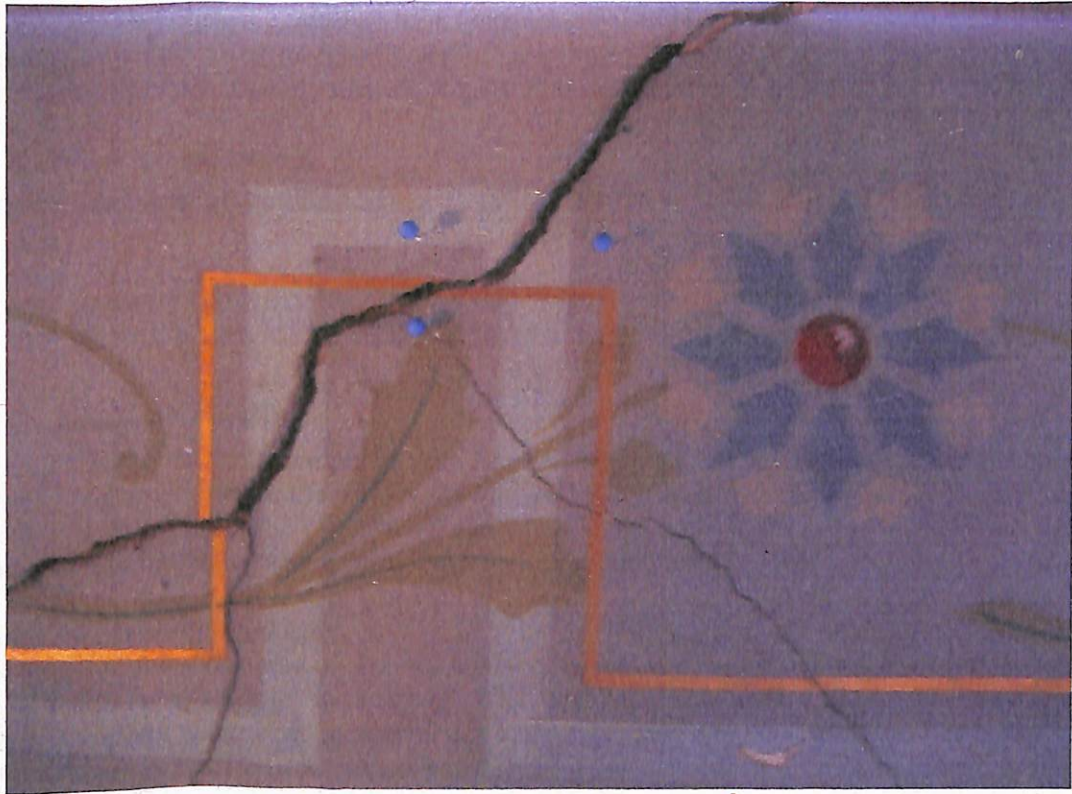


Villa Alba

Condition Survey 2004



prepared for
Villa Alba Museum

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1. Introduction

This report documents all deterioration to the painted surfaces at Villa Alba. It continues on from earlier surveys in 1986 and 1996, and follows recommendations by Artcare that the building should be surveyed every five years. The five year frequency has not yet been achieved and the conditions described in this report underline the need to adhere to this frequency.

The report also outlines the installation of movement monitors throughout the building and reports on the readings taken after three months. These short term readings are not of any great concern but illustrate that the system is working and sensitive to small changes even over such a short period.

This report includes a CD containing images of each room. These are available light digital images of variable quality but they do document all of the visible components of each room.

1.1. *Similar studies*

Artcare has undertaken a Condition Survey in 1986 and 1996.

2. Movement monitoring

2.1. *General principles*

Artcare installed movement monitors in Villa Alba in 1996 but these were removed from the building either during plaster repairs or the various show house installations. The current series of installations are attempting to monitor the three dimensional movement of the upper walls and to do this some monitoring points have been established at the base of the walls at ground level.

Movement monitoring principles.

Early movement monitors relied on the attachment of a glass slide across a crack to determine movement. If the glass broke the crack must have moved. What could not be determined was the nature of the movement. It was not clear when the movement took place, only the glass breakage. Nor could the direction of the movement be determined, whether the break was due to opening or closing of the crack.

At the other end of the range of sophistication, strain gauges have been employed to measure the pressure exerted by a movement rather than its resultant journey. Such gauges are sufficiently sensitive to be able to detect changes in expansion due to temperature but this is of no use to interpreting building movement. The gauge requires calibration to convert strain into distance. The gauge can be connected to a data logger to provide time related movement events at intervals set by the operator. These can be as little as every second or once per day.

The recognition of significant movement allows the use of less precise equipment to monitor movement.

Two factors need to be considered. How repeatable is the measurement? How much movement is significant? To verify the first question a dry test needs to be incorporated that measures two points in the structure that have no apparent movement. The second question is more difficult but in reality a cumulative movement of 1 mm or less is considered insignificant.

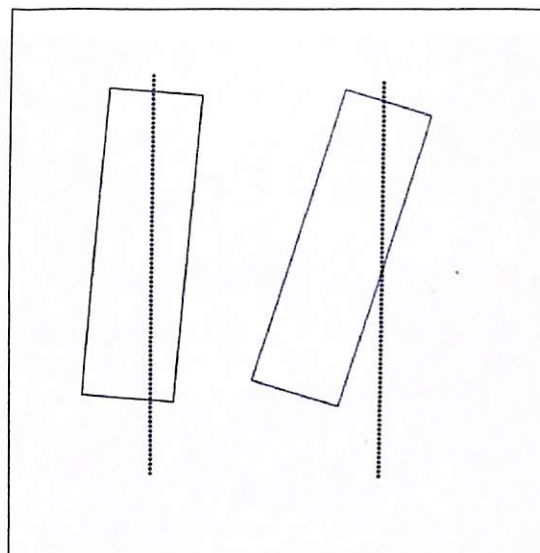


Figure 1 Stable and unstable walls.

The structure itself will determine whether this is the case and depends to a very large extent on how vertical the wall is. In simple terms a wall is considered stable if the centre of the wall at the top lies within the outer extent of the base. In the illustration the structure on the left is stable while that on the right is not. Hence in an unstable structure a 1 mm movement may be considered more significant than it would be in a perfectly stable vertical wall.

Several methods for taking imprecise measurements adequate for building movement are outlined and have been used by the author.

1. Glass slides

A pair of glass slides is affixed to the crack, one either side such that they can move independently across the crack. A pattern is etched on to the surface of each so that when installed in the correct overlapping position a pair of horizontal and vertical lines is produced. Changes in the distance indicates movement and each slide pair provides a horizontal and vertical measurement. A vernier scale mounted in a hand microscope can give reliable increments of 0.1 mm and the accuracy of the system is to about 0.2 mm, well within the range of significant movement.

2. Vernier scales

In this variation the scale is printed onto the slide. For ease of printing the scale is printed onto transparency film that can be fed through a conventional printer. A vernier scale has 10 increments on one side and only 9 on the other. So reading to an accuracy of 0.1 mm can be achieved with normal eyesight. Each vernier is attached to either side of the crack using a stable adhesive. There is always the possibility that the slide will move through disturbance or creep within the adhesive but the advantage of this system is that it can safely be applied to mural paintings without damaging the surface. The vernier can be printed with vertical and horizontal axes but this is more easily achieved by installing two separate scales.

3. Three pin method.

This method requires the insertion of pins into the surface and is thus not suited to high art murals. It relies on the fact that most cracks run diagonally, providing the opportunity to measure both horizontally and vertically. The pins are arranged such that two pins are placed across the crack horizontally (A-B) while the third is placed vertically beneath one of them (A-C). The crack runs between the two pairs as illustrated in the adjacent image. Measurements are taken using a vernier calliper and again this is to 0.1 mm.

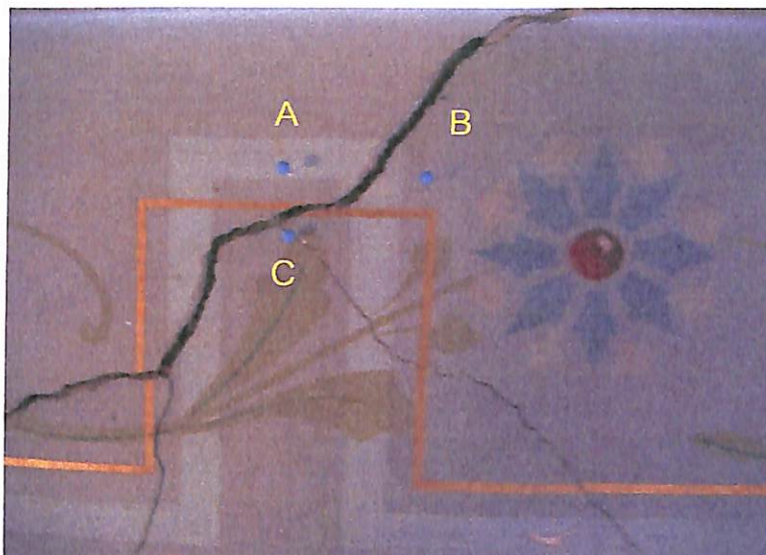


Figure 2 Three pin placement to obtain vertical and horizontal movements.

This is the method currently employed at Villa Alba whereas the previous less permanent used glass slides. While the mapping pins can be removed quite readily their exact location can be re-established with suitable accuracy.

2.2. Monitor installation

Monitors have been installed at locations marked A to E on Figure 4.

Location A has monitors in the cornice of F14 and on the ceiling of G3.

Location B has monitors on the cornice of F15 and the skirting level of G3.

Location C has monitors on the cornice of F12 and the skirting level of G4.

Location D has monitors on the cornice of F17.

Location E has monitors on the cornice of F12.

In all there are 24 readings taken for the installation. This will be increased shortly to ensure that additional three dimensional movements are recorded.

2.3. Results.

The monitors have been re-read after three months and already there is evidence that the building is mobile. The readings are within the 1mm significant movement range but outside the margin of error. The data is not presented here but readings will be taken whenever the conservator is working in the building. Ideally the readings should be taken at least twice per year in April and October.

Without reading any significance into the current data the greatest movement is 0.8 mm which is a vertical opening of the crack in F12. There are corresponding horizontal movements, confirming that even these preliminary data are valid. All cracks measured are opening except the north end of G3 which has closed 0.3 mm in the NS orientation with a corresponding 0.1 closure in the EW orientation. One would normally expect cracks to be opening over the measurement period. A fuller report will be provided at the next reading.

3. Condition Survey in Detail

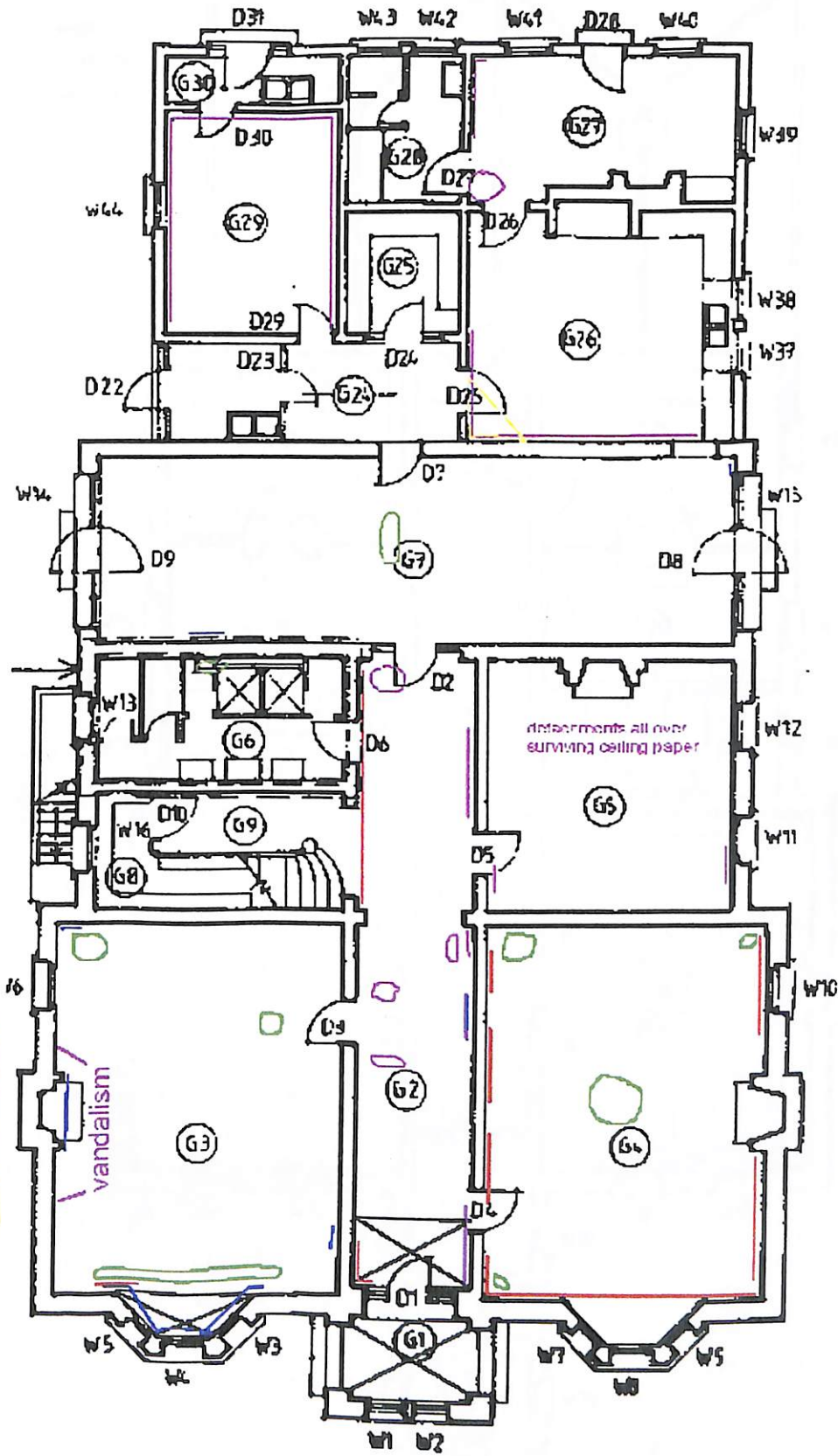


Figure 3 Condition of Level 1 (Ground Floor)

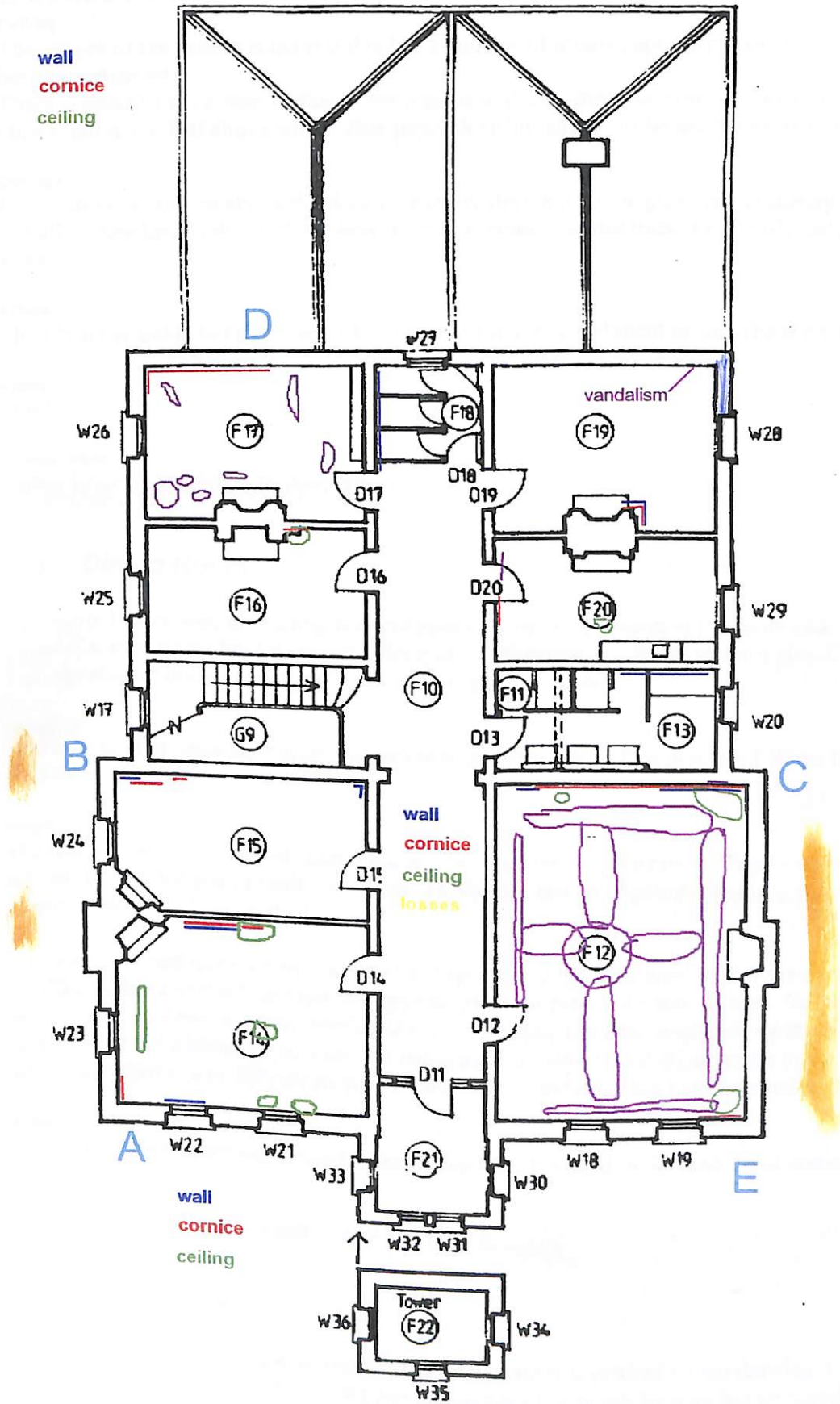


Figure 4 Condition of Level 2.

G 2 Entrance Hall

Ceiling

The plaster of the ceiling is quite stable but a number of minor paper detachments from the plaster have been documented.

There appears to have been further water ingress in the northern section. Some of this corresponds to the plaster fall in the hall above while other paper detachments occur below the bathroom above.

Cornice

One section of cornice above the door is severely detaching. One piece is completely loose. Three modillion brackets in the north section are now missing without trace. Previously only one of these was gone

Frieze

The plaster is stable but a few significant areas of paper detachment occur. These are marked on the plan.

Walls

Stable

Remediation

Allow 5 hours to stabilize these surfaces.

G 3 Dining Room

Ceiling

As reported on earlier, the ceiling has undergone some compression in the south end. A newly developed, yet similar movement has taken place along the northern edge in more recent times. Crack monitors have been installed at both locations to monitor future movements.

Cornice

One section of cornice has become loose since last inspection. This is located above the bay window, as marked.

Frieze

The painted frieze is the most significant artistic component in this room. It is an oil paint on paper applied as long lengths of multiple scenes. There has been an ongoing instability within the paper wherever the walls have moved.

A more recent and quite severe damage has happened at the right hand end of the panel above the fireplace. This is a recent damage that appears to be the result of a serious leak. No knowledge of this leak has been brought to the conservator's attention. Someone has been engaged to paint over the damage. Not only has this not addressed the issue but has caused considerable disfigurement to the frieze painting and the cornice above. It is difficult to imagine how such vandalism has been allowed to take place.

Walls

The walls remain stable and a crack monitor has been installed in the north west corner at skirting level.

Remediation

Allow 10 hours to stabilize and rectify previous damages.

G 4 Drawing Room

Ceiling

The ceiling is generally stable except for the three corners identified on the drawing. Combining this with the seemingly recent instability in the cornice suggests the destabilization has occurred in recent years.

There is clear evidence of damage to the ceiling from recent open house installations. The central rosette of the centrepiece is broken through and the general area around appears less stable than other parts of the ceiling. The cracks have been marked out in Figure 5.



Figure 5 Cracking to the plaster in G4. The yellow lines mark the extent of cracks in January 2004.

Cornice

The cornice has become increasingly unstable over recent years. The repair plaster east of the bay window has an open crack of about 1-2 mm indicating recent instability in the walls at this end of the building. The movement may be due to drying in the foundation since the gutter replacement above. Monitors have been installed to track movement in this room.

Frieze

Stable

Walls

Stable

Other

The central rosette of the ceiling centrepiece has been broken off during installation of chandeliers during open days. The ceiling itself appears more disturbed in this central area.

Remediation

Allow 6 hours for stabilization in the cornice.

G 5 Breakfast Room

Ceiling

The plaster of the ceiling is quite stable but the paper supporting the decoration is detaching in almost every part of the ceiling. There is approximately 20% detachment across the ceiling but it is unclear at this stage whether the detaching paper is in fact that supporting the painted scheme in all places.

*Degree
of
paper
remaining*

Cornice
Stable

100% - Laguerre's ceiling

Frieze

Paint is peeling from the frieze but in one area this is confined to the overpaint peeling from the original.

Walls
Stable

Remediation

Allow 20 hours to reattach the paper onto plaster in the ceiling.

G 7 Vestibule

Ceiling

Stable in all but one area with some paint flaking. This is believed to be overpaint with no original decoration intact. An investigation of the ceiling is currently underway.

Cornice

Overpaint is flaking from various parts of the cornice. On the whole this is exposing the original mauve scheme.

Frieze

As for wall.

Walls

Stable except for two small areas. The plaster around the removed western flue is severely detached in small areas. A minor detachment occurs above the left side of the east door. All paint is now securely attached.

Other

A floor joist appears broken midway between the central and outer doors, along the north side of the western half of the room. Recent repairs to the north east corner have been done very crudely. This work should be removed or completed, including polishing to match the surroundings.

Remediation

Allow 2 hours for paint and plaster stabilization in the walls.

G 9 Butlers Pantry.

Ceiling

Detachment around flue penetrations through ceiling, as marked.

Cornice
Stable

Frieze

As for walls

Walls

Deteriorating wallpaper but this is of later period.

Remediation

None essential at this time.

F14 SW Bedroom**Ceiling**

Evidence of pin fixing damage causing paint and plaster loss.

Central overpainted area continues to flake but this is not original.

Compression of plaster along western wall line as marked.

An area of plaster, filled at some earlier stage, has folded out and is very hollow behind. This area should be properly secured now.

One section of the ceiling rose is loose as a result of movement and detachment of the ceiling supporting it.

Cornice

Stable except where marked.

Frieze

Stable except where marked. Generally all wall detachment is in the frieze area.

Walls

Detachments as marked.

Remediation

Allow 3 hours to secure plaster in cornice and rose.

F15 Bedroom**Ceiling**

Stable all over including recent repair.

Paint peeling but not where original paint survives.

There is evidence of movement in the ceiling since the stabilization from above but all remains well attached.

Cornice

Evidence of compression through movement, particularly near the NW downpipe area.

Frieze**Walls**

Some detachment around the downpipe.

Moisture survey indicates that this previously wet plaster is now fully dry.

Remediation

None required at this stage.

F 12 Master Bedroom**Ceiling**

The ceiling has suffered from continual movement since last inspection. This has resulted in several areas of buckled plaster skim coat. The ceiling has been stabilized from above but this is limited to attaching the whole plaster mass to the laths and joists above. The current detachments are between the outer skim coat and the thicker brown coat that bonds to the laths. Previous stabilization to the skim coat remains effective and should be continued.

In addition to the minor areas of detached plaster, the painted surface continues to detach. This has been documented on the plan and is confined to the foliage border decoration. There are some detachments to the inner plain cream panels but this paint is an overpaint.

Cornice

Plaster is detaching from the northern cornice in particular. A visible line of detachment runs almost the entire length of cornice.

Frieze

One small section of frieze plaster has detached in the NE corner, associated with the building movement in this corner.

Walls

Wall plaster all appears stable.

Remediation

Allow 20 hours for stabilization of ceiling, cornice and frieze.

F10 Upper Hall**Ceiling**

All stable. The new repair has been applied very well with no over-run onto the original surface. The new plaster appears to be a conventional gypsum based plaster and time will determine to what extent this remains compatible with the original and how well it can withstand building movement.

Cornice

Stable

Frieze

Stable despite some bubbling appearance to the south wall.

Walls

Stable including the revealed flower panels in the south section.

Other***F16 Bedroom*****Ceiling**

This ceiling has remnant scheme information and as such is moderately important to retain. There is some instability in the ceiling around the removed vent on the east side of the chimney.

Cornice

A section of cornice to the east side of the chimney is severely detaching. This cornice retains its exposed original scheme. All other cornice is stable despite its heavily cracked appearance.

Frieze

The frieze to the east of the chimney shows its exposed scheme. The wall is stable but all other surfaces around this area are fragile.

Walls

Stable

Remediation

Allow 3 hours to stabilize frieze and cornice details.

F20 Bedroom**Ceiling**

Stable except for one small part of the rose.

Cornice

Small section along the west wall could be strengthened.

Section of powdering paint along the west wall.

The 1883 date in this cornice has been recorded.

Frieze

Stable except for small area along the west wall. This appears to be due to the leak that caused recent plaster ceiling falls in the adjacent Upper Hall.

Walls

Stable

Other

Door handle is loose and could easily be removed. The handle base plate has already been removed.

Remediation

Allow 3 hours to cornice and ceiling.

F 19 Bedroom**Ceiling**

Stable

Cornice

Stable except for east corner of fireplace.

One section of cornice has been crudely painted during open house events in recent years. Not only is this clear evidence of exhibitors disregarding instructions but belies a lack of detailed supervision during such events.

Frieze

Stable except for east corner of fireplace.

Walls

Stable

Other***F 17 Boudoir*****Ceiling**

Detachments as marked on plan. There is an ongoing but gradual destabilization of papers in this room. Despite the number of areas the detachment is minor and requires just routine reattachment.

Cornice

The north cornice has moved considerably in recent years causing compression and failure within the cove. A major crack perpendicular to the cornice is now being monitored for movement.

Frieze

Stable

Walls

Stable

Remediation

Allow 8 hours to reattach ceiling papers.

F18 Bathroom**Ceiling**

Stable but possible damage under recent ceiling section.

Cornice

Stable

Frieze
None

Walls
Lower west wall requires stabilization while timber frame is removed. This should be done as one exercise not divided between two parties.

Remediation
Allow 6 hours for plaster reattachment in lower wall.

F11 – F13

Ceiling
Replacement

Cornice
Removed

Frieze

Walls
Some further stabilization required along the very fragmented area of the north wall.

Remediation
Allow 2 hours for further plaster stabilization.

4. Recommendations

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|-------------------|---|
| Recommendation 1 | All works outlined in this report should be implemented within 12 months. |
| Recommendation 2. | A further survey should be undertaken no later than 2009. |