HOLDEN CONSERVATION LTD

Works on the plaster ceiling in the Vestry, St Olave's.

2008

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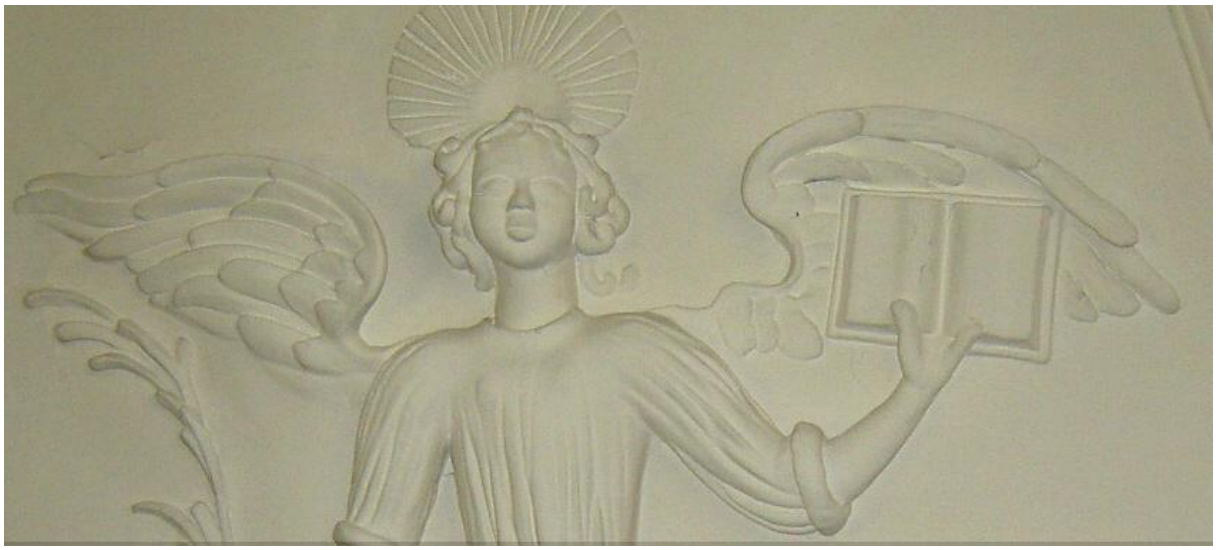
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Introduction

The plasterwork ceiling in the vestry of St Olave's church was made in 1661. There were no records of previous works done to the ceiling.

It could be seen that the paint work was flaking and cracking in a number of areas. Paint analysis was done on samples of paint from the ceiling and cornice by Catherine Hassall and a report made (see appendix). From this analysis it could be seen that the cause of the flaking was the separation of the many layers of paint between a distemper layer and an oil layer. To prevent continued flaking it was decided that the layers of paint would need to be removed. It was not possible to go back to an original distemper layer as the ceiling had been partially stripped before and there was not a whole scheme to go back to.

The cracks and bulges in the plasterwork ceiling would be checked to ensure the ceiling was stable.



1 Detail of the vestry ceiling before conservation – The thickness of the paint layers could be seen in the loss of detail within the decorative elements on the ceiling.



2 Detail of the vestry ceiling before conservation - Large flakes of paint were loose in a number of areas over the ceiling.

Treatment

Loose paint layers were removed back to the plaster with scalpels. Paint that was difficult to remove was softened with paint stripper (Tavec 203) before being scraped off with scalpels.

On examination the ceiling was found to be in a stable condition. Once the paint was stripped from the ceiling the different repairs could clearly be seen. Many of the steps within the plaster were due to repair work. A number of washer and screw fixings stabilising the ceiling could be seen. All these have been marked on the drawing below.

All the cracks were filled with fine plaster filler (Toupret) though no attempt was made to even out the different levels within the plaster as this would have obscured the original plasterwork.

It was decided to paint the ceiling with an emulsion paint to match the colour of the original white distemper. Modern commercial distemper paint was not used as these are oil-bound distempers and could have caused difficulties when the ceiling needed to be re-painted in the future.

Two coats of Whitening acrylic emulsion paint (Little Green Paint Company, acrylic matt emulsion, Whitening) were applied with brushes.

The cornice was sanded back. All the cracks and areas of paint loss were feathered in to create a smooth rather than a filled and even surface.

The cornice was painted with a flat oil to match the original brown colour of the cornice. It was matched from the sample that Catherine Hassall gave in her report.

Two coats of brown flat oil paint (Sanderson-spectrum paint, flat oil) were applied with brushes.

The walls and woodwork were cleaned and prepared. They were painted with a coat of paint using brushes.

Walls – Little Green Paint Company, acrylic matt emulsion, Whitening

Woodwork - Little Green Paint Company, oil-based eggshell, Whitening

Skirting – gloss, Black



3 The vestry ceiling during conservation

The paint layers on the ceiling being removed with paint stripper (the green colour) and scalpels.



4 One of the cast cherubs during conservation.

The heads of three of the four cherubs were plaster casts of the one remaining original. The casts were taken while the original was still covered with many layers of paint so the detail of the face is not as sharp as the original.

The wings of each of the replacement cherubs were made free-hand and so are all slightly different from each other and the original.



5 The remaining original cherub during conservation – Areas of repaired plaster.

The middle section of the wings on the remaining original cherub has been remade in plaster.



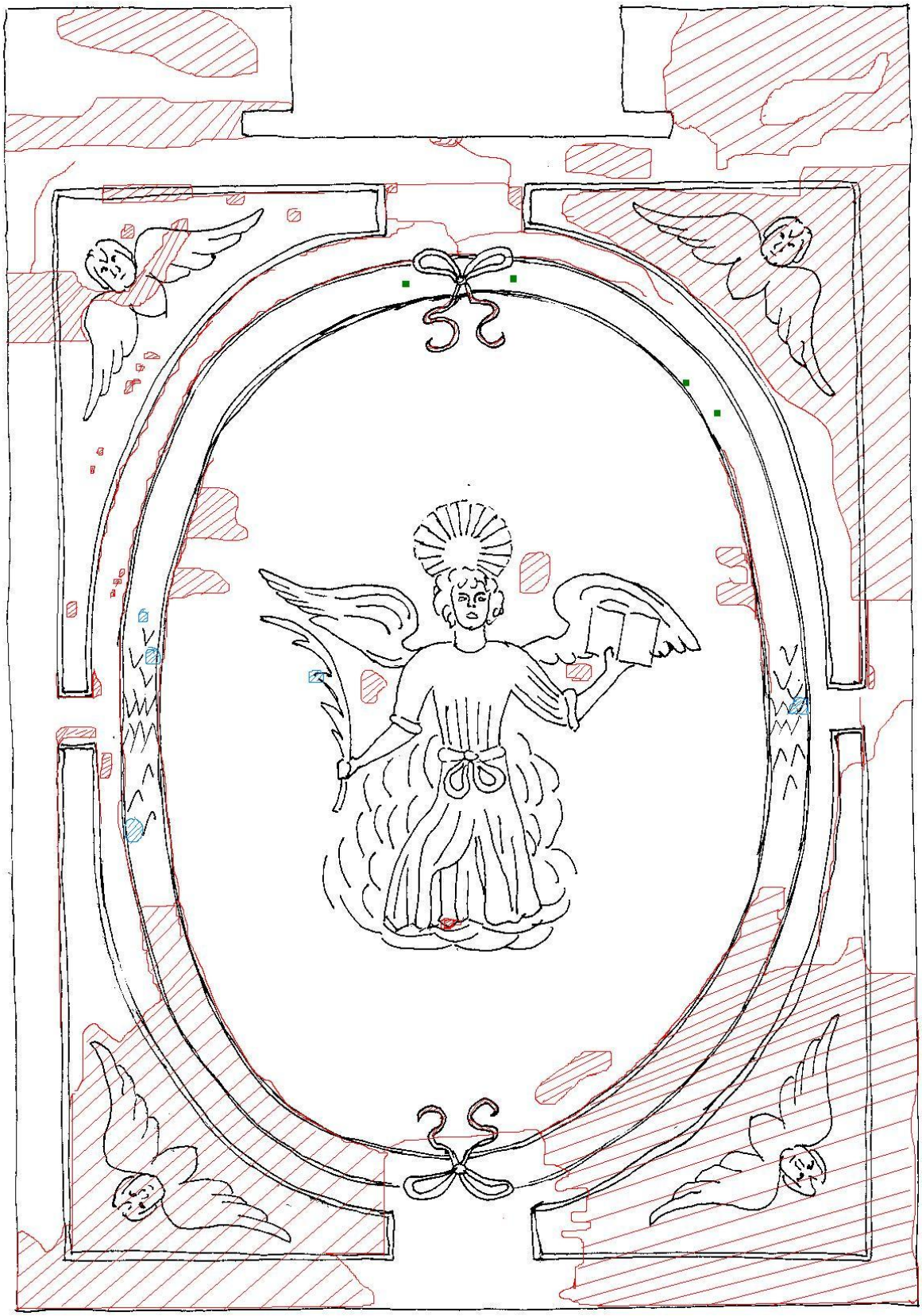
6 Detail of the angel during conservation.

Much more detail in the sculpture could be seen once the paint layers had been removed.



7 The vestry ceiling after conservation.

The Vestry ceiling view from below.



Key



Visible plaster repairs from previous works and the cracks filled with plaster as part of the works in 2008



Fragments of plaster re-adhered with polyester resin adhesive



Visible screw and washer fixings

Appendix

THE VESTRY CEILING

St Olave's Church
Hart Street, London EC3

The vestry was built in 1661

The paint is cracking and flaking over quite large areas, and the ceiling is due to be redecorated. On the recommendation of Martin Holden, of Holden Conservation, it was decided to take a selection of paint samples to find out how it has been painted over the years, and to find out the reason for the flaking.

Eleven samples were taken, as marked on the accompanying photographs.

Examination The samples were examined under low magnification; then mounted in cold setting resin, to be cut and polished as cross-sections. Paint from the coloured layers was dispersed on glass slides and the pigments identified using a polarising light microscope at magnification x1000. A chemical test for lead [lead nitrate/lead iodide] was carried out on the white layers.

RESULTS

The Vestry has been painted nineteen times since it was built in 1661, which means it was being painted approximately every twelve years.

The treatment of the cornice has changed frequently since 1661, but apart from a period in the later nineteenth century when it was painted pale blue, the ceiling has always been plain white.

Original decoration

The plaster ceiling was painted all over with a white soft distemper.

The wooden cornice was painted all over with a light brown oil paint

The undercoats used for the light brown were unusual and elaborate. The wood was first given a coat of chalk gesso. This was followed by a very thin coat of lead white and chalk which may have been in the same aqueous medium as the gesso, and finally the white undercoats were sealed with a layer of clear organic medium which could have been oil. The brown oil paint, itself applied in two layers, was brushed onto the top.

The light brown colour chosen for the cornice was common choice for joinery in the early eighteenth century. Today there is no longer any panelling on the Vestry walls, but originally that would have been painted the same light brown as the cornice

Appendix

Later eighteenth century decorations

Plain white soft distemper continued to be used for the ceiling.

The original light brown oil paint used on the cornice at first was replaced by a very similar coloured oil paint, though a little darker in tone, then there was a change to two lots of pale buff. This change will have taken place at the latter end of the eighteenth century when the dark tones used in the early part of the century were abandoned in favour of much lighter paintwork, and will have carried the room up to the end of the century.

Nineteenth century schemes

In the first half of the century, plain white soft distempers continued to be used for the ceiling. In the second half there were four occasions when pale blue distempers tinted with French ultramarine were used.

The cornice was twice painted a light grey, then there were two occasions when a pale blue based on Prussian blue was used. Judging by the number of paint schemes which followed, and assuming the room was being painted approximately every twelve years, the period when the room was painted blue must have been in the middle part of the nineteenth century.

The blue schemes were followed by a set of four greyish whites used on the cornice. This was when pale blue distempers were being used on the ceiling. The decoration was therefore reversed: in the mid century the walls were blue and the ceiling white, in the later nineteenth century the walls were white and the ceiling blue.

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End of nineteenth century and twentieth century schemes

Probably towards the end of the nineteenth century the cornice was grained to imitate oak. This scheme remained in place through the first half of the twentieth century, being repeatedly re-varnished. It was eventually replaced by a cream-coloured paint scheme based on zinc white rather than traditional lead white. An early photograph of the Vestry shows a very dark scheme, and this will have been the graining.

The thick dirt of the last of the pale blue schemes, must mean it was in place for many years, and the room may have been neglected for quite a long period, with just the graining being occasionally revarnished.

Eventually the ceiling was painted over with a cream or off-white. Instead of soft distempers, oil paints were now used. Four of these off-white oil paints, all based on lead white can be seen in the cross-sections.

In the second half of the twentieth century the Vestry has been painted just three times. Each time the cornice and ceiling have been painted plain white.

Appendix

Cause of flaking on the ceiling.

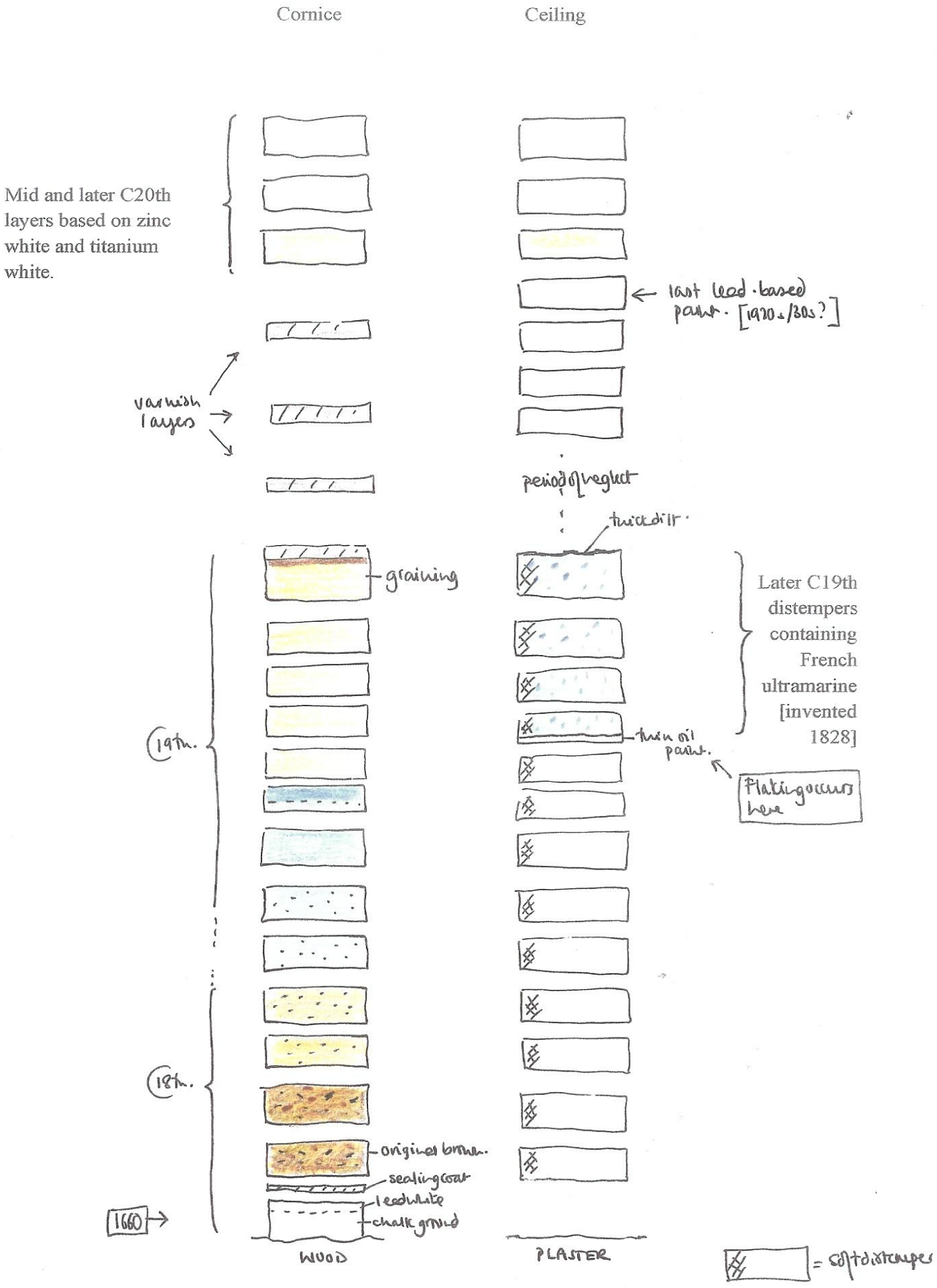
Samples of lifting paint layers were taken from the badly flaking area at the base of the angel's robe. These were examined to see at which layer the delamination was taking place.

The separation was found to be taking place half way through the long sequence of distempers. It seems that prior to painting on the first of the pale blue soft distempers, a very thin coat of lead white oil paint was brushed across the ceiling, presumably to act as a sealant or undercoat. It is this thin coat of oil paint, sandwiched between layers of powdery soft distemper, which is the point of failure.

The flaking is probably not a recent phenomenon, as several of the samples taken many areas. Probably each time the room has been painted in recent years, some more loose areas of paint have been scraped back.

As the unstable layer is immediately under the first of the pale blue distempers, it should be easy to clean back to the stable white distemper layers.

Appendix


Cornice
Ceiling
Mid and later C20th layers based on zinc white and titanium white.
varnish layers
last lead-based paint. [1920s/30s?]
period of neglect
thick dirt
graining
Later C19th distempers containing French ultramarine [invented 1828]
thin oil paint.
Plaking occurs here
19th.
18th.
original brown
sealing coat
lead white
chalk ground
1660
WOOD
PLASTER
= soft distemper

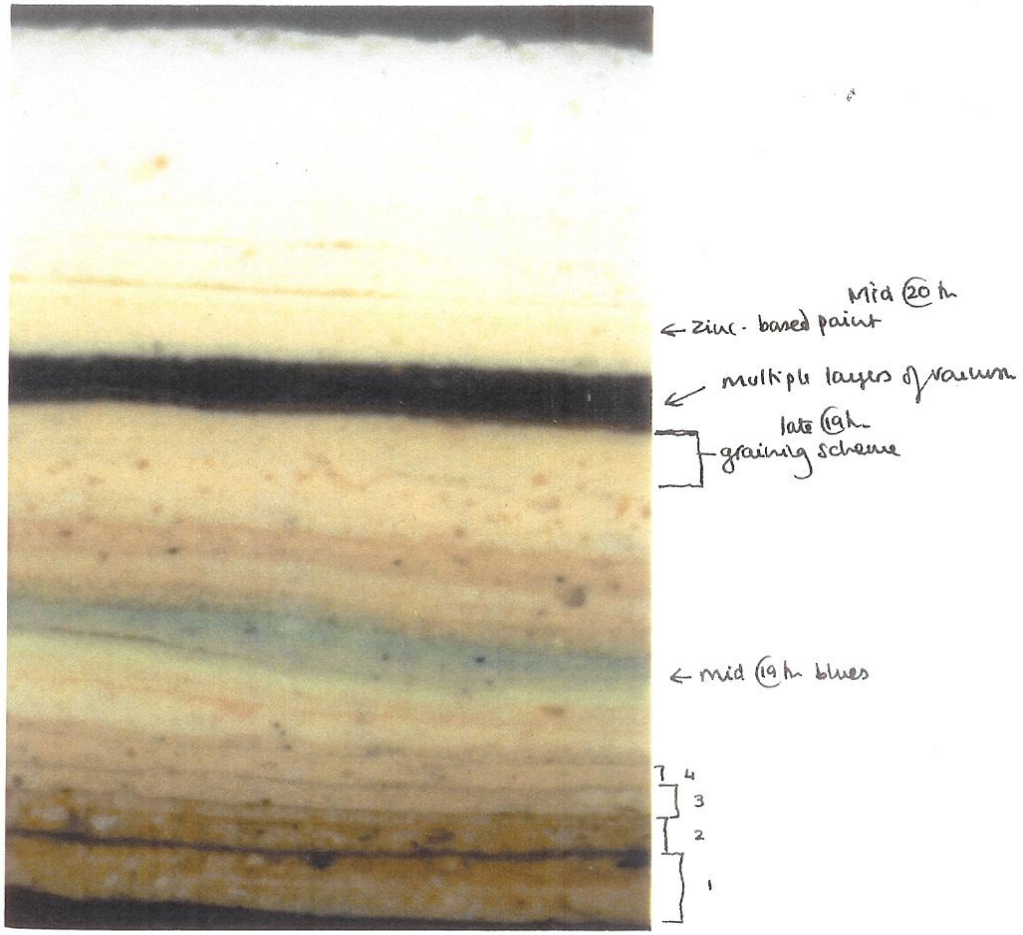
Appendix

CORNICE PAINT

SAMPLE 1
From the bottom of the cornice

All layers from the original light brown to the present white.

[x200]

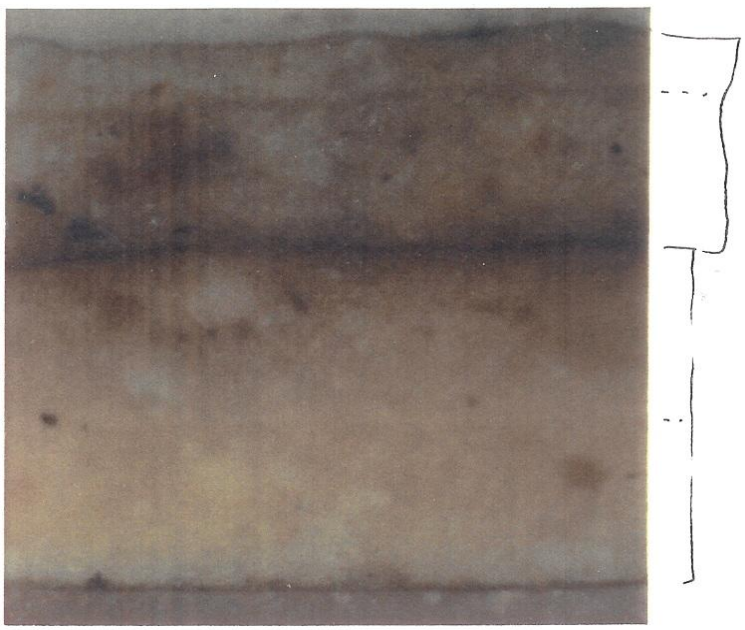


Wood and preparatory layers. [x200]



Detail of the first two schemes – both of them light brown.

[x500]

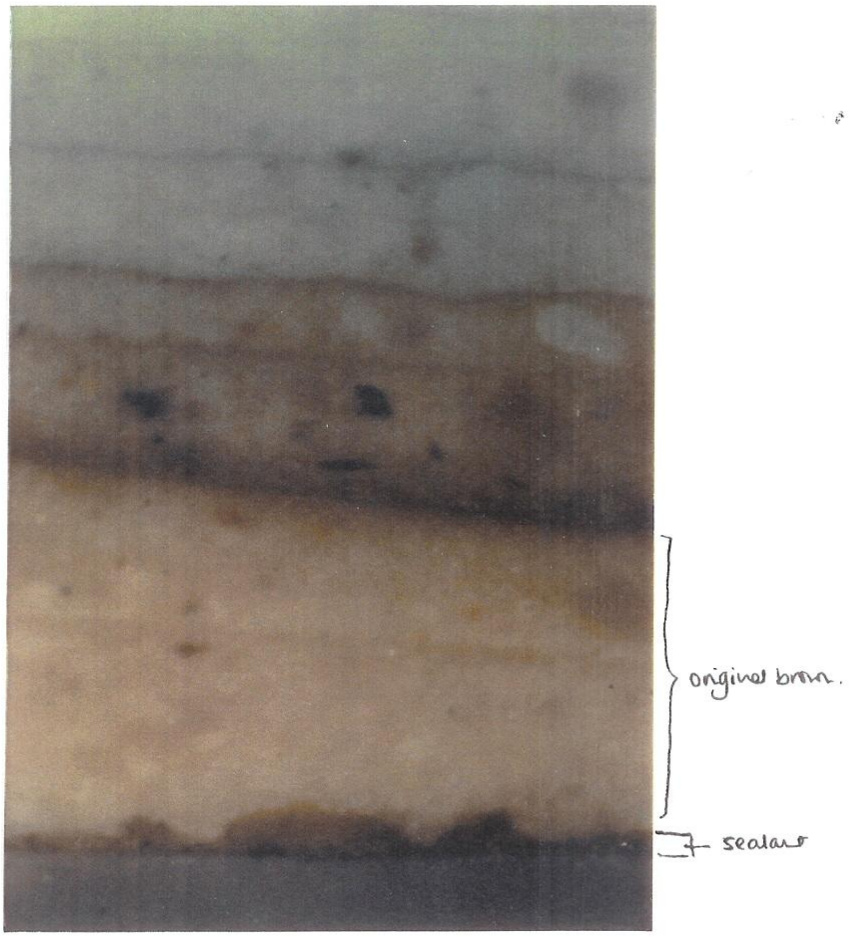


Appendix

Sample 1 continued.

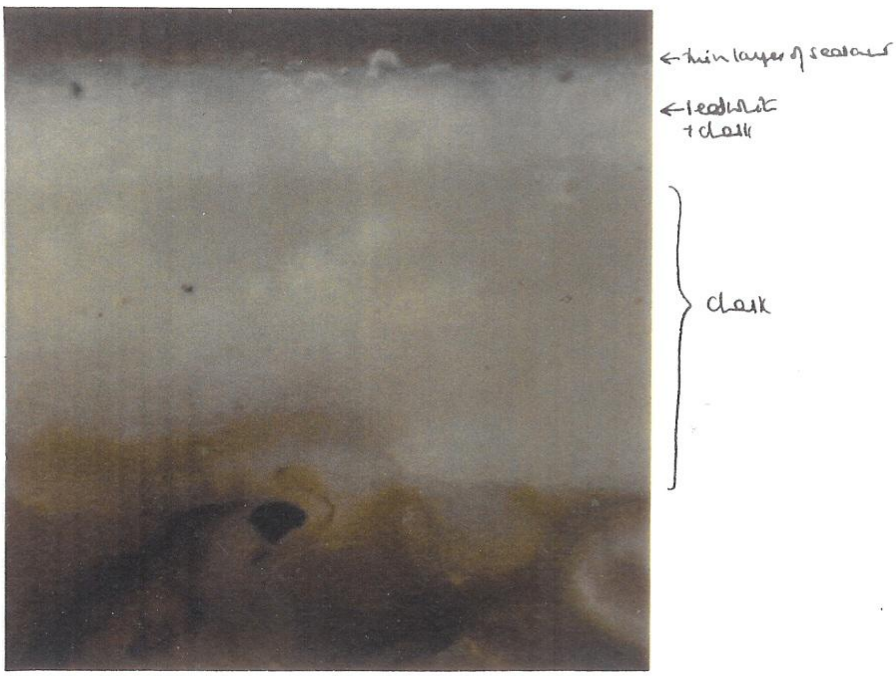
Another detail of the original brown layers. Lit from behind to show the organic sealant coat under the brown.

[x200]



Detail of the preparatory layers on the wood of the cornice, showing the thin coat of lead white over the chalk gesso ground.

[x500]



Appendix

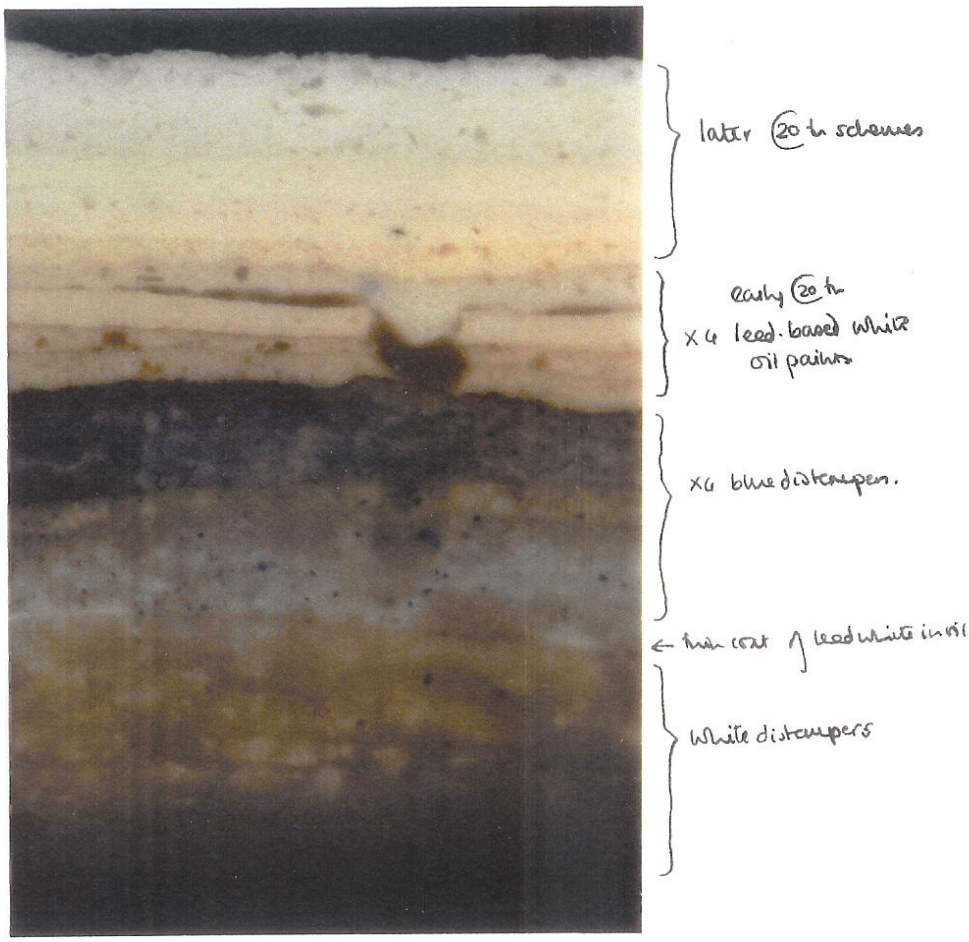
CEILING PAINT

SAMPLE 8
Triangular corner bed of ceiling.

Upper layers consisting of white and off-white oil paints and emulsion paints, over many distempers.

The last four distempers were tinted blue, and there is heavy dirt over the last of them.

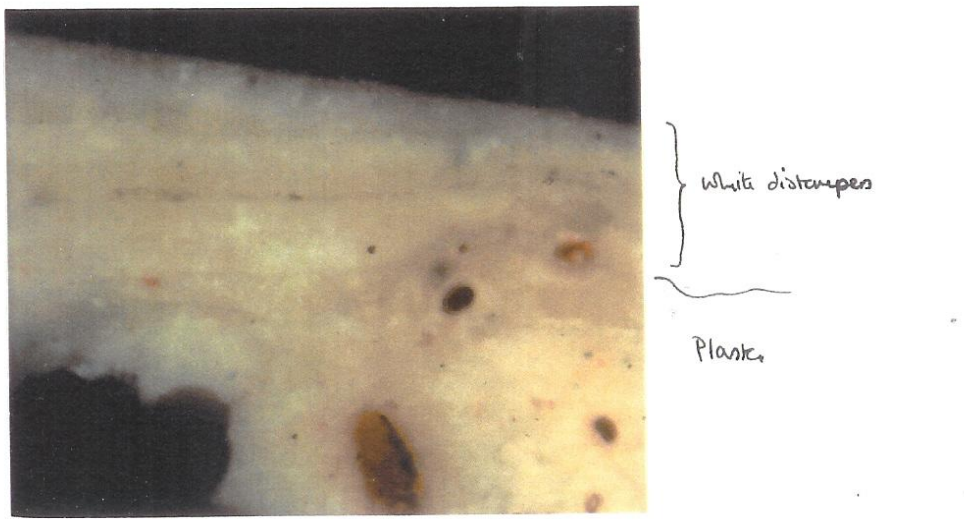
[x200]



Plaster and lower layers from the same sample

All the early distempers were pure white.

[x200]



Appendix

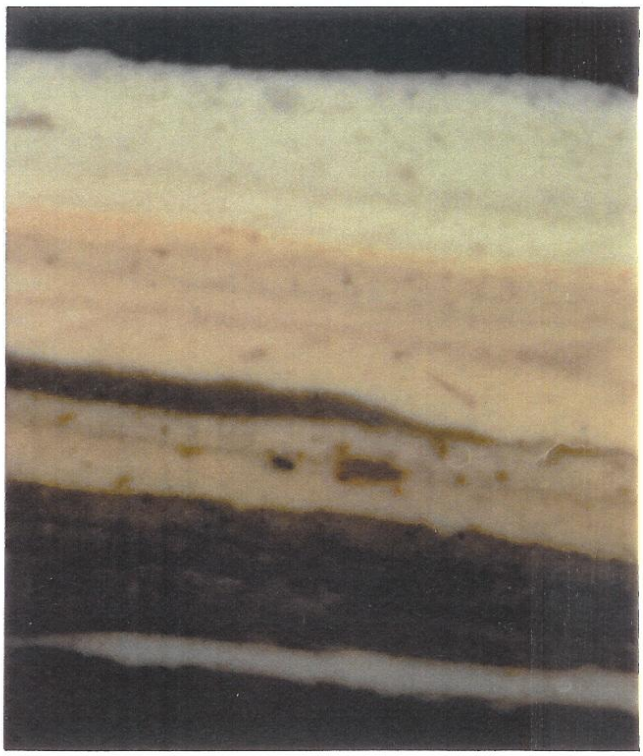
FLAKING PAINT

SAMPLE 10
From the angel's robe

Fragment consisting of the
of the layers
which are flaking off.

Under the four blue
distempers is a thin coat
of white oil paint. This oil
divides the later distempers
from the earlier ones.

[x200]



SAMPLE 7
In this piece the dividing
layer of oil paint is not
continuous and the distempers
are holding together.

[x200]

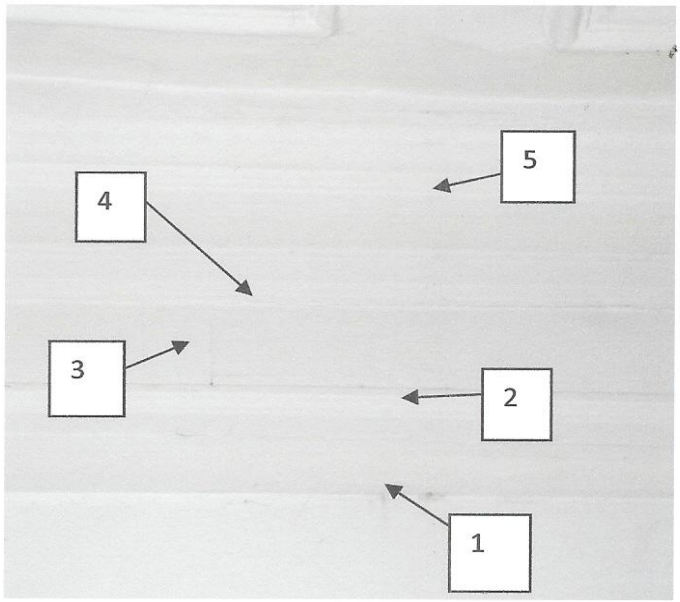


Appendix

SAMPLES

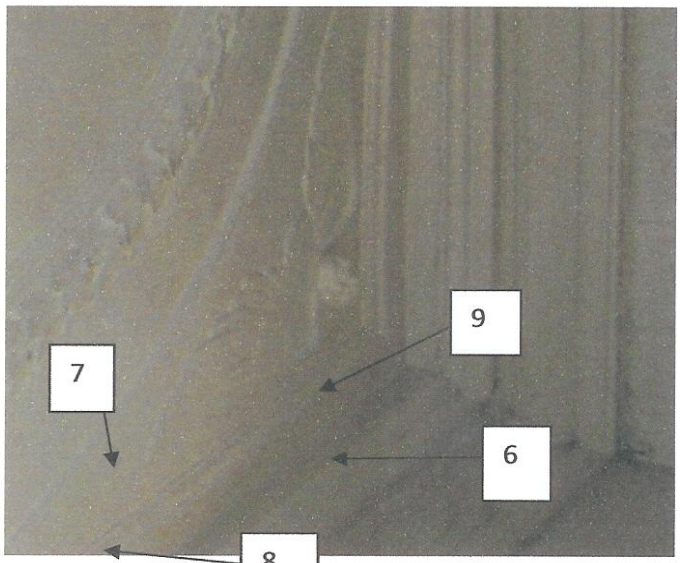
Frieze and cornice
[but in SW corner of room]

1 - Moulding at base of frieze
2 - Frieze
3 - Moulding at base of cornice
4 - Vertical moulding in middle of cornice
5 - Moulding at top of cornice



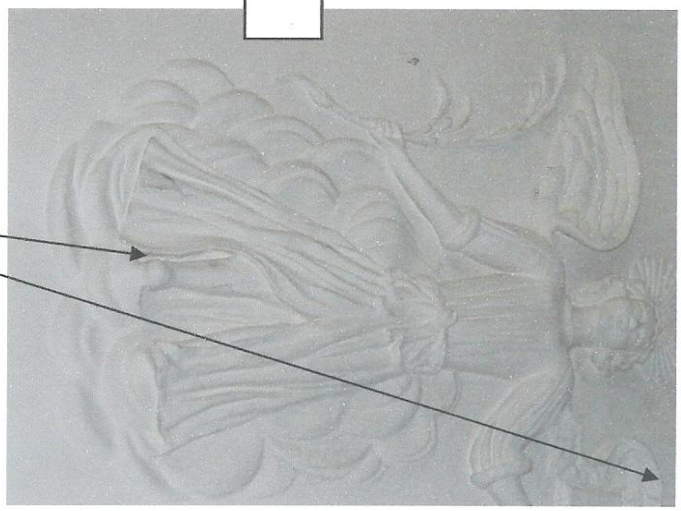
Outer part of ceiling in SW corner

6 - Outer bed of ceiling
7 - Border of triangular bed
8 - Triangular bed
9 - Wing of cherub



Central part of ceiling

10 - Flaking paint on robe of angel
11 - Flat background of oval, at south end



Appendix

1661 BROWN OIL PAINT

USED ON CORNICE [AND PRESUMABLY THE WALL PANELLING]

