



15/09/2026

Genevieve Kenyon-Slade
LDK
Level 10, 200 Mary St
BRISBANE QLD 4000

Attention: Genevieve Kenyon-Slade

RE: Structural Review of Relocation of Existing Heritage Listed Huts

Dear Genevieve,

This letter has been prepared in response to a proposal to relocate the existing two heritage listed huts that are located on the property at 16 Twenty Fourth Avenue, Brighton, QLD. Inertia Engineering has been engaged as the structural engineers for the proposed development. Inertia understand that it is proposed to relocate the huts to new positions within the same site.

The existing huts have been previously reviewed and a Structural Condition Report was prepared by vT Consulting Engineers in December 2024 (attached). This report addresses the condition of the huts as well as the suitability of the huts to be relocated. The report has concluded that the integrity of the building structure is such that the buildings are structurally sound for relocation.

Inertia have reviewed the huts and the structural report noted above and agree with the findings in the report. It is noted that the professional house removal specialist engaged to move the huts will need to provide adequate supports under the existing floor framing as well as provide temporary bracing to ensure stability during the relocation process.

Should you require any additional information, please do not hesitate to contact us.

Yours sincerely,

Digitally signed by Andrew Smith
Date: 2026.09.17 10:46+10'00'

Andrew Smith
Principal – Built Environment

ALTERATION AND RELOCATION OF TWO EXISTING HERITAGE BUILDINGS
UNITING CHURCH BRIGHTON CHILDCARE
Structural Condition Report

December 2024
Project No.: 24373
Revision No.: B

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Structural Condition Report

Date: 25/03/2025 Document No.: 24373 - Structural Condition Report 3
By: WB Revision No.: B

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Document Status:

REVISION	PREPARED BY	REVIEWED BY	DATE
A	Willie Beh	Jenelle Grauf	18.12.2024
B	Willie Beh	Jenelle Grauf	25.03.2025

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1. Introduction

a. General

vT Consulting Engineers has been commissioned by Open Architecture Studio to prepare this structural condition report for the relocation of two existing heritage listed RAAF barracks at Twenty Fourth Avenue, Brighton. The report will review if the proposed works are feasible and provide advice for the structural requirements for this relocation. This report has been prepared prior to any alterations to the existing building. It is understood that the age of both buildings were over 80 years old. It was found that the buildings were constructed with hardwood timber framing (floor, wall, and roof) and supported with concrete stumps and footings.

b. Inspection Procedure

The inspection was conducted by Jenelle, Willie, and Zhen from vT Consulting Engineers. The existing buildings was inspected both internally and externally on the 10th December 2024 to determine the structural and physical state of the building as it stands.

The areas that were evaluated in both buildings are described as follows:

- Roof Framing
- Wall Framing
- Floor Framing
- Stump and Footing

Structural elements that were in accessible areas were photographed, sketched and assessed for their structural integrity. Measurements were taken on the floor and roof structural members and attached in Appendix A.

c. Limitations

In the preparation of this report, the following limitations are to be borne in mind:

Some areas were not accessible such as:

- All areas above ceilings - we were able to access localised areas in the roof space to inspect of the general layout and condition of the structural elements. However, some areas were inaccessible due to limited space and visibility.
- Areas with flooring - the floor framing was cover up with internal flooring, these were not removed to assess the condition of the floor framing from top.
- Areas with wall linings – some walls were covered with sheeting these were not removed to assess the condition of the structure behind.
- The inspection was based purely on visual observations in accordance with our proposal.
- The inspections were to assess structural elements only and architectural elements and finishes were not assessed.
- This inspection was only visual, and the responsibility of the exiting structural design remains with the original designer.

2. Discussion

a. General

Four main areas were identified that required structural input for both buildings. These will be evaluated in the section below and categorised as Building 'A' and 'B' in Figure 1. Refer to Appendix A for sketch layout plan and detail markup. In addition, inspection photographs taken is attached in this report in Appendix B. At time of inspection, it was noted that the floor and roof framings are made of hardwood timber. Both buildings are elevated approximately 1m above ground with reinforced concrete stumps. It is believed that the roof loading is distributed to the width of the building which is 6.8m. Building 'A' was noted that the perimeter walls are load-bearing and internal walls are non-load bearing. Whereas Building 'B' with larger roof area, one of internal walls and perimeter walls is believed to be load bearing wall (refer Figure 1). Further discussions and recommendations of moving the buildings are elaborated in this report in below section 'e'.

b. Roof Framing

Gable roof framing in Building 'A' and 'B' was configured using timber truss system. The roof trusses at Building 'A' are spanning from external wall to external wall at 6.8m, meaning the internal walls are not taking any roof loading. On the other hand, Building 'B' roof trusses is also spanning at 6.8m from external wall to internal wall and addition of 2.5m roof spanning to external wall as shown in Figure 1. The roof trusses spacing was measured at 3m centres. The ridge height of the roof truss from top of ceiling is 1.5m with 24° pitch approximately.

At time of inspection, the roof structural framing appears to be in sound condition for its age. The roof purlins, truss members, bracings and ceiling joists are found to be intact and workable condition. However, roof insulations and truss tie-downs were not found during the inspection. The condition of the existing roofing sheet was found to be in deteriorating condition (Photo 8). The bolt fixings between the truss members were observed to be rusting and diagonal member to bottom chord joints were notched without any screw/bolt fixings (Photo 2 and 5).

It is recommended to replace the roofing sheet with new and install roof insulation in accordance with Building Code of Australia if required. Furthermore, the connection fixing between the roof truss members shall be replaced with new bolts or screws. It is also recommended to install new metal strap at each end of the roof truss as tie-down to the wall top plate or roof beam which accordance to AS1684.2:2021.

c. Wall Framing

The existing wall framing was cover up with wall sheeting, hence the internal wall framing was not able to inspected. The internal area of the wall sheeting and ceiling appeared to be in adequate condition except for Building 'A' where the gable end wall which was observed to be damaged (Photo 7). Further assessment is required to examine the wall bracings, insulations and wall tie-downs between roof-wall and wall-floor framing. It is known that the internal walls are consider non-load bearing walls for Building 'A' as shown in figure below. Whereas for Building 'B', one of the internal walls is believed to be load bearing that is proposed to be

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removed. Hence, we proposed to install new roof beam and columns or additional studs to replace the internal load bearing walls that will be removed in Building 'B'. Take note that the proposed roof beam might effect a down stand of the beam from ceiling or a bulkhead. Furthermore, the removal of internal wall with bracings shall be assessed and substituted to any new walls or to existing perimeter walls. It is also recommended to retrofit tie-down from the wall bottom plate to floor framing for both buildings.

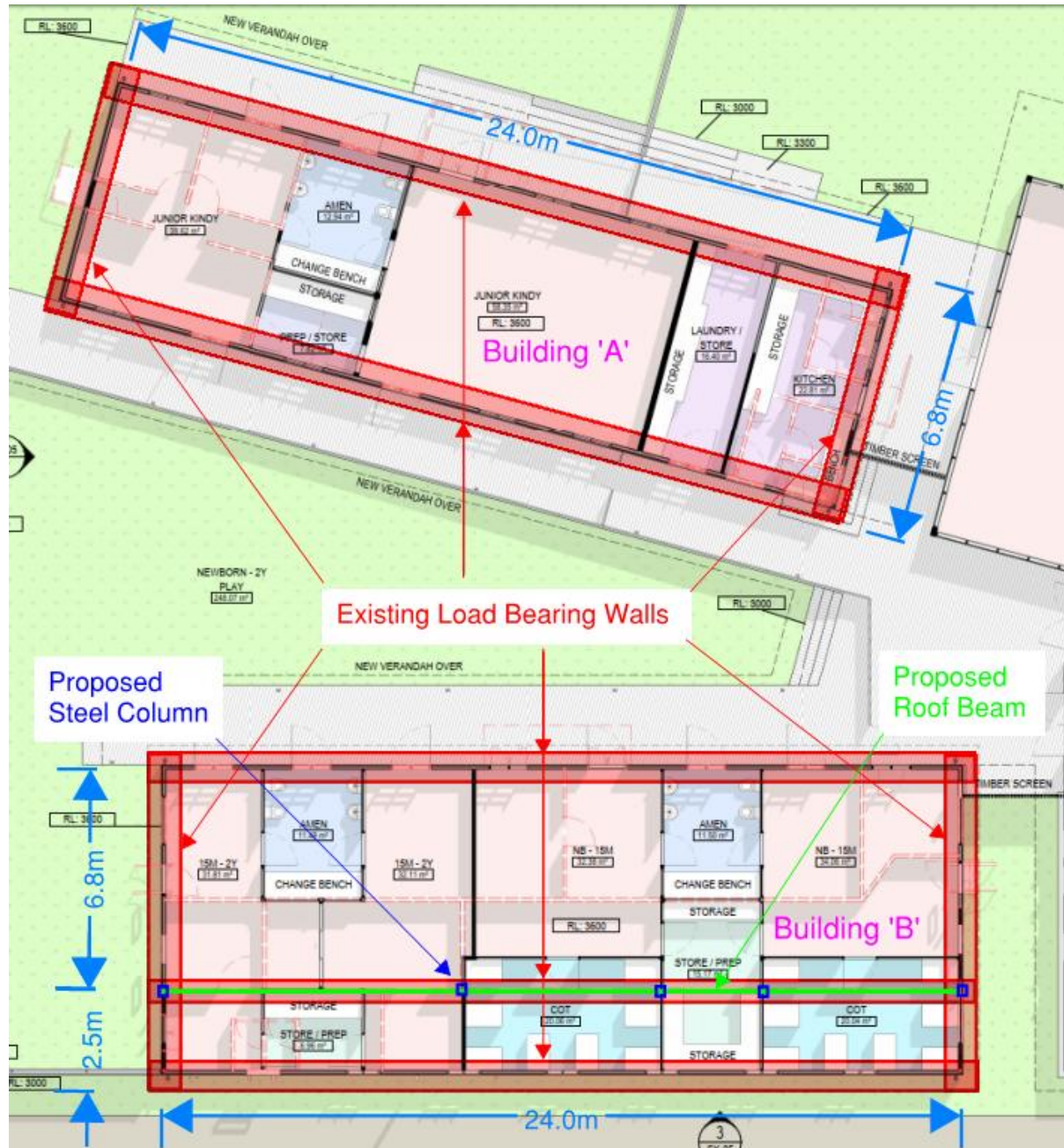


Figure 1: Load Bearing Wall Layout

d. Floor Framing

The floor framing was inspected from underside of the building. The floor joists (50x100 Hwd) were seen spanning between floor bearers at 2.25m (three to four spans) and spacing at

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450mm centres. The floor bearers (125x72 Hwd) are supported by reinforced concrete stumps and spanning at every 1.5m. Some part of the floor framing and flooring was not able to inspected due to the site conditions. Overall, the floor framings and fixings appeared to be sound condition. It is recommended that the floor framing shall be properly fixed and ensure sufficient tie-down to the new footings which in accordance with AS1684.2:2021. Moreover, it is recommended that any new walls or columns to be constructed above and align with existing floor joists or bearers. Otherwise, additional floor joists or bearers may be required for strengthening as to facilitate the modifications of internal load bearing wall at Building 'B'.

e. Stump and Footing

The exposed stumps above ground were visually inspected but not the footings inground as new footings will be constructed at the new location. A number of concrete stumps was found deteriorating. Concrete was seen spalling and reinforcement steel bars were exposed and bent. It is recommended that the new stump and footings to be designed for allowable ground movement, uplift and axial loading from the building.

f. Building Integrity During Relocation

After inspecting both existing buildings, the integrity of the buildings is considered structurally sound for relocation. It is recommended the buildings shall be relocated by a professional house removalist and who should have previous experience in relocation of older Queensland homes of a similar age. The removalist will need to take all due care and attention when moving the building of this age and must be familiar with the type of construction, and how to effectively support and brace the structure during relocation. Prior to moving, the removalist is advised to submit their relocation methodology to be reviewed by a structural engineer to ensure that the building is properly lifted and braced during the relocation.

3. Conclusions

vT Consulting Engineers has undertaken a preliminary review of the structural engineering components of the two existing RAAF barracks. We have taken into consideration that the existing buildings works outlined in this report and have provide some recommendations and advice with regards to the structural integrity of the relocation of both buildings. Based on all the findings outlined in this report, vT Consulting Engineers believes that, should the recommendation contained within the report be implemented, there are no significant engineering issues in relation to this relocation of the existing buildings or facilitation of the proposed architectural modifications.

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Appendix A – Preliminary Sketch and Detail Markup

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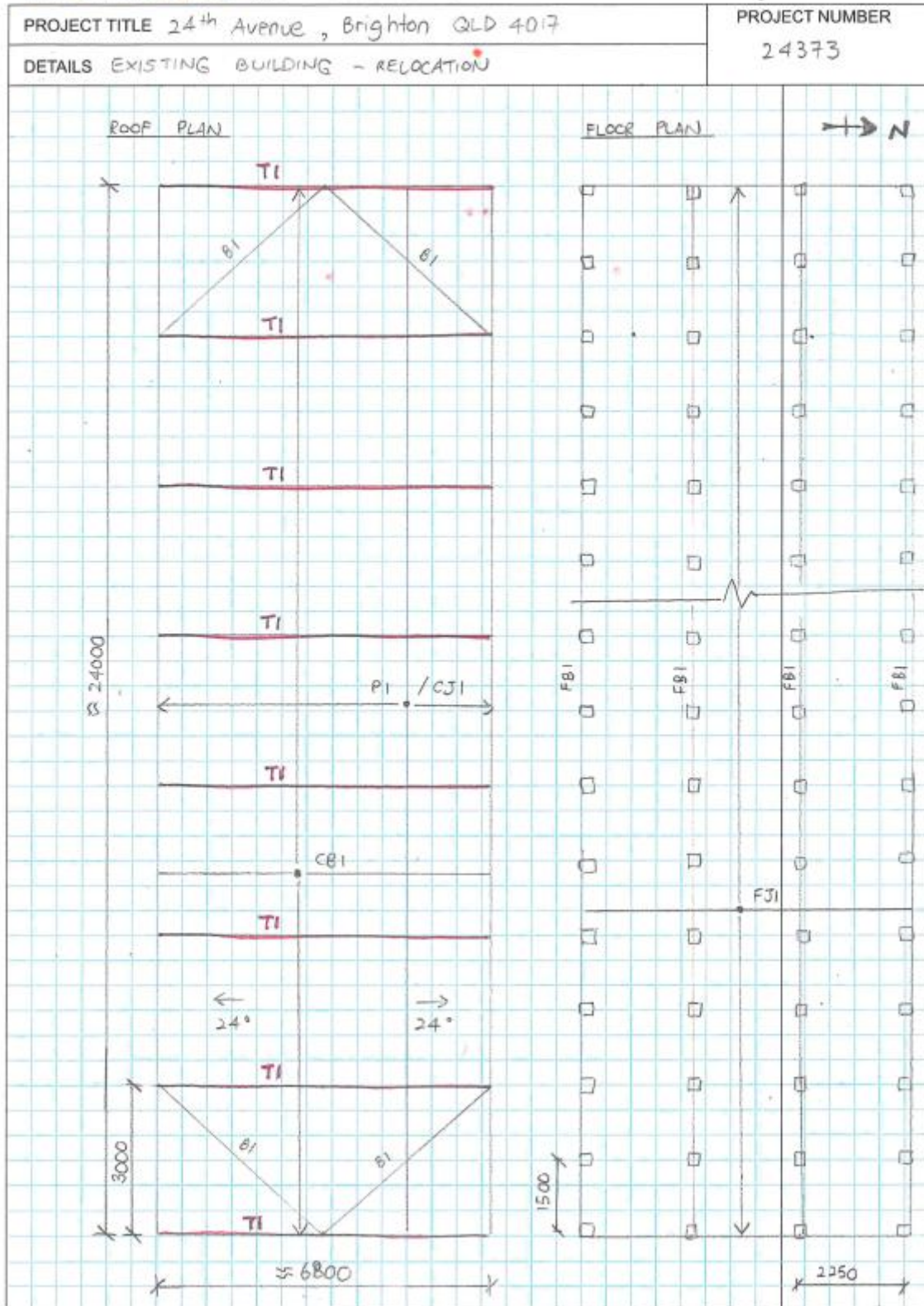
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686 Flinders Parade

CALCULATION PAD

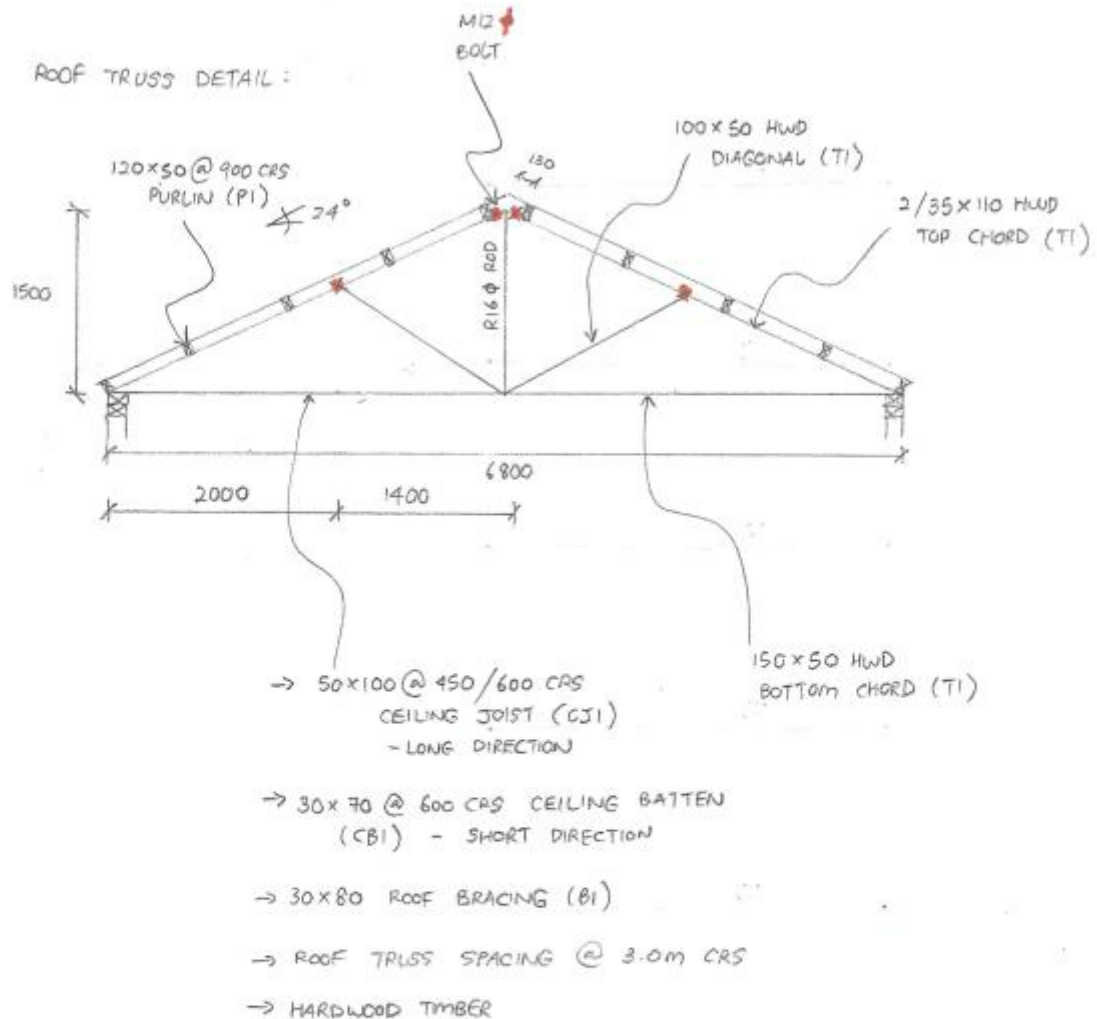
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PREPARED BY WB DATE 10/12/24



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FLOOR FRAMING :

- 125 x 72 FLOOR BEARER (FBI)
- 50 x 100 @ 450/500 CRS FLOOR JOIST (FJI)
- HARDWOOD TIMBER

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Appendix B – Site Photographs



Photo 1 (Left): Internal of Building



Photo 2 (Right): Bolt Connection on Roof Truss Top Chords

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Photo 3: Roof Framing



Photo 4: Gable End Wall

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Photo 5 (Left): Bolt Connection Between Truss Members

Photo 6 (Right): Roof Truss Support at External Wall

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Photo 7: Gable End Wall – Damage Wall Cladding



Photo 8: Roof Framing – Damaged Roof Sheeting



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