

STRUCTURAL

Engineering Report

for

34 Lostock School Road, Lostock

for Barr Property and Planning

25 October 2024

NORTHROP

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ST242274

Barr Property and Planning Rebecca Boresch PO Box 3107 Merewether NSW 2291

Dear Rebecca,

Re: 34 Lostock School Road, Lostock

This report, commissioned by Barr Property and Planning, describes the existing condition and suitability of re-use of the single-storey weatherboard church located at 34 Lostock School Road, Lostock, as observed during our inspection. Detailed photographic evidence of the documented condition is also provided. Further to your email dated 4th September 2024, we understand the scope includes.

Stage 1:

• Site visit to confirm elements for retention and review the structural condition of the building.

Stage 2:

• Preparation of an engineering report providing an assessment of the structural viability of the building and noting the elements that are viable for reuse within a proposed shade structure.

Stage 3:

• Suitability for reuse, repair or demolition.

		Date
Prepared by	DCP	25/10/2024
Checked by	ТВ	25/10/2024
Admin	HB	25/10/2024



Stage 1 Site visit

An inspection at the above-mentioned site was undertaken on Friday, 27th September 2024. The purpose of the inspection was to assess the condition of the building and identify any structural elements that could be retained for re-use.

After carrying out the inspection, our comments are as follows.

The church was built prior to 1892, and we were informed by the Anglican Diocese of Newcastle that it was built by the local community and has not been used for some time (approx. a decade according to public records).

The building exhibits characteristics typical of historic timber construction with load-bearing timber stud walls supporting timber rafters, which are tied horizontally with steel tension rods and covered with a metal sheet roof. The timber floor consists of bearers and joists supported by timber piers.

Many of the piers were unable to be inspected due to limited subfloor space, however the condition of those able to be viewed appeared poor with cracking to the timber and general degradation. The piers appear to have sunk up to 300mm in varying locations across the site (refer Figures 10 and 36).

Termite damage was unable to be verified at the time of our inspection due to wall and ceiling linings. Termite protection appeared to be limited to termite caps to piers, which appeared inadequate at the time of our inspection (not sufficient coverage to top of pier). The subfloor appeared damp where it could be seen at the time of our inspection, which, in our opinion, yields an environment appealing to termites.

Given the building has been vacant for some time, we have been asked to comment on the possibility of certification of structural adequacy of the building. Based on our visual inspection, the building is not considered compliant with current codes. Further to that, in order to certify the building, linings would need to be removed to determine the structural integrity of its members and extent of any termite damage.

Foundations/piers would need to be replaced, which would require lifting of the structure and installation of a new termite management system and tie-down. It is likely the floor system and bracing system would require upgrading to resist current design loads for the new building occupancy.

Given the condition of the entry porch, this area would require complete reconstruction in our opinion.



Stage 2 Structural Viability Assessment

The building was upright, whilst not vertically plumb, and the walls and roof showed no immediate signs of distress or likelihood of collapse. However, several concerns were noted:

- **Uneven Flooring:** The flooring is noticeably uneven and sloped with an observed change is height of 200-300 mm over width of the main room (5m). This degree of slope is not suitable for public use of the building and poses risk of injury to patrons.
- Settlement Issues: Limited survey data was available indoors, but external observations indicated uneven settlement of the piers, and deterioration of the timber piers. It is likely they have degraded significantly causing the differential floor subsidence internally. The ground externally was notably soddened underfoot.
- **Subfloor ventilation:** The settlement of the piers has resulted in the weather boards being in contact with the ground (see photos 4 and 36). This has reduced any subfloor ventilation, evidenced by the damp noted. Damp subfloor we know is likely to result in mould and mildew growth, pest infestation and wood rot to the structure. See photos (14, 15, 16, 26 and 29) for evidence of water ingress.
- Access Concerns: Whilst not a primary structural issue, there was difficulty in opening the main door and walking into the building due to the excessive sloping of the building, which suggests, there is a structural issue with the foundation under the main door.
- Interior Condition: Whilst not a structural issues, the interior exhibits signs of aging and neglect, including detached sections of wall and ceiling linings.
- **Termite protection:** Access to underfloor, roof and wall framing was restricted; however, termite protection noted appeared inadequate.
- **Roofing material and drainage:** The roof is in a visibly poor condition, with patches of mould spreading across its surface and signs of water ingress evident in the interior walls. Dark stains and peeling paint indicate that moisture has seeped through, compromising not only the roof structure but also the structural integrity of the building. Additionally, the gutters and downpipes appeared to be blocked and thereby ineffective, failing to channel rainwater away from the roof and foundation. This combination of issues poses a risk of further damage and requires immediate attention, as a complete replacement of the roof, along with the gutters and downpipes, is essential to restore safety and protect against future water-related problems.
- Seismic, Wind and lateral bracing: The building lacks visible lateral bracing and tie-down, indicating insufficient structural support to resist lateral forces. The detached sections of wall and roof lining suggest stress from settling or lateral loading. To comply with current seismic and wind design requirements, the building would likely require upgrades, including the installation of lateral bracing, tie-down and new piers. Without these modifications, the structure is at increased risk during seismic and high wind events, necessitating immediate evaluation and remediation.



Stage 2 Material Repurposing

Opportunities for repurposing materials from the structure are limited due to member sizes and likelihood of termite damage and/or loss in integrity to structural members. Elements such as the hardwood floorboards could be salvaged for use in ad hoc furnishings or design features, as identified by a heritage consultant and architect, however, based on our experience, older hardwood may be susceptible to cracking or splintering during removal. Based on current standards, it is our opinion that the structural elements have exceeded their design life and would be unlikely to be able to be repurposed as structural elements. We would instead recommend any salvageable items be used in any artistic interpretations etc.



Stage 3 Suitability of ongoing use, repair or demolition

The building has exceeded its design life and requires significant repair work before it could be certified as structurally adequate for a new use. There are structural concerns regarding the integrity of the supporting floor members and sunken piers. Given the condition of the entry porch, the uneven flooring, settlement issues, slope access, likely termite damage, poor roof condition and non-structural code compliance means the reinstatement or repurposing would likely not be viable without significant investment. As the building is flexible in nature (being made up of timber frames) lifting of the building would be very challenging and likely cause damage to elements such as linings and glazing. This means deconstruction and re-assembly would likely be required to undertake this type of repair work and given the age and condition of the building this would be very challenging and likely require replacement of several structural members.

It is unknown to us whether the building has been tested for hazardous materials. Items such as lead based paints, if found to have been used, would further increase costs associated with remediation or reconstruction works.

These observations were made on Friday, 27th September 2024. Photographic evidence of the discussed building elements is included in Appendix B. It should be noted that this report only records the condition of the structures at the time of our inspection. Our inspection was limited to a visual inspection only from ground level. No at height works or destructive investigation was undertaken. No personal property (e.g. furniture or belongings) was touched or moved during the inspection and as such any areas of structure hidden from view were not inspected and have not been photographically documented in this report.

Appendix A contains a site plan showing the location of the inspection and the section numbers of the photographs as numbered. Appendix B contains general condition photographs of the tenancies and other permanent structures on the site.

Section	Figure No.	Location
1	1	Site Location
2	2-4	Overall external view
3	6-8	External weather boards and roof eaves
4	9-10	Front awning and entrance
5	11-16	Floorboards and joists from under external sub floor
6	17	Wide internal view
7	18-21	Ceiling internal view
8	22-29	Internal wall elements and framing
9	30-35	Internal view of floorboards
10	36-38	External view of the building



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Yours sincerely,

Dr. Dan Court-Patience Structural Engineer BE Hons (Civil), PhD

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Appendix A – Site Plan



Figure 1 Site location (plan view)



Appendix B





Figure 3





Figure 4









Figure 6



Figure 7





Figure 8







Figure 10







Figure 12







Figure 14







Figure 16



Figure 17





Figure 18



Figure 19





Figure 20







Figure 22



Figure 23





Figure 24







Figure 26







Figure 28







Figure 30



Figure 31





Figure 32



Figure 33





Figure 34









Figure 37



