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Plaster Cornice Removal Methodology

Former Department of Lands Building
22-23 Bridge Street, Sydney

Prepared for
Built

Date
11/08/2023

ICS Job Reference
#15314N



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Contents

1.	Introduction	3
1.1.1	Acknowledgement	3
1.1.2	Site visit	3
1.2	Structure of report	3
2.	Existing construction	4
3.	Enabling Works	5
3.1.1	Prepare architectural documentation	5
3.1.2	Develop a salvaging plan	5
3.1.3	Transport and storage	5
4.	Insitu Salvaging Works	6
4.1.1	Access from above	6
4.1.2	Hazardous materials removal	6
4.1.3	Timber formwork	6
4.1.4	Removal of string moulding	6
4.1.5	Removal of cornice segment	7
		8
5.	Authorship and project team	9
	Appendix A - Images of Chief Surveyors Room- Room G.01	10
	Appendix B - Room G.04 – Records and Correspondents Room	12
	Appendix C - Images of Minister’s Room – Room 1.07	16

This report has been prepared for the client in accordance with the terms and conditions of appointment of International Conservation Services for this project.

International Conservation Services Pty Ltd cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

1. Introduction

International Conservation Services (ICS) has been engaged by Built Pty Ltd in August 2023 to prepare a methodology for the removal and future reinstatement of the heritage listed original plaster cornices, beam, and string mouldings in three rooms G.01, G.04, G.07 in the former Lands Department Building, 22 Bridge St, Sydney to address DA Condition B44C (MOD 18 – SSD 7484).

1.1.1 Acknowledgement

This report references the methodology contained in the "The Department of Lands Building Heritage Cornice Salvage Methodology" prepared by the Traditional Restoration Company (TRC) dated 12/12/2022. This report relates specifically to the methodology TRC adopted to remove a sample of cornice from room 1.04. Whilst the cornice design differs from that found in G.01, G.04 and G.07, the subject of this report, the process required is sufficiently similar to allow the methodology to be largely utilised.

1.1.2 Site visit

Richard Silink, Head of Conservation, Shrief Eissa, Conservator, and Ken Ellis, Artisan of Stone inspected the site on Thursday 3 August 2023. Access was provided to the following spaces: G.01, G.04 and G.07. Access was provided to the ceiling space above G.07 by temporarily removing the temporary floor covering. This allowed for visual inspection of the cornice at both the wall and beam junction.

1.2 Structure of report

This report follows the structure of the TRC report for consistency, as follows:

1. Enabling works
2. In-situ Salvaging Works
3. Consolidation, Restoration, and Installation of Support Structure
4. Reinstatement Onsite Methodology (separate document)

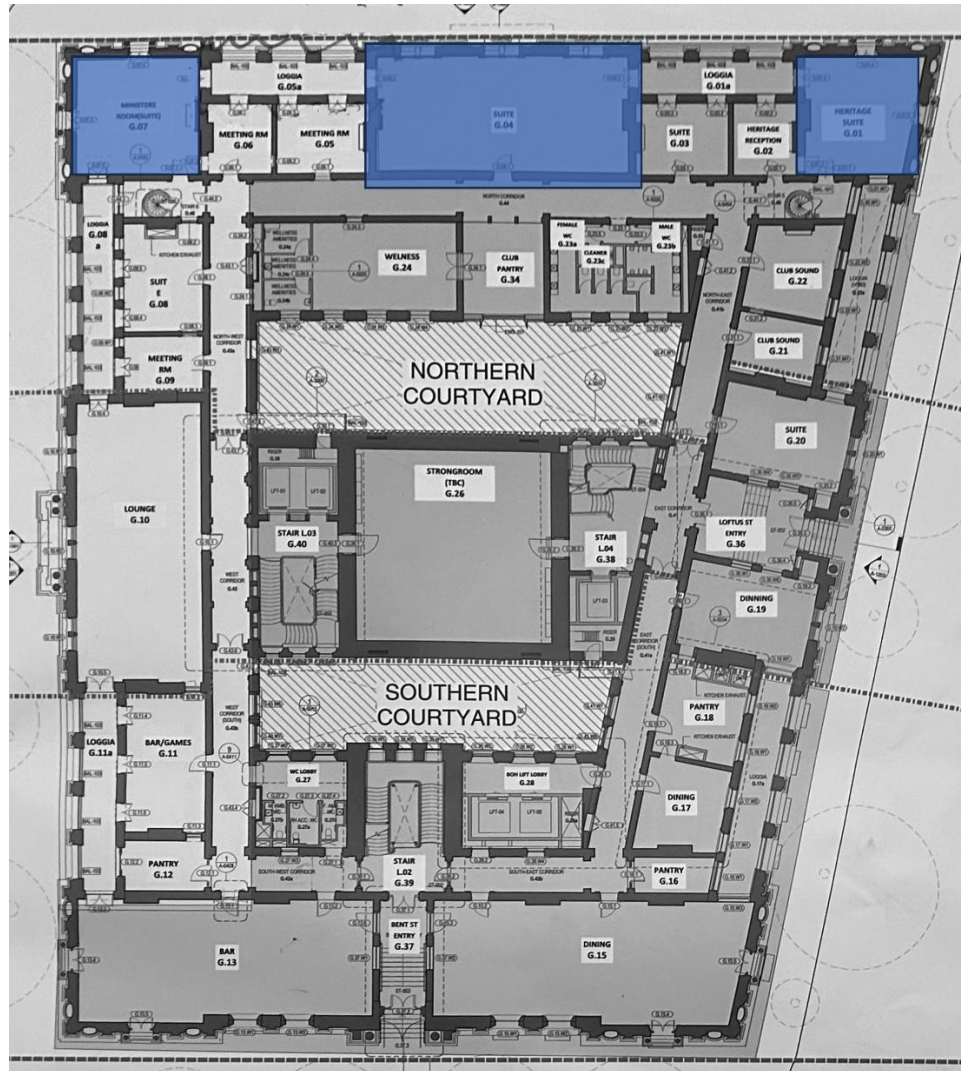


Figure 1: Ground floor plan denoting G.01, 04 and 07

2. Existing construction

The elaborate plaster and lath cornice was constructed using a combination of insitu 'run' sections of plasterwork that would have involved using a sliding form to create an extruded shape using wet plaster. Due to the height and depth of the cornice this would have been undertaken in up to three separate 'runs' to create the final profile.

The 'run' sections of the cornice were then embellished with the addition of cast decorative plaster elements.

The structure of the cornice is founded on timber brackets that were fixed perpendicular to the wall or beam at approximately 350-450mm centres. The brackets were fixed laterally to timber plugs that were set into the walls and to the underside of the timber ceiling joists. Split timber laths were then fixed to the leading edge of the brackets to provide the support for the run sections of the plaster cornice.

Below the cornice is a separate plaster string moulding that would have been run insitu.



Plate 1: Detailed image of the ornate plaster cornice and string moulding in G.07

3. Enabling Works

3.1.1 Prepare architectural documentation

- Prepare detailed architectural CAD measured drawings of the three rooms including all relevant features e.g. chimney, location of ceiling beams etc.

3.1.2 Develop a salvage plan

- Prepare a detailed photographic archival record and condition assessment of the entire cornice in situ. This will allow for the accurate recording of all elements and the identification of defects that may compromise the cornice during salvaging.
- Submit the archival recording to the Design Team (Design architect, Heritage architect, Heritage engineer and Heritage consultant).
- Prepare a 'cutting diagram' to identify the number and location of all proposed joints in the cornice to allow for the systematic removal into manageable segments. Locate cuts with respect to the existing pattern to facilitate a seamless join during reinstatement.
- Confirm locations for cutting with the Design Team.
- All components will be coded to allow for careful management during removal, transport, off-site conservation, and future reinstatement with the coding documented on the cutting diagram.

3.1.3 Transport and storage

- The transport and storage of the cornice segments will require the fabrication of bespoke plywood stillages. (Refer Timber Formwork section).

- All components will be carefully numbered to allow for tracking during the project.
-

4. Insitu Salvage Works

4.1.1 Access from above

- Carefully remove timber flooring to the floor level directly above the works area to provide access to the upper concealed face of all cornices.

4.1.2 Hazardous materials removal and plaster consolidation

- Remove all accumulated dust and debris by hand and by use of a HEPA filter vacuum. Assume that due to the age of the structure all materials may be hazardous including lead paint contamination. This will allow for the upper side of the cornice to be clean and dust free prior to consolidation. Note that an archaeologist may be required if heritage items/relics are uncovered during the works.
- Due to the fragile nature of traditional plasterwork, it is imperative to consolidate the plaster to the underlying timber lath supports prior to undertaking any works. This will greatly reduce the risk of failure during removal. Consolidate the plaster and laths from above using Westox proprietary RAP primer and adhesive system in accordance with manufacturers recommendations.

4.1.3 Timber formwork

- Fabricate timber formwork using plywood in segments. Each formwork section will be individually cut to the exact length of each segment of cornice. The formwork will be used as the stillage for the safe transport and storage of the plasterwork. (refer Figure 3a)
- Coat the surface of the original cornice with a removable barrier layer, eg silicon release, to prevent the expanding foam from adhering to the surface.
- Raise timber formwork to cornice (lengths from 1 – 1.5 metres at a time) and temporarily prop in location.
- Inject expanding foam between formwork length and face of plaster cornice, and allow to cure.
- Trim cured foam back to edge of formwork
- Mark edge of formwork length on cornice using pencil for future cutting line.
- Lower formwork segment, including foam moulding to the floor below in readiness for supporting each length of cornice for transport.
- Code all formwork segments to allow for careful management during removal, transport, off-site management and future reinstatement with the coding documented on the cutting diagram.

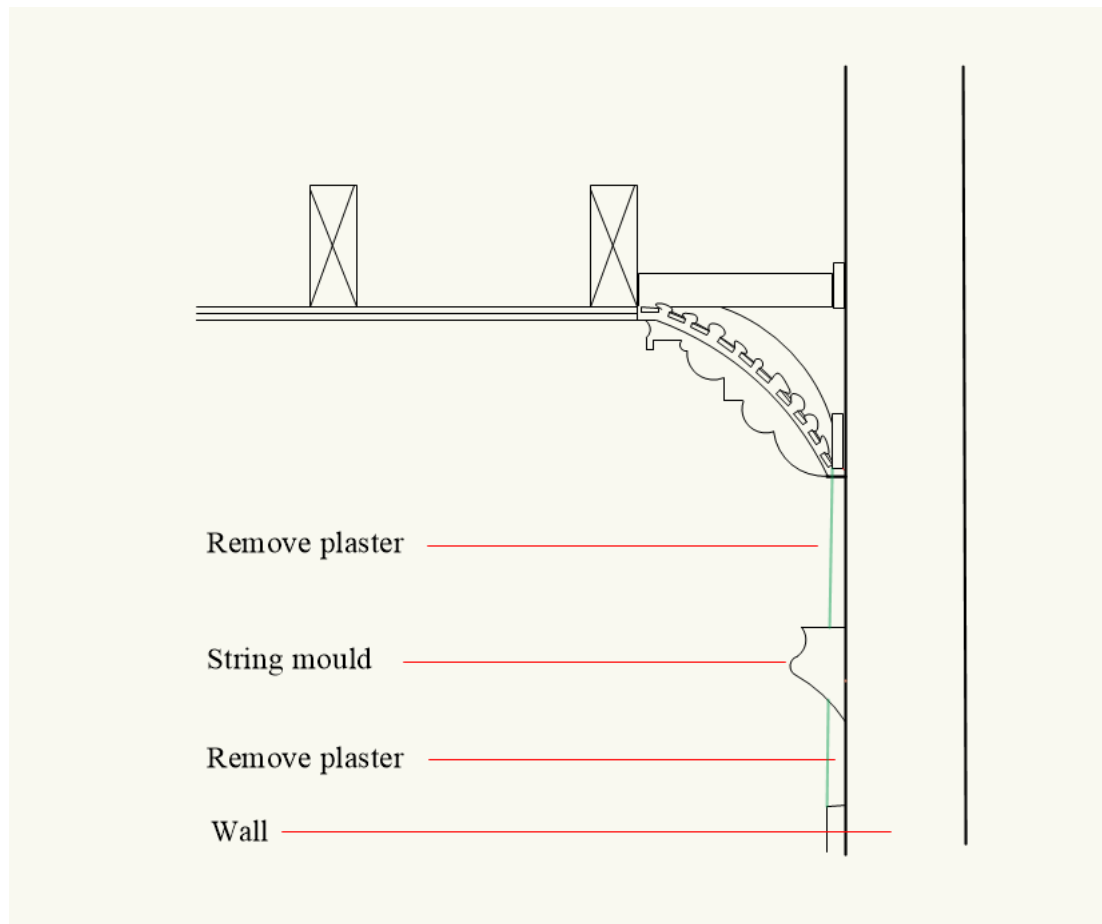


Figure 2: Location of removal of plaster on wall surface adjacent to elements to be removed

4.1.4 Removal of string moulding (if required)

- Undertake a trial, to be approved by the design architect, heritage architect/engineer/consultant prior to removing the full string moulding if required to install the fire rated ceiling.
- Create timber formwork for the storage and transport of the string moulding.
- Carefully remove wall plaster to approximately 200mm directly above and below the string moulding. (Refer Figure 2)
- Coat the surface of one 1.5m section of the string moulding with a removable barrier layer to prevent the expanding foam from adhering to the surface.
- Raise timber formwork in selected section and inject expanding foam and allow to cure.
- Remove timber formwork and replicate foam mould to allow for string moulding from entire room
- Identify the cutting points, locating with respect to the existing pattern.
- Confirm locations for cutting with the Heritage architect and Heritage consultant.
- Carefully support the string moulding and cut into lengths.
- Carefully cut behind moulding using a fine saw and lower segments to floor. (Refer Figure 3b)
- Place in foam moulds in timber formwork for storage and transport

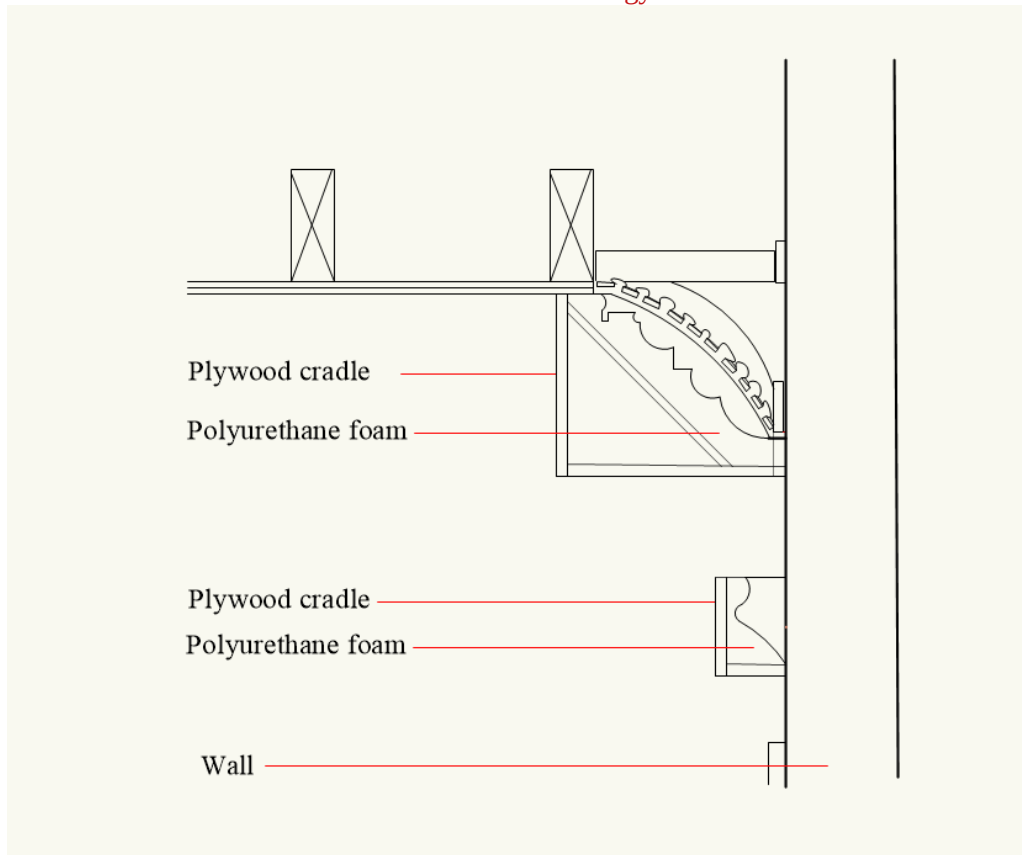


Figure 3a: Create plywood cradles

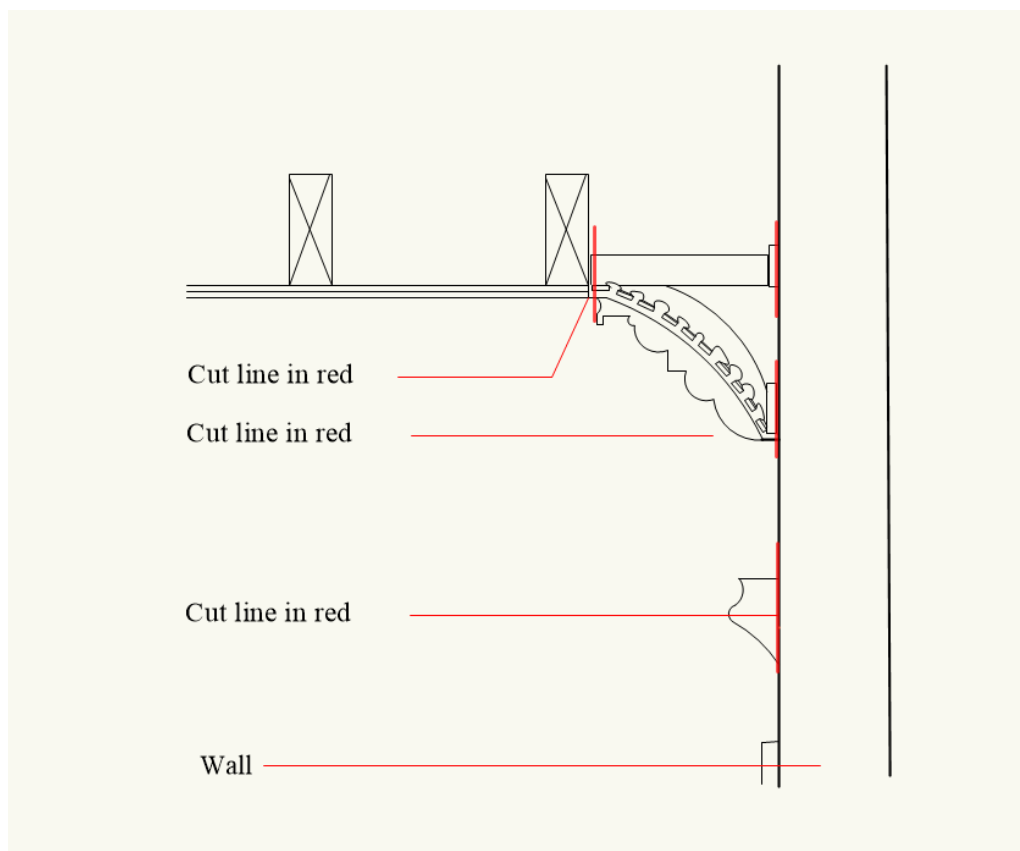


Figure 3b: Cut lines (in red) to detach cornice and moulding from wall and ceiling

4.1.5 Removal of cornice segment

- Undertake a trial removal of a segment with location approved by the Heritage architect and Heritage consultant prior to removal, noting the location be chosen with respect to the existing pattern.
- Carefully remove adjoining plaster from both wall and ceiling (app 100-200mm). (Refer Figure 2)
- Carefully drill holes into the original timber angled braces from above to accommodate fixings and insert fixing points.
- Carefully support plaster cornice by connecting fixing points to a block and tackle from above. The number of fixing points will be dependent on the length and configuration of the cornice segment.
- With the weight supported from above use a flexible hand or fine reciprocating saw to carefully cut through the nails to the timber wall blocks and the timber joists above. (Refer Figure 3b)
- Carefully vertically cut the cornice and underlying laths into lengths to exactly match the formwork. Avoid excessive vibration.
- Carefully lower using block and tackle to the floor below and place segment on the timber support formwork. Note that the ceiling height is approximately 5.7m (not including the additional height from the floor level above.)
- Label both the cornice section and the timber crate with their unique identifying code and note location on architectural plans.
- Transport to offsite workshop for future conservation works.

5. Authorship and project team

A condition inspection of the Former Department of Lands Building was undertaken on 3 August 2023 by Richard Silink, Head of Conservation, and Shrief Eissa, Conservator, of ICS, who subsequently prepared this report.

The report has been reviewed by Julian Bickersteth, CEO and Emily Jaques, Projects and Admin Officer.

Appendix A - Images of Chief Surveyors Room- Room G.01

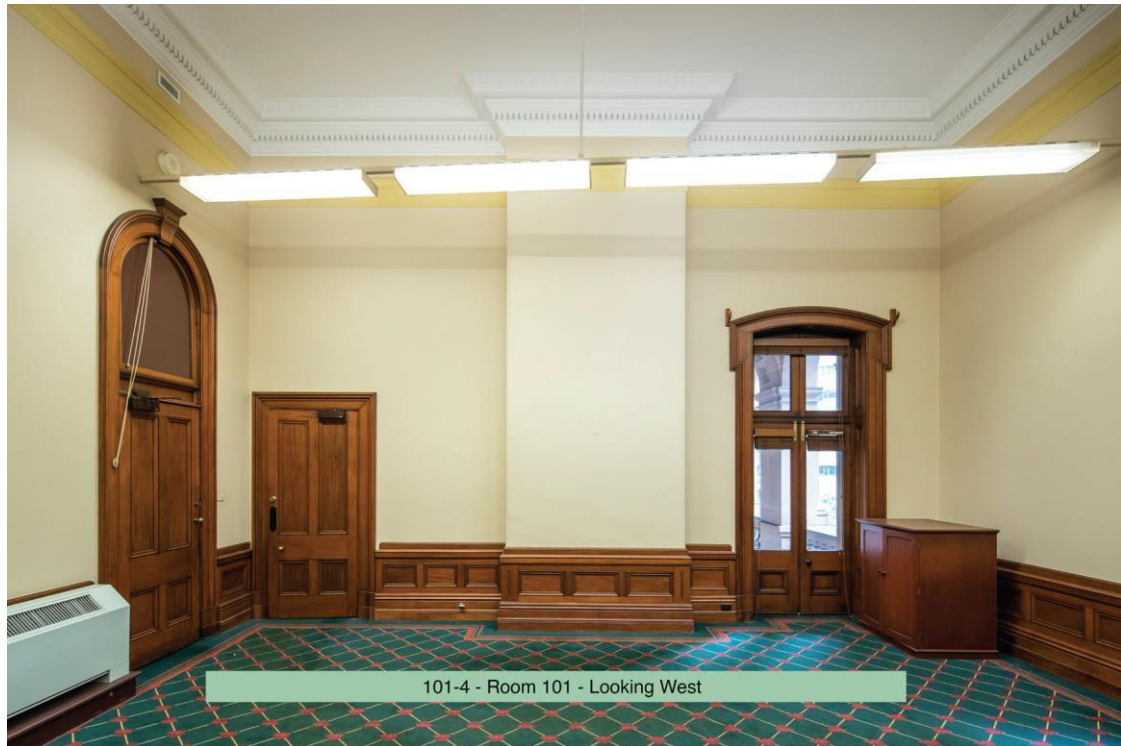


Plate 2: Chief Surveyor's Room- Room G.01 – Looking West



Plate 3: Chief Surveyors Room- Room G.01 – Looking North



Plate 4: Room G.01 - Chief Surveyors Room – Looking East

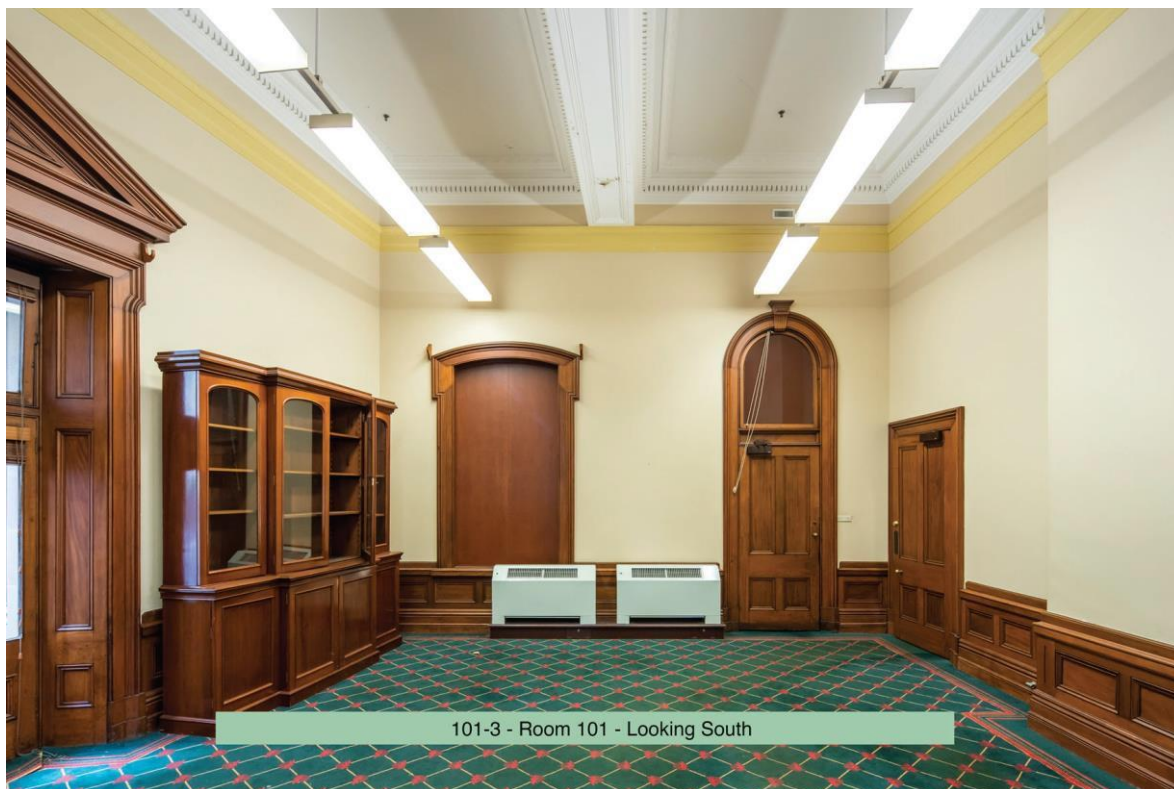


Plate 5: Room G.01 - Chief Surveyors Room – Looking South

Appendix B - Room G.04 – Records and Correspondents Room

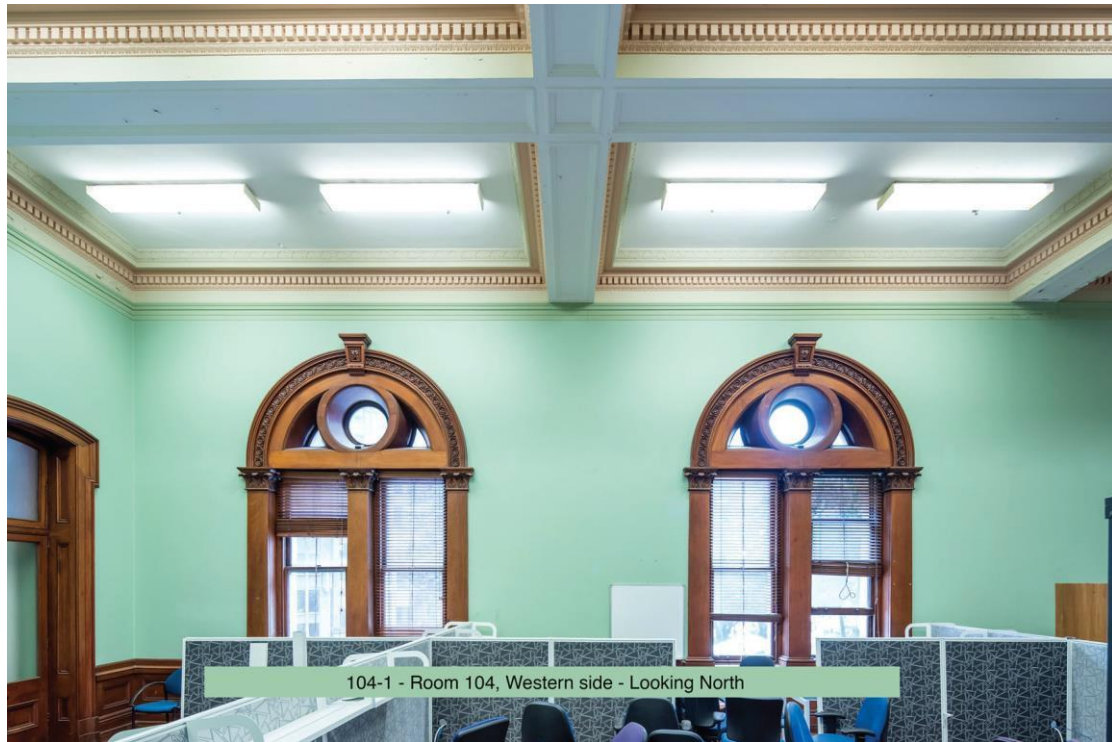


Plate 6: Room G.04 - Records and Correspondents Room – Western side looking North



Plate 7: Room G.04 - Records and Correspondents Room – Looking North



Plate 8: Room G.04 - Records and Correspondents Room – Looking East

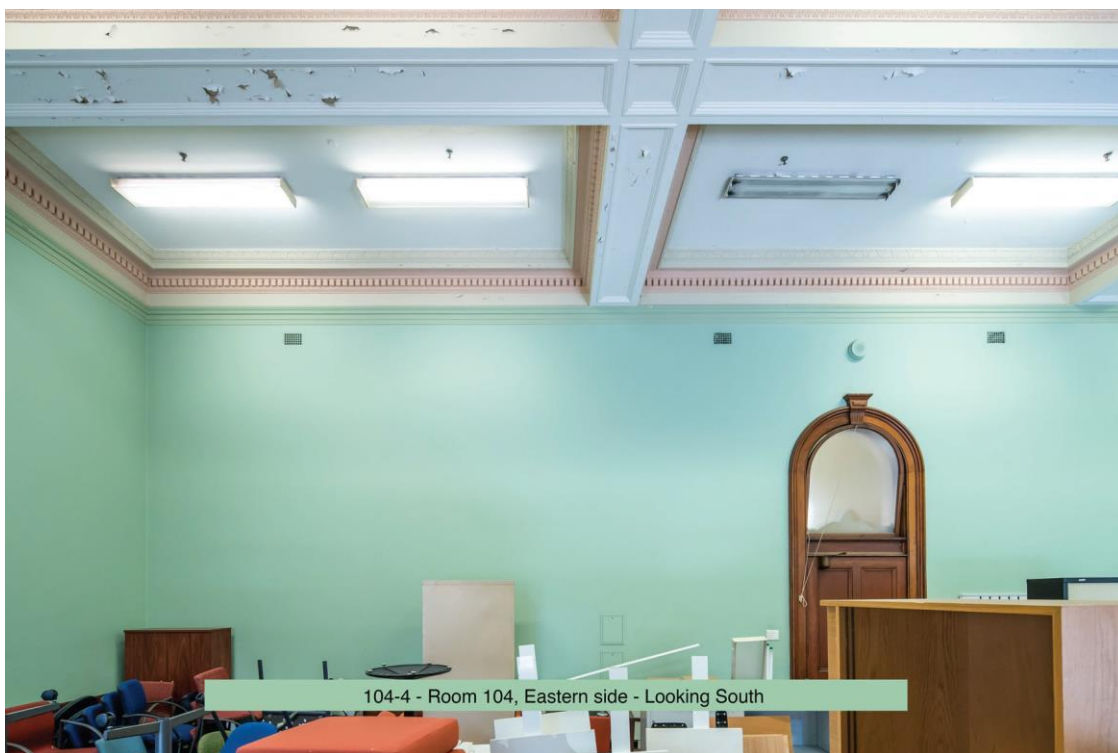


Plate 9: Room G.04 - Records and Correspondents Room – Looking South



Plate 10: Room G.04 - Records and Correspondents Room – Looking South

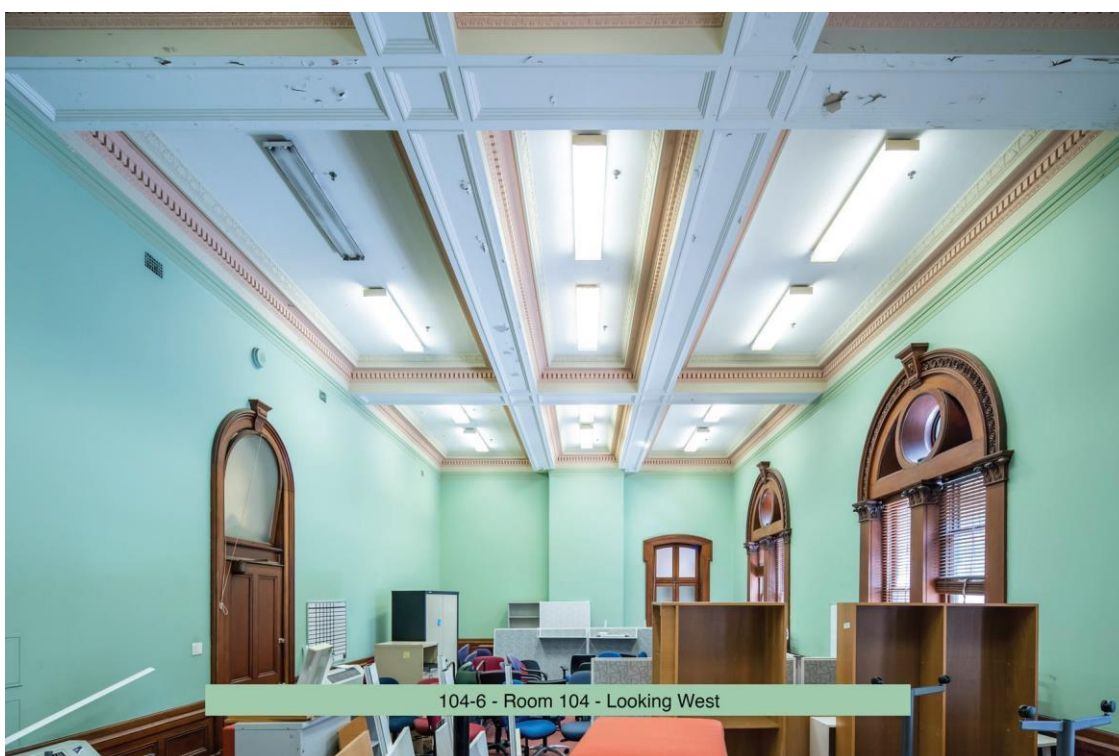


Plate 11: Room 1.04 - Records and Correspondents Room – Looking West



Plate 12: Room G.04 - Records and Correspondents Room – Looking North

Appendix C - Images of Minister's Room – Room G.07



Plate 13: Room G.07 – Looking North

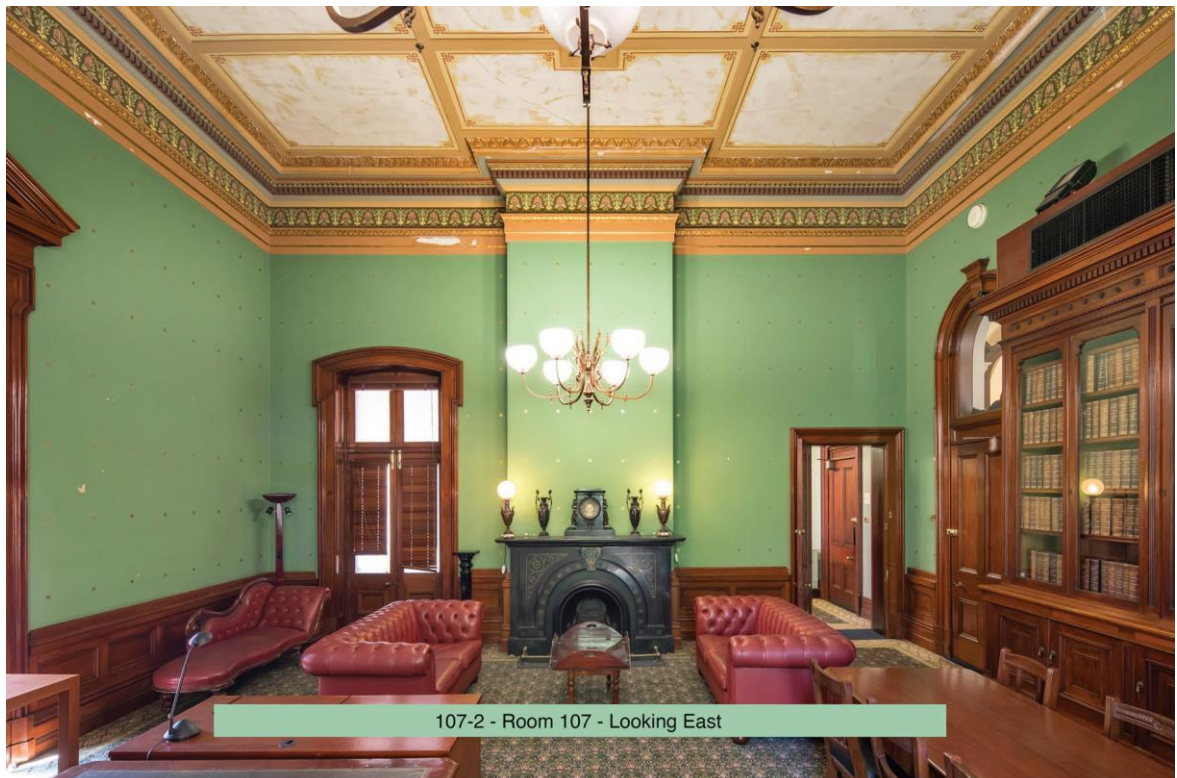


Plate 14: Room G.07 – Looking East

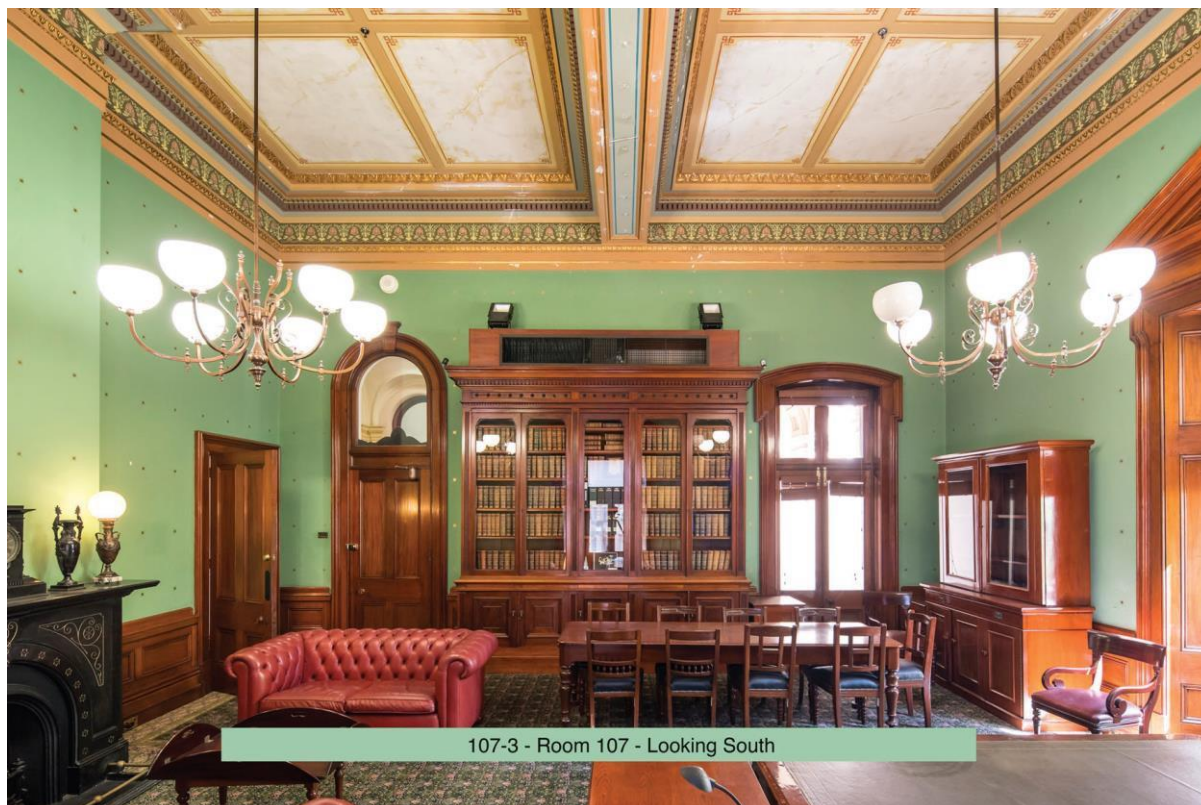


Plate 15: Room G.07 – Looking South

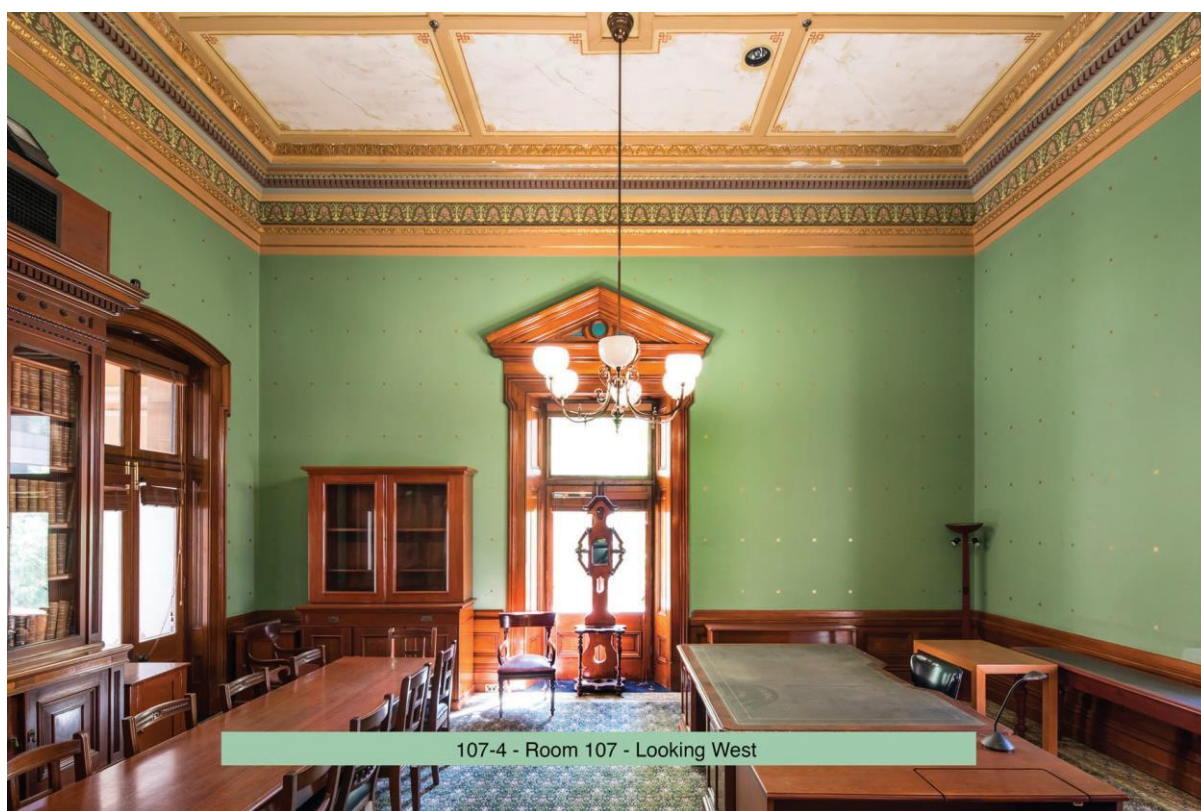


Plate 16: Room G.07 – Looking West



Plate 17: Room G.07 – Upward view to ceiling – North at top



Plate 18: Room G.07 – Upward view to ceiling, corner detail – Looking South-West

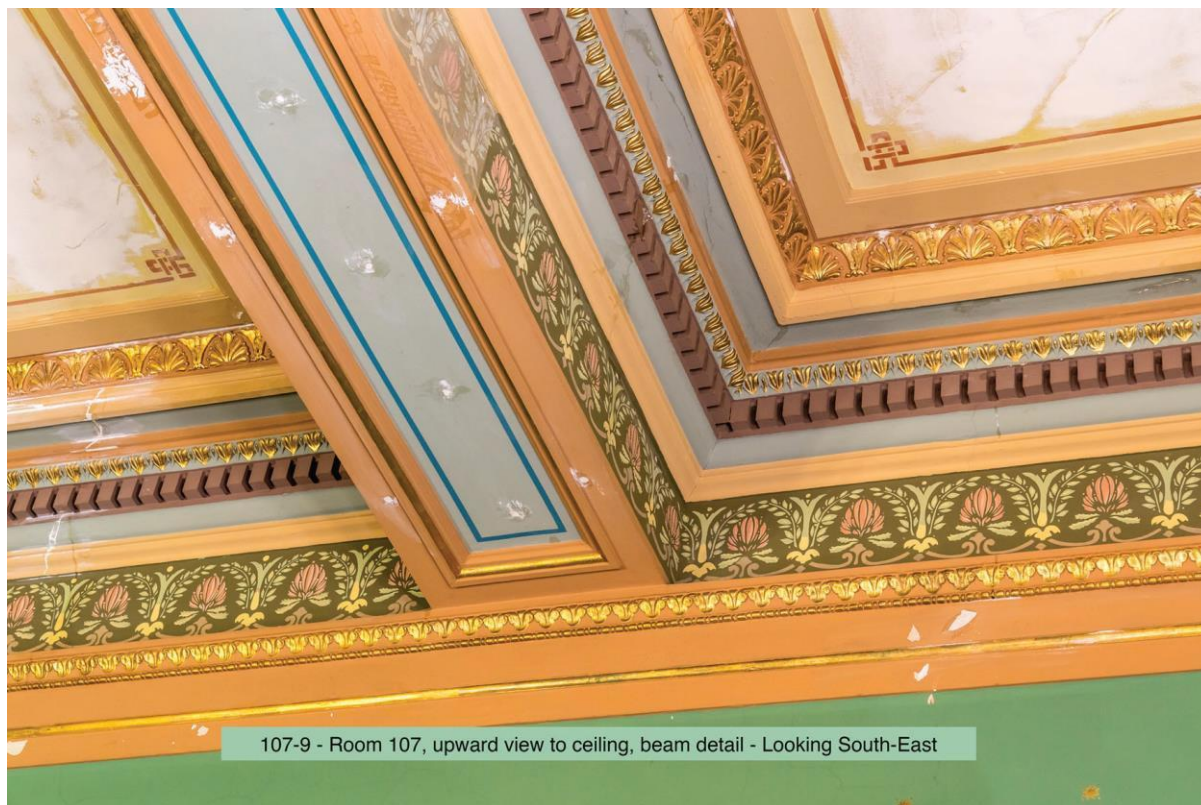


Plate 19: Room G.07 – Upward view to ceiling, beam detail – Looking South-East