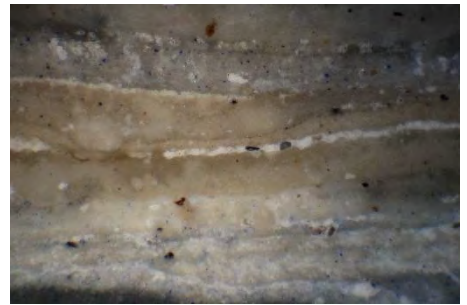


40-46 Princess Street, Manchester Paint Analysis



Report on Findings Report No HPMTA01

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1.0 Introduction

Heritage Project Management have taken a number of paint samples from the Eastern Building located at 40-46 Princess Street in Manchester to identify the paint schemes that have been applied to the architectural details. The analysis will be used to inform the development of new decorative paint coatings as part of a refurbishment project being undertaken.

The samples were taken on site on the 10th November 2021 as the buildings were undergoing refurbishment. Wall and column samples were taken at mid height with beam and soffit samples taken from ladders access.

The sample works are intrusive although this was very minor as only very small samples of the exiting 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 38 paint samples were taken from the internal elevations of the buildings. The following schedule notes the locations of the samples:

Sample Ref:	Location:	Comment
01	Level 8 – front wall.	
02	Level 8 – mid/rear wall.	
03	Level 8 – front beam.	
04	Level 8 – rear soffit.	
05	Level 8 – mid beam.	
06	Level 8 – front column.	
07	Level 6 – front wall.	
08	Level 6 – rear wall.	
09	Level 6 – front beam.	
10	Level 6 – front soffit.	
11	Level 6 – front column.	
12	Level 6 – rear column.	
13	Level 6 – rear soffit.	
14	Level 6 – rear beam.	
15	Level 4 – front wall.	
16	Level 4 – front beam.	
17	Level 4 – front soffit.	
18	Level 4 – front column.	
19	Level 4 – rear wall.	
20	Level 4 – rear beam.	
21	Level 4 – rear soffit.	
22	Level 4 – rear column.	
23	Level 2 – front wall.	

24	Level 2 – front beam.	
25	Level 2 – front soffit.	
26	Level 2 – front column.	
27	Level 2 – rear wall.	
28	Level 2 – rear beam,	
29	Level 2 – rear soffit.	
30	Level 2 – rear column.	
31	Level 0 – front wall.	
32	Level 0 – front beam.	
33	Level 0 – front soffit.	
34	Level 0 – front column.	
35	Level 0 – rear wall.	
36	Level 0 – rear beam.	
37	Level 0 – rear soffit.	
38	Level 0 – rear column.	

3.0 Analysis Methodology

Samples were collected from joinery items, cast ironwork and plasterwork. 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 (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.

In addition to the paint coatings, wall papers were also extensively used at this time. These were typically pre-finished with a raised pattern.

The investigations took a total of 37 samples of paint from the buildings. 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 was originally constructed as a warehouse with an open plan layout internally. Many of the internal walls were painted with limewash finishes however over a period of time a number of adaptations have been undertaken including the plastering of wall which has partly covered these early limewash finishes. Samples have been taken that best detail the different paint layers that have been applied to the building features and where possible these show the most original / earliest paint coatings that were applied. To the front of the building there has been a fire at some time which has resulted in the replacement of some timberwork and left other areas charred with the resultant loss of original finishes.

Level 8

Front walls – The earliest paint finishes found were a light green oil paint that was applied over a lime plaster. This was overpainted on two occasions with similar green coatings before being painted with a single application of the dark red which had a varnish finish. The red only lasted for one application before being overpainted with four separate green applications before being covered with wallpaper which was painted in a light blue.

Front timber beams – The earliest paint layers that were found was an off-white oil paint based on lead carbonate. The beam remained in either an off-white or stone colour for four subsequent redecorations before being painted a mid-blue before returning to a white colour. The most recent decoration is a black which is the only time this colour has been used.

Front columns – The cast iron columns were originally decorated in a rich green colour with a varnish over that would have produced a high gloss finish. This scheme was replicated on one further occasion before changing to an off white / stone colour that was maintained for the next ten decorative schemes before the partial green scheme that is currently visible.

Mid walls – The walls were originally decorated with white / light blue limewash. Originally pure limewash was used however in later applications this was modified (presumably to make it more permanent) making it similar to a distemper. Up to 6 limewash layers are present before being decorated with a stone coloured paint which is currently visible.

Rear soffit – The soffit timbers were originally decorated in a white limewash and this was replicated on a number of redecorations in either a white or light blue colour. Often limewash was tinted with a Prussian Blue pigment to make it appear more “white” however the levels of pigment present here would have resulted in a light blue colour.

Mid beams – the timber beams in this area only have two separate paint layers applied. Each of these layers was a stone / light brown colour being similar to that visible today.

Level 6

Front walls - The walls were originally decorated with a mid-green oil paint over lime plaster. This was subsequently covered by a stone coloured paint and 4 subsequent off-white paints before a single thin layer of a red paint. This was overcoated with an off-white and mid green and the current off-white scheme.

Front beams – The timber beam only had three separate paint coatings and there was some evidence of charring of the timber. The earliest layer was an off-white oil paint which was poorly attached to the timber. This colour was replicated on two further occasions before the application of the current black colour scheme.

Front soffit – The soffit timbers only have three separate paint coatings present with the earliest being a white limewash. Given the limited number of coatings present and the adjacent charring of timber the timber may have been replaced and the earliest coatings are not present.

Front columns – The columns were originally decorated in a rich red colour. This was an iron oxide oil paint. The colour was replicated on two further occasions before application of three separate stone coloured decorative coatings with a varnish top coat. After this, three separate white paint layers are present before the application of more modern red, white, green and white paint systems.

Rear walls – The walls were originally decorated in a mid-green colour however this was soon overcoated with a light blue limewash which given the dirt present on the surface was likely to have been in place for some time. Five subsequent paint layers followed in white / off-white and this was finally covered with the blue paintwork which is currently visible.

Rear beam – the timber beams were originally decorated with a white oil paint based on lead carbonate. This colour or slight variations thereof were maintained on another six occasions.

Rear soffit – the soffit timber were originally decorated with a light blue limewash paint. This was replicated on a number of occasions before the stone coloured paintwork that is currently visible.

Rear columns – The rear columns were originally decorated in a mid-green oil paint. This covered a mid-brown oil paint which is likely to have been applied as a protective layer at the mill / foundry. The green colour was maintained on another seven occasions before being decorated with a single white layer and the aluminium silver paint which is currently visible.

Level 4

Front wall – The wall was originally decorated in a light brown oil paint over a lime plaster which was covered by a varnish layer producing a high gloss. This colour was replicated on a single occasion before being decorated with a rich red and then green schemes. Two layers of wallpaper are present on the wall which was over decorated two green paint applications and a further red scheme before being papered again which is partly evident in areas currently visible.

Front beam – The timber beam has ten separate paint layers present which are white / off white. This paintwork is applied over charred timber possibly indicating that the most original layers are not present.

Front soffit – The soffit timbers only have three separate paint layers present. The earliest layer being an off-white limewash. These layers are present over charred timber possibly indicating that the most original layers are no longer present.

Front columns – The columns were originally decorated in a light brown oil paint based on lead carbonate. This was redecorated with reds and green on a further two occasions before ten applications of white paints based on zinc and then later Titanium whites.

Rear walls – The walls were originally decorated in a light blue limewash over a lime plaster. Greens and blues were maintained as the colour of choice apart from two applications of a stone coloured paint in more recent times.

Rear beam – The iron beam was originally decorated in a black protective paint that would have been applied at the mill. This was formed from a combination of carbon black and red lead. The first decorative scheme was likely to be a light green colour which was applied over a white primer layer. The green colour was present for a number of years based on the dirt that remains on the surface of the coating. It was however replaced with six separate redecorations in white / off-white colour.

Rear soffit – The soffit timbers were originally decorated in a light blue limewash. Four separate applications of limewash are present and this was later covered by stone coloured scheme currently visible.

Rear columns – The earliest paint layer identified was a red oxide oil paint which was subsequently redecorated on two occasions in a mid green colour before being decorated in a thick stone coloured paint system. Over this is a single layer of a white limewash and the current green scheme.

Level 2

Front wall – The earliest decorative scheme found was an off-white oil paint based on lead carbonate over lime plaster. This was subsequently redecorated on two occasions with a light green paint and then a further white before being covered with a wallpaper and the current light blue scheme.

Front beam – The timber beam only has five separate paint layers visible and the timber substrate is heavily charred possibly indicating that the earliest paint layers are missing. The earliest paint layer is a stone coloured limewash which has been overcoated with a zinc white paint then grey and current black paintwork which is currently visible.

Front soffit – The soffit timbers show evidence of charring from fire and only four separate paint layers are present. These are similar to the adjacent beams but none of the original paint layers are present.

Front columns – The cast iron columns were originally decorated in a rich red iron oxide oil paint which was varnish coated to produce a high gloss. Two subsequent application of reds with varnish are present before the paint colours change to a stone colour which was present on a subsequent six occasions before the application of the current red colour.

Rear wall – The original wall decorations were a white limewash. Over twenty applications of limewash are present which is not unusual and limewash was often applied on a yearly basis. Later paint applications introduced stone and the final green colours to the walls.

Rear beam – The iron beam was originally decorated with a black / red oil paint although this was likely to have been applied at the mill. The first decorative coating was likely to be light green oil paint over a white primer. The beam was then subsequently decorated in a number of white schemes and the current grey colour.

Rear soffit – The soffit timbers were originally decorated in a white limewash. Five separate white and light blue limewash coatings are present before the timbers were painted in a series of off-white and stone coloured paint applications.

Rear columns - The earliest paint layer identified was a white lead carbonate oil paint which was likely to be a primer for the first decorative red scheme. This scheme was replicated on three further occasions before changing to a stone and then final green paint colour.

Level 0

Front walls – The first decorative scheme for the walls was a light blue limewash. Four separate applications are present which are then overcoated with four white lime / distemper paints before the application of a wallpaper.

Front beams – The timber beams are heavily charred from fire damage. The earliest coating is a white limewash with some traces of a light brown oil paint. The original decorative paint layers are not present in the sample.

Front soffit – The soffit timbers are similar in condition to the beams with heavy charring. The earliest paint layer is a white limewash which is covered by traces of wallpaper and white and finally black paints. The original decorative schemes are not present in the sample.

Front columns – The columns in this area are decorated in ten separate white paint layers although the adjacent fire may have removed the most original decorative schemes. The current red scheme covers the earlier white paint layers.

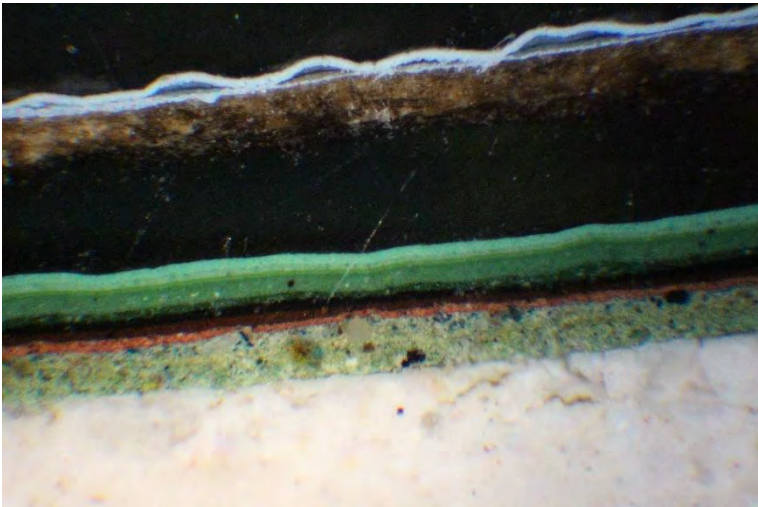
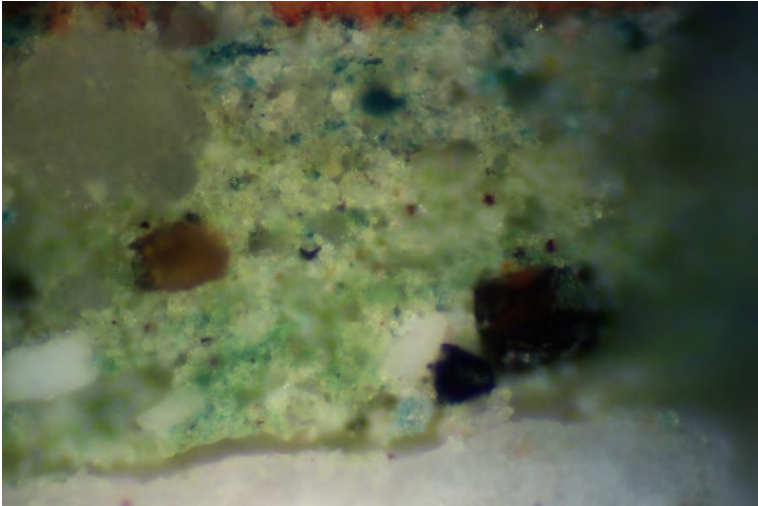
Rear wall – The walls were originally decorated in a white limewash. Ten separate white and light blue limewash layers are present in the sample before a more modern stone coloured paint system was applied and the current green scheme.

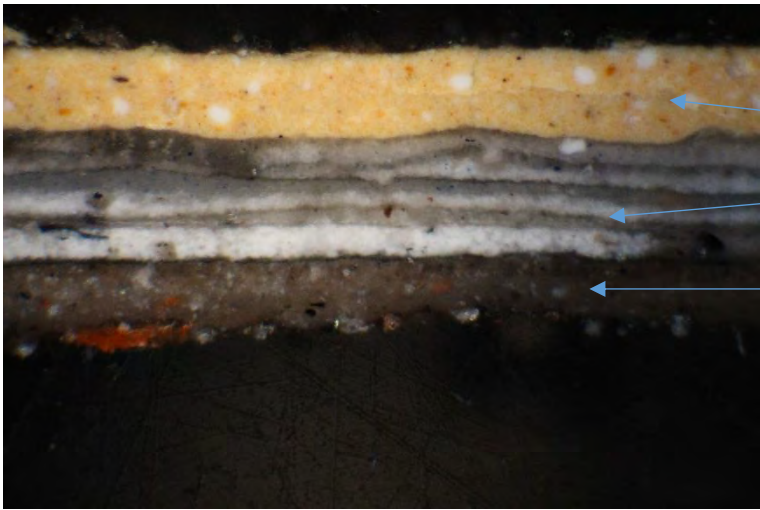
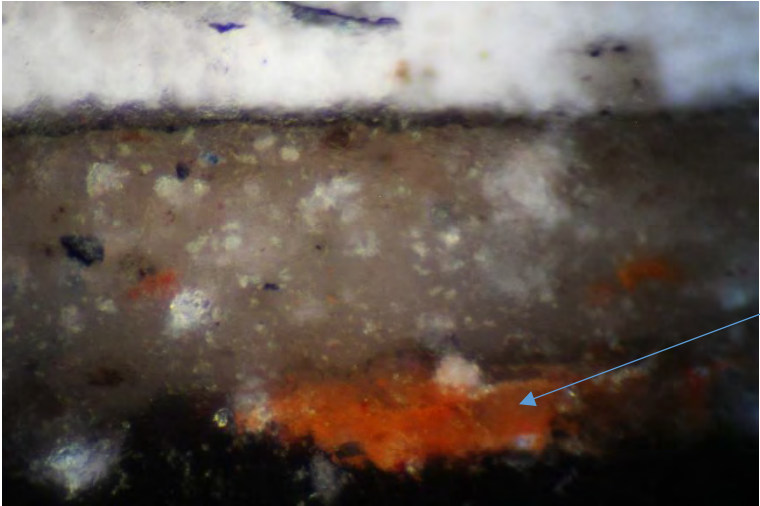
Rear beam – The iron beam was originally decorated in a light green oil paint. This scheme was replicated on one further occasion before the application of six white / off-white schemes and single black paint layer.

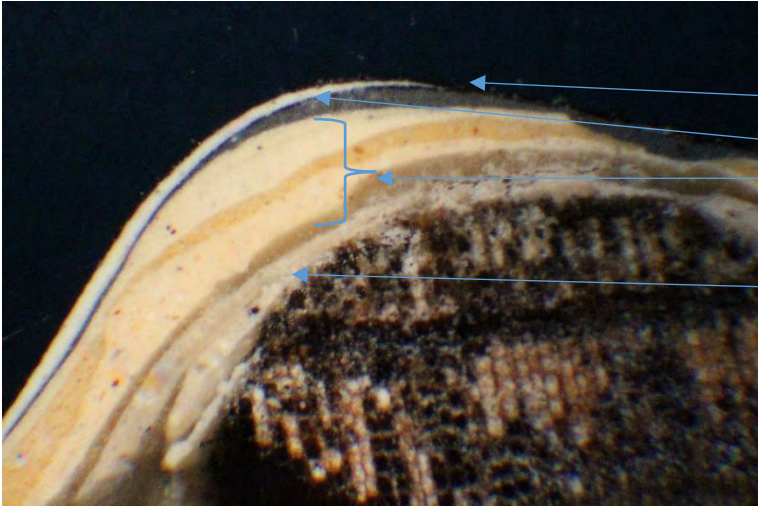
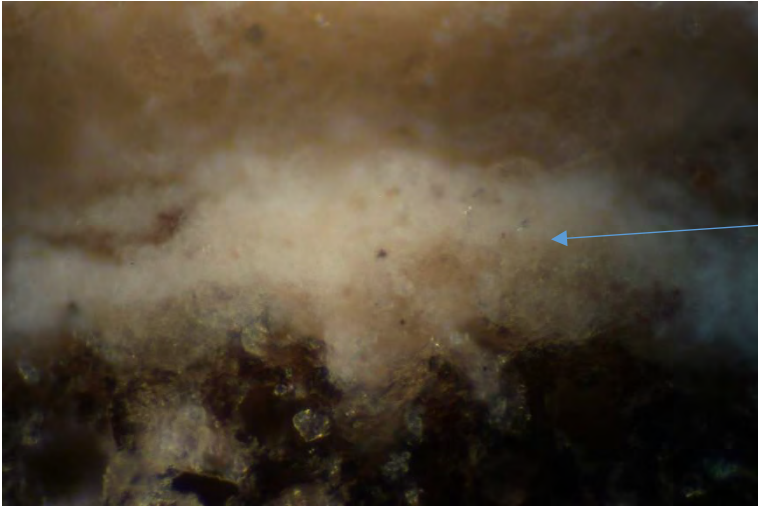
Rear soffit – The soffit is currently boarded with a modern material and a sample was taken from the adjacent timber beams. The original decorations to this beam were a light blue limewash. A number of limewash applications are present before the application of more modern white oil paints

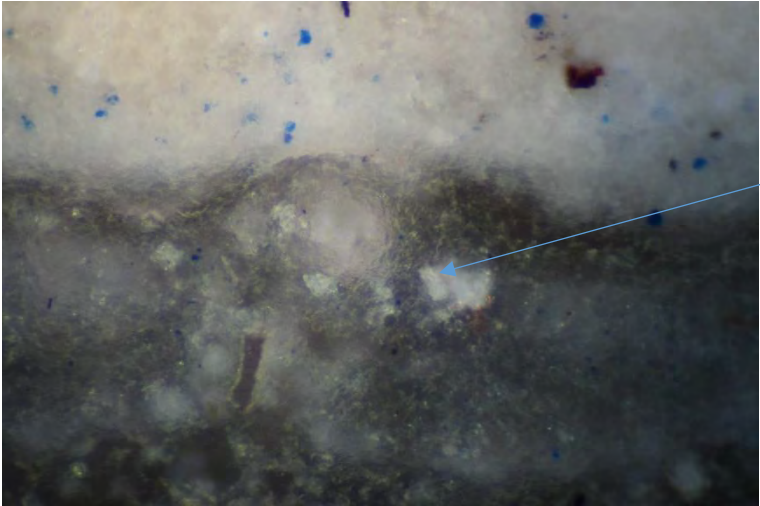
Rear column – The cast iron column was originally decorated in a rich red colour over an off-white primer. This scheme was replicated on a single occasion before changing to a stone coloured paint system and a number of modern white and green schemes.

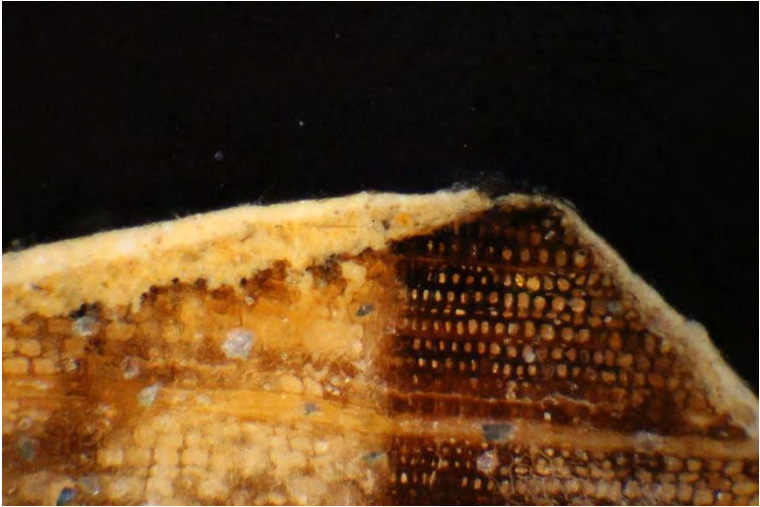
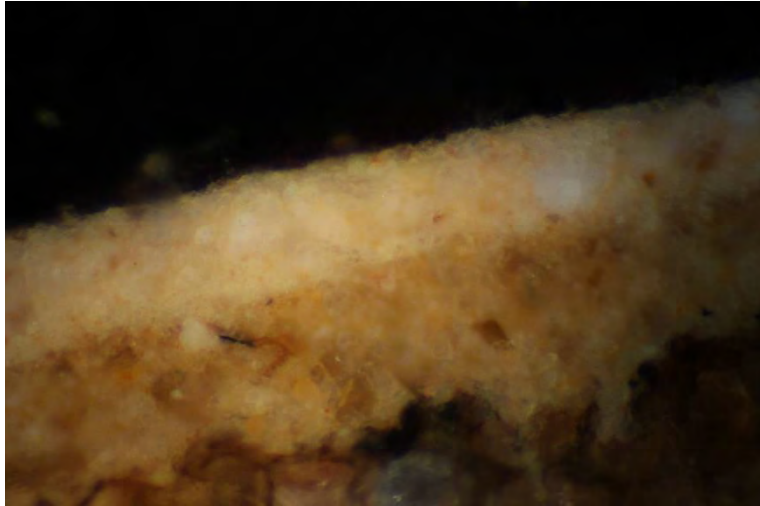
Appendix A – Sample Analysis Sheets

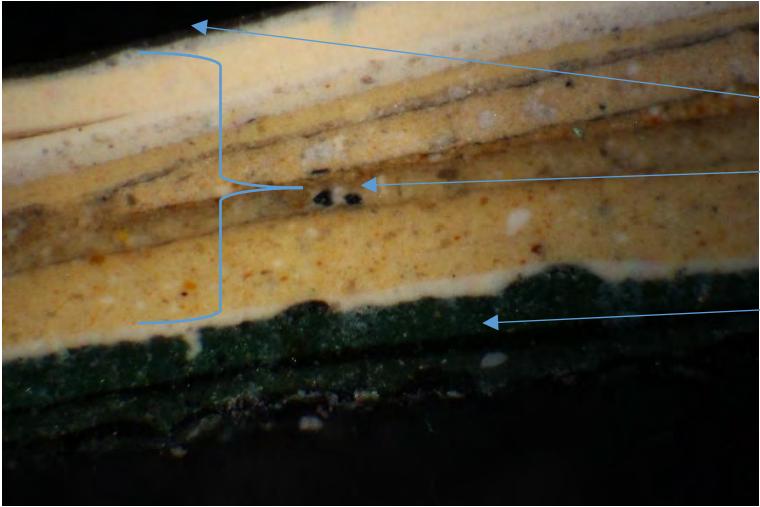
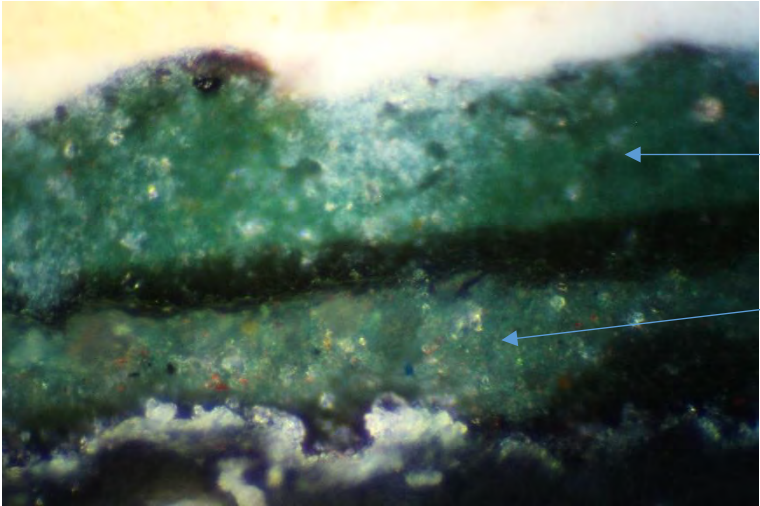
Sample Ref:PS.01	Location: 40-46 Princess Street
Paint sample removed from: Location: 01 – Level 8 front wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 – Magnification Current blue paint scheme (2No layers) over wallpaper. 4No layers of varying greens Red scheme with varnish over Earliest green paint scheme over lime plaster. X400 - Earliest paint layers. A light green oil paint based on lead carbonate with Verdigris pigment.
Lead Test	
Early schemes tested for lead	Yes – positive.

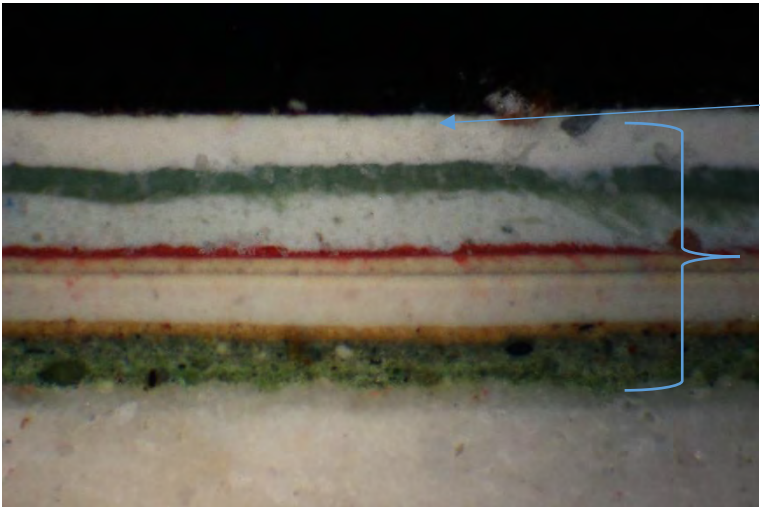
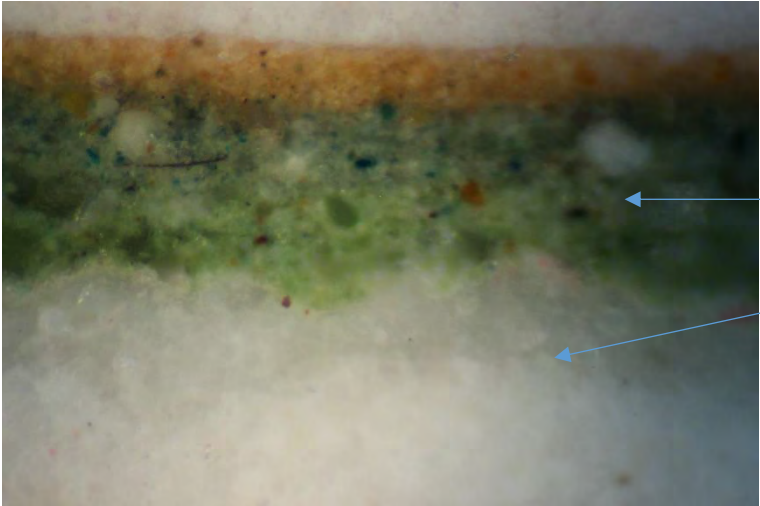
Sample Ref:PS.02	Location: 40-46 Princess Street
Paint sample removed from: Location: 02 – Level 8 mid/rear wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification Current stone coloured scheme. Earlier white and blue limewash applications. Earliest scheme. X400 - Earliest paint layers. A white limewash – note dirt on surface of the paint. Brickwork fragment.
Lead Test	
Early schemes tested for lead	Yes – negative

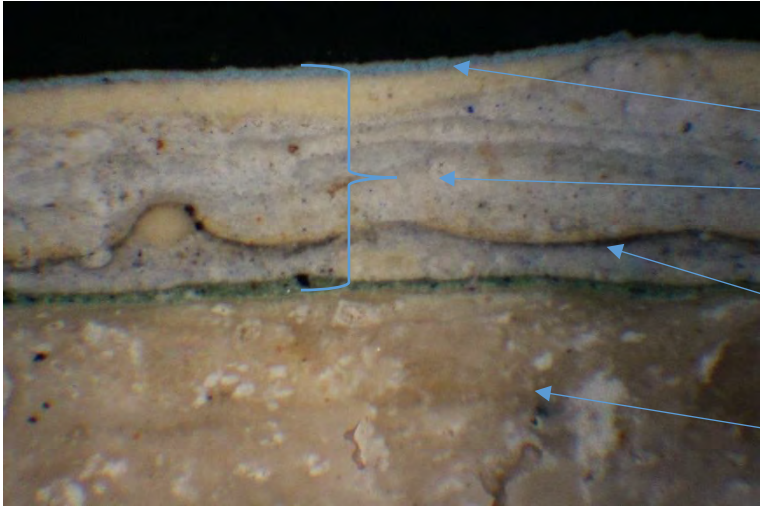
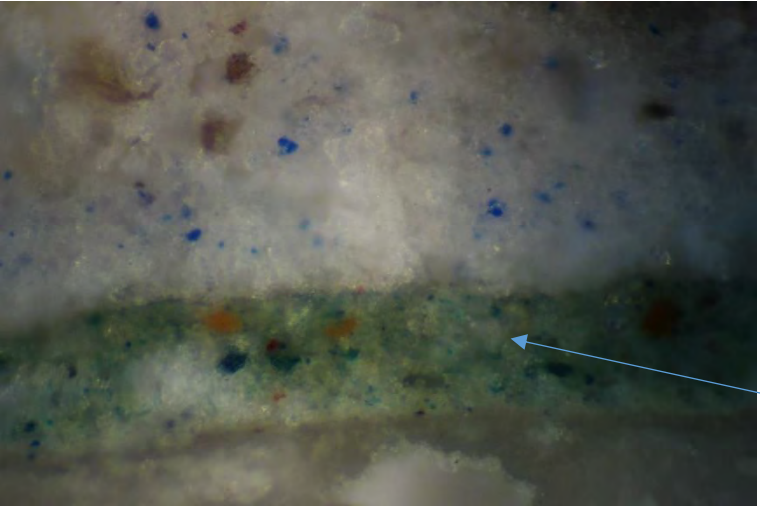
Sample Ref:PS.03	Location: 40-46 Princess Street
Paint sample removed from: Location: 03 – Level 8 front beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 – Current black paint scheme White scheme over earlier blue. 4No stone coloured paint applications. Earliest paint layer on timber beam. X400 - Earliest paint layers. Layer of white oil paint based on lead carbonate.
Lead Test	
Early schemes tested for lead	Yes – positive.

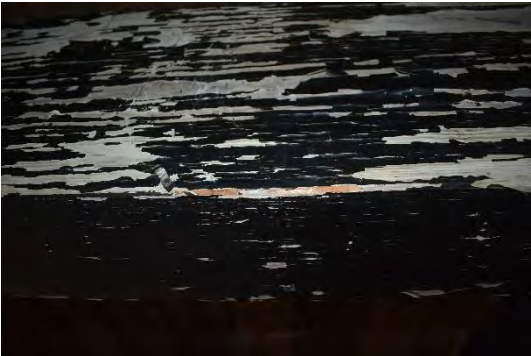
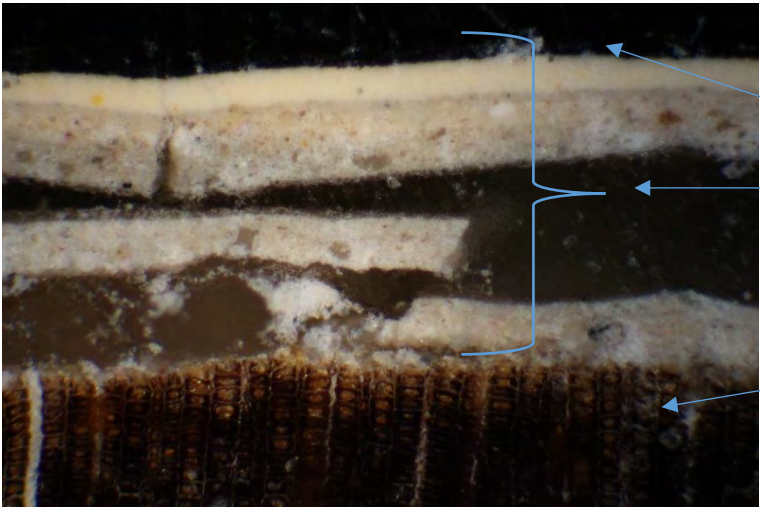
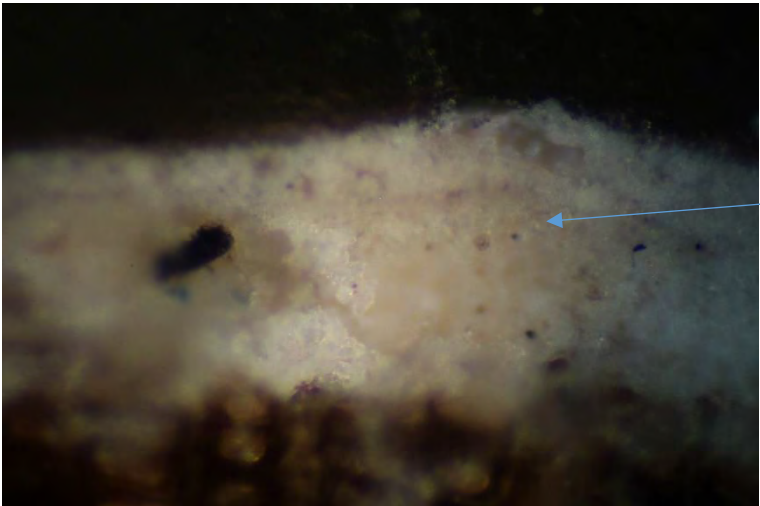
Sample Ref:PS.04	Location: 40-46 Princess Street
Paint sample removed from: Location: 04 – Level 8 rear soffit. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 – Current visible paint layer – light blue. Approx. 7No layers of blue limewash over original white limewash. Timber fragment X400 - Earliest paint layers. White limewash paint system.
Lead Test	
Early schemes tested for lead	Yes – negative.

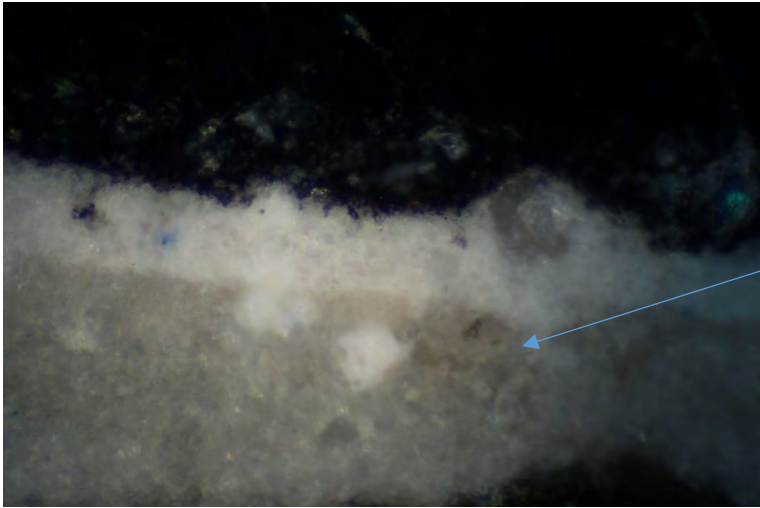
Sample Ref:PS.05	Location: 40-46 Princess Street
Paint sample removed from: Location: 05 – Level 8 mid beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification– Only 2No paint layers are present in the sample. 2No layers of stone coloured paint. X400 - Earliest paint layers. A light brown oil paint with umber pigments.
Lead Test	
Early schemes tested for lead	Yes – positive.

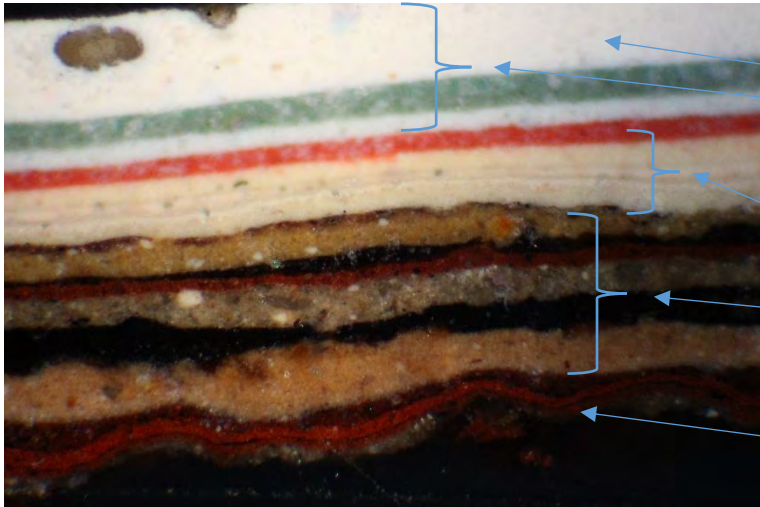
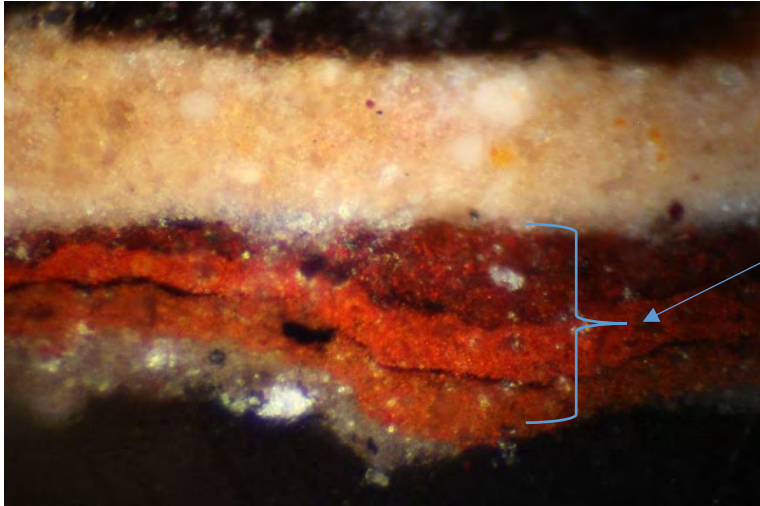
Sample Ref:PS.06	Location: 40-46 Princess Street
Paint sample removed from: Location: 06 – Level 8 front column. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification– Current green paint scheme 10 separate layers of white and stone coloured coatings (zinc oxide based). Two layers of a rich green paint. X400 - Earliest paint layers. Later application with similar varnish finish. A rich green oil paint with a varnish finish.
Lead Test	
Early schemes tested for lead	Yes – positive.

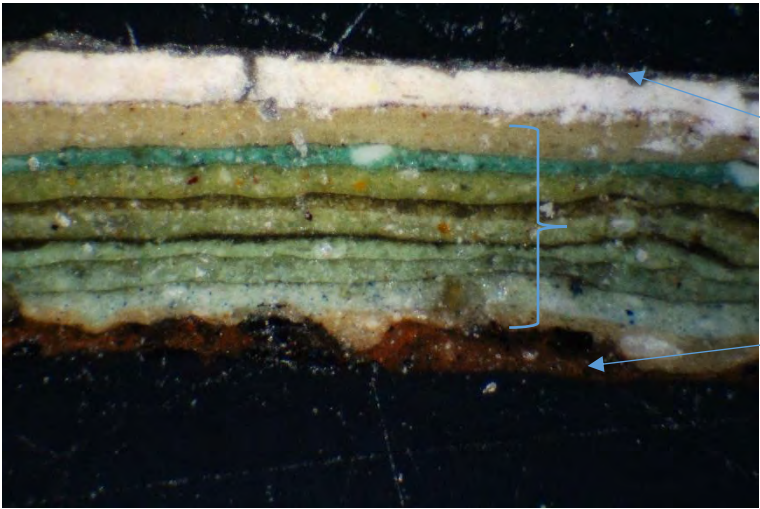
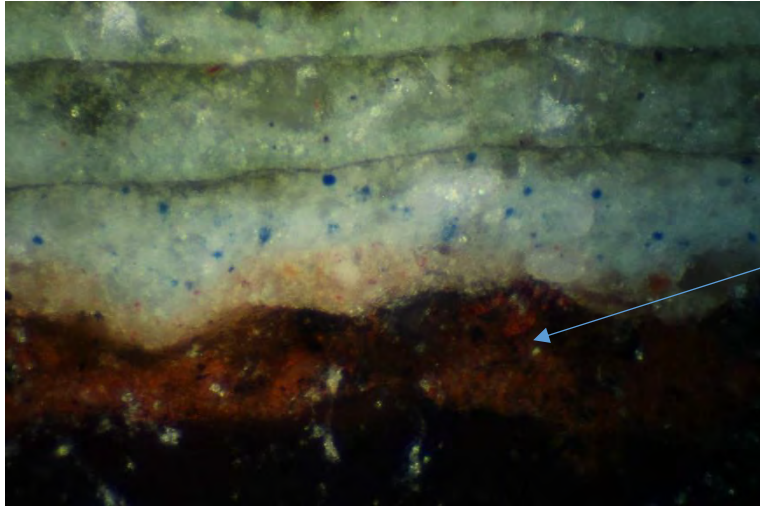
Sample Ref:PS.07	Location: 40-46 Princess Street
Paint sample removed from: Location: 07 – Level 6 front wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current off-white paint scheme 10 separate paint layers are visible. X400 - Earliest paint layers. Original wall colour – a mid green oil paint based on lead carbonate.. Lime plaster
Lead Test	
Early schemes tested for lead	Yes – positive.

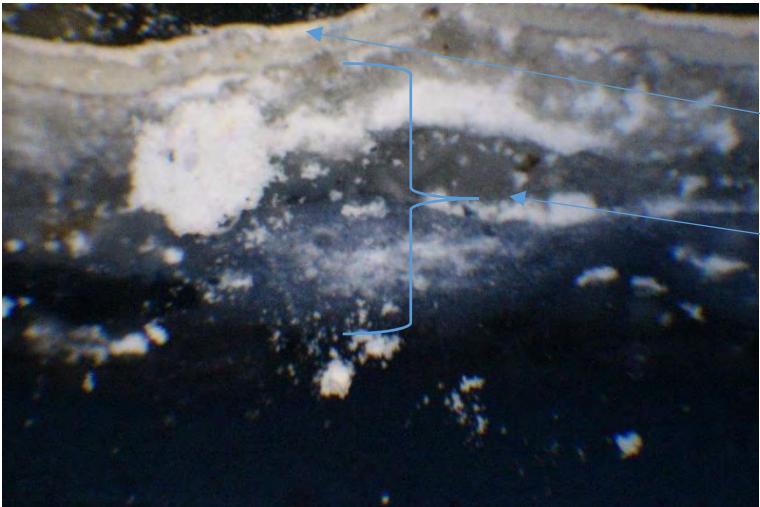
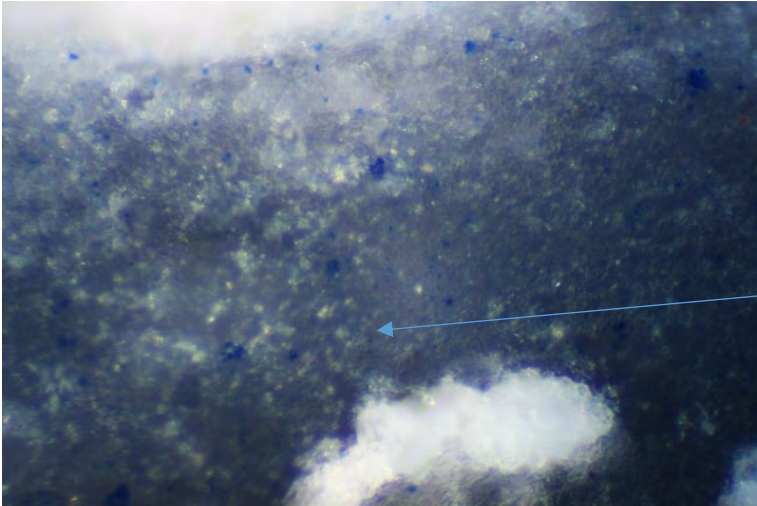
Sample Ref:PS.08	Location: 40-46 Princess Street
Paint sample removed from: Location: 08 – Level 6 rear wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification – Current mid-blue paint scheme. No separate paint layers are visible. Thick dirt layer over second paint layer – indicating that it was present for some time. Lime plaster X400 - Earliest paint layers. (The original green paintwork is overpainted with a light blue limewash / distemper). Original paint scheme – a mid-green oil paint.
Lead Test	
Early schemes tested for lead	Yes – positive.

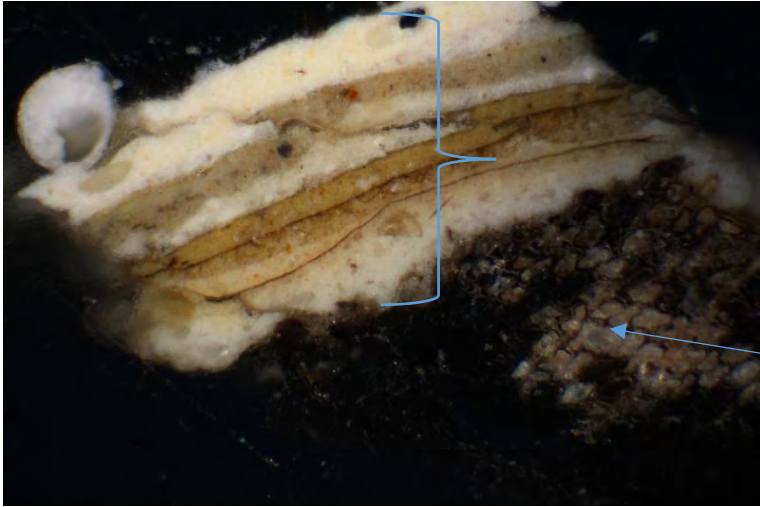
Sample Ref:PS.09	Location: 40-46 Princess Street
Paint sample removed from: Location: 09 – Level 6 front beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current black paint scheme. Only 3No separate paint layers noted in sample. Timber beam. X400 - Earliest paint layers. Earliest paint scheme – a light stone coloured oil paint. (The paint is in a very friable condition and easily detached from the substrate. Given the limited number of coatings this earliest coating is unlikely to be the original colour).
Lead Test	
Early schemes tested for lead	Yes – negative.

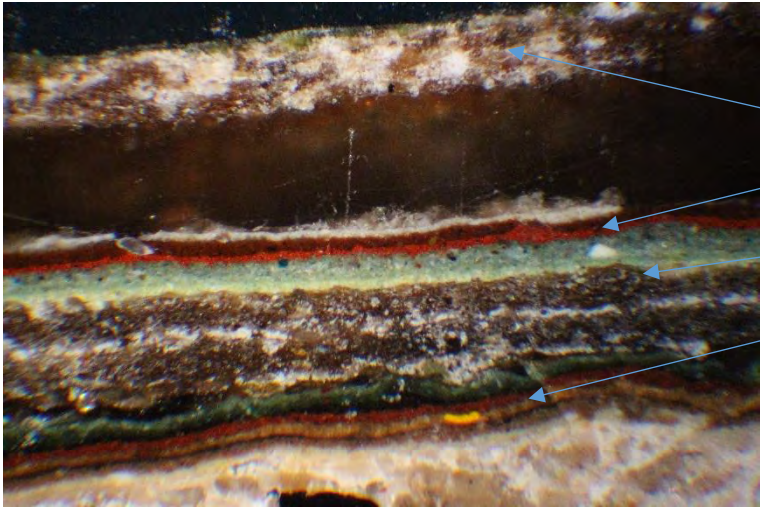
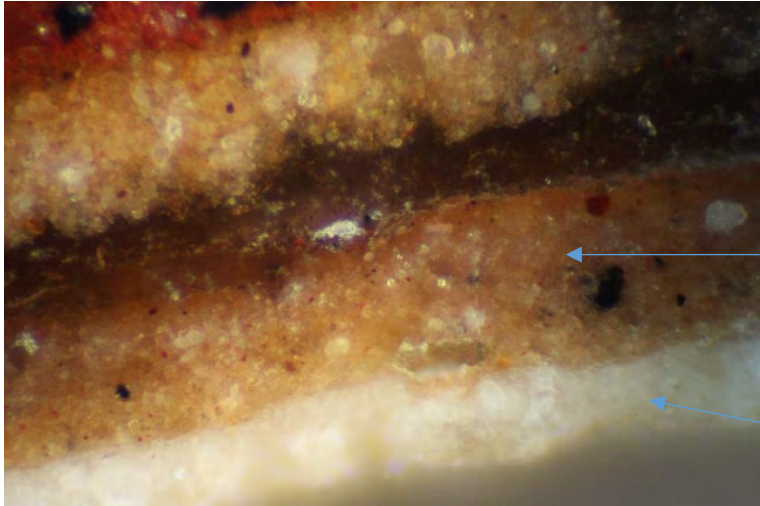
Sample Ref:PS.10	Location: 40-46 Princess Street
Paint sample removed from: Location: 10 – Level 6 front soffit. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification– Current black paint scheme. Only 3No separate paint layers are visible. Earliest paint layer. X400 - Earliest paint layers. Earliest paint scheme – a white lime wash coating.
Lead Test	
Early schemes tested for lead	Yes – negative.

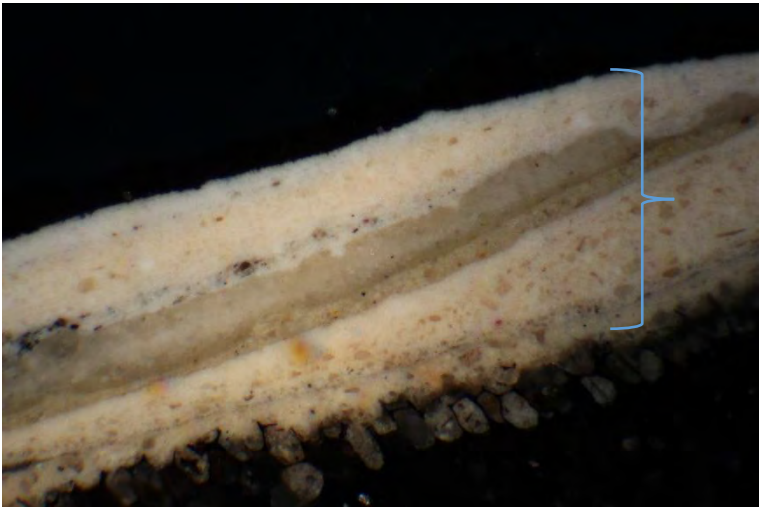
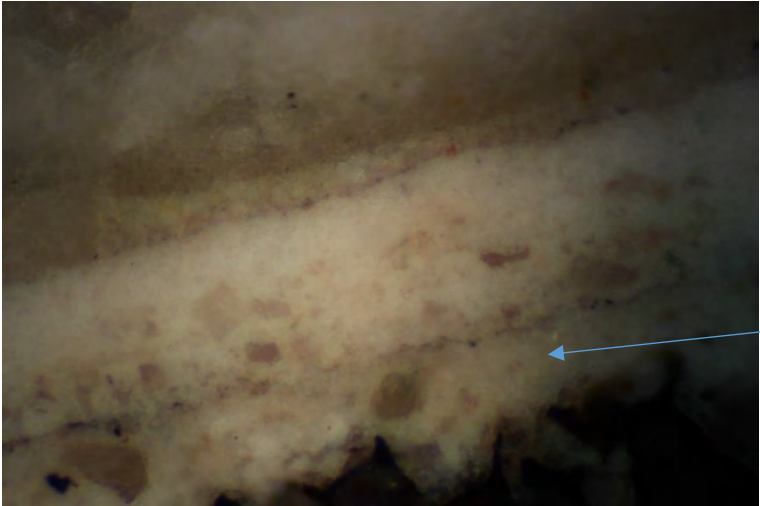
Sample Ref:PS.11	Location: 40-46 Princess Street
Paint sample removed from: Location: 11 – Level 6 front column. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current white paint scheme 3No modern paint layers based on Titanium whites. 3No off whites based on zinc oxides Paint schemes based on lead carbonates. Iron oxide reds X400 - Earliest paint layers. 3No applications of a red iron oxide paint. (Trace of a white – possibly primer layer)
Lead Test	
Early schemes tested for lead	Yes – negative.

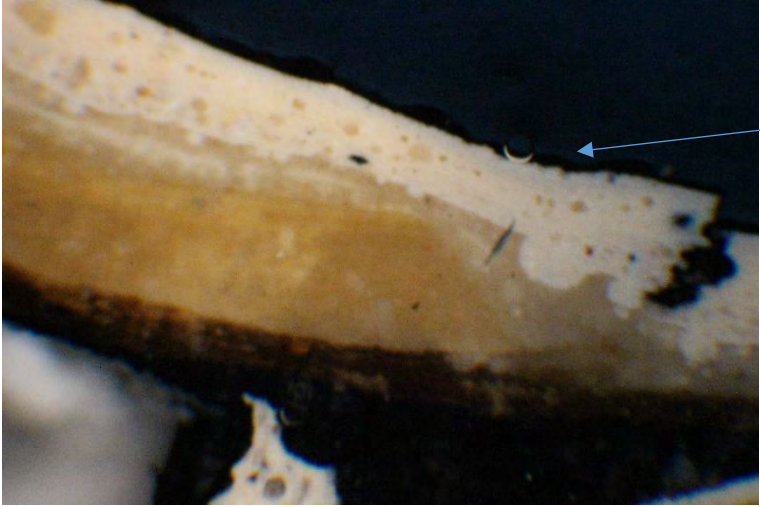
Sample Ref:PS.12	Location: 40-46 Princess Street
Paint sample removed from: Location: 12 – Level 6 rear column. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Thin layer of aluminium paint over a modern Titanium white. 8No layers of green paints. Earliest brown paint layer X400 - Earliest paint layers. Earliest decorative coating – a mid green oil paint. Earliest paint layer – a mid-brown oil paint (most likely applied at the mill before delivery to site). Each of the green paint layers has a layer of dirt showing that they were present for some time and redecorated regularly.
Lead Test	
Early schemes tested for lead	Yes – positive.

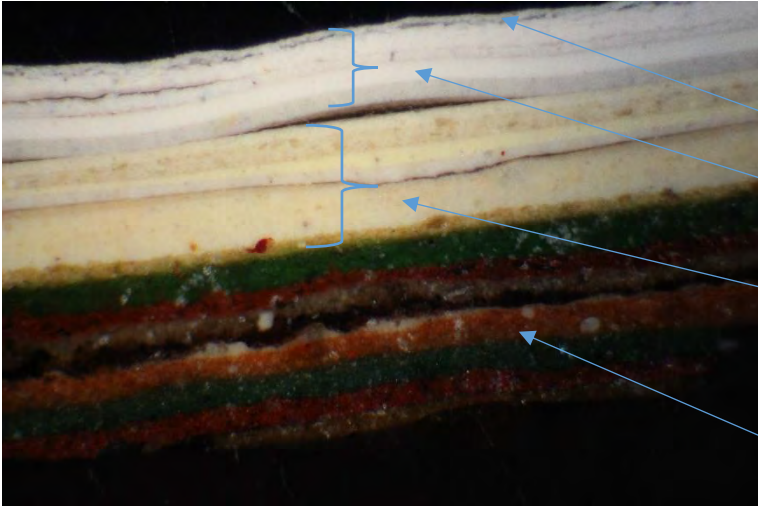
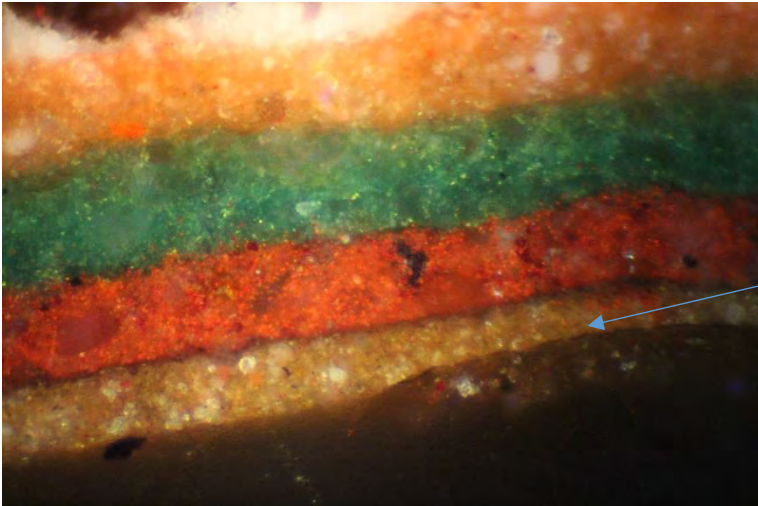
Sample Ref:PS.13	Location: 40-46 Princess Street
Paint sample removed from: Location: 13 – Level 6 rear soffit. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification– Current stone coloured paint scheme. Limewash paint layers. X400 - Earliest paint layers. Original paint scheme – a light blue limewash.
Lead Test	
Early schemes tested for lead	Yes – negative.

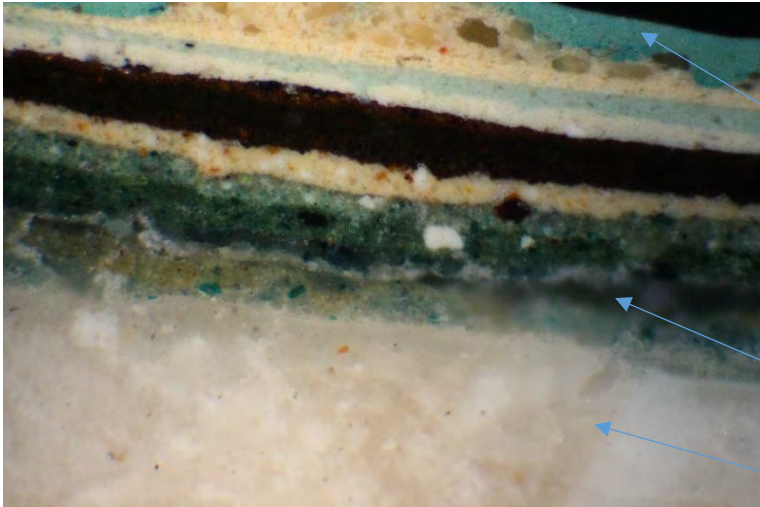
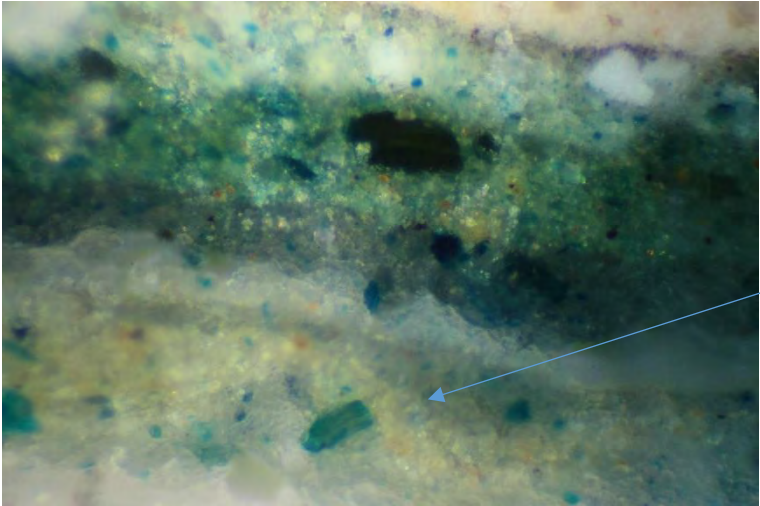
Sample Ref:PS.14	Location: 40-46 Princess Street
Paint sample removed from: Location: 14 – Level 6 rear beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
	X100 Magnification– Current off-white paint scheme. 7No separate paint layers in the sample. Timber beam.
	X400 - Earliest paint layers. Original paint scheme – a white oil paint based on lead carbonate.
Lead Test	
Early schemes tested for lead	Yes – positive.

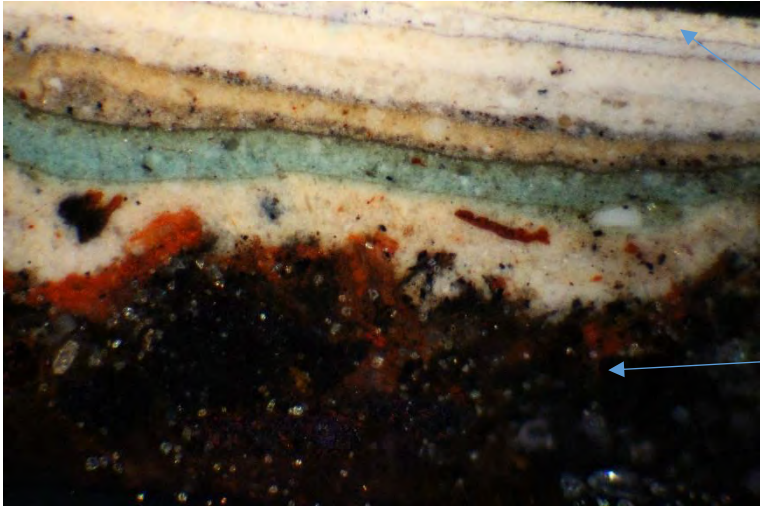
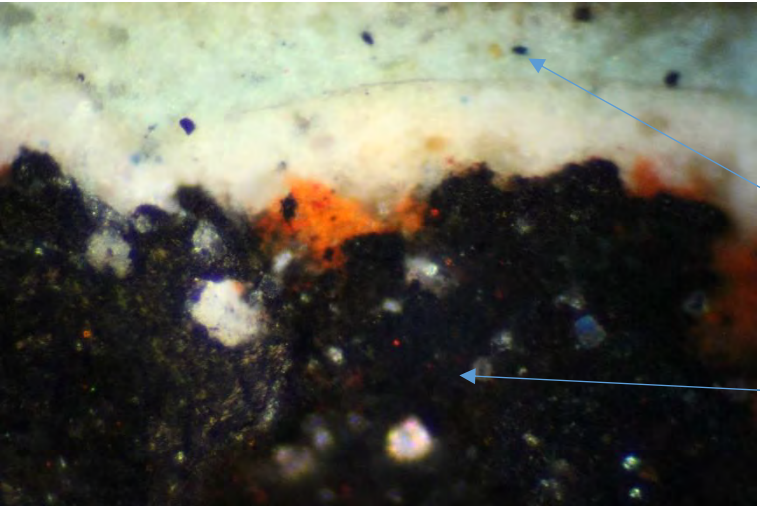
Sample Ref:PS.15	Location: 40-46 Princess Street
Paint sample removed from: Location: 15 – Level 4 front wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification - Wallpaper White, brown and red paint layers. 2No green layers over 2x wallpaper Green and red layers over historic stone coloured layers. X400 - Earliest paint layers. Original paint scheme – a light brown / stone coloured oil paint. Lime plaster
Lead Test	
Early schemes tested for lead	Yes – positive.

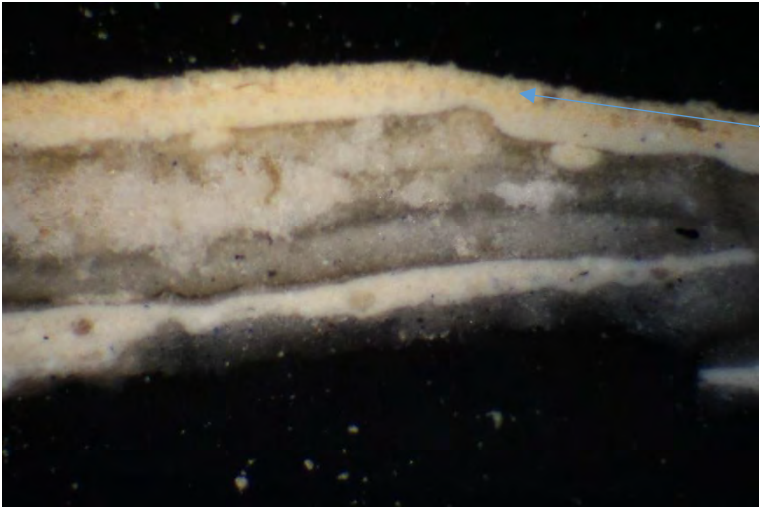
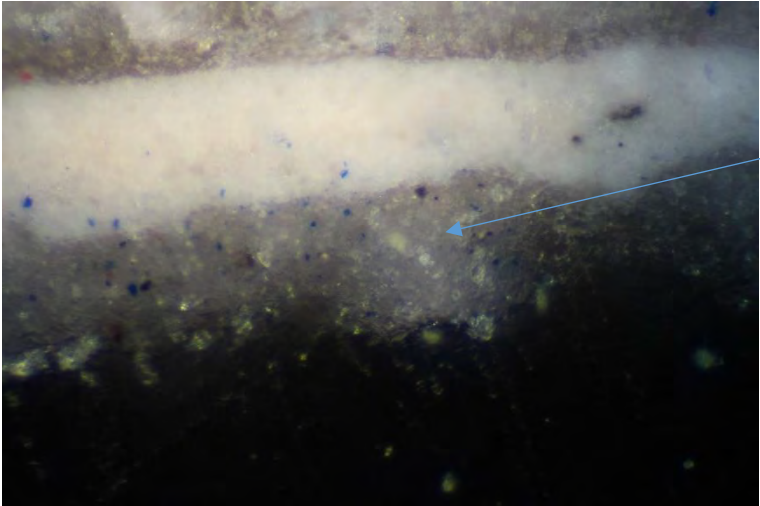
Sample Ref:PS.16	Location: 40-46 Princess Street
Paint sample removed from: Location: 16 – Level 4 front beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current black paint scheme 10 No paint layers are visible in the sample. The most recent is black however prior to this all coats were off-white / white. X400 - Earliest paint layers. Earliest paint scheme – a white oil paint. Note: charring to timber.
Lead Test	
Early schemes tested for lead	Yes – negative.

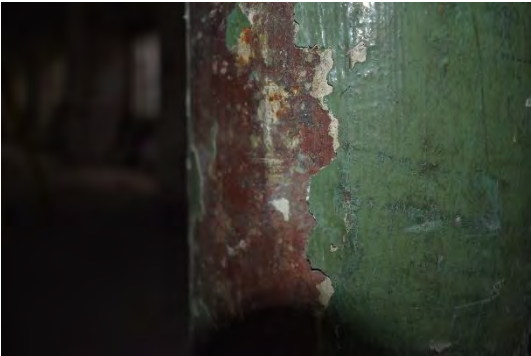
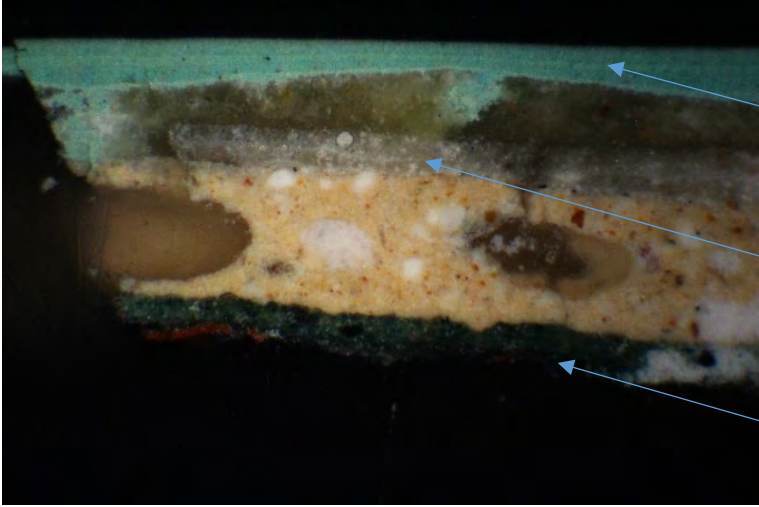
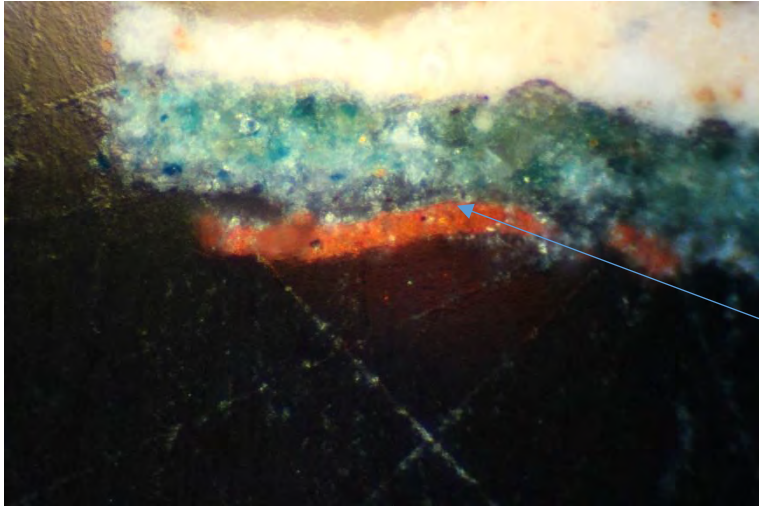
Sample Ref:PS.17	Location: 40-46 Princess Street
Paint sample removed from: Location: 17 – Level 4 front soffit. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 magnification – Current black paint scheme 2No layers of off-white Thick layer of limewash over charred timber. X400 - Earliest paint layers. Earliest paint scheme – a thick layer of an off-white limewash covering the charred timbers. Note: This is unlikely to be the original colour as there is evidence of fire damage.
Lead Test	
Early schemes tested for lead	Yes – negative.

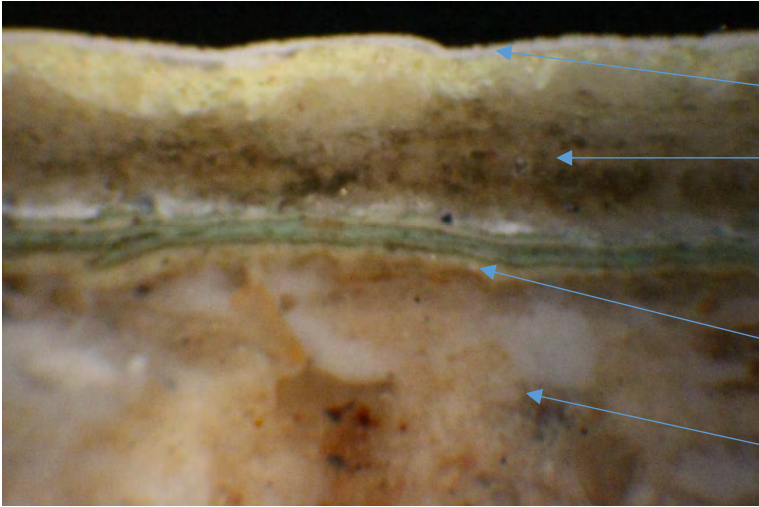
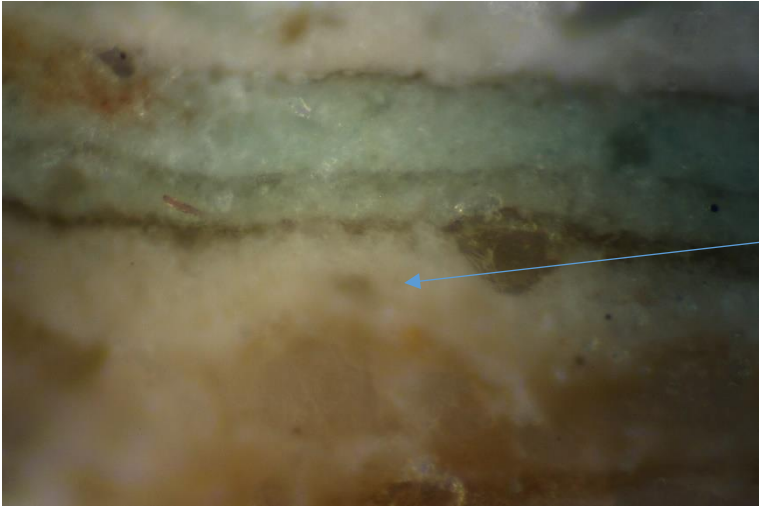
Sample Ref:PS.18	Location: 40-46 Princess Street
Paint sample removed from: Location: 18 – Level 4 front column. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current white paint scheme 4No layers of modern white gloss and undercoat layers based on Titanium white. 6No layers of off-white gloss and undercoat paints based on zinc oxides. Earlier green, red and brown paint schemes. X400 - Earliest paint layers. Original paint scheme – light brown oil paint (containing lead carbonate).
Lead Test	
Early schemes tested for lead	Yes – positive.

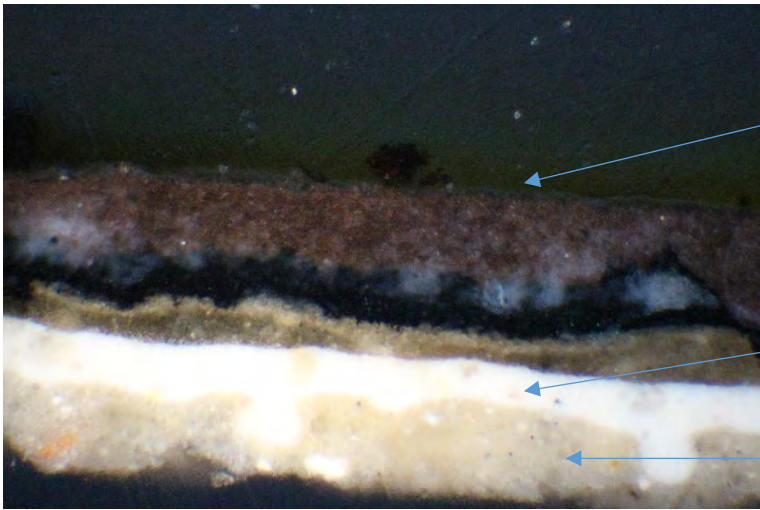
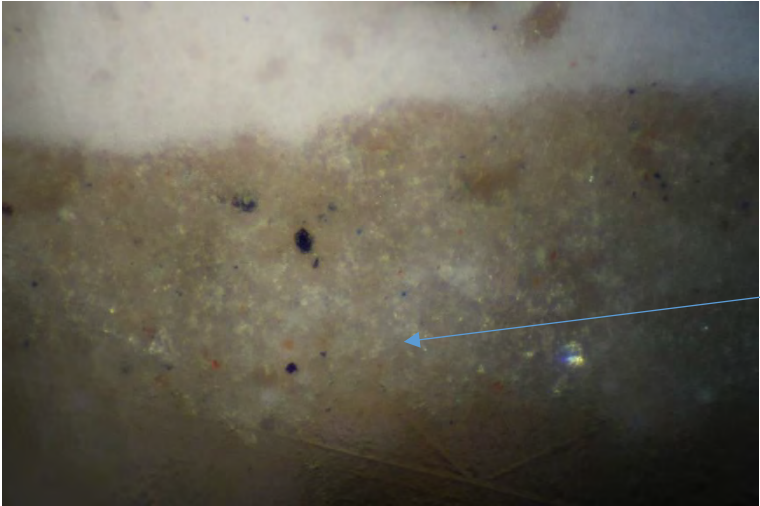
Sample Ref:PS.19	Location: 40-46 Princess Street
Paint sample removed from: Location: 19 – Level 4 rear wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current green paint scheme. 8No separate paint layers present in the sample. Light blue limewash early layers. Lime plaster X400 - Earliest paint layers. Original paint scheme – a light blue limewash
Lead Test	
Early schemes tested for lead	Yes – negative.

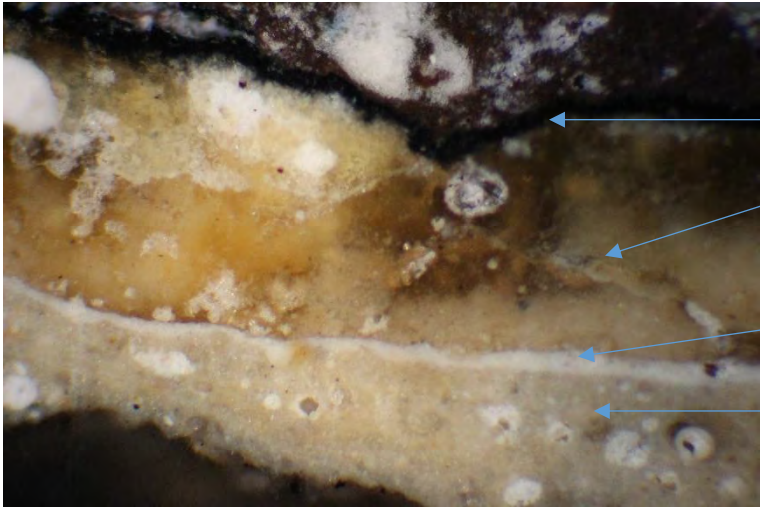
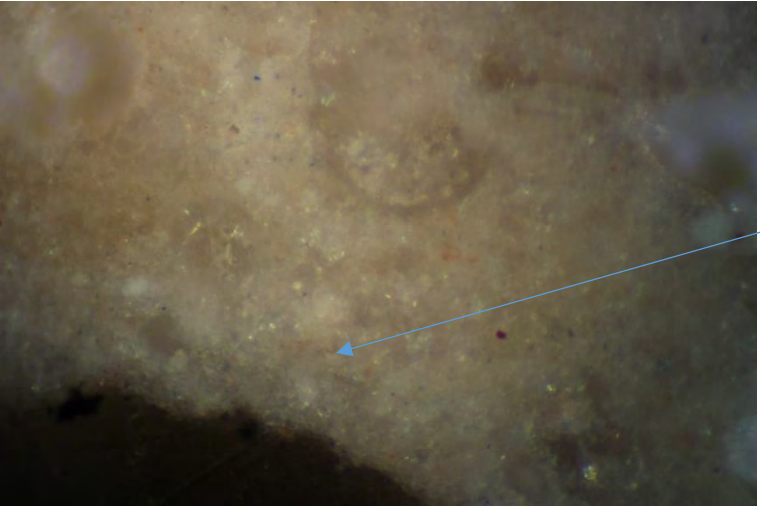
Sample Ref:PS.20	Location: 40-46 Princess Street
Paint sample removed from: Location: 20 – Level 4 rear beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current stone coloured paint scheme. 9No separate paint layers visible in the sample. Thick coating – possibly mill applied. X400 - Earliest paint layers. Original “finished” paint coating was likely to be the green oil paint layer applied over a white primer. Thick layer of carbon black / red lead oil paint. This is likely to have been applied at the mill before delivery to site.
Lead Test	
Early schemes tested for lead	Yes – positive.

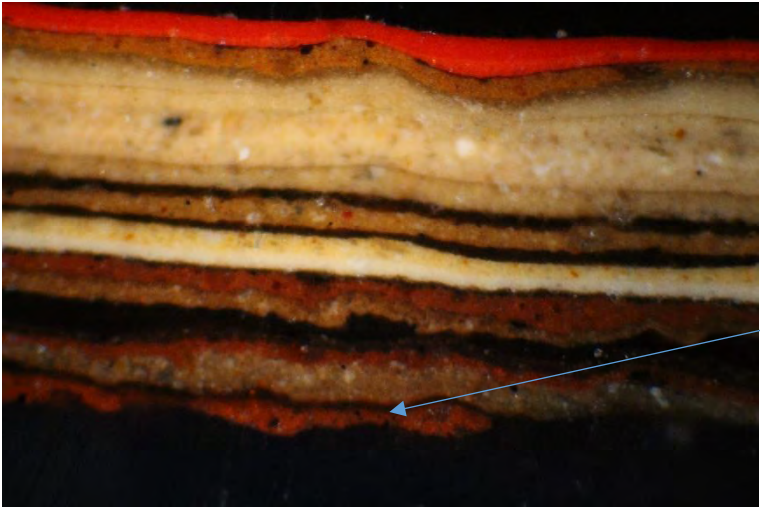
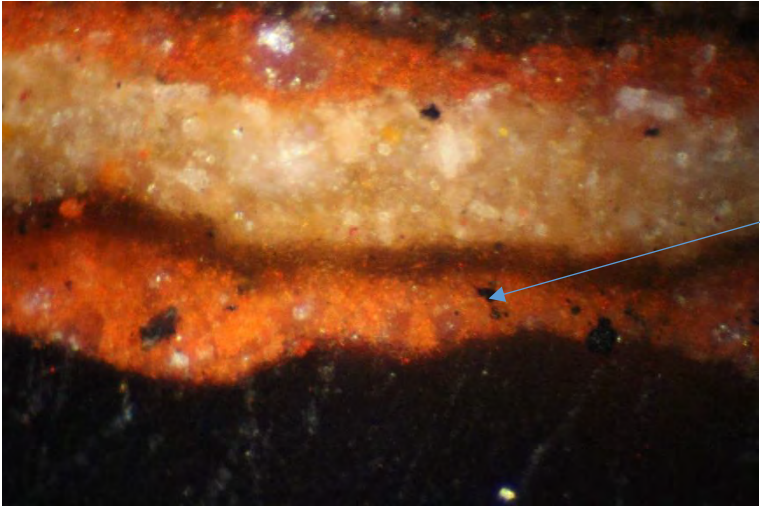
Sample Ref:PS.21	Location: 40-46 Princess Street
Paint sample removed from: Location: 21 – Level 4 rear soffit. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current stone coloured paint scheme. The two most recent layers are modern and based on Zinc oxide. 4No white / light blue lime wash applications. X400 - Earliest paint layers. Earliest paint scheme – a white limewash paint. Note: The white limewash includes a small amount of Prussian Blue pigment to off-set its slightly yellow colour.
Lead Test	
Early schemes tested for lead	Yes – negative.

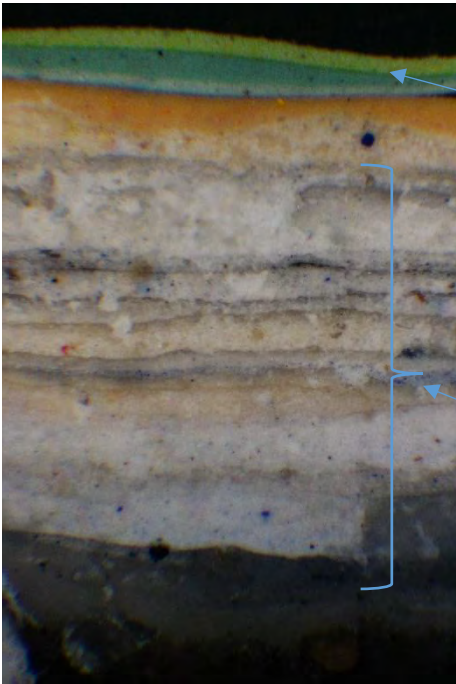
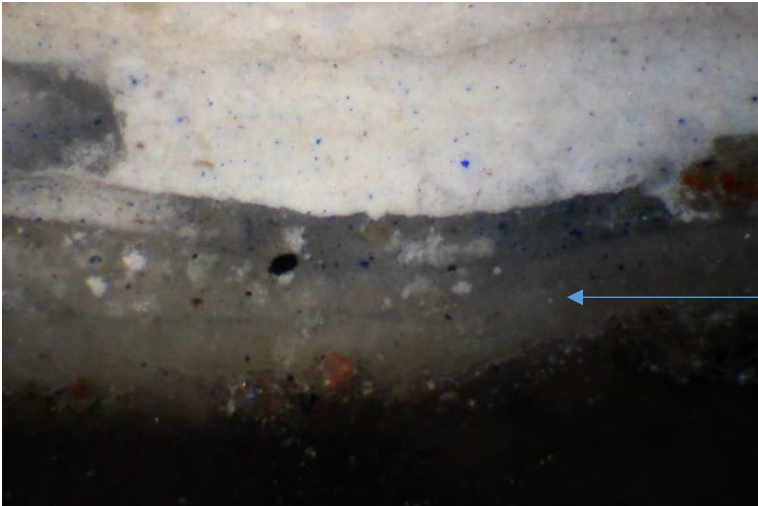
Sample Ref:PS.22	Location: 40-46 Princess Street
Paint sample removed from: Location: 22 – Level 4 rear column. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current green paint scheme. (3No separate green layers are present) Single layer of limewash (later coats partly separated) Thick stone coloured paint layer. Earlier green and red paint schemes. X400 - Earliest paint layers. Earliest paint layer – a red oxide oil paint. Later covered by two layers of mid greens.
Lead Test	
Early schemes tested for lead	Yes – positive.

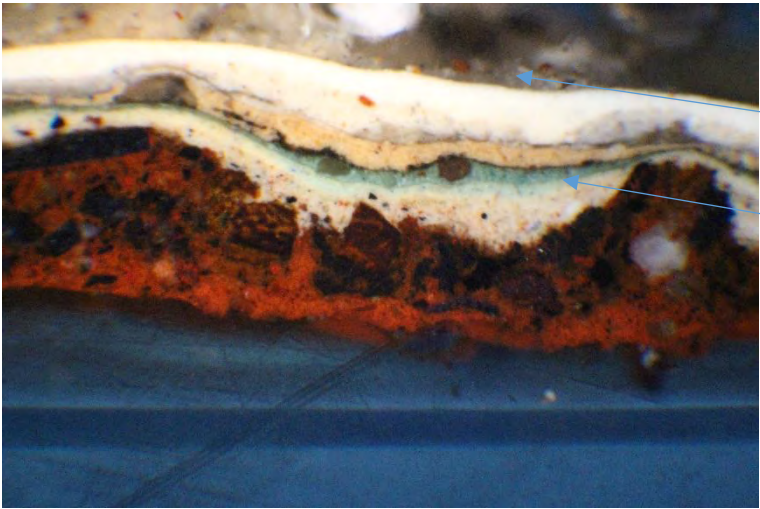
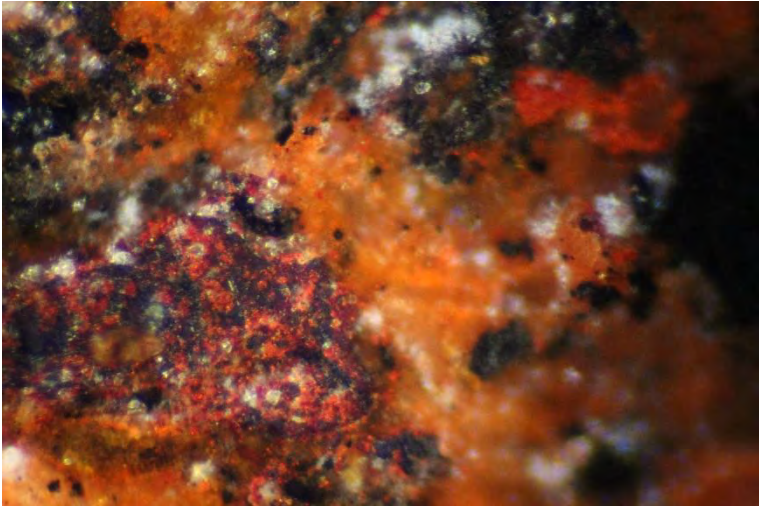
Sample Ref:PS.23	Location: 40-46 Princess Street
Paint sample removed from: Location: 23 – Level 2 front wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification – Current light blue paint scheme. Woodchip wallpaper. White paint layer 2No mid green layers. Off-white layer (earliest layer). Lime plaster X400 - Earliest paint layers. Original paint scheme – an off-white oil paint based on lead carbonate.
Lead Test	
Early schemes tested for lead	Yes – positive.

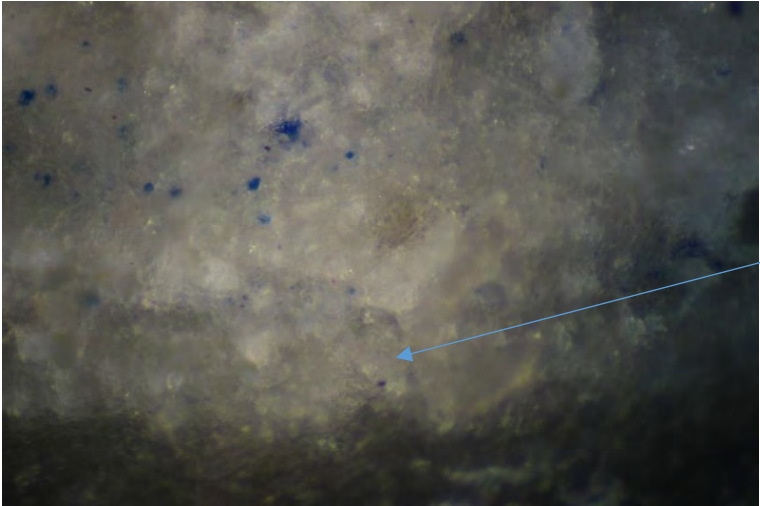
Sample Ref:PS.24	Location: 40-46 Princess Street
Paint sample removed from: Location: 24 – Level 2 front beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current black scheme (paint very friable and easily disturbed). Grey paint layer. White oil paint A bright zinc oxide white paint layer. Stone coloured limewash / distemper. X400 - Earliest paint layers. Earliest paint scheme – a stone coloured limewash / distemper.
Lead Test	
Early schemes tested for lead	Yes – negative.

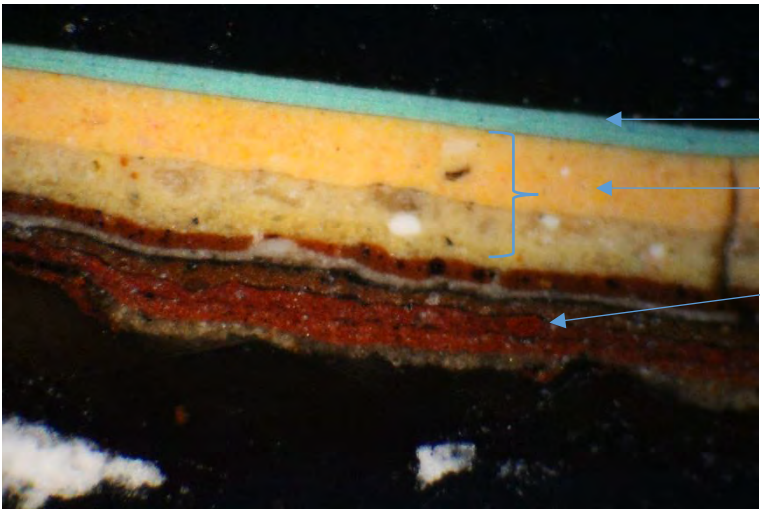
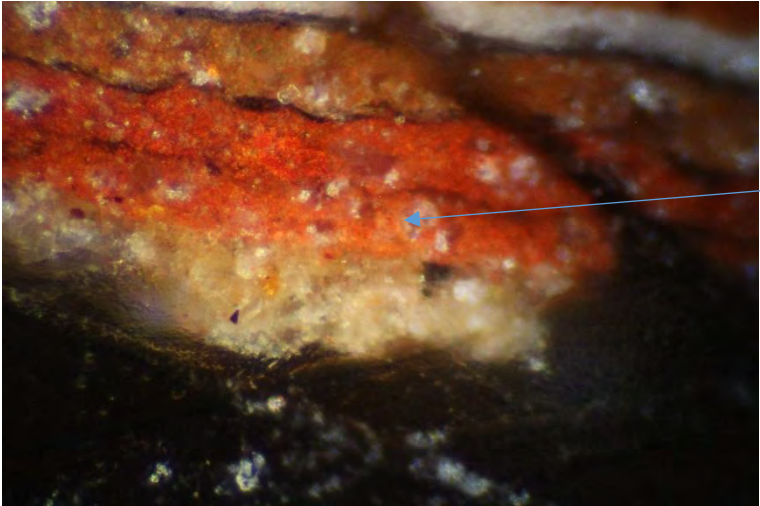
Sample Ref:PS.25	Location: 40-46 Princess Street
Paint sample removed from: Location: 25 – Level 2 front soffit. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current black paint scheme. Thick layer of a stone coloured oil paint. White zinc oxide white paint layer. Thick layer of stone coloured lime wash. X400 - Earliest paint layers. Earliest paint colour – a stone coloured limewash / distemper.
Lead Test	
Early schemes tested for lead	Yes – negative.

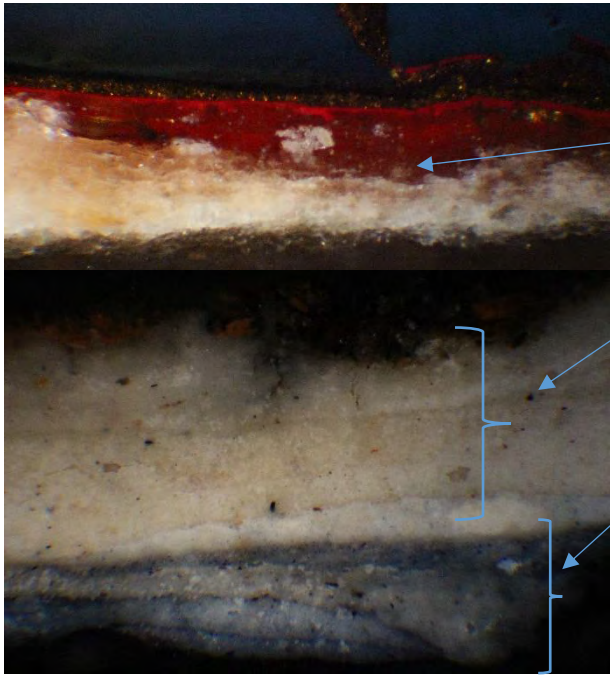
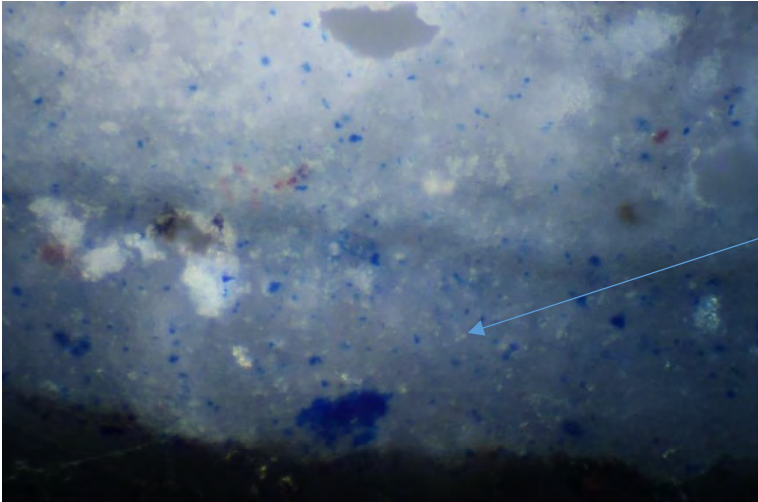
Sample Ref:PS.26	Location: 40-46 Princess Street
Paint sample removed from: Location: 26 – Level 2 front column. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current red paint scheme. 17 separate layers are visible in the sample. Earliest red schemes. X400 - Earliest paint layers. Original paint scheme – a red iron oxide oil paint with a varnish coating bringing the finish to a gloss.
Lead Test	
Early schemes tested for lead	Yes – positive.

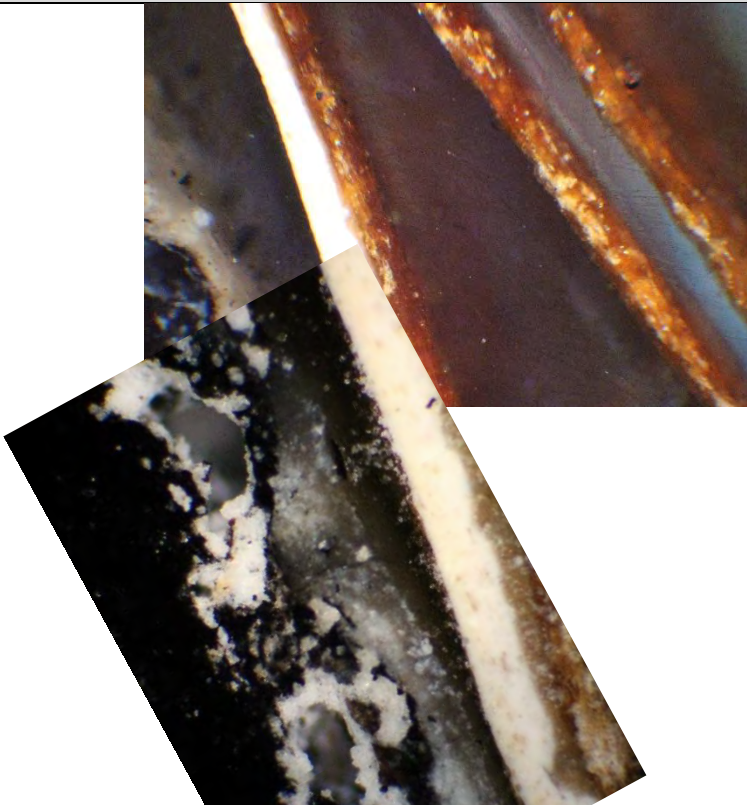
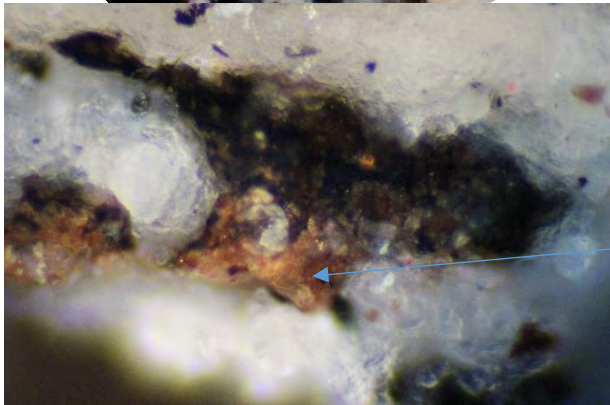
Sample Ref:PS.27	Location: 40-46 Princess Street
Paint sample removed from: Location: 27 – Level 2 rear wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification – Current green paint scheme with 2 no earlier green / blue schemes. 21 separate paint layers are visible in the sample. 17 costs of limewash / distemper. X400 - Earliest paint layers. Original paint scheme – white limewash.
Lead Test	
Early schemes tested for lead	Yes – negative.

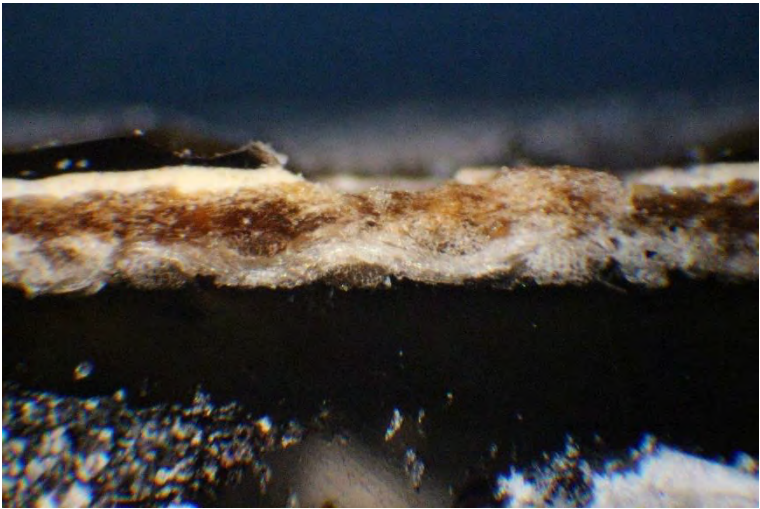
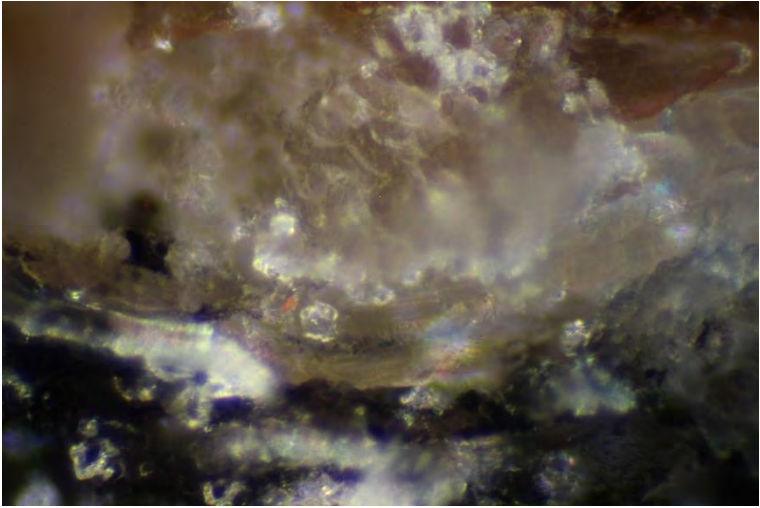
Sample Ref:PS.28	Location: 40-46 Princess Street
Paint sample removed from: Location: 28 – Level 2 rear beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 – Current grey paint scheme. First finished decorative coating green over off-white primer. Note thick dirt layer on surface of the green indicating that it was present for some time. X400 - Earliest paint layers. Earliest layer – a rough coating likely to be applied at the mill consisting of iron oxide red, carbon black and some red lead pigments.
Lead Test	
Early schemes tested for lead	Yes – positive.

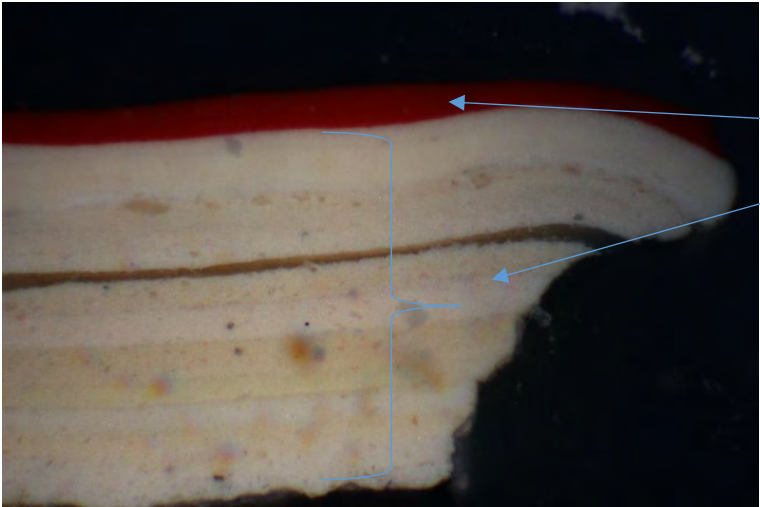
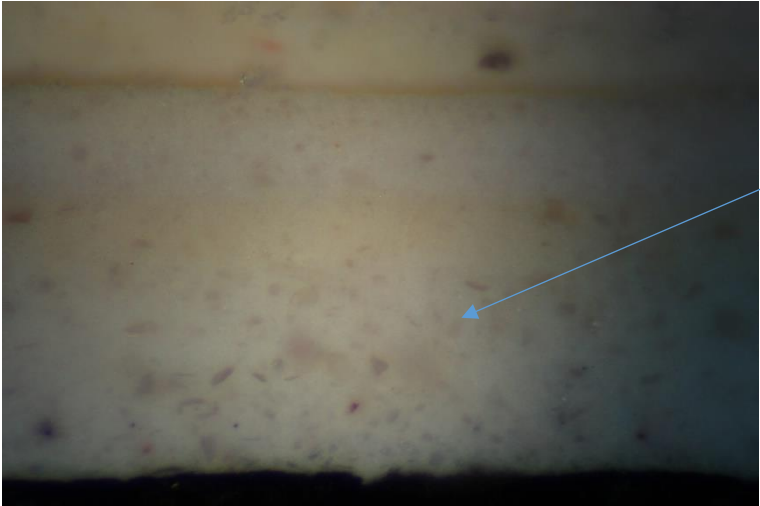
Sample Ref:PS.29	Location: 40-46 Princess Street
Paint sample removed from: Location: 29 – Level 2 rear soffit. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification - Current stone coloured paint scheme. 8No white / off paint layers. 5No light blue lime wash layers. X400 - Earliest paint layers. Earliest paint scheme – white limewash. Later limewashes tinted with Prussian Blue.
Lead Test	
Early schemes tested for lead	Yes – negative.

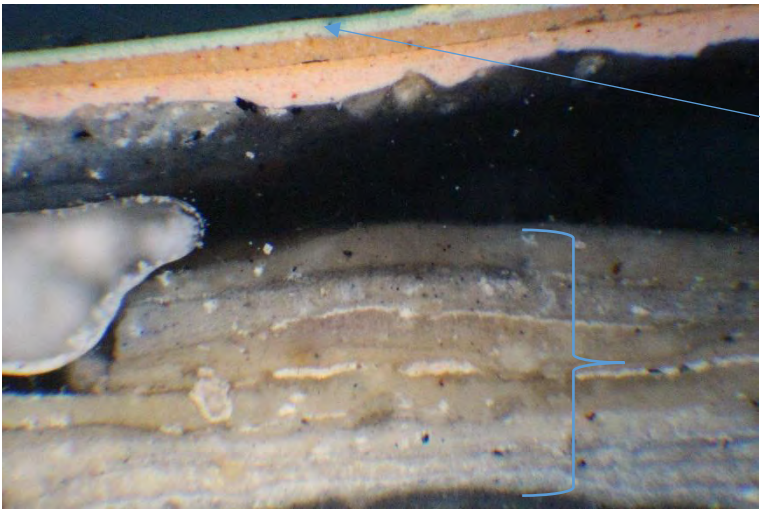
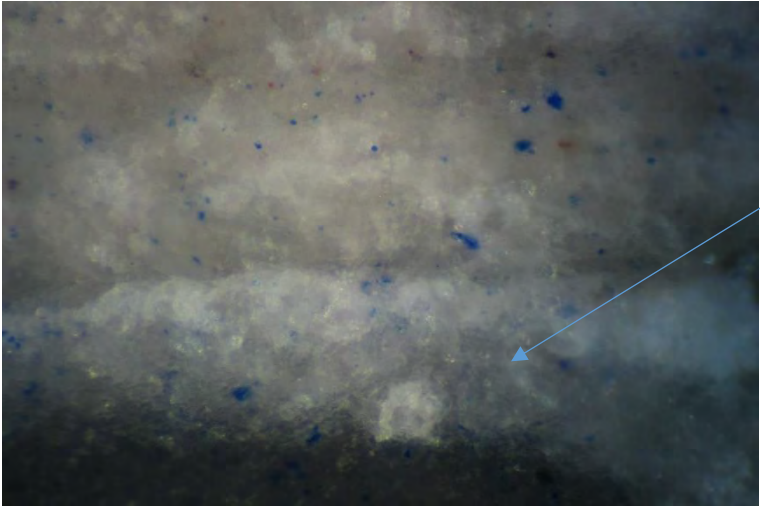
Sample Ref:PS.30	Location: 40-46 Princess Street
Paint sample removed from: Location: 30 – Level 2 rear column. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current green paint scheme. Thick orange gloss with matching undercoat based on zinc white. Earlier iron oxide red paint schemes. X400 - Earliest paint layers. Original paint scheme – red iron oxide oil paint over off-white primer coating.
Lead Test	
Early schemes tested for lead	Yes – positive.

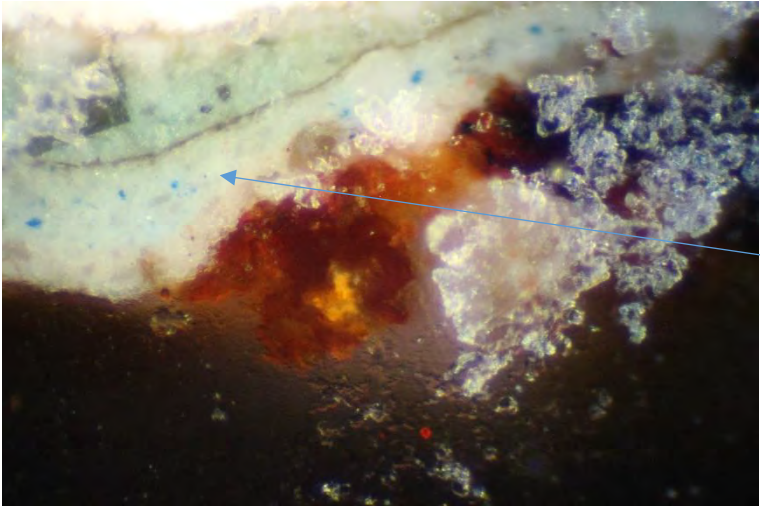
Sample Ref:PS.31	Location: 40-46 Princess Street
Paint sample removed from: Location: 31 – Level 0 front wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification – Red faced wallpapers over plaster fill. 4No white limewash / distemper paint layers. 4No light blue limewash paint layers. X400 - Earliest paint layers. Earliest paint layer – a white limewash tinted with Prussian Blue pigments.
Lead Test	
Early schemes tested for lead	Yes – negative.

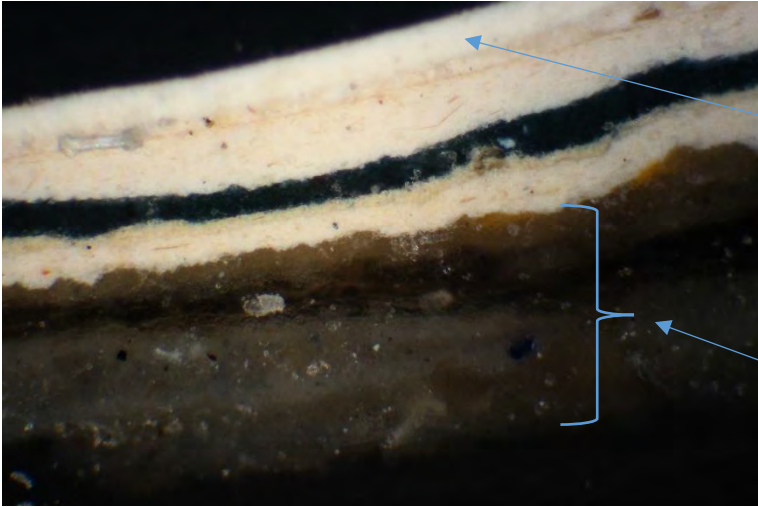
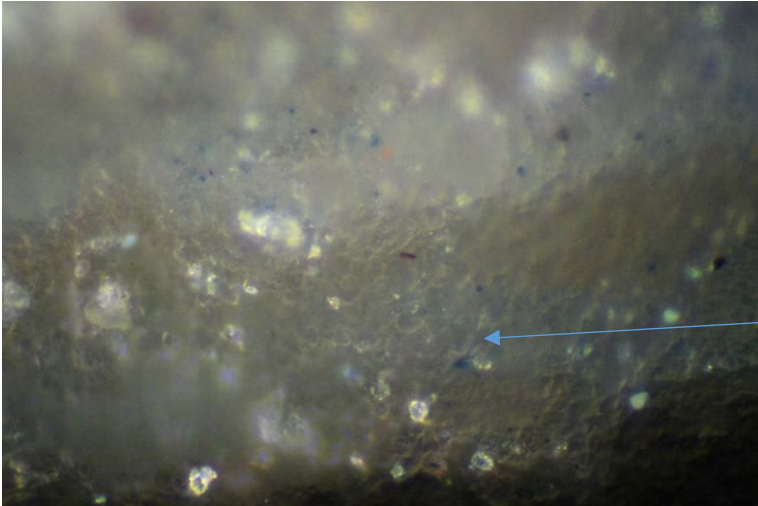
Sample Ref:PS.32		Location: 40-46 Princess Street	
Paint sample removed from: Location: 32 – Level 0 front beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).			
Sectional Photographs		Description	
		X50 – 3No layers of wallpapers over a white zinc oxide based paint. Single layer of white limewash. Note: Timber is heavily charred from fire.	
		X400 - Earliest paint layers. Earliest paint layers – light brown oil paint surrounded by light blue limewash.	
Lead Test			
Early schemes tested for lead		No.	

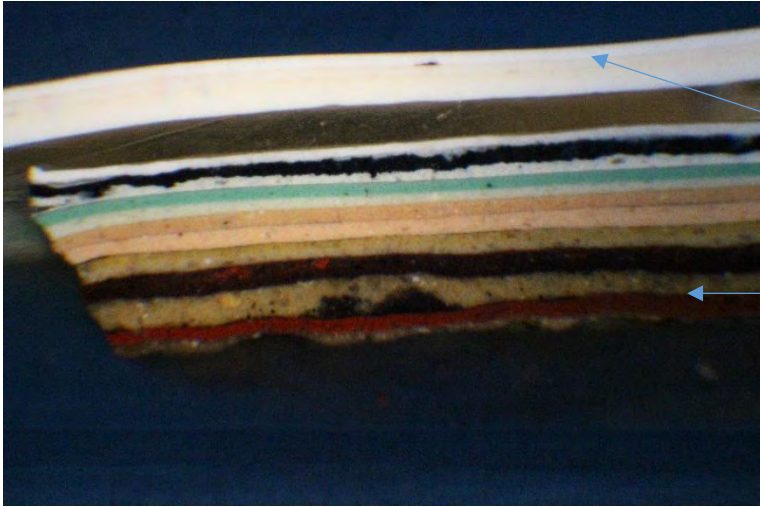
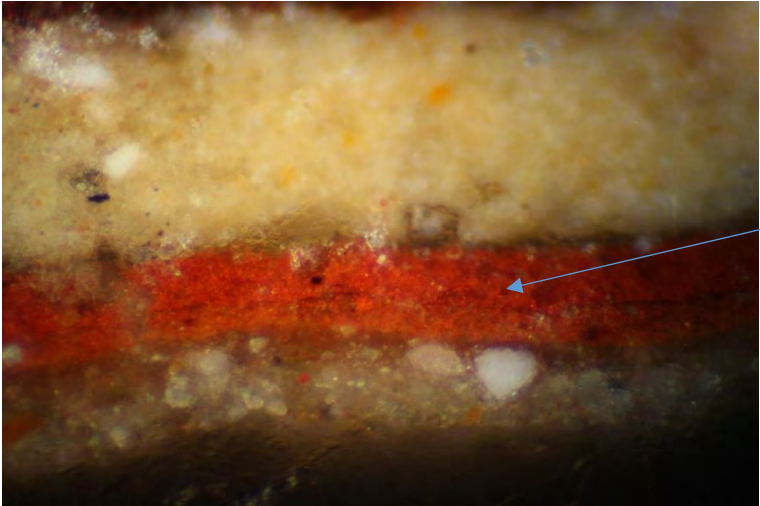
Sample Ref:PS.33	Location: 40-46 Princess Street
Paint sample removed from: Location: 33 – Level 0 front soffit. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification – Current visible black paint layer. Current white visible paint layer. Wallpaper. Heavily charred timber. X400 - Earliest paint layers. Earliest paint layer – a white limewash over charred timber.
Lead Test	
Early schemes tested for lead	Yes – negative.

Sample Ref:PS.34	Location: 40-46 Princess Street
Paint sample removed from: Location: 34 – Level 0 front column. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current red paint scheme. 10No layers of white paint (none based on lead carbonate). X400 - Earliest paint layers. Earliest paint layer – white oil paint most likely a Lithopone possibly indicating that the original paint finishes have been removed.
Lead Test	
Early schemes tested for lead	Yes – negative.

Sample Ref:PS.35	Location: 40-46 Princess Street
Paint sample removed from: Location: 35 – Level 0 rear wall. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification - Current green paint scheme. 2No earlier red schemes. 10No white and light blue limewash schemes. X400 - Earliest paint layers. Earliest paint layer – a white limewash tinted with Prussian Blue pigments.
Lead Test	
Early schemes tested for lead	Yes – negative.

Sample Ref:PS.36	Location: 40-46 Princess Street
Paint sample removed from: Location: 36 – Level 0 rear beam. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current off-white paint scheme. 6No white / off-white paint schemes with a single black scheme. Earlier 2x green schemes with some evidence of a black/red primer. X400 - Earliest paint layers. Earliest decorative coating is the light green oil paint scheme. The red/brown primer coating is likely to have been applied at the mill before delivery to site.
Lead Test	
Early schemes tested for lead	Yes – positive.

Sample Ref:PS.37	Location: 40-46 Princess Street
Paint sample removed from: Location: 37 – Level 0 rear soffit. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X100 Magnification – Current off-white decorative scheme. Later white schemes based on zinc oxide with a single black paint layer. Earlier limewash applications. X400 - Earliest paint layers. Earliest paint layer – a light blue limewash.
Lead Test	
Early schemes tested for lead	Yes – negative.

Sample Ref:PS.38	Location: 40-46 Princess Street
Paint sample removed from: Location: 38 – Level 0 rear column. (The earliest paint layers are shown towards the bottom of the layers shown in the photographs).	
Sectional Photographs	Description
 	X50 Magnification – Current white paint scheme. 12No layers are visible in the sample. Earliest paint coatings – red iron oxide paint layer. X400 - Earliest paint layers. Earliest decorative paint layer – a red iron oxide based oil paint over a off-white primer.
Lead Test	
Early schemes tested for lead	Yes – positive.