

Ancient Monuments Laboratory  
Report 31/97

WALL PAINTING CONDITION AUDIT,  
BRODSWORTH HALL, SOUTH  
YORKSHIRE

J Davies  
T Manning

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T Manning

Summary

This condition audit of wall paintings at Brodsworth Hall includes a wall painting record, general audit information, documentation of original materials and execution of the painting, and deterioration and damage including previously used materials and treatment, as well as proposals for treatment and monitoring strategies.

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## **Brodsworth Hall**

### **South Yorkshire**

The following report has been generated by the Wall Painting Section database. This archival system provides a computerised record of all wall paintings in English Heritage Historic Properties and is intended to comprehensively document the collection. Each report has been subdivided into four sections to present the data in a clear format. These include:

**1 Wall Painting Record:**

Includes a description of the site and paintings, as well as archival information, such as bibliographic references and photographic records.

**2 General Audit Information:**

Describes any monitoring undertaken and a synopsis of future conservation requirements.

**3 Technique:**

Documents the nature and condition of the original materials and execution of the painting which is described according to its stratigraphy and any related analysis.

**4 Deterioration and damage, added materials, treatment:**

*Deterioration and damage* lists the types of alterations which may have occurred, that is either deterioration (natural alterations such as cracking or delamination) or mechanical damage (such as graffiti).

*Added Materials* documents all non-original materials present on or within a painting. These may include naturally occurring substances (accretions, such as dirt and dust) or deliberately added materials (coatings, coverings and repairs).

*Treatment* documents previous interventions and proposed treatment and monitoring strategies.

Throughout each section, an area of painting is assigned a number between 1 and 4 which is intended as a general indication of present condition. These are: 1 good, 2 fair, 3 poor, 4 unacceptable.

This report is based on information gathered prior to March 1996 and does not include any changes in condition, further research or treatment undertaken after this date. Amended editions will be produced as necessary.

# Contents

**1     Drawing Room**

**2     Entrance Hall, Corridors, and Stairs**

# 1 Wall Painting Record

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|                           |                 |             |                 |
|---------------------------|-----------------|-------------|-----------------|
| Property name             | BRODSWORTH HALL |             |                 |
| Region                    | North           | County      | South Yorkshire |
| Location of painting      | Drawing Room    |             |                 |
| Orientation               | CEILING         |             |                 |
| Century 19 <sup>th</sup>  | Date            | Height (cm) | Width (cm)      |
| Subjects included         |                 |             |                 |
| Various decorative motifs |                 |             |                 |

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## Description

Charles Sabine Augustus Thellusson (1822-85) commissioned Brodsworth Hall after inheriting the estate of his great grandfather, Peter Thellusson, in 1859. Building, which involved demolishing an earlier Georgian mansion, commenced in 1861 and was largely completed by 1870.

The new hall was constructed according to the design of Chevalier Casentini, an Italian architect and sculptor, and the project was overseen by Philip Wilkinson. The original drawings and specification for works still survive.

### THE DRAWING ROOM

The ceiling, coving and cornice of the Drawing Room are ornately painted with arabesque ornamentation and bird motifs, in vivid pinks and greens with extensive gilding. There is no mention in the 1861 specification of this decorative scheme. Instead it describes satinwood graining for the woodwork, and that the walls were to be distempered. Therefore, the precise date of execution is unknown.

## Photographic Record

29/6/94 EH 'current' contact photo files; Drawing Room, ceiling detail, May 1990, J900142, J900143, J900145.

## Bibliography

Fletcher, A.K.H. Brodsworth Hall and the Thellusson Family. A brief historical account etc., Museum and Arts Service Publication No. 55, Doncaster, n.d.

Girouard, M. The Victorian Country House, Yale University Press, (1985), p. 236.

Gordon-Smith, P. 'Welcome to Brodsworth Hall', English Heritage, 1990.

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## Internal Conservation Reports

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Babington, C. Brodsworth Hall: Proposals for the treatment of the painted decoration..., February 1993.

Hemmett, R., The conservation and treatment for the Drawing Room ceiling at Brodsworth Hall, December 1992.

Hughes, H. and Babington, C. Brodsworth Hall, Yorkshire: Preliminary report on the condition of the painted decoration, unpublished report, English Heritage, May 1991.

Manning, T. and Sawdy, A., Conservation and examination of the painted ceiling, the Drawing Room, Brodsworth Hall, October 1993.

## 2 General Audit Information

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|               |                 |             |                 |
|---------------|-----------------|-------------|-----------------|
| Property name | BRODSWORTH HALL | County      | South Yorkshire |
| Region        | North           |             |                 |
| Location      | Drawing Room    |             |                 |
| Orientation   | CEILING         |             |                 |
| Century 19th  | Date            | Height (cm) | Width (cm)      |
| Auditor(s)    | JD/TM           | Start date  | 10/02/95        |

**Overall condition score**      **2**

### Recommendations

The ceiling of the Drawing Room appears to be relatively unchanged since conservation work was carried out two years ago.

The staff at Brodsworth Hall have been extremely vigilant in monitoring the condition of the scheme, as some flaking was noted recently while work was being undertaken to the floor above. The flaking appears to have been directly related to this work (which was halted shortly thereafter) and has not reoccurred. It is hoped that staff will continue to monitor the condition of the ceiling.

Any further cosmetic conservation work should only be part of an overall programme dictated by curatorial policy.

### 3 Audit Information: Technique

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|               |                 |             |                 |
|---------------|-----------------|-------------|-----------------|
| Property name | BRODSWORTH HALL |             |                 |
| Region        | North           | County      | South Yorkshire |
| Location      | Drawing Room    |             |                 |
| Orientation   | CEILING         |             |                 |
| Century 19th  | Date            | Height (cm) | Width (cm)      |
| Auditor(s)    | JD/TM           | Start date  | 10/02/95        |

**Overall Condition Score**      **2**

#### Stratigraphy

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|            |               |                          |   |
|------------|---------------|--------------------------|---|
| Layer type | Support Layer | Specific condition Score | 2 |
| Thickness  | ? cm          |                          |   |

#### **Comments**

The support has not been examined directly as there is no access to the reverse of the ceiling. However, as in other areas of the building, it is likely to be of lath and plaster construction. There is extensive cracking around the ceiling rose (and running from the centre towards the corners) which is directly related to movement of the support and the consequent stress imposed on the plaster bed. These cracks follow the shape of the timber structure behind the plaster. However, there is no sagging or bulging and the ceiling appears sound.

There is a history of infiltration to the southeast and southwest corners, and they have recently been replaced with new plaster replicas.

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|            |                |                          |   |
|------------|----------------|--------------------------|---|
| Layer type | Render Layer 1 | Specific condition Score | 2 |
| Thickness  | ? cm           |                          |   |

#### **Comments**

'From the original Specification for Brodsworth Hall (1861) it would seem that the walls of the Drawing Room are made of brick, and rendered with a fine lime plaster (2:1) and that the ceiling is a hanging split lath and plaster construction.' (Manning & Sawdy 1993:3, n.4)

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|            |                |                          |   |
|------------|----------------|--------------------------|---|
| Layer type | Ground Layer 1 | Specific condition Score | 2 |
| Thickness  |                |                          |   |

#### **Comments**

Recent analysis has shown a lead white ground to be present, in one or two layers: 'In all of the samples... [lead] appears to be only part of an admixture with another (as yet unidentified) white pigment... Further analysis is required to investigate whether this may be a quartz white, or possibly a barium, zinc or titanium white'. (Manning & Sawdy 1993)

#### **Identified pigments    Colours**

|            |       |
|------------|-------|
| white lead | white |
| ---        | white |

#### **Analysis undertaken**

|        |                             |      |          |
|--------|-----------------------------|------|----------|
| Method | POLARIZING LIGHT MICROSCOPY |      |          |
| Person | Manning & Sawdy             | Date | 01/10/93 |

#### **Comments**

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|            |               |                          |   |
|------------|---------------|--------------------------|---|
| Layer type | Paint Layer 1 | Specific condition Score | 2 |
|------------|---------------|--------------------------|---|

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**Thickness**

**Comments**

Several types of preparatory techniques were employed in the execution of the painted ceiling: 'Cartoons were used for the figurative areas of the ceiling decoration. For example, within the small pink grisaille scenes on the ceiling, the design was transferred by 'pouncing' with carbon powder through a pricked cartoon...for larger figures, such as the putti and the birds, an underdrawing was directly made on the surface of the ceiling before painting. This as done using pencil in a rapid freehand technique on a dry surface.' (Manning & Sawdy 1993:5)

The palette used in the Drawing Room is remarkably vivid, employing a wide range of pigments. Limited analysis undertaken in 1993 has revealed the presence of certain pigments, but full analysis has yet to be undertaken.

'The pinks, originally thought to be a lake, such as rose madder, instead appear crystalline. Polarized light microscopy work...has indicated the presence of red lead and vermilion. The examination of the blue and green pigments in dispersion has so far proved inconclusive; however, the presence of lead white and yellow ochre as an admixture was noted.

The pigments are generally simply applied, mixed with lead white, in a single layer on a lead-based white ground, though the possibility of a wet-in-wet technique has been suggested by the appearance of some of the samples.' (Manning & Sawdy 1993:5)

'The organic binder for the pigments, which is as yet unconfirmed (by stain tests and fluorescence under ultraviolet light) would appear to be an oil, on the basis of empirical observations.' (Manning & Sawdy 1993:4)

**Identified pigments Colours**

|              |        |
|--------------|--------|
| vermillion   | red    |
| red lead     | red    |
| white lead   | white  |
| yellow earth | yellow |
| ---          | blue   |
| ---          | green  |
| ---          | yellow |
| ---          | purple |
| ---          | pink   |
| ---          | brown  |
| ---          | black  |

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|            |              |                          |   |
|------------|--------------|--------------------------|---|
| Layer type | Attachment 1 | Specific condition Score | 2 |
|------------|--------------|--------------------------|---|

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**Thickness**

**Comments**

Gilding.

**Identified pigments Colours**

|     |      |
|-----|------|
| --- | gold |
|-----|------|



## 4 Audit Information: deterioration and damage, added materials, treatment

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|               |                 |             |                 |
|---------------|-----------------|-------------|-----------------|
| Property name | BRODSWORTH HALL |             |                 |
| Region        | North           | County      | South Yorkshire |
| Location      | Drawing Room    |             |                 |
| Orientation   | CEILING         |             |                 |
| Century       | 19th            | Date        |                 |
|               |                 | Height (cm) | Width (cm)      |

### DETERIORATION AND DAMAGE

#### Deterioration phenomena

**Type** cracking

**Location** Entire ceiling

**Comments** Cracking of plaster bed, possibly due to structural movement and past subsidence. Cracks follow patterns that indicate very clearly the strain imposed on certain areas of the ceiling in relation to the timber support.

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**Type** flaking

**Location** SE corner (within pink) and NW quarter (white)

**Comments** Recent flaking and loss (c.1-2 cm?) in these areas, caused by the vibration from work on the floors upstairs, was noted by staff. The work was subsequently halted and no further loss was observed.

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**Type** loss

**Location** Gilded banding

**Comments** Several areas of gilded plaster strips are lost.

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**Type** loss

**Location** SW and SE corners

**Comments** Severely damaged due to water infiltration and subsequent cycles of salt crystallisation. These corners were removed and replaced with new plaster replicas.

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## ADDED MATERIALS

### Accretions

**Type** dirt

**Location** Entire

**Comments** Dirt - now ingrained in surface - which was not fully removed during past cleaning treatment.

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**Type** dust

**Location** Entire

**Comments** General accretion of dust, more recently due to the stone conservation work being undertaken on the exterior of the drawing room. This has meant the windows on the south side have had to be sealed temporarily.

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### Repairs

**Type** modern plaster

**Location** SE and SW corners

**Comments** Both corners were replaced with plaster replicas early in 1993.

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## TREATMENT

### Past Treatment

**Type** FLAKE FIXING **Date** 01/12/92

**Person** EH Conservation Studio/ R F Hemmett

**Comments** The southeast and southwest corners were treated before they were to be replaced with plaster replicas in 1993. RF Hemmett, in his report of December 1992, stated: 'Before "facing", reattachment of the flaking paint was necessary... Lens tissue was applied over the flakes and attached with water; the softened flakes were pressed back into place. A wetting agent of alcohol:water was injected behind the flakes and Plextol B500 (20% in water) brushed through the tissue. The lens tissue and Plextol was removed from the surface of the paint layer with moisture.'

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**Type** PRE-CONSOLIDATION **Date** 01/12/92

**Person** EH Conservation Studio/ R F Hemmett

**Comments** The southeast and southwest corners were treated before they were to be replaced with plaster replicas in 1993. RF Hemmett, in his report of December 1992, stated: 'The ceilings, coving, cornice and frieze are to be replastered. The degraded plaster in these areas will be removed and replaced and a small area of the coving will be affected. To prevent damage to the arabesque and stencil design in these areas, a protective facing tissue has been attached to these areas to protect them while the replastering work takes place... After fixing the paint layer the SE/SW corners were "faced" with Eltoline tissue attached with Beva 371 (30% in white spirit).'

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### Past Treatment

**Type** FILLS/REPAIRS INSERTION **Date** 01/01/93

**Person** EH/ Site contractors

**Comments** The cornices of the SE and SW corners were replaced with plaster replicas (possibly gypsum?) early in 1993.

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### Past Treatment

**Type** CLEANING **Date** 01/02/93

**Person** EH Conservation Studio/ C. Babington

**Comments** Various cleaning tests were carried out using distilled water, soap, ammonium carbonate, and mechanical methods. These are described in the report of C. Babington (February 1993), and followed on earlier conservation tests and treatment carried out on the painted marbling of the corridors (especially GC8). On the basis of this testing it was proposed that the ceiling be cleaned using soap and water. However, the approach in the Drawing Room was altered in keeping with the overall policy of minimal intervention, and it was decided that cleaning would not be necessary.

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### Past Treatment

**Type** FLAKE FIXING **Date** 01/08/93  
**Person** EH Conservation Studio/ under A. Buckley  
**Comments** 3/93 - 8/93: Conservation work carried out over the course of several months by S. Paine, S. Broadbent, A. Sawdy and T. Manning, under the general supervision of A. Buckley, included the fixing of macro-flaking throughout the ceiling and coving. Flaking was worst within the coving around the SE, SW and NW corners. The conservation treatment was based on that used in the corridor (GC8).  
'The fixing of flakes was achieved by pre-wetting an area by injection of a solution of acetone and white spirit (50:50) and by injection of a 15% (percent of proprietary product) solution of Plextol B500. The flakes were then eased back into place using a cotton wool pad, or where possible satisfactory results were achieved using a rubber roller over heavy absorbent paper.'

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**Past Treatment**

**Type** CLEANING **Date** 02/08/93  
**Person** EH Conservation Studio/under A. Buckley  
**Comments** 3/93 - 8/93: Conservation work carried out over the course of several months by S. Paine, S. Broadbent, A. Sawdy and T. Manning, under the general supervision of A. Buckley, included a light dusting of the ceiling and cornices. Gilded areas were partially cleaned using swabs and a distilled water:acetone (1:1) solution.

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**Past Treatment**

**Type** PRESENTATION/REINTEGRATION **Date** 03/08/93  
**Person** EH Conservation Studio/ under A. Buckley  
**Comments** Reintegration was carried out by A. Sawdy and T. Manning, under the general supervision of A. Buckley, and in accordance with the general policy of minimal intervention.  
'As a general policy of minimal intervention has been adopted at Brodsworth, it was decided to merely subdue the brightness of losses within the paint layer by the application of a pigment wash slightly lighter in tone than the original. However, plaster repairs made to the southeast and southwest corners of the cornice presented more of a problem... As the cornice is an element which functions to unify the room, it was necessary to reintegrate these areas more closely to the original, but so that they would still remain visible as repairs from the ground.' (Manning & Sawdy 1993:8) These repairs were sanded down and sealed with a 30% solution of Plextol B500. Dry pigment was mixed with Plextol B500 (2.5% in water) and applied by brush. 'To achieve a uniformity in the reintegration on both old and new surfaces a buff-coloured base coat was first applied to the new plaster... Two applications of each colour were then made, and the surface stippled with non-absorbent cotton wool to remove brush marks and imperfections.' (Manning & Sawdy 1993:8)  
  
Losses to the paint layer, where the original plaster was exposed, were treated slightly differently. 'The surface of the original plaster was initially sealed with a solution of 2.5% Plextol B500 (percentage proprietary product in water), and then a single layer of colour wash was applied (loose pigment bound in 2.5% Plextol). The intention was to use as low a concentration of Plextol as possible, and to minimize the number of applications to that sufficient to achieve a reduction of the brightness of the losses. It was intended that these losses should remain visible from the ground.' (Manning & Sawdy 1993:8)

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**Past Treatment**

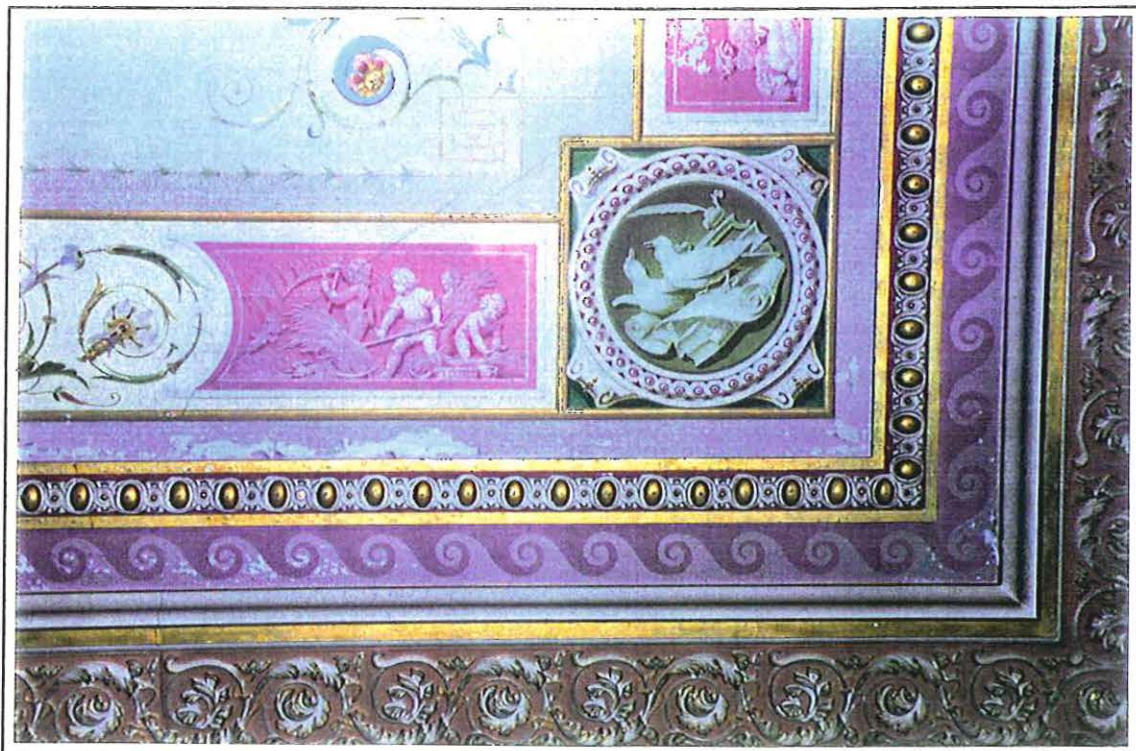
**Type** PRESENTATION/REINTEGRATION **Date** 01/01/94  
**Person** EH Conservation Studio/ under A. Buckley  
**Comments** Further reintegration was undertaken in late 1993/early 1994. An area of complete loss in the coving of the SE corner, which had been left during the 1993 treatment with only a buff-coloured retouching, was more fully reintegrated by joining the pink decorative elements on either side of the losses. On the east coving, towards the NE corner, a heavily abraded area within the green stencil pattern was more deceptively retouched to improve the continuity of the coving. The work was carried out by Elizabeth Rose under the supervision of the Conservation Studio.

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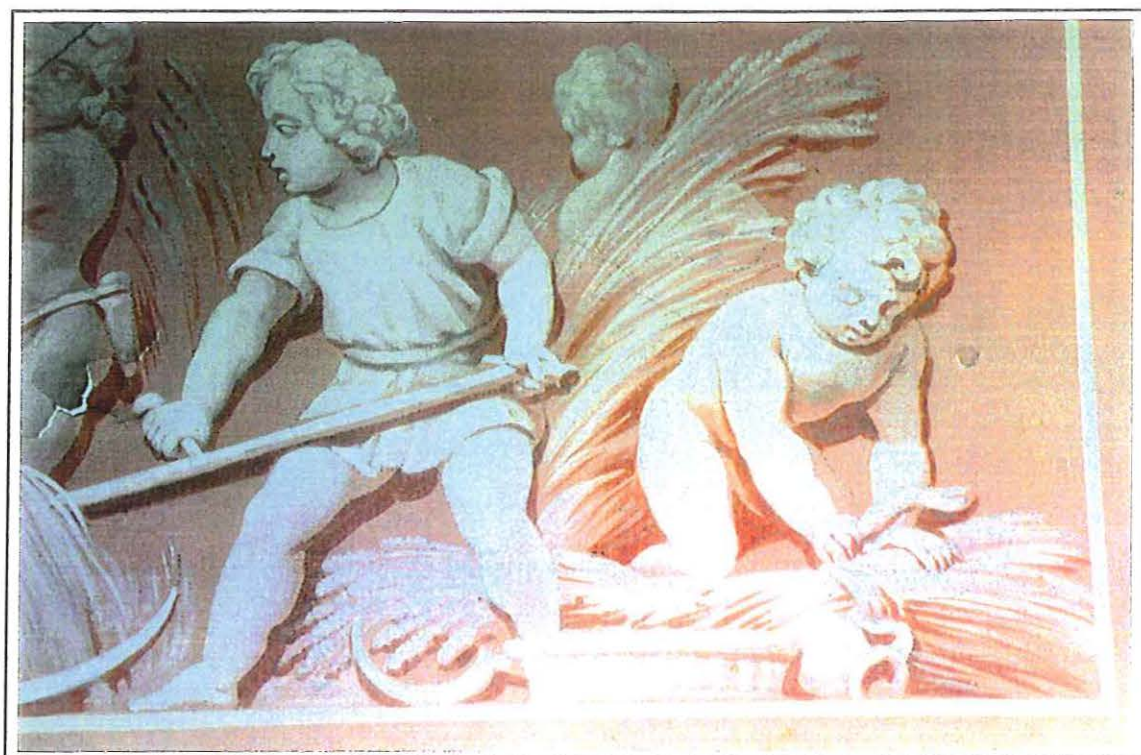
**Proposed Treatment**

**Type** MONITORING CONDITION **Date** 06/02/95  
**Person** TM, JD  
**Comments** The Drawing Room appears to be relatively stable, and so far the staff at Brodsworth Hall have been extremely vigilant in monitoring the condition of the ceiling. Any further cosmetic conservation work should only be part of an overall programme dictated by curatorial policy.

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Drawing Room, ceiling, detail, before conservation in 1993



Drawing Room, ceiling, detail

# 1 Wall Painting Record

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|                           |                                     |        |                                 |
|---------------------------|-------------------------------------|--------|---------------------------------|
| Property name             | BRODSWORTH HALL                     |        |                                 |
| Region                    | North                               | County | South Yorkshire                 |
| Location of painting      | Hall, corridors and stairs.         |        |                                 |
| Orientation               | CORRIDORS ARE ORIENTATED EAST-WEST. |        |                                 |
| Century 19 <sup>th</sup>  | Date                                | 1870   | Height (cm) 0      Width (cm) 0 |
| Subjects included         |                                     |        |                                 |
| Various decorative motifs |                                     |        |                                 |

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## Description

Charles Sabine Augustus Thellusson (1822-85) commissioned Brodsworth Hall after inheriting the estate of his great grandfather, Peter Thellusson, in 1859. Building, which involved demolishing an earlier Georgian mansion, commenced in 1861 and was largely completed by 1870.

The new hall was constructed according to the design of Chevalier Casentini, an Italian architect and sculptor, and the project was overseen by Philip Wilkinson. The original drawings and specification for works still survive.

### THE HALL, CORRIDORS AND STAIRCASES

The walls of the entrance hall, most of the corridors, and the back staircase are painted with fictive marble panels, originally pinkish in colour (to imitate Siena marble). Scagliola columns (also pink) are used to accentuate the doorway into the main staircase and frame various pieces of free-standing sculpture.

The main staircase contains further painted panels imitating stone such as Verde Antique, Rosso di Verona, and porphyry.

## Photographic Record

## Bibliography

Fletcher, A.K.H. Brodsworth Hall and the Thellusson Family: A brief historical account etc., Museum and Arts Service Publication No. 55, Doncaster, n.d.

Girouard, M. The Victorian Country House, Yale University Press, (1985), p. 236.

Gordon-Smith, P. 'Welcome to Brodsworth Hall', English Heritage, 1990.

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## Internal Conservation Reports

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Hughes, H. and Babington, C. Brodsworth Hall, Yorkshire: Preliminary Report on the Condition of the Painted Decoration, unpublished report, English Heritage, May 1991.



## 2 General Audit Information

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|               |                                     |              |                 |
|---------------|-------------------------------------|--------------|-----------------|
| Property name | BRODSWORTH HALL                     | County       | South Yorkshire |
| Region        | North                               |              |                 |
| Location      | Hall, corridors and stairs.         |              |                 |
| Orientation   | CORRIDORS ARE ORIENTATED EAST-WEST. |              |                 |
| Century 19th  | Date 1870                           | Height (cm)0 | Width (cm) 0    |
| Auditor(s)    | TM/JD                               | Start date   | 07/02/95        |

**Overall condition score 3**

### Recommendations

The staff at Brodsworth Hall have been extremely vigilant in monitoring the condition of the painted decoration.

In general the condition of the decoration is fair (Condition Score 2). However, the flaking and delamination of the paint and ground layers appears serious in certain areas and should be addressed as soon as possible (Condition Score 3).

Further flake fixing to the following areas is required: GC1- S. and E. walls; FC1- S. and E. walls; FC3 - N. wall below windows; FC9 - E. wall; FC10 - W.wall, N.end (n.b. wood graining to door rebate to Bedroom 15); GC8 (stairs to FC8) N. and S. walls; GC9 - E. wall, above and S. of lift door.[Timescale: 2 conservators, 4 weeks].

In addition, some deterioration of the render layer 1 has occurred apparently following moisture ingress. The following areas should therefore be examined and treated accordingly: GC1- S. wall, west of fireplace, low level; GC2 - W. wall, above door to corridor (mechanical damage); FC1 - crack over door; FC3 - esp. N. wall, below window 1 and S. wall above door to bedroom 8; FC9 - E. wall; FC10 - S. of door to FC11; FC8 (stairs to GC8) - E. wall, below window.

Also, probably because of the vast extent of wall space covered over the past few years' conservation work, areas of retouching are not always consistent. The corridors could be reviewed as a whole, in order to give these retouchings a more homogeneous appearance. Various areas (around new power points, repairs, etc) should be reintegrated with their surroundings. Any further cosmetic conservation work should only be part of an overall programme dictated by curatorial policy.



### 3 Audit Information: Technique

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**Property name** BRODSWORTH HALL  
**Region** North **County** South Yorkshire  
**Location** Hall, corridors and stairs.  
**Orientation** CORRIDORS ARE ORIENTATED EAST-WEST.  
**Century** 19<sup>th</sup> **Date** 1870 **Height (cm)** 0 **Width (cm)** 0  
**Auditor(s)** TM/JD **Start date** 07/02/95

**Overall Condition Score** 3

#### Stratigraphy

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|                   |               |                                 |   |
|-------------------|---------------|---------------------------------|---|
| <b>Layer type</b> | Support Layer | <b>Specific condition Score</b> | 2 |
|-------------------|---------------|---------------------------------|---|

**Thickness**

**Comments**

The exterior is currently being restored. The stone appears to be vulnerable to decay and several parts are being replaced.

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|                   |                |                                 |   |
|-------------------|----------------|---------------------------------|---|
| <b>Layer type</b> | Render Layer 1 | <b>Specific condition Score</b> | 2 |
|-------------------|----------------|---------------------------------|---|

**Thickness** ? cm

**Comments**

Appears to be a lime-based plaster, which has a smooth compact finish. The 1861 building specification states 'the whole of the plastering in the Entrance Hall, both the walls and the ceiling to be in Parien'. Parien is an anhydrous gypsum plaster, with the addition of borax as a set accelerator (similar to Keene's cement, which uses alum for this purpose).

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|                   |                |                                 |   |
|-------------------|----------------|---------------------------------|---|
| <b>Layer type</b> | Ground Layer 1 | <b>Specific condition Score</b> | 3 |
|-------------------|----------------|---------------------------------|---|

**Thickness** 0.1 cm

**Comments**

A cross-section from GC8 shows a white 'undercoat' [ground?] below a thin layer of paint. This may represent a ground applied by the painter/decorators who undertook the marbling. However, the 1861 building specification makes reference to the plasterers whitening the ceilings. (Hughes and Babington, 1991; n.p.) It would be most unusual for oil-based paint to be applied without sealing the plaster and applying a ground layer.

#### Analysis undertaken

**Method** POLARIZING LIGHT MICROSCOPY

**Person** Hughes, Babington **Date** 01/05/91

**Comments** Sample 1 from GC8. A thin paint layer was noted.

|                            |   |                                 |          |
|----------------------------|---|---------------------------------|----------|
| <b>Layer type</b>          | Paint Layer 1   | <b>Specific condition Score</b> | 2        |
| <b>Thickness</b>           |   |                                 |          |
| <b>Comments</b>            | <p>The marbling shows a sophisticated and subtle painting technique, closely imitating porphyry, serpentine and pink Sienna marble (the Sienna marble now appears orange due to the presence of a discoloured varnish layer). A cross-section from GC8 shows 'a thin layer of the painted marbled decoration'. (Hughes &amp; Babington, 1991; n.p.). The building specification 1861 records the walls of the Entrance Hall, Corridors, main passages and staircases were to be 'painted five times and finished in imitation marble by hand as directed and twice varnished with best copal.' (Hughes &amp; Babington, 1991; n.p.) Colours include pink, green, brown, red, black and white.</p> |                                 |          |
| <b>Identified pigments</b> | <b>Colours</b>  |                                 |          |
| ---                        | pink  |                                 |          |
| ---                        | green   |                                 |          |
| ---                        | brown   |                                 |          |
| ---                        | red   |                                 |          |
| ---                        | black   |                                 |          |
| ---                        | white   |                                 |          |
| <b>Analysis undertaken</b> |   |                                 |          |
| <b>Method</b>              | <b>POLARIZING LIGHT MICROSCOPY</b>  |                                 |          |
| <b>Person</b>              | Hughes,Babington  | <b>Date</b>                     | 01/05/91 |
| <b>Comments</b>            | Sample 1 from GC8. A thick coat (or possibly two coats) of discoloured varnish over the paint layer was noted.  |                                 |          |

|                            |  |                                 |   |
|----------------------------|--|---------------------------------|---|
| <b>Layer type</b>          | Paint Layer 2  | <b>Specific condition Score</b> | 2 |
| <b>Thickness</b>           |  |                                 |   |
| <b>Comments</b>            | Pencil lines provide edges for the trompe l'oeil 'marble slabs'. |                                 |   |
| <b>Identified pigments</b> | <b>Colours</b>   |                                 |   |
| GRAPHITE                   | BLACK  |                                 |   |

|                            |   |                                 |          |
|----------------------------|---|---------------------------------|----------|
| <b>Layer type</b>          | Paint Layer 3   | <b>Specific condition Score</b> | 2        |
| <b>Thickness</b>           |   |                                 |          |
| <b>Comments</b>            | <p>Paint layer 3 refers to the final application of varnish, probably copal, as part of the original marbling technique. The building specification of 1861 records the walls of the Entrance Hall, Corridors, main passages and staircases were to be 'painted five times and finished in imitation marble by hand as directed and twice varnished with best copal.' (Hughes &amp; Babington, 1991; n.p.) A cross-section from GC8 shows 'a thick coat of varnish applied over the marbling'. (Hughes &amp; Babington, 1991; n.p.). The strongly discoloured varnish present on the marbling today is probably the original varnish application.</p> |                                 |          |
| <b>Analysis undertaken</b> |   |                                 |          |
| <b>Method</b>              | <b>POLARIZING LIGHT MICROSCOPY</b>  |                                 |          |
| <b>Person</b>              | Hughes,Babington  | <b>Date</b>                     | 01/05/91 |
| <b>Comments</b>            | Sample 1 from GC8. A thick coat (or possibly two coats) of discoloured varnish over the paint layer was noted.  |                                 |          |

## 4 Audit Information: deterioration and damage, added materials, treatment

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|               |                                     |             |                 |
|---------------|-------------------------------------|-------------|-----------------|
| Property name | BRODSWORTH HALL                     |             |                 |
| Region        | North                               | County      | South Yorkshire |
| Location      | Hall, corridors and stairs.         |             |                 |
| Orientation   | CORRIDORS ARE ORIENTATED EAST-WEST. |             |                 |
| Century       | 19th                                | Date        | 1870            |
|               |                                     | Height (cm) | 0               |
|               |                                     | Width (cm)  | 0               |

### DETERIORATION AND DAMAGE

#### Deterioration phenomena

**Type** flaking

**Location** Many areas are affected, especially low level. See comments below for details of locations.

**Comments** Areas of flaking were fixed c. 1993-4, obviously further deterioration has occurred, indicating that the underlying cause is still active. Further flake fixing to the following areas is required:  
GC1- S. and E. walls; FC1- S. and E. walls; FC3 - N. wall below windows; FC9 - E. wall; FC10 - W.wall, N.end (n.b. wood graining to door rebate to Bedroom 15); GC8 (stairs to FC8) N. and S. walls; GC9 - E. wall, above and S. of lift door.

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**Type** delamination (render layer)

**Location** Several localised areas of delamination were noted during inspection, some have been partially consolidated. See comments below for details of locations.

**Comments** Some deterioration of the render layer 1 has occurred apparently following moisture ingress, however some of the damage listed below is the result of mechanical damage caused by insertion of fixings. The following areas should be examined and possibly further consolidation undertaken:  
GC1- S. wall, west of fireplace, low level; GC2 - W. wall, above door to corridor (mechanical damage); FC1 - crack over door; FC3 - esp. N. wall, below window 1 and S. wall above door to bedroom 8; FC9 - E. wall; FC10 - S. of door to FC11; FC8 (stairs to GC8) - E. wall, below window.

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**Type** cracking

**Location** Various, see for example; Entrance Hall (GC1) - S. wall, W. of fireplace.

**Comments** 'Alligatoring' of paint film, usually a phenomenon associated with drying.

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**Type** coating - deterioration

**Location** Entire.

**Comments** The varnish layer present on the marbling appears to be the original 'copal' varnish (although this is not certain without analytical investigation). The varnish layer has discoloured considerably and now gives the imitation pink Sienna marble a strong orange colour.

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**Type** photodeterioration

**Location** Entire.

**Comments** Fading and bleaching of the discoloration in the varnish (and paint layers?) has occurred where the layers are exposed to light. In areas normally covered by pictures etc. the varnish (and paint ?) has a much darker colour.

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**Type** coating - deterioration

**Location** General.

**Comments** Minor cracking/shrinkage of the varnish layer has occurred in many areas. The varnish has cracked slightly forming 'islands' of approximately 15 cms diameter.

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**Mechanical damage**

**Type** insertions

**Location** Various, low level, associated with insertion of new electrical points c. 1994.

**Comments** The house curator, Caroline Whitworth, is planning to have these damages minimally retouched.

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**Type** nail holes

**Location** Various.

**Comments** Nail holes/ fixings for paintings are present in many areas.

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## TREATMENT

### Past Treatment

**Type** CLEANING **Date** 01/10/91

**Person** C. Babington/EH contractors

**Comments** Surface cleaning to remove accumulated dirt was undertaken using a standard soap (ie. a non synthetic detergent of fatty acids). The soap was applied with a sponge or brush and rinsed from the surface with water.

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**Type** FLAKE FIXING **Date** 01/10/91

**Person** C. Babington/EH contractors

**Comments** Flake fixing involved an initial injection of a wetting agent of 40:60 acetone:water behind the flake. After which Plextol B500 at 15% in water was injected behind the flake. The flakes were readhered by positioning a pad of absorbent paper over the treated area and pressed back with a small roller.

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**Type** PRESENTATION/REINTEGRATION **Date** 01/10/91

**Person** C. Babington/EH contractors

**Comments** Losses have been infilled by retouching in single flat hues sympathetic to the general colouring of the surrounding marbling.

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### Proposed Treatment

**Type** FLAKE FIXING **Date** 07/02/95

**Person** TM/JD

**Comments** Follow through 'Phase 1, "Conserve as found" policy'. Two people, one month, as soon as possible.

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**Type** MONITORING CONDITION **Date** 07/02/95

**Person** TM/JD

**Comments** Routine visual monitoring is required. Curatorial staff within the house could undertake this work and request expert assistance when necessary.

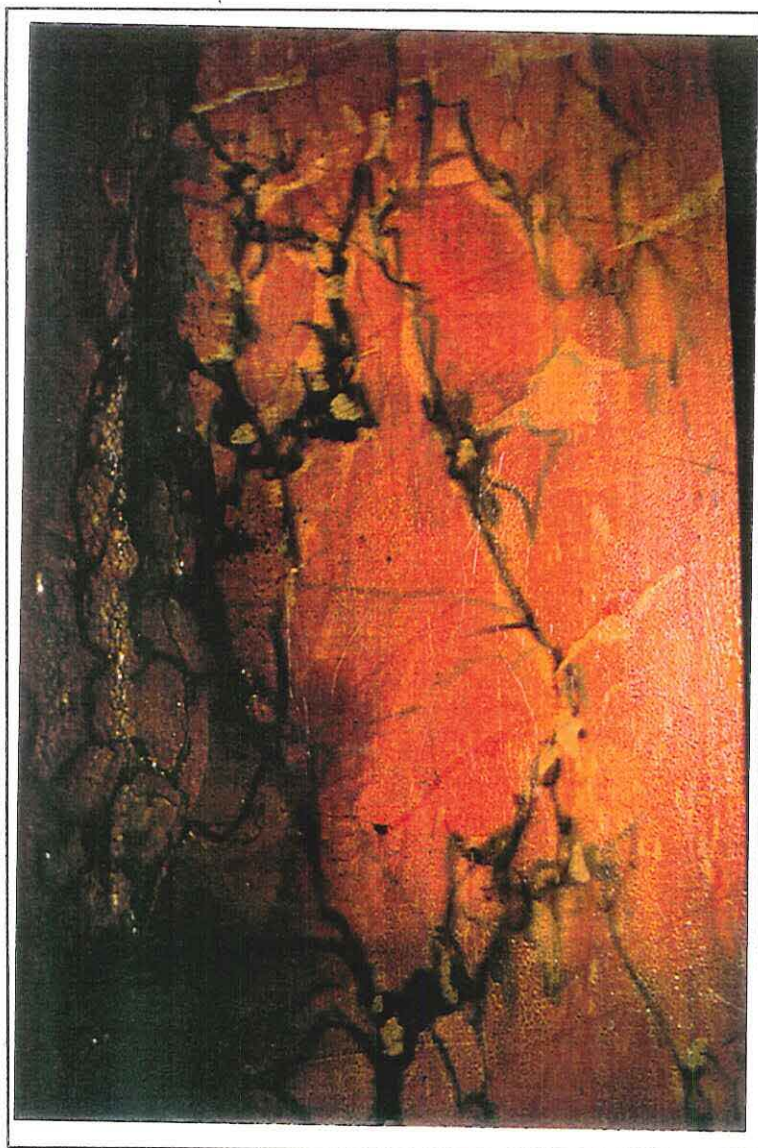
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**Type** PRESENTATION/REINTEGRATION **Date** 07/02/95

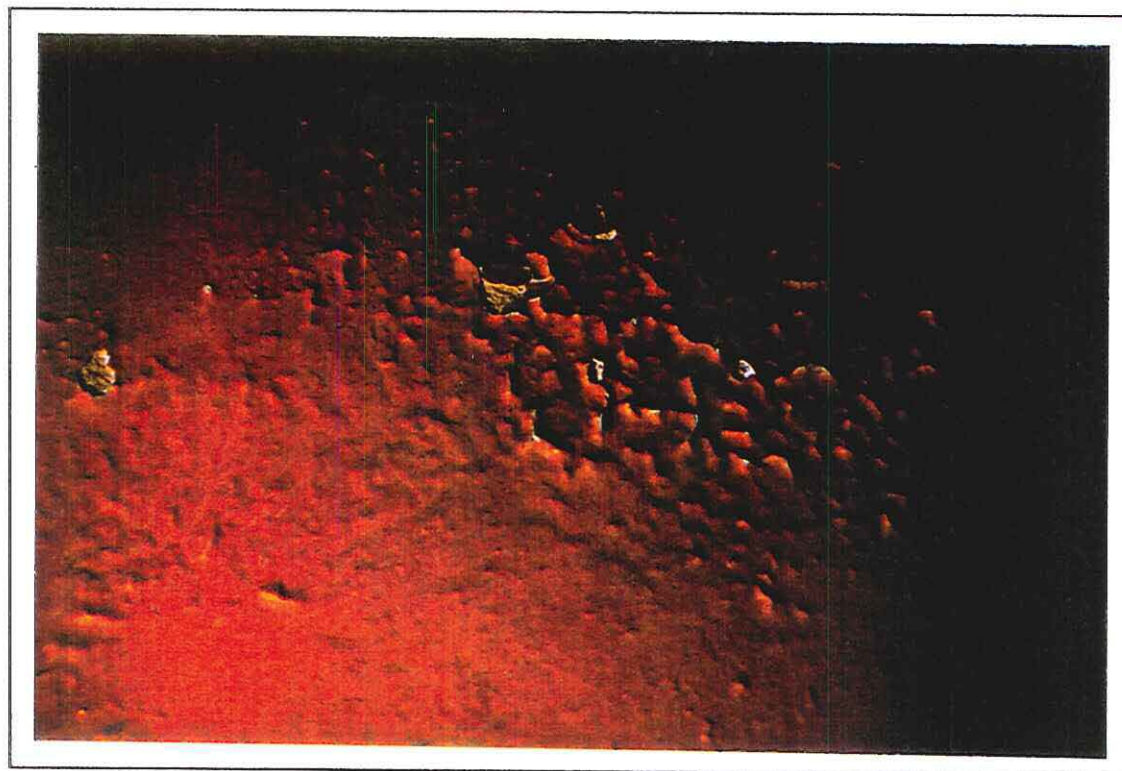
**Person** TM/JD

**Comments** Follow through 'Phase 1, "Conserve as found" policy'. Two people, one month, as soon as possible.

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Entrance hall, detail of marbling



First floor, corridor, detail of typical flaking found throughout the marbled decoration, in raking light