TRINITY COLLEGE CHAPEL OXFORD
ARCHITECTURAL PAINT RESEARCH
THE CEILING

CONTACT: KATY ROSS
CLIENT: CLIVEDEN CONSERVATION WORKSHOPS
NOVEMBER 2010
SECTION A – RESEARCH METHODOLOGY & BACKGROUND INFORMATION

1.0 Introduction

This brief report details in chart format the results of the paint research of a series of paint samples removed from the ceiling of Trinity College Chapel, Oxford. The samples were forwarded to the researchers by Cliveden Conservation who were undertaking on site survey and conservation works. All site descriptions were provided by Cliveden Conservation and are recorded as provided. It was noted that sample nos 16-20 were recorded incorrectly and have been re-assigned. It was not part of this research brief for Crick Smith University of Lincoln to visit the site.

The client has not provided any detailed site photographs or site images.

See Figure 8 on page 6 of this document for the results of this research.
2.0 Examination of Cross-sections

The paint fragments removed from the elements of each area were examined at 40x magnification under a binocular microscope and representative cross-sections mounted in polyester resin for further cross-sectional analysis. The mounted samples were viewed at a range of magnifications from 40 to 500x under both simulated daylight and ultraviolet light in order that the stratigraphy and chronology of the decorative schemes could be understood and cross-referenced. Some basic media analysis of the paint layers was also undertaken using fluorescence techniques under UV illumination and chemical spot testing. Photomicrographs (photographs taken through the microscope) of key cross-sections were taken for inclusion within this report to support and clarify the information detailed. These graphically show, in cross-section, small samples of paint removed from various areas/elements. They illustrate the build-up of paint layers (successive decorations), through the building's history. These are included within this report and are annotated with strata diagrams and explanatory text. The annotations describe the original decorative scheme and the relevance of the later layers.

The colour descriptions detailed within this report are described using basic generic terminology; in addition, the colours seen in the photomicrographs should be viewed as representative only. The colours of the surviving paint layers may have altered since they were first applied due to various factors. Pigments may have faded when exposed to strong light or atmospheric pollution, causing a lightening or darkening of the colour. Darkening of the paint media may also have altered the appearance of the paint (Drying oils within paint darken in the absence of light).

Sample Location list/Cross-section References

Trinity College Chapel Ceiling Oxford (Tr.Col. Ch. Cell/)

Samples taken by Trevor Proudfoot 25/08/10

Tr.Col. Ch. Cell/1
1: Panel moulding – Centre south gild
2: Bolection moulding – South wall paint
3: Palm leaves - South wall shield
4: Panel moulding – South cove centre
5: Flatwork – between cove panel and centre panel
6: Centre panel – oak leaf
7: Centre panel – east flower (no sample provided)
8: Centre Panel east flower – South range cove
9: Centre panel – South range cove (no sample provided)
10: South cove flat in panel
11: Flat around the south centre wall panel

12: Wallshield surround – acanthus tendril
13: Centre of shield – south wall
14: Centre of shield - gilding
15: South wall centre cornice shield – acanthus curl

Samples taken by Guy Roberts
(Required re-numbering)

Tr.Col. Ch. Cell/ 2 (continued)
16: East High Relief Garland – Gilding Sample
17: Blue Sky – under left wing of Dove
18: White Dove, breast - under left wing
19: Silver thunder bolt device
20: South East Corner Shell
3.0 Research Findings & Conclusions (incl representative photomicrographs)

Figure 3). Tr.Col. Ch. Ceil/ 1.1 Panel moulding – centre south gild

Traces of water based distemper paints were found. These would have been washed off prior to the application of the mid cream lead based oilpaint (scheme 1). There was no picking out or gilding at this stage.

Figure 4). Tr.Col. Ch. Ceil/ 1.4 panel moulding – south cove centre

Description of layers:

- Scheme 4 Extant scheme with gilding
- Scheme 3 Pale cream lead oilpaint
- Scheme 2 mid yellow cream lead oilpaint (no gilding)
- Scheme 1 mid warm cream lead oilpaint
- Substrate not provided

- Scheme 4 Extant scheme with gilding
- Scheme 3 Pale cream lead oilpaint with gilding
- Scheme 2 mid yellow cream lead oilpaint with gilding
- Scheme 1 mid warm cream lead oilpaint
- Traces of stone coloured distemper
- Plaster substrate
Figure 5). Tr.Col. Ch. Ceil/ 1.5 flatwork – between cove panel and centre panel

Description of layers:

- Scheme 4 Extant scheme strong yellow cream alkyd oilpaint with an off-white undercoat
- Scheme 3 Pale cream lead oilpaint
- Scheme 2 mid yellow cream lead oilpaint
- Scheme 1 mid warm cream lead oilpaint
- Traces of stone coloured distemper
- Plaster substrate

Figure 6). Tr.Col. Ch. Ceil/ 2.17 Blue sky under left wing of dove

Description of layers:

- Scheme 4 Extant scheme
  There appears to have been a modification to the scheme possibly during the time of application, when the mid blue replaces the dark blue picking out.
- Scheme 3 Pale blue lead oilpaint
- Scheme 2 Pale blue lead oilpaint
- Scheme 1 mid warm cream lead oilpaint
- Substrate not provided

Plaster substrate
Description of layers:

Scheme 4: Extant scheme with the addition of "silver" leaf picking out

Scheme 3: Pale cream lead oilpaint with gilding

Schemes 1 & 2 were not in evidence with the sample provided
### FIGURE 8. CHART RECORDING THE EVIDENCE SURVIVING ON THE SAMPLES PROVIDED

<table>
<thead>
<tr>
<th>Element</th>
<th>Scheme details</th>
<th>1: TP</th>
<th>2: TP</th>
<th>3: TP</th>
<th>4: TP</th>
<th>5: TP</th>
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<th>7: TP</th>
<th>8: TP</th>
<th>9: TP</th>
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<td>No sample provided</td>
<td>South cove flat in panel</td>
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<td>Pale cream alkyd oilpaint</td>
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<td>Pale cream lead oilpaint no gilding</td>
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<td>Water shield surround – acanthus tendril</td>
<td>Centre of shield – south wall</td>
<td>Centre of shield – gilding</td>
<td>Centre of shield – cornice shield – acanthus curl</td>
<td>East high relief garland – gilding sample</td>
<td>Blue sky – under left wing of dove</td>
<td>White dove, breast – under left wing</td>
<td>Silver thunder bolt device</td>
<td>South east corner shell</td>
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MATERIAL ANALYSIS

The material analysis undertaken within this research was only at a minimum level. No positive pigment identification was undertaken. Where pigment names are given these are based upon visual identification only. If further clarification of these schemes is required, these pigments should be subjected to further material analysis.

The cross-sectional samples were viewed under both simulated daylight and ultraviolet illumination. This allowed the stratigraphy of the samples to be fully understood and provided an insight into the first appearance of schemes containing zinc compounds, which assisted with the dating of the layers.

Ultraviolet fluorescence was undertaken using an excitation filter of BP 340 – 380 nm wavelength. (Identification of metal driers and extenders within paint media)

Chemical spot testing was undertaken using Sodium sulphide (Na₂S · 9H₂O) at 15% solution in distilled water. This chemical test identifies the presence of lead compounds within oilpaint films.

For details of the research facilities, conservation services and advice on the recreation of historic decorative schemes that Crick Smith Conservation, University of Lincoln are able to offer please contact Neilian (Ian) C. Crick at the University of Lincoln directly using the details on the front of this report.