



[REDACTED]  
*STRUCTURAL INTEGRITY ASSESSMENT (SIA)*

**INSPECTION DATE:** September 23, 2025

**INSPECTION PERFORMED BY:** Andrew (Zenghao Xu) Cheu  
MEng (CivEng)

**SITE ASSESSED:** [REDACTED]

**COMMISSIONED BY:** [REDACTED]





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**COMMISSION AND PURPOSE OF ASSESSMENT**

AusDilaps was commissioned by [redacted] to conduct a structural integrity assessment for the [redacted] project. This assessment has been undertaken in accordance with standard principles of professional engineering practice, based on visual observations and the documentation provided.


**SCOPE OF THIS REPORT**

This is a visual engineering assessment intended to provide a professional opinion on the observed structural condition and integrity of the asset at the time of inspection. It includes a photographic record of key structural elements and any notable issues visible during the visit.

This assessment is not a structural certification and does not confirm full compliance with design standards or provide a comprehensive engineering analysis. Findings are based on available information, site conditions, and visible evidence and are intended to support early-stage decisions, risk identification, maintenance planning, or recommendations for further investigation if required.

**ENGINEER SIGNOFF**

I, Andrew (Zenghao Xu) Cheu, of AusDilaps Pty Ltd, have reviewed this report in its entirety and certify it is an accurate representation of the property at the time of inspection.

Name	Qualifications	Signature	Date
Andrew (Zenghao Xu) Cheu	MEng (CivEng)		23/09/2025



## EXPLANATION OF REVISIONS

- Not applicable

## STAKEHOLDER CONCERNS

Any noted conditions within this section of the report are raised by stakeholders only and may not be able to be verified by AusDilaps with photographic evidence or may not qualify under our standard of defects.

- None noted at the time of the inspection.

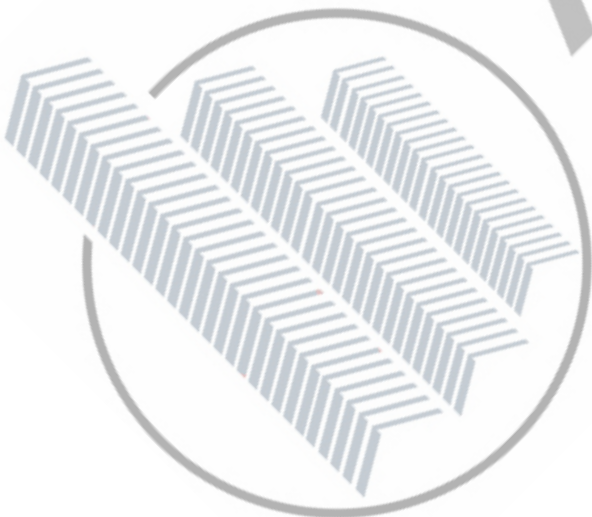
## PREVIOUS REPORT DETAILS:

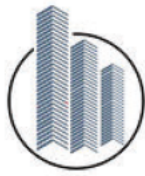
Previous Survey Name: [REDACTED]

Previous Survey ID: [REDACTED]

Date Of Previous Inspection: July 31, 2023

Link To Previous Report: [REDACTED]





## LIMITATIONS

- This assessment was conducted on-site by a qualified professional, with visual observations supported by photographic records and any available documentation, including previous AusDilaps condition surveys where applicable.
- The inspection was non-invasive unless otherwise specified. Findings are based on conditions that were observable and accessible at the time of the visit.
- The assessment provides a considered professional opinion on the asset's structural condition and integrity. It does not constitute a full structural certification, compliance audit, or detailed engineering analysis unless explicitly scoped.
- While reasonable care is taken to consider all relevant site factors, concealed construction elements, inaccessible areas, or undocumented modifications may limit the completeness of the findings.
- This report is intended to inform practical next steps, assist with risk management and maintenance planning, and identify where further investigation or specialist testing may be beneficial.
- Conditions may change after the time of inspection; this assessment represents a snapshot based on the site context and available information at that point in time.

## EXCLUSIONS

This Structural Integrity Assessment excludes the following unless specifically stated within the scope of this report:

- Temporary environmental factors that may obscure or alter observations (e.g. recent weather, surface moisture, debris, or lighting).
- Performance or operational testing of services (e.g. plumbing, electrical, mechanical, fire, or HVAC systems) and their potential influence on structural condition.
- Detection of pests, timber decay, mould, termites, or other biological damage unless clearly visible during inspection.
- Detailed structural adequacy assessments (e.g. load capacity, design compliance, or full code verification) unless explicitly scoped and supported by structural calculations or specialist analysis.
- Statutory and planning matters, including illegal or non-compliant building work, unapproved modifications, council approvals, or conformity with planning/building regulations, unless expressly included.
- Inspection or testing of non-structural or ancillary elements (e.g. pools, spas, chimneys, fireplaces, landscaping, fencing, signage, lighting, or appliances) unless otherwise specified.
- Subsurface and concealed conditions (e.g. foundations, soil composition, compaction, or geotechnical risks) unless directly observable or tested.
- Material compliance verification (e.g. concrete strength, reinforcement details, coatings, or protective systems) without supporting documentation or testing.
- Drainage systems, underground services, and subsurface utilities unless surface evidence indicates failure or structural impact.
- Impacts from dynamic loads, traffic stressors, or vibration unless clearly observable and relevant to the asset's structural integrity.
- Destructive testing, laboratory testing, specialist investigation, or forensic analysis unless specifically commissioned and documented.
- Any testing, specialist investigation, or expert input outside the limits of a visual engineering assessment.



## TERMS AND CONDITIONS

*Any person relying on this report does so acknowledging the following conditions form an integral part of the assessment.*

### PURPOSE AND USE OF REPORT

- This Structural Integrity Assessment (SIA) provides a professional opinion based on a visual inspection and available documentation.
- It is not a structural certification, code compliance confirmation, or comprehensive engineering analysis unless explicitly scoped.
- The report assists with understanding the observed structural condition and supports informed decision-making.
- No guarantee or warranty is provided regarding the future performance, safety, or adequacy of the structure.

### ACCESS AND VISIBILITY

- Only areas that were safely and reasonably accessible at the time of inspection were assessed.
- Inaccessible, concealed, or obstructed areas were excluded unless otherwise agreed.
- No destructive, invasive, or dismantling methods were used unless specifically scoped.
- No guarantee is made regarding conditions in areas not visible or accessible during the inspection.

### HAZARDOUS MATERIALS

- This assessment does not include inspection, testing, or opinions on the presence of asbestos, lead, mould, or other hazardous materials.
- For assets constructed before 1990, or where hazardous materials are suspected, a qualified specialist should be engaged.

### COST ESTIMATES

- This report does not provide cost estimates for repairs or remedial works.
- Engage a qualified contractor, engineer, or quantity surveyor for cost advice.

### LIMITATIONS OF VISUAL ASSESSMENT

- Findings are based on visible conditions and documentation available at the time of inspection.
- No responsibility is accepted for:
  - Latent or concealed defects
  - Conditions not reasonably detectable
  - Changes to the asset after the inspection date

### LIMITATION OF LIABILITY

- AusDilaps accepts no liability for:
  - Issues in inaccessible or restricted areas
  - Conditions not visible or detectable during inspection
  - Reliance on incomplete or inaccurate third-party information

### THIRD-PARTY DISCLAIMER

- This report is prepared solely for the named client and the agreed purpose.
- No responsibility is accepted to any third party relying on this report.
- Any third-party reliance is entirely at their own risk. to any third party who may rely on this report, in whole or in part. Any third party doing so does so entirely at their own risk.

## COPYRIGHT

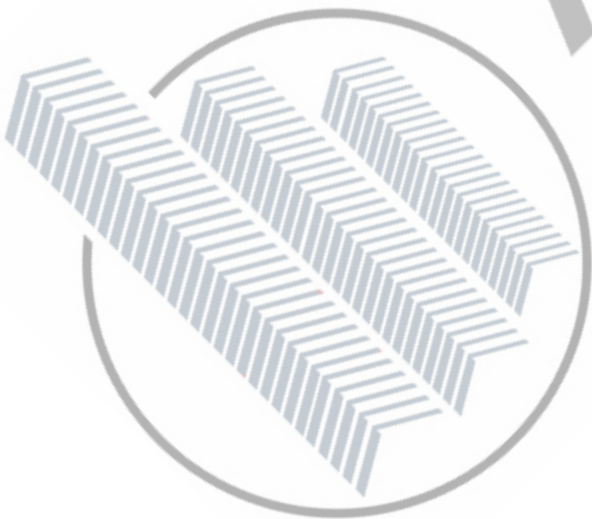
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Yours faithfully,

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<div style="background-color: black; width: 200px; height: 15px; margin: 0 auto;"></div>	
<b>Background Information</b>	<p>The property at [REDACTED] is located downslope of [REDACTED] and is supported along the boundary by a timber sleeper retaining wall with steel posts. During the inspection conducted on 31 July 2023, the wall was observed to exhibit leaning and bulging. This condition may have been exacerbated by flooding from a burst decommissioned water pipe, which recently released a significant volume of water across multiple properties and prompted this structural integrity assessment. Accordingly, an initial inspection was undertaken on 23 September 2025, followed by a subsequent inspection on 20 October 2025.</p>
<b>Summary:</b>	<p>This report documents the inspection of the timber sleeper retaining wall, supported by steel posts, following the recent flooding event to assess its structural condition. The wall exhibits visible leaning and bulging; however, its inclination appears largely unchanged compared to the condition recorded on 31 July 2023. The retaining wall remains functional with no noticeable movement when physically tested.</p>
<b>Conclusion</b>	<p>The retaining wall exhibits signs of leaning and minor deterioration; however, the drainage system appears to be functioning effectively, with no water pooling observed in the backfill. Some timber palings show decay, but no significant cracking was identified. Overall, the wall remains stable, as no noticeable changes were observed between inspections conducted on 23 September 2025 and 20 October 2025. The current condition is considered unlikely to be related to the recent flooding event, as no evidence of new displacement or flood-induced damage was identified when compared with the condition documented on 31 July 2023.</p>

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 Specialist Building Inspections



**Key Findings**

Findings from the inspection	Photo number in the report (captured on 23 Sep 2025)	Photo number in the Pre-report	Potential Causes	Change that could be linked to the flooding event	Structural engineer's opinion
Bulging and movement of the timber paling	Fig.0004	Fig. 0074 in [REDACTED] (captured on 31 July 2023)	Aging timber materials	Unlikely	Timber aging results from prolonged exposure to environmental factors such as moisture variations, UV radiation, and biological decay (fungi, termites, rot), which weaken the timber's structural capacity over time. This process occurs independently of a specific flooding event, as it reflects cumulative weathering and material fatigue rather than damage induced by a single or recent water discharge incident.
Visible leaning and bulging in parts of the wall	Fig.0008	Fig. 0069 and Fig. 0074 in [REDACTED] (captured on 31 July 2023)	<p>a. The retained soil and potential accumulation of moisture behind the wall are likely exerting continuous lateral pressure. If subsurface drainage (e.g. agi pipe or weep holes) is inadequate or blocked, water buildup can increase pressure and cause gradual wall displacement.</p> <p>b. Variations in soil moisture—particularly after heavy rainfall or flooding—may have softened the foundation soil, leading to rotation or settlement of the post footings.</p>	Unlikely	<p>The leaning of the retaining wall was already documented in the 31 July 2023 inspection, and no noticeable change has been observed since then. The drainage system appears to be functioning properly, with no evidence of water pooling, soil scour, or recent movement. Therefore, the leaning is assessed as a pre-existing condition likely related to long-term material deterioration rather than the recent flooding event.</p>
Movement of the tile paving	Fig.0019-30	Fig.0048 - 0049; Fig. 0055; Fig. 0062 in [REDACTED] (captured on 31 July 2023)	Prolonged saturation of the underlying soil due to flooding or poor runoff diversion can weaken the substrate's bearing capacity, causing uneven movement of the tiles.	Likely	The majority of the discharged water impacted [REDACTED]; however, due to the considerable volume and elevation difference, water flowed downslope to [REDACTED]

Moderate Cracking	Fig.0042	Not previously photographed	Prolonged exposure to moisture, sunlight, and temperature fluctuations has likely caused the timber to dry, shrink, and split along the grain. This is a common sign of long-term weathering and material fatigue.	Unlikely	The cracking in the timber sleeper is unlikely to be related to the recent flooding event because the defect exhibits characteristics of long-term deterioration rather than recent hydraulic damage. The timber shows weathered surfaces and gradual splitting along the grain, consistent with aging and prolonged exposure to moisture and temperature cycles.
Visible leaning of the wall	Fig.0045	Figure 0250 in  (captured on 19 Sep 2023)	<p>a. The retained soil and potential accumulation of moisture behind the wall are likely exerting continuous lateral pressure. If subsurface drainage (e.g. agi pipe or weep holes) is inadequate or blocked, water buildup can increase pressure and cause gradual wall displacement.</p> <p>b. Variations in soil moisture—particularly after heavy rainfall—may have softened the foundation soil, leading to rotation or settlement of the post footings.</p>	Unlikely	The leaning of the retaining wall was already documented in the 31 July 2023 inspection, and no noticeable change has been observed since then. The drainage system appears to be functioning properly, with no evidence of water pooling, soil scour, or recent movement. Therefore, the leaning is assessed as a pre-existing condition likely related to long-term material deterioration rather than the recent flooding event.

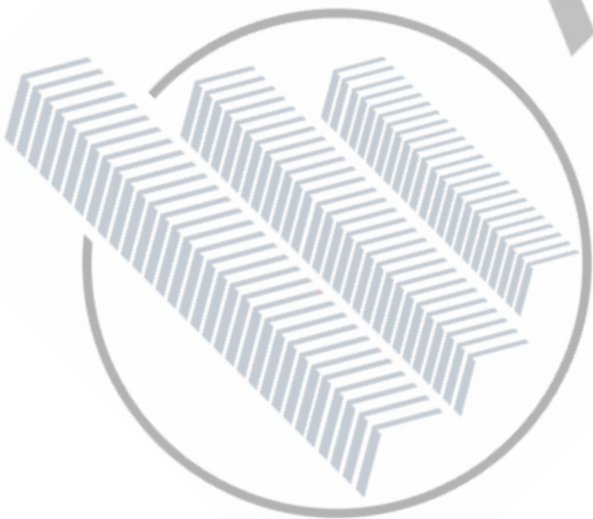


Figure 0001



23 Sep 2025 09:20:59

Leaning in the east boundary fence.

Figure 0002



23 Sep 2025 09:21:04

Leaning in the east boundary fence.

Figure 0003



23 Sep 2025 09:21:51

Leaning in the east boundary fence. Showing movement in the paling.

Figure 0004



23 Sep 2025 09:23:29

Leaning in the east boundary fence. Showing movement in the paling.

Figure 0005



23 Sep 2025 09:29:45

Leaning in the east boundary fence.

Figure 0006



23 Sep 2025 09:30:36

Leaning in the east boundary fence.