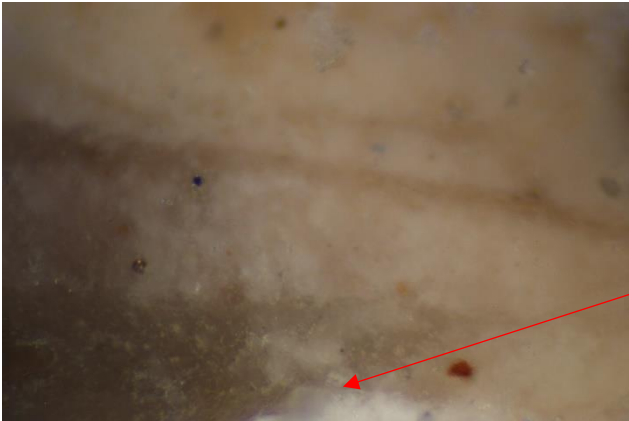
Sample Ref: P28 – (Ground Floor Doors)		Location: Neptune Mill	
Paint sample removed from: Location: P28- Paint on timber doors to ground floor. 2 No paint layers identified.			
Sectional Photographs		Description	
		100x Magnification. Current visible paint layer (Modern blue alkyd paint).	
		Earliest paint layers 400x Magnification. Blue alkyd paint (current visible decoration). Grey undercoat Note: Only 2No modern paint layers are present.	
Lead Test			
Yes.		No lead-based paint present.	

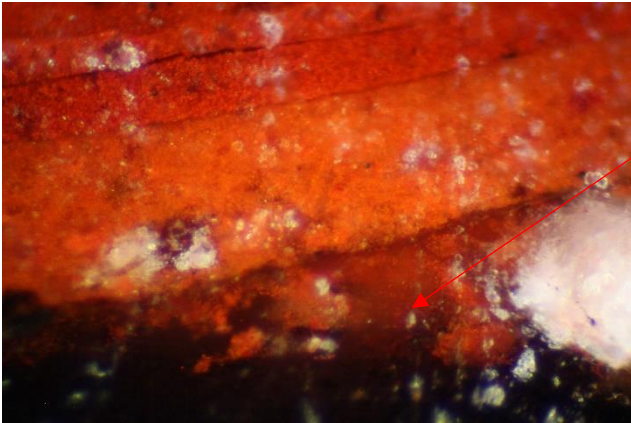
Sample Ref: P29 – (Ground Floor Window)	Location: Neptune Mill
Paint sample removed from: Location: P29- Iron window frame to ground floor. 12No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (modern blue alkyd paint). (2No green decorative schemes). (4 No red iron oxide paint layers). Earliest paint layer. Earliest paint layers 400x Magnification. Red iron oxide oil paint (earliest decorative coating). Note: Area of modern white paint which has run into earlier layers with paint dust particles. (Paint generally in a poor condition).
Lead Test	
Yes.	No lead-based paints present.

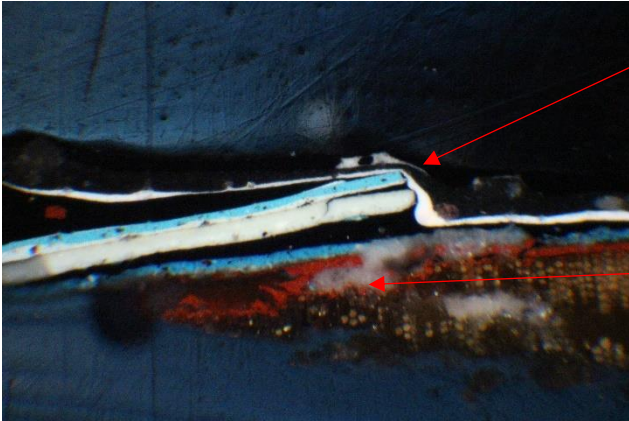
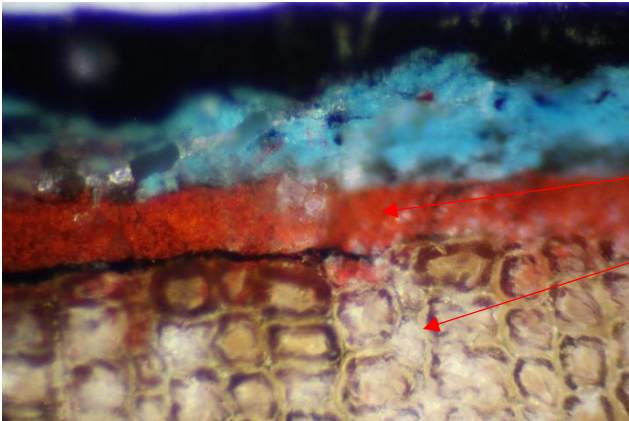
Sample Ref: P30 – (Ground Floor Rainwater Pipe)	Location: Neptune Mill
Paint sample removed from: Location: P30- Rainwater pipe fitted to brickwork. Only 1No paint layer identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (black alkyd paint). Earliest and only paint layer. Corrosion products. Earliest paint layers 400x Magnification. Black alkyd paint. Iron oxide corrosion
Lead Test	
Yes.	No lead-based paints present.

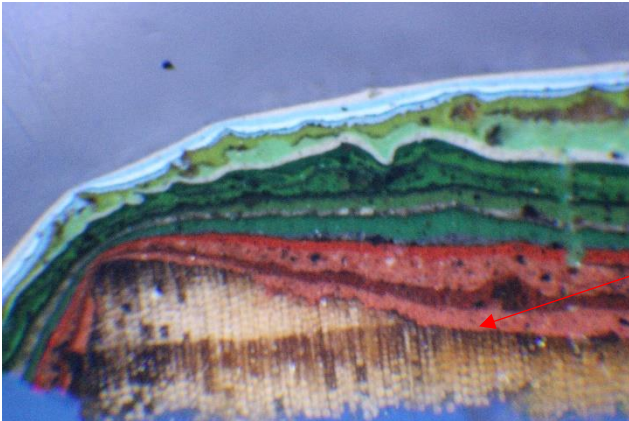
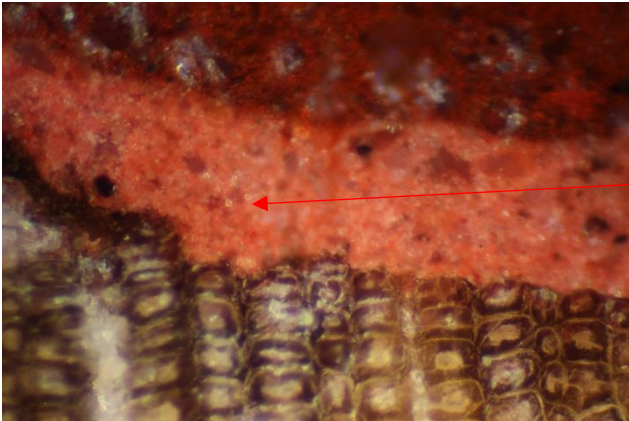
Sample Ref: P31 – (First Floor Stairway Wall)	Location: Neptune Mill
Paint sample removed from: Location: P31- Paint on brick stairway wall to first floor. 9No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). (Single blue and yellow paint layers). (6No off-white and white paint layers). Earliest paint layer. Earliest paint layers 400x Magnification. White Lime wash paint layer (tinted with a small amount of Prussian Blue pigment). Earliest decorative layer.
Lead Test	
Yes.	No lead-based paints present.

Sample Ref: P32 – (First Floor Brick Wall)	Location: Neptune Mill
Paint sample removed from: Location: P32- Paint on brickwork wall to first floor. 30 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). (3No modern schemes base don Titanium white). (7No white decorative schemes). (8No blue Lime Wash paint layers) (12No white Lime Wash paint layers) Earliest paint layer. Earliest paint layers 400x Magnification. White Lime Wash paint layer – earliest decorative scheme.
Lead Test	
Yes.	No lead-based paints present.

Sample Ref: P33 – (First Floor Ceiling Beam)	Location: Neptune Mill
Paint sample removed from: Location: P33- Paint on ceiling beam to first floor. 20 No total paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern Titanium white scheme). (4No blue Lime Wash paint layers). (4No white Lime Wash paint layers) Earliest paint layer. Earliest paint layers 400x Magnification. White Lime Wash paint layer. (earliest decorative scheme).
Lead Test	
Yes.	No lead-based paints present.

Sample Ref: P34 – (First Floor Column)	Location: Neptune Mill
Paint sample removed from: Location: P34- Paint to cast iron column to first floor. 9No paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Modern blue alkyd paint). 6No red iron oxide paint layers. Earliest paint layer. Earliest paint layers 400x Magnification. Red iron oxide oil paint. (earliest decorative scheme).
Lead Test	
Yes.	No lead-based paints present.

Sample Ref: P35 – (First Floor Joinery)	Location: Neptune Mill
Paint sample removed from: Location: P35- Timber handrail bracket to stairway of first floor. 9 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Black alkyd paint). Earliest paint layer. Earliest paint layers 400x Magnification. Black alkyd paint Red iron oxide oil paint (earliest decorative layer). Timber of bracket.
Lead Test	
Yes.	No lead-based paints present.

Sample Ref: P36 – (First Floor Outside Door Frame)	Location: Neptune Mill
Paint sample removed from: Location: P36- Paint on outside door frame to first floor. 19 No separate paint layers identified.	
Sectional Photographs	Description
 	100x Magnification. Current visible paint layer (Thin layer of grey alkyd paint). (7 No separate green paint schemes). (4No iron oxide red paint schemes). Earliest paint layer. Earliest paint layers 400x Magnification. Red iron oxide oil paint (earliest decorative scheme). Timber of joinery
Lead Test	
Yes.	No lead-based paint present.