ANKN Engineering Consultants Pty Ltd

STRUCTURAL INSPECTION REPORT

Property address:	78 George St, Grenfell NSW 2810
Report prepared for:	[redacted]
Inspection requested by:	[redacted]
Type of inspection report:	Structural Inspection Report
Persons present:	[redacted]
Weather conditions:	Sunny
Inspected on:	24.06.2023
Inspection and report:	Mylvaganam Nirupan, CPEng NER MIEAust BSc Eng Chartered Professional Engineer/Director **ANKN Engineering Consultants Pty Ltd** 45 Paradise Drive, Gobbagombalin NSW 2650 **M:** 0432 519 495 **E:** info@ankn.com.au **W:** www.ankn.com.au
Our Reference:	JN 24-2023

1 INSPECTION NOTES

ANKN Engineering Consultants Pty Ltd was instructed by Mr. Greg Oliver to attend Olivers Hardware & Building Supplies at 78 George Street, Grenfell NSW 2810 and carry out visual inspections and produce a pictorial and written structural report.

This report does include a photographic record of the main structural defects visible at the time of the survey. The report intends to contain an exhaustive list of minor defects that are found in nearly all buildings (general wear and tear, minor cracking, unevenness and blemishes). I have also reported on finishes to the building such as paint, walls, tiled and concrete flooring.

During the inspection, I have not moved objects that could be covering defects in the structure. The buildings at the time of the inspection were fully furnished. There were wall and floor areas which were concealed by the furnishings, stored goods. The existence of asbestos products or other hazardous material if applicable has not been reported on.

This report mainly records the existing conditions of the buildings.

Overall, there was minimal movement that have occurred to the building. The general condition of the walls and ceilings in this property ranges from hairline cracks to wide cracks. The floor is generally in good to fair condition. Please refer to Section 5 for a more detailed report with photographic evidence.

This report shall not be construed as a certificate of warranty of the building. The report does not cover issues such as building services, hazardous materials, fire safety, drainage, plant, machinery, illegal building works, nor does it consider requirements of the National Construction Code. Certification of any building works is excluded from this report.

2. INTRODUCTION

2.1. This report is intended to record the current structural condition of Olivers Hardware & Building Supplies at 78 George Street, Grenfell NSW 2810.

2.2. The site inspection was carried out on 24th June 2023. The weather during the course of inspection was fine with sunny skies for the most part of the day.

2.3. Photographs that have been included in this report were taken on the day of the inspection using a Samsung S22 ultra mobile phone camera. Photographs have not been edited or doctored other than the addition of descriptive text boxes and arrows to highlight the nominated items for the attention of the reader.

2.4. The property inspected;

- 2.5.1. is estimated to be 90 years old and is in poor condition
- 2.5.2. is a one storey building.
- 2.5.3. Is constructed as follows:
  - 2.5.3.1. footings of 1.5m long 200mm diameter circular timber stumps (front veranda floor supported by 100 x 100 SHS on concrete)
  - 2.5.3.2. floors of timber
  - 2.5.3.3. external walls of corrugated iron sheets cladded on timber frame
  - 2.5.3.4. roof of timber frame cladded with corrugated iron sheets

2.5. This report of condition contains the following definitions and their descriptions are as follows:

- Good - No signs of wear of tear and able to perform the function for which it was installed.
- Fair - Showing signs of wear/soiling but still serviceable and functioning adequately.
- Poor - Subject to hard and long-term wear with repair and/or renovation generally necessary.

2.6. The below tables identify the classification of cracks and their sizes in relation to building elements.

a) Classification of Identified Defects with Reference to Walls

Impact Category	Description of typical defect to walls	Approximate crack width limit
0	Hairline cracks.	< 0.1 mm
1	Fine cracks which do not need repair.	0.1 mm to 1.0 mm
2	Cracks noticeable but easily filled. Doors and windows stick slightly.	1 mm to 5 mm
3	Cracks can be repaired and possibly a small amount of wall will need to be replaced. Doors and windows stick. Service pipes can fracture. Weather-tightness often impaired.	5 mm to 15 mm, or a number of cracks 3 mm to 5 mm in one group
4	Extensive repair works involving breaking-out and replacing sections of walls, especially over doors and windows. Window or door frames distort. Walls lean or bulge noticeably. Some loss of bearing in beams. Service pipes disrupted.	15 mm to 25 mm but also depends on number of cracks

b) Classification of Damage to Concrete Floors

Impact Category	Description of typical damage	Approximate crack width limit in floor	Change of offset from 3m straight placed over defect
0	Hairline crack, insignificant movement of slab from level	< 0.3 mm	< 8 mm
1	Fine but noticeable cracks. Slab reasonably level	< 1.0 mm	< 10 mm
2	Distinct cracks, slab noticeable curved or change in level	< 2.0 mm	< 15 mm
3	Wide cracks. Obvious curvature or change in level	2 mm to 4 mm	15mm – 25mm
4	Gaps in slab. Disturbing curvature or change in level	4 mm to 10 mm	> 25 mm

3. LOCATION OF THE PROPERTY

4. LOCATIONS OF THE PHOTGRAPHS TAKEN

5. DETAILED STRUCTURAL INSPECTION REPORT

Photo 1: Main Building - A split and rotted timber stump shown boxed in red. Rotted timber stairs shown arrowed in red. Assessment type: Poor. A defective downpipe shown arrowed in yellow. The downpipes that have not been connected to a stormwater system shown arrowed in blue.

Photo 2: Main Building - Rotted/split timer stumps shown boxed in red. Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown arrowed in red. Assessment type: Poor.

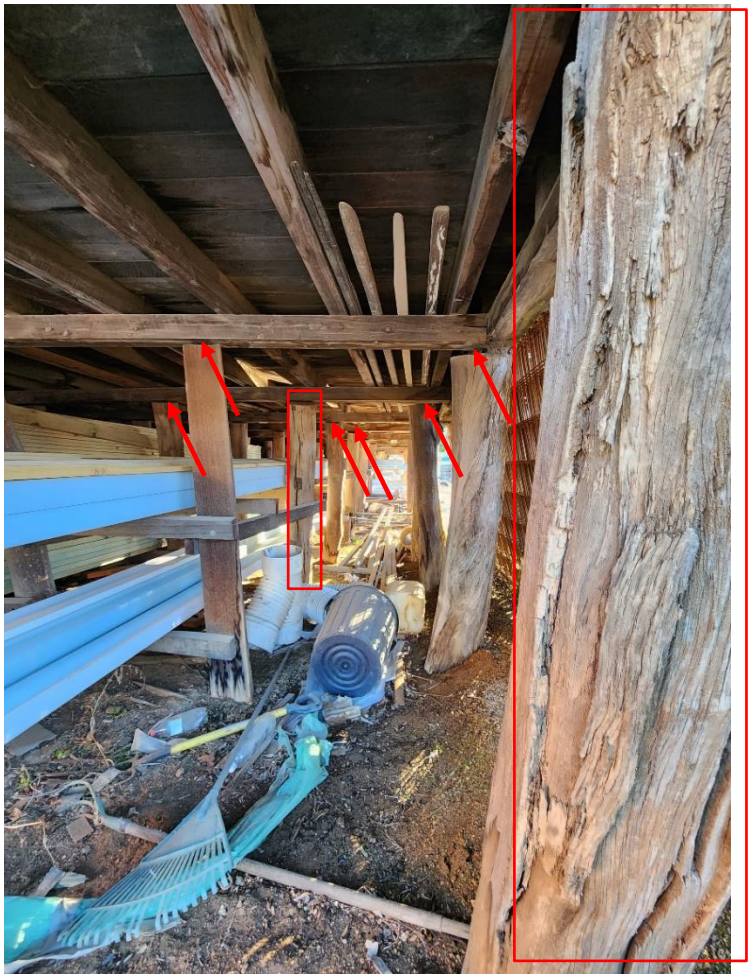

Photo 3: Another view of the defects shown in photo 2 above.

Photo 4: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown arrowed in red. Assessment type: Poor.

Photo 5: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown arrowed in red. Assessment type: Poor.

Photo 6: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown boxed in red. Assessment type: Poor.

Photo 7: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown boxed in red. A large split on the stump shown arrowed in red. Assessment type: Poor.

Photo 8: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown arrowed in red. Assessment type: Poor.

Photo 9: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown boxed in red. Assessment type: Poor.

Photo 10: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown boxed in red. A large split on the stump shown arrowed in red. Assessment type: Poor.

Photo 11: Main Building - Split on a stump shown boxed in red. Assessment type: Fair to poor.

Photo 12: Main Building - Split on a stump shown boxed in red. Assessment type: Fair to poor.

Photo 13: A close-up view of the defect shown in photo 12 above.

Photo 14: Main Building - Cracked stumps shown boxed in red. Assessment type: Fair to poor.

Photo 15: Main Building - Cracked timber stumps shown boxed in red. Assessment type: Fair to poor.

Photo 16: Main Building - Defective bearers shown arrowed in red. However, they have been overlapped with non-defective bearers.

Photo 17: Main Building - Cracks on timber stumps shown arrowed in red. Assessment type: Fair.

Photo 18: Main Building - A cracked timber stump shown boxed in red. Assessment type: Fair to poor.

Photo 19: Main Building - Defective bearers shown arrowed in red. However, they have been overlapped with non-defective bearers.

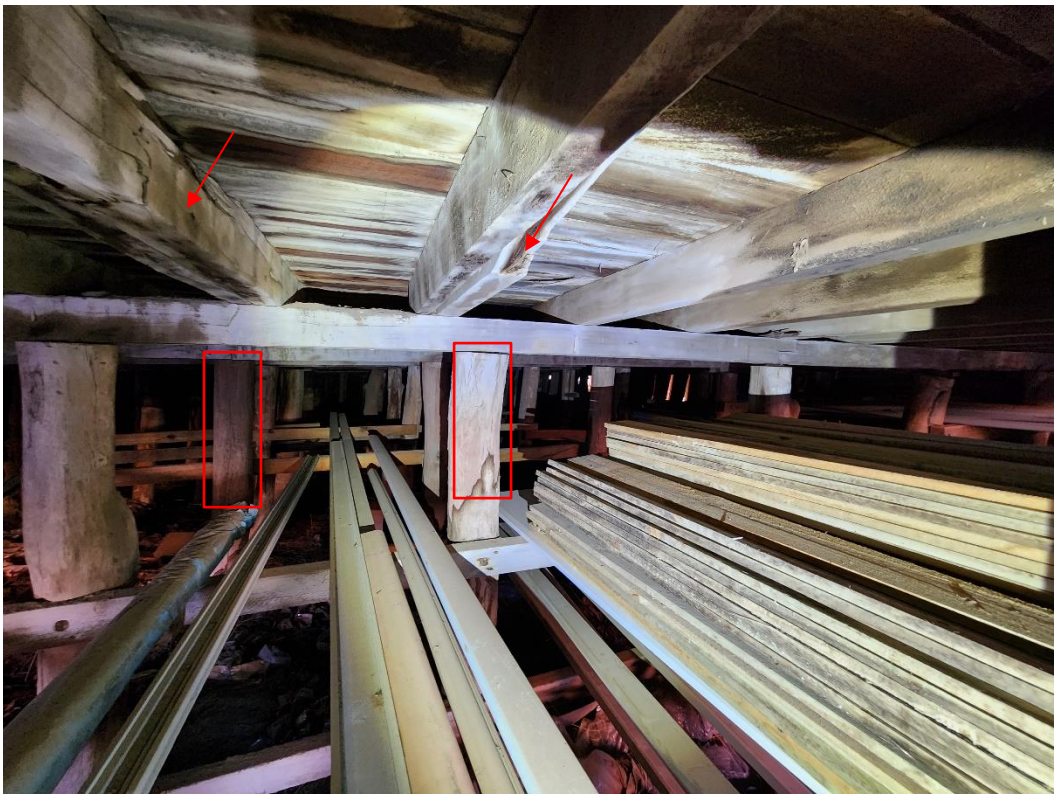

Photo 20: Main Building - Split on a timber stump shown boxed in blue. Assessment type: Poor. Cracked timber stumps shown boxed in red. Assessment type: Fair to poor. Timber packers have been added to fill the gaps between the stumps and bearers (arrowed red).

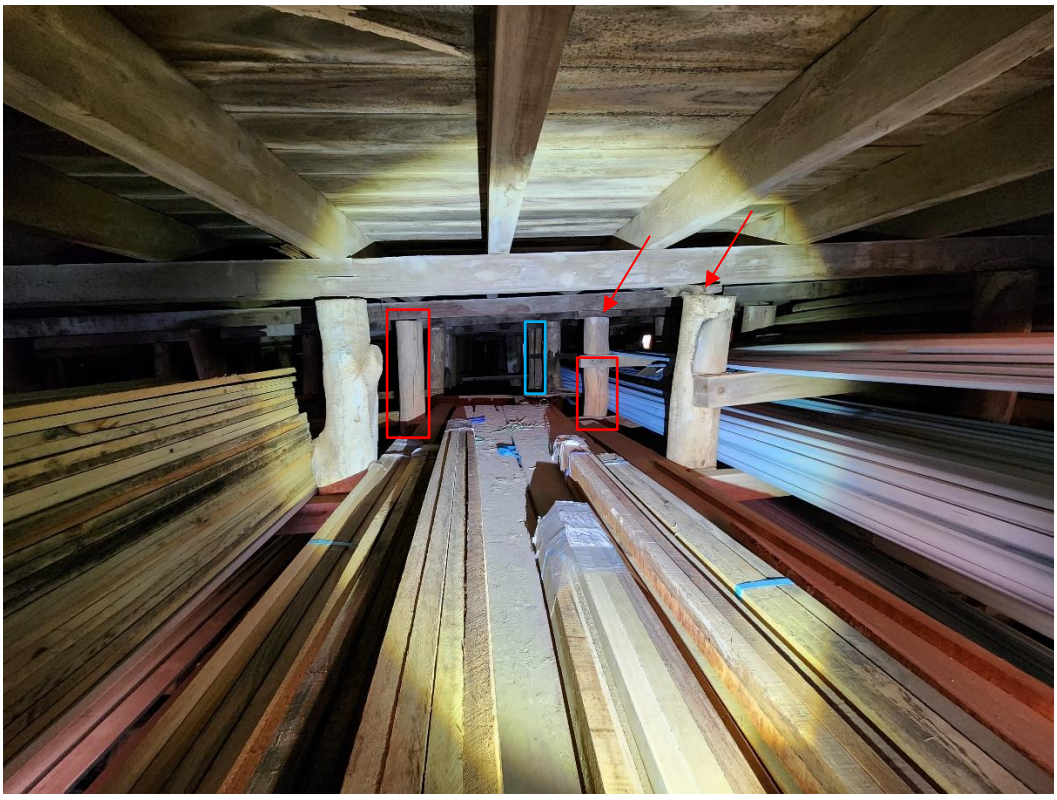

Photo 21: Main Building - A cracked timber stump and bearers shown arrowed in red. Assessment type: Fair to poor.

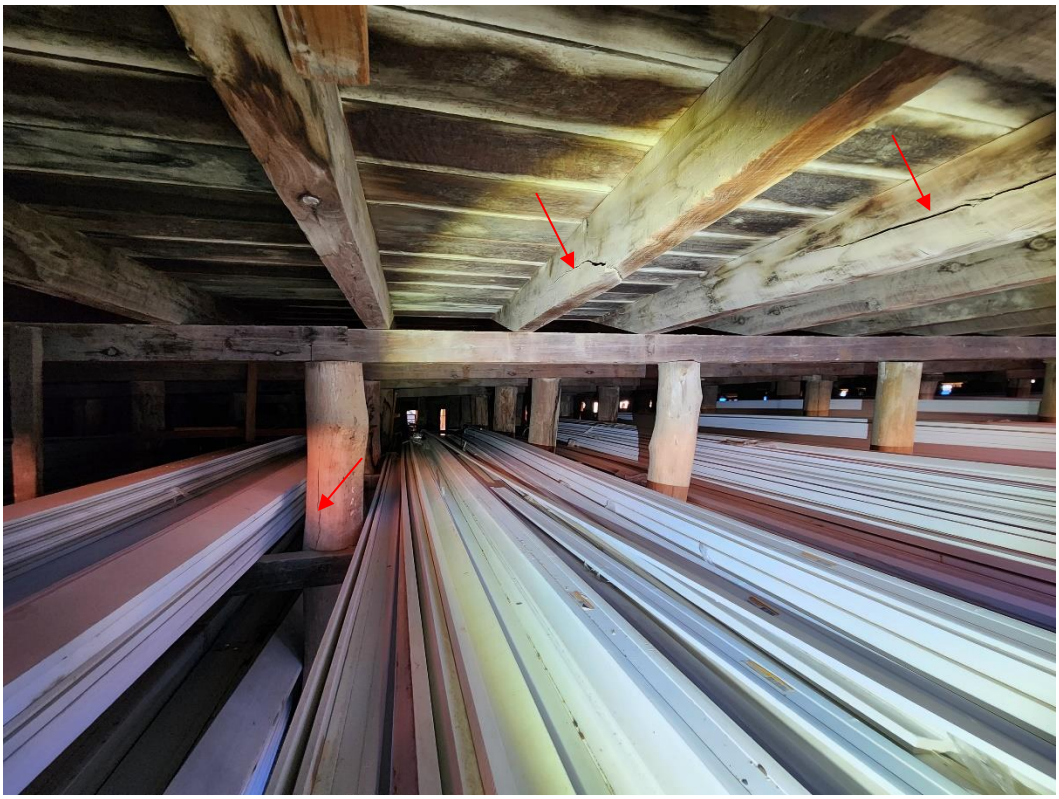

Photo 22: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown boxed in red. A large split on a timber bearer shown arrowed in red. Assessment type: Poor.

Photo 23: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown boxed in red. A large split on timber stumps shown boxed in blue. Assessment type: Poor.

Photo 24: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown boxed in red. A cracked timber stump shown boxed in blue. Assessment type: Poor.

Photo 25: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown arrowed in red. Assessment type: Poor. Cracked timber stumps shown boxed in red. Assessment type: Fair to Poor.

Photo 26: Main Building - A cracked timber stump shown boxed in red. Assessment type: Fair to Poor.

Photo 27: Main Building - Large splits on the timber stumps shown boxed in red. Assessment type: Poor. The downpipe has not been connected to the stormwater system (arrowed red).

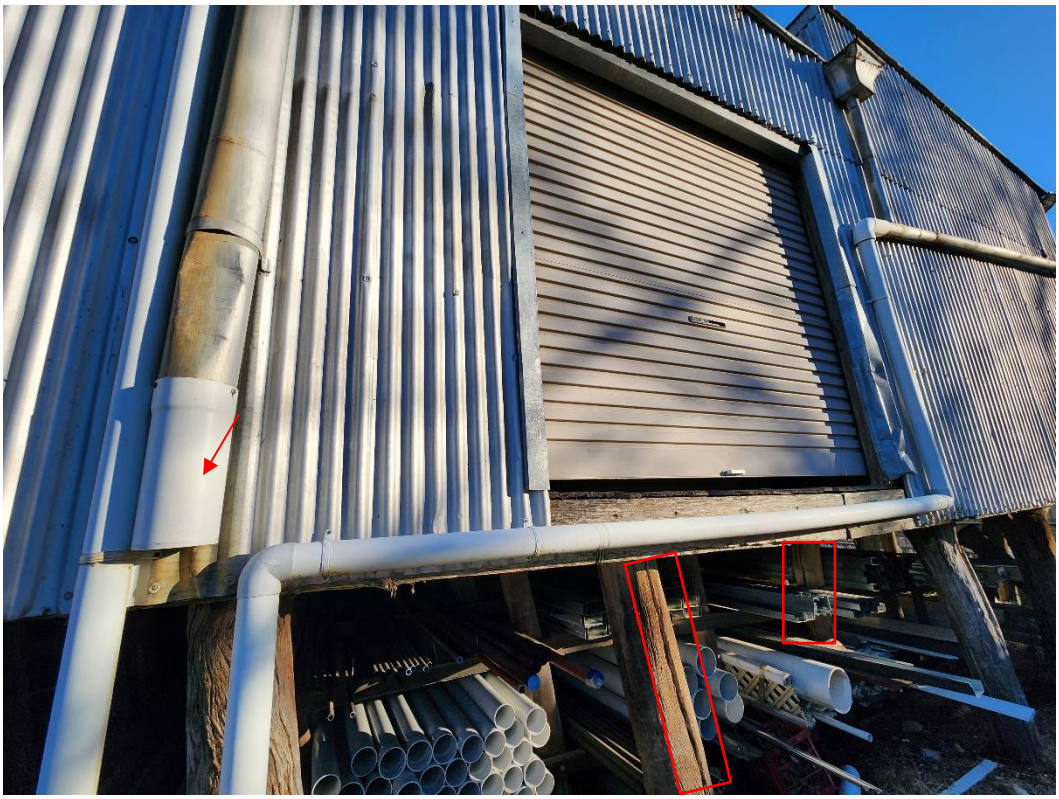

Photo 28: Main Building - Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown arrowed in red. Assessment type: Poor. A cracked timber stump shown boxed in red. Assessment type: Poor.

Photo 29: Main Building - The timber stumps with large splits shown boxed in red. Dislocated timber stumps shown boxed in blue. Assessment type: Poor.

Photo 30: Main Building - Rotted timber stumps shown arrowed in red. A cracked timber shows arrowed in blue. Gaps formed between bearers and tops of the timber stumps due to inclination of the stumps shown boxed in red. Assessment type of all the above defects: Poor.

Photo 31: Main Building - The timber stumps with large splits shown boxed in red. Assessment type: Poor.

Photo 32: Main Building - cracks on the timber stumps shown arrowed in red. Assessment type: Fair to poor.

Photo 33: Main Building - Cracks on the timber stumps shown arrowed in red. Assessment type: Fair to poor.

Photo 34: Main Building - Rotted/dislocated/cracked timber stumps shown arrowed in red. Assessment type: Poor.

Photo 35: Main Building - Dislocated/cracked timber stumps shown arrowed in red. Assessment type: Poor.

Photo 36: Main Building - Cracked timber stumps shown arrowed in red. Assessment type: Fair to Poor.

Photo 37: Main Building - Heavily cracked timber stumps shown arrowed in red. Assessment type: Poor.

Photo 38: Main Building - Veranda

Photo 39: Main Building - Veranda

Photo 40: Main Building - General view of internal areas of the hardware shop

Photo 41: Main Building - General view of internal areas of the hardware shop

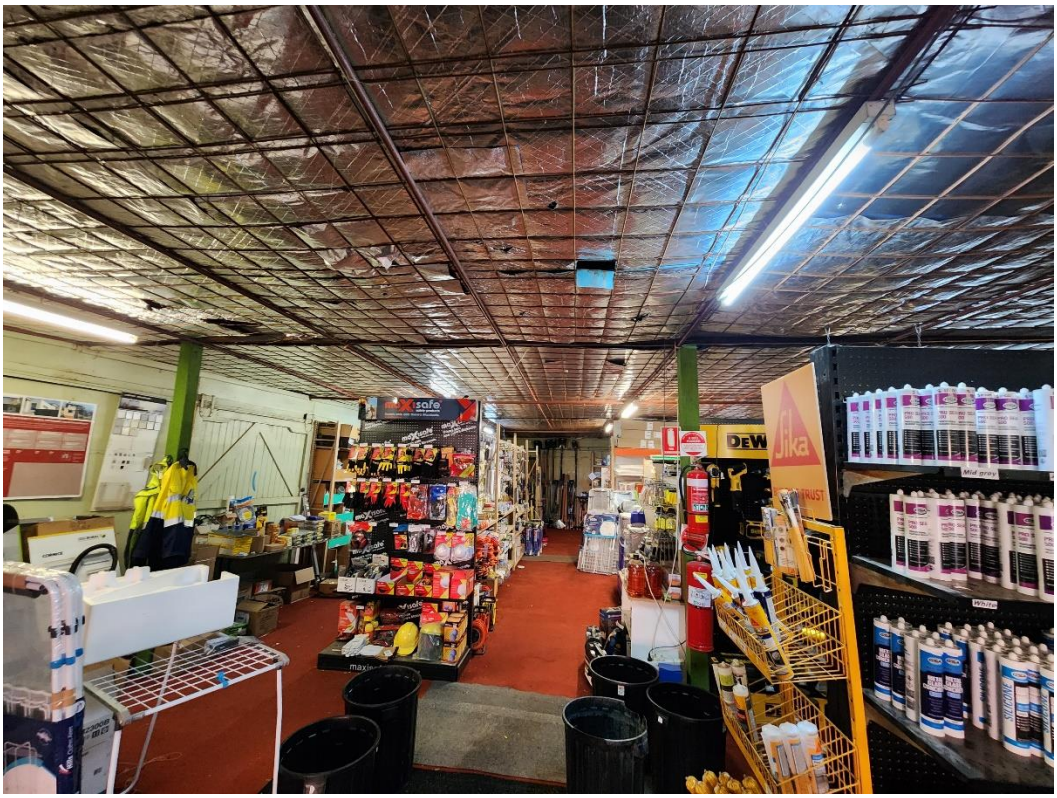

Photo 42: Main Building - A significant amount of footing movement has caused movement in the floors, walls and roller doors.

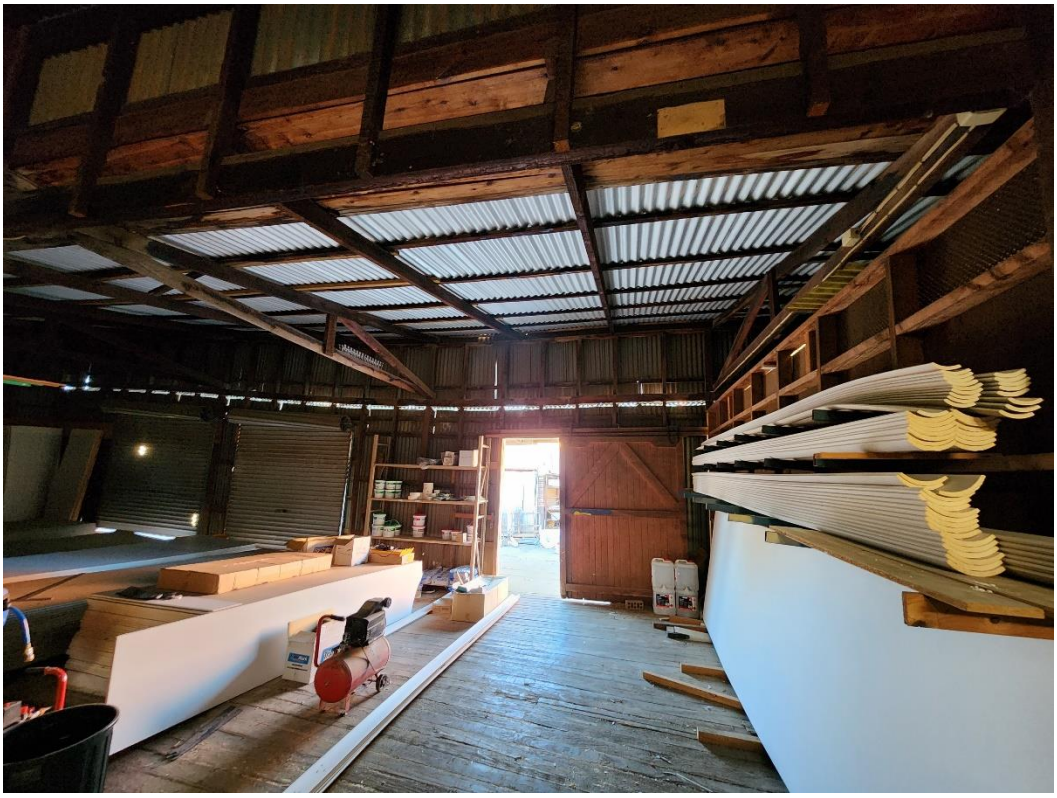

Photo 43: Main Building - A significant amount of footing movement has caused movement in the floors, walls and roller doors.

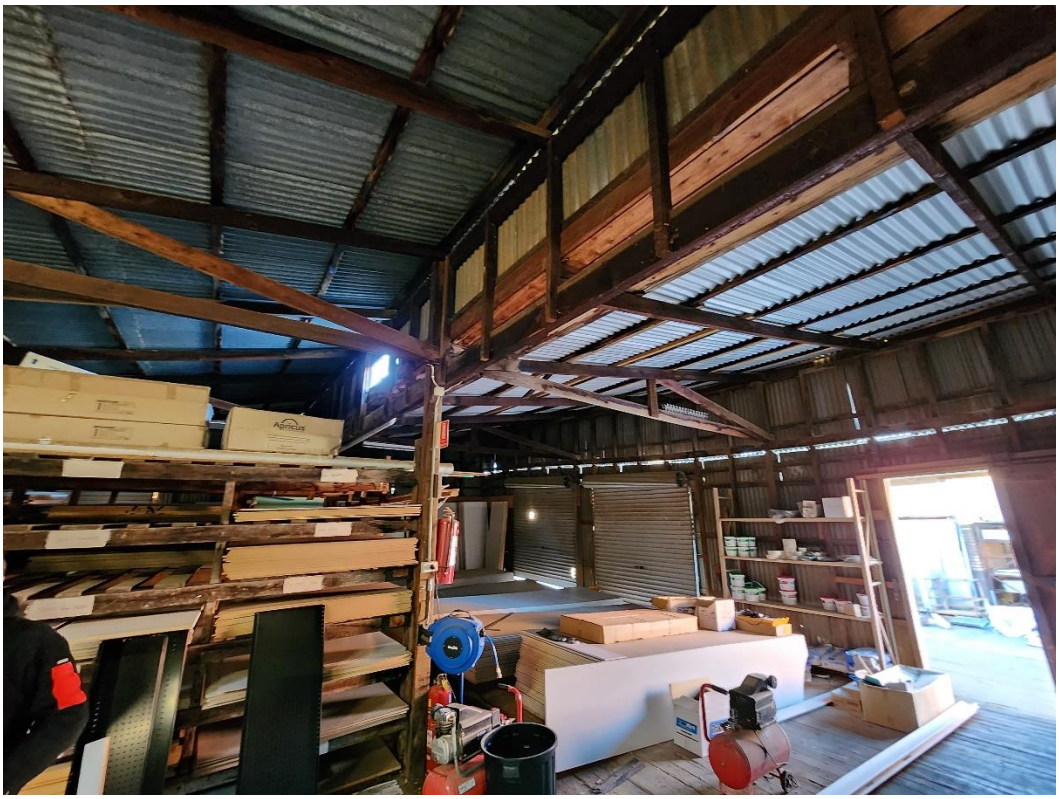

Photo 44: Main Building - A significant amount of footing movement has caused movement in the floors, walls and roller doors.

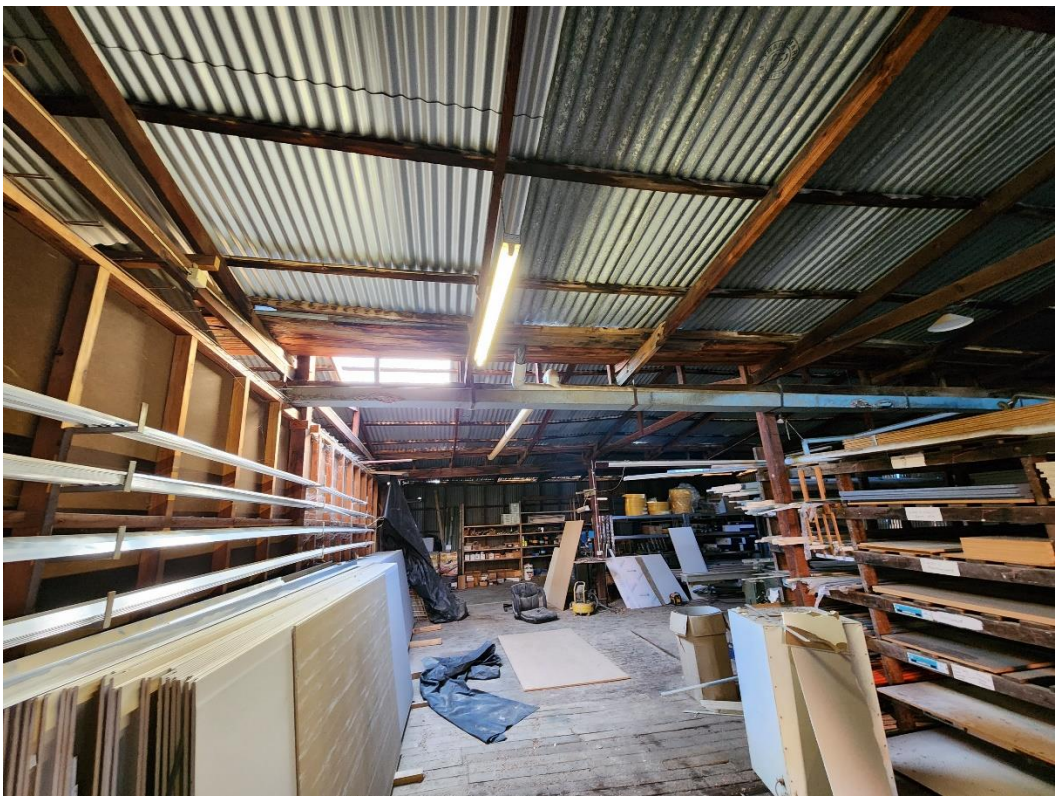

Photo 45: Main Building - A significant amount of footing movement has caused movement in the floors, walls and roller doors.

Photo 46: Main Building - A significant amount of footing movement has caused movement in the floors, walls and roller doors.

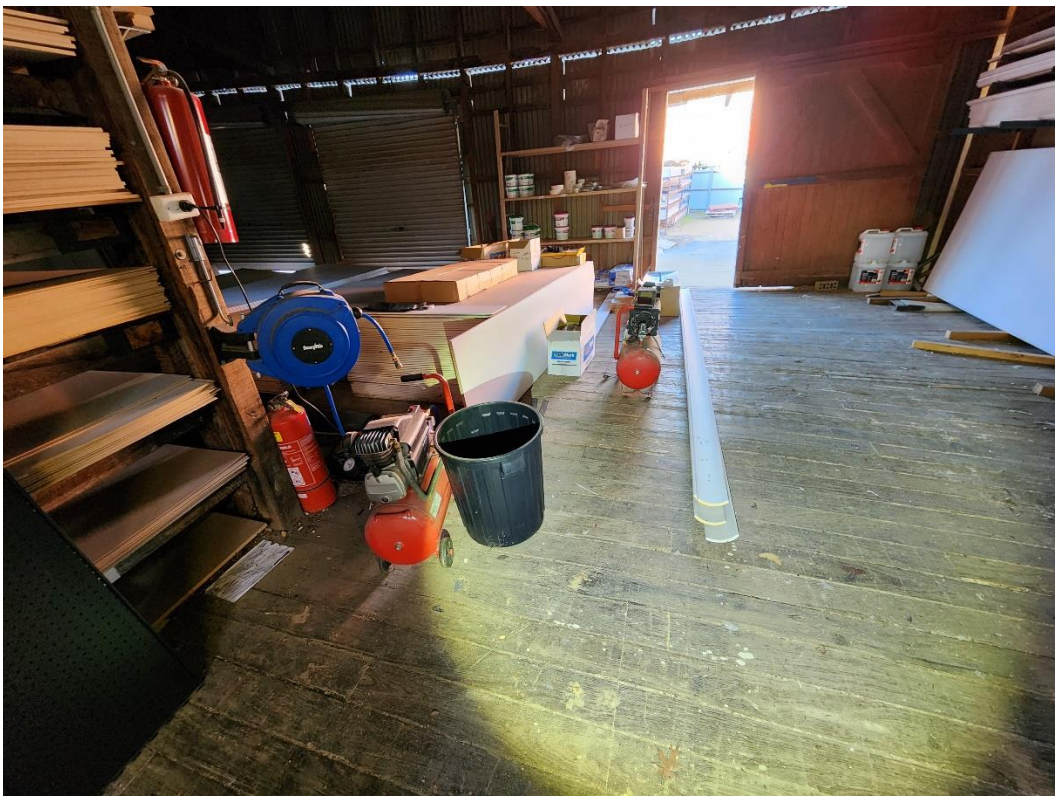

Photo 47: Main Building - A significant amount of footing movement has caused movement in the floors and walls.

Photo 48: Main Building - A significant amount of footing movement has caused movement in the floors and walls.

Photo 49: Main Building - Termite attack on the wall member shown boxed in red. Assessment type: Poor.

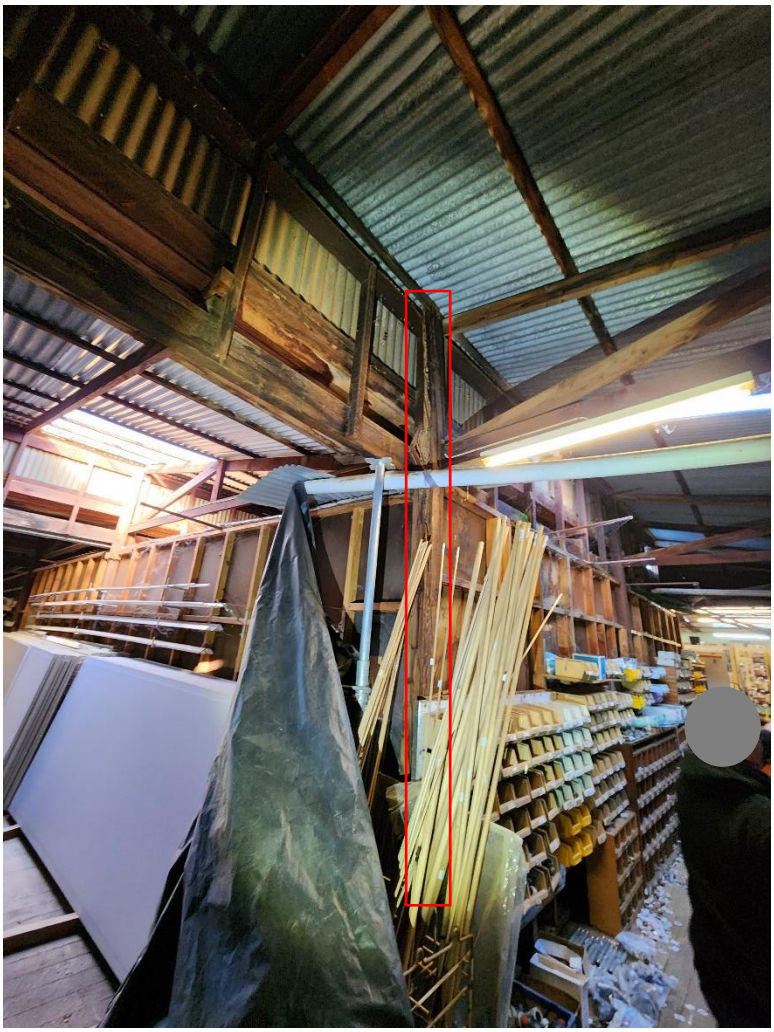

Photo 50: Main Building - A significant amount of footing movement has caused movement in the floors and walls.

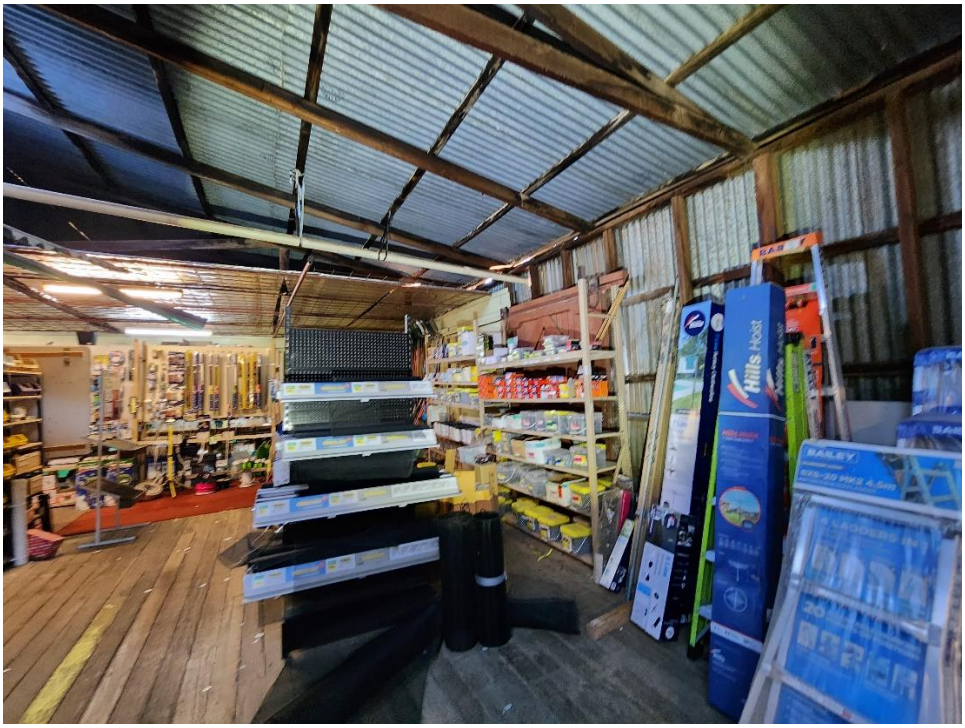

Photo 51: Main Building - Front view of the hardware shop.

Photo 52: Shed 1 - Front view of shed 1.

Photo 53: Shed 1 - A collapsing load bearing timber wall shown boxed in red. Assessment type: Poor.

Photo 54: Shed 1.

Photo 55: Shed 1.

Photo 56: Shed 1 - Deflected/cracked bottom chord of the roof truss shown boxed in red. Assessment type: Poor. Steel lintel and posts provided to support the trusses in an opening (arrowed yellow).

Photo 57: Another of the damage shown in photo 56 above.

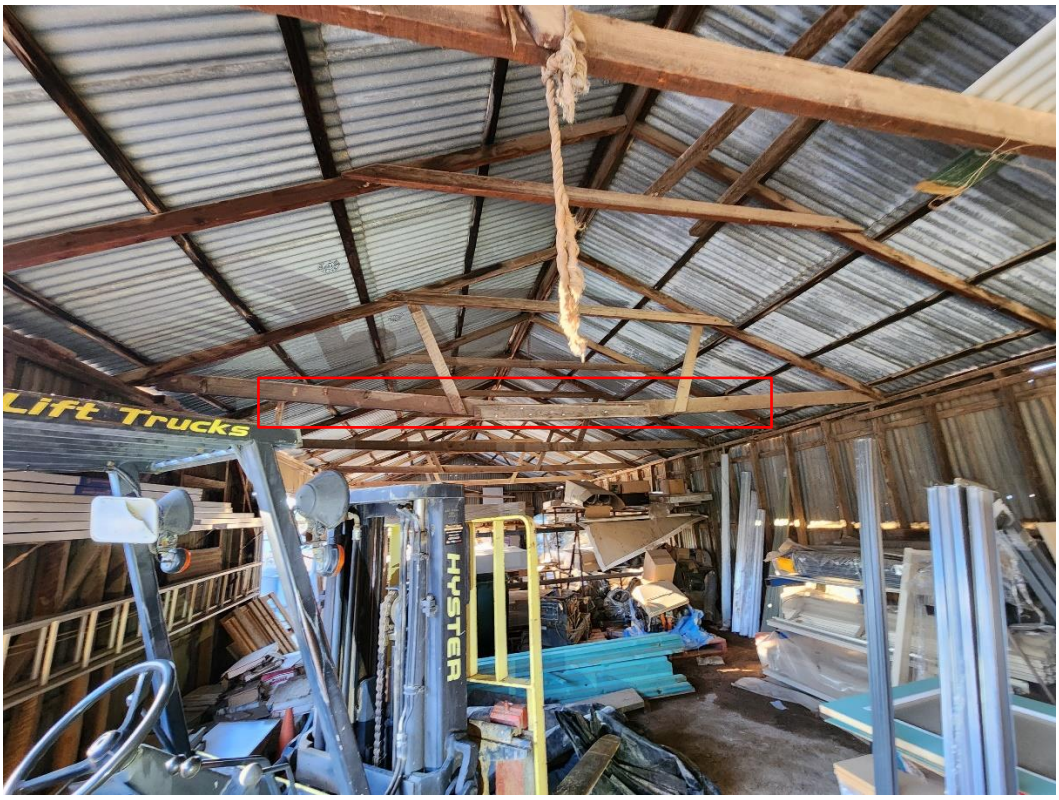

Photo 58: A close-up view of the damage shown in photo 56 above.

Photo 59: Shed 1.

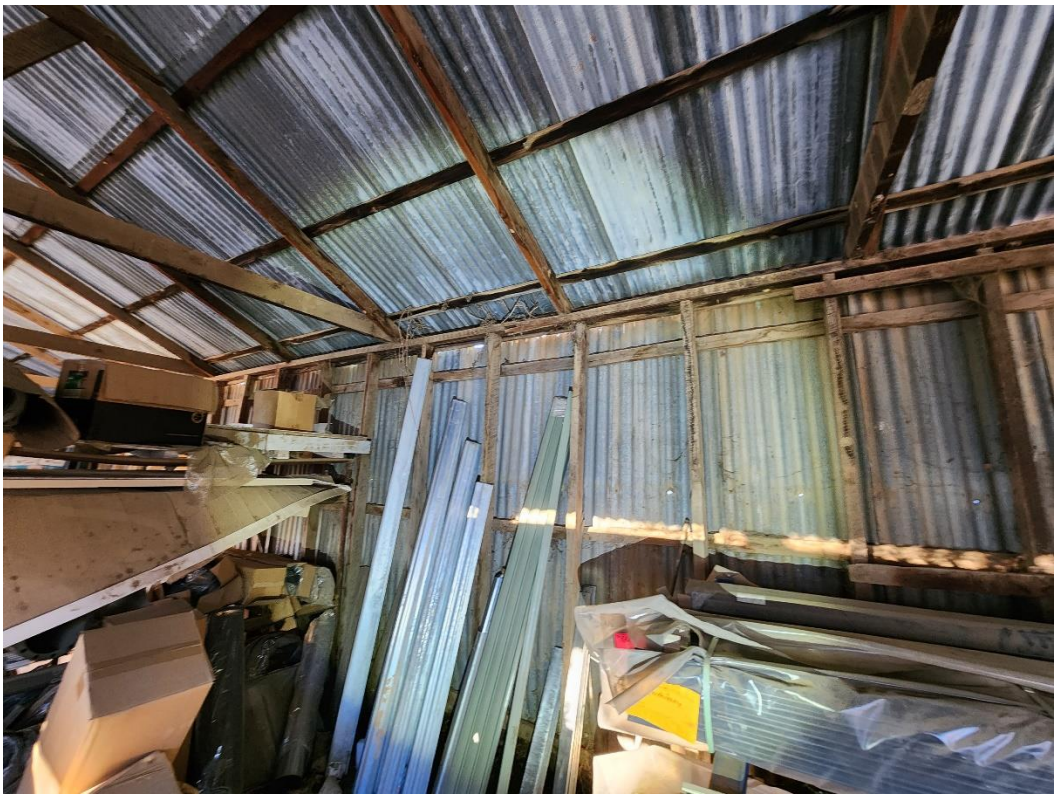

Photo 60: Shed 1.

Photo 61: Shed 1 - Deflected/cracked bottom chord of the roof truss shown boxed in red. Assessment type: Poor. No roof braces have been provided.

Photo 62: A close-up view of the damage shown in photo 61 above.

Photo 63: Shed 1. One of the missing struts shown arrowed in red. A defective bottom chord shown arrowed in blue. Assessment type: Poor.

Photo 64: Shed 1.

Photo 65: Shed 2.

Photo 66: Main building - Another view of the hardware shop (main building).

6. OBSERVATIONS

Main Building

- The majority of the timber stumps in the subfloor have dislocated and inclined up to 16 degrees vertically, thus not supporting the bearers and lost the structural ability to carry the loadings above (photos 2, 3, 4, 5, 6, 7, 8, 9, 22, 23, 24, 28, 29, 30, 34 and 35).
- A significant number of timber stumps in the subfloor space have cracked, split and rotted, thus have lost the structural ability to carry the loadings from above (photos 1, 2, 11, 12, 13, 14, 15, 18, 20, 23, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36 and 37).
- Termite attack found on an internal wall member (photo 49).
- A few downpipes have not been connected to the stormwater system (photos 1 and 27).
- No structural braces have been provided for the roofs, walls and the subfloor.
- Roof leaks at a few locations.

Shed 1

- One of the load bearing walls has partially collapsed (photo 53).
- A few roof trusses are defective, thus not supporting the roof loads adequately (photo 56, 57, 58, 61, 62 and 63).
- No structural braces have been provided for the roof.

7. CONCLUSION

Main Building has experienced a significant amount of foundation and footing movement laterally and vertically, which has significantly affected the structural stability of the building. In the absence of the structural bracings to the roofs, walls and subfloor of the building, **the building will collapse partially or completely when any significant wind event or any addition to the floor loadings happens.**

Shed 1 has a significant number of structural defects in it. In the absence of the adequate structural bracings to the roofs, walls, **the shed 1 can collapse partially or completely during any significant wind event.**

7. RECOMMENDATION

Considering the structural instability of both buildings, it is strongly recommended that both the main building and shed 1 shall be completely demolished as soon as practicable. If any parts of the buildings are to be retained, they can be completely removed during the demolition, redesigned to conform current Australian Standards and NCC and reused if suitable.

8. IMPORTANT INFORMATION REGARDING THE SCOPE AND LIMITATIONS OF THE INSPECTIONS AND THIS REPORT

8.1. Important Information: Any person who relies upon the contents of this report does so acknowledging that the following clauses, which define the Scope and Limitations of the inspection, form an integral part of the report. This report is **NOT** an all-encompassing report dealing with the building from every aspect. It is a reasonable attempt to identify any obvious or significant defects apparent at the time of the inspection. Whether or not a defect is considered significant or not, depends, to a large extent, upon the age and type of the building inspected. This report is not a Certificate of Compliance with the requirements of any Act, Regulation, Ordinance or By-law.

8.2. THIS IS A VISUAL INSPECTION ONLY limited to those areas and sections of the property fully accessible and visible to the Inspector on the date of Inspection. The inspection DID NOT include breaking apart, dismantling, removing or moving objects including, but not limited to, foliage, mouldings, roof insulation, floor or wall coverings, sidings, ceilings, floors, furnishings, appliances or personal possessions. The inspector CANNOT see inside walls, between floors, inside skillion roofing, behind stored goods in cupboards, other areas that are concealed or obstructed. The inspector DID NOT dig, gouge, force or perform any other invasive procedures. Visible timbers CANNOT be destructively probed or hit without the written permission of the property owner.

8.3. This Report does not and cannot make comment upon: defects that may have been concealed; the assessment or detection of defects (including rising damp and leaks) which may be subject to the prevailing weather conditions; whether or not services have been used for some time prior to the inspection and whether this will affect the detection of leaks or other defects (e.g. In the case of shower enclosures the absence of any dampness at the time of the inspection does not necessarily mean that the enclosure will not leak); the presence or absence of timber pests; gas-fittings; common property areas; environmental concerns; the proximity of the property to flight paths, railways, or busy traffic; noise levels; health and safety issues; heritage concerns; security concerns; fire protection; site drainage (apart from surface water drainage); swimming pools and spas (non-structural); detection and identification of illegal building work; detection and identification of illegal plumbing work; durability of exposed finishes; neighbourhood problems; document analysis; electrical installation; any matters that are solely regulated by statute; any area(s) or item(s) that could not be inspected by the consultant. Accordingly, this Report **is not a guarantee** that defects and/or damage does not exist in any inaccessible or partly inaccessible areas or sections of the property.

8.4. CONSUMER COMPLAINTS PROCEDURE: In the event of any controversy or claim arising out of, or relating to this Report, either party must give written Notice of the dispute to the other party. If the dispute is not resolved within ten (10) days from the service of the Notice then the dispute shall be referred to a mediator nominated by the Inspector. Should the dispute not be resolved by mediation then either party may refer the dispute to the Institute of Arbitrators and Mediators of Australia for resolution by arbitration.

8.5. DISCLAIMER OF LIABILITY TO THIRD PARTIES: This Report is made solely for the use and benefit of the client named on the front of this report. No liability or responsibility whatsoever, ANKN Engineering Consultants Pty Ltd Structural Report in contract or tort, is accepted to any third party who may rely on the Report wholly or in part. Any third party acting or relying on this Report, in completely or in part does so at his or her own risk.

8.6. REASONABLE ACCESS: Only areas to which reasonable access is available were inspected. The Australian Standard 4349.3 defines reasonable access as "areas where safe, unobstructed access is provided and the minimum clearances specified in the Table below are available or, where these clearances are not available, areas within the consultant's unobstructed line of sight and within arm's length. Reasonable access does not include removing screws and bolts to access covers. "Reasonable access does not include the use of destructive or invasive inspection methods. Nor does reasonable access include cutting or making access traps, or moving heavy furniture or stored goods.

Area	Access hole	Crawl space	Height
Roof interior	450 x 400mm	600 x 600mm	Accessible from 2.1m step ladder or 3.6m ladder placed against a wall.
Sub floor	500 x 400mm	Vertical clearance Timber floor: 400mm to bearer, joist or other obstruction. Concrete floor: 500mm	
Roof Exterior			Accessible from a 3.6m ladder.

8.7. IMPORTANT DISCLAIMER

DISCLAIMER OF LIABILITY: No Liability shall be accepted on an account of failure of the Report to notify any problems in the area(s) or section(s) of the subject property physically inaccessible for inspection, or to which access for Inspection is denied by or to the Inspector (including but not limited to or any area(s) or section(s) so specified by the Report).

8.8. CONTACT THE INSPECTOR

Please feel free to contact the inspector who carried out this inspection. Often it is very difficult to fully explain situations, problems, access difficulties or timber Pest activity and/or damage in a manner that is readily understandable by the reader. Should you have any difficulty in understanding anything contained within this report then you should

immediately contact the inspector and have the matter explained to you. If you have any questions at all or require any clarification then contact the inspector prior to acting on this report.

The inspection and report carried out by

[redacted]

Mylvaganam Nirupan CPEng NER MIEAust BSc Eng
Civil/Structural Engineer | Chartered Professional Engineer
13.08.2023

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