

BUILDING DEFECT INVESTIGATION REPORT

External Timber Landscape / Planter Elements

Report No: QSEMS-BDI-001

Revision: Rev 1

Inspection Date: 7 August 2026

Report Date: 8 August 2026

Client

Sample Management Group

Attention

John Smith

Property

Sample Gardens

Property Address

15 Sample Street, Sample QLD 4111

Inspector

Michael Arvanitakis - QSEMS

Inspection Type

Visual, non-destructive building defect investigation



General view of the external landscaped courtyard and timber planter/seal elements inspected.

1. Executive Summary

QSEMS was engaged to investigate visible timber deterioration to external landscape and planter elements at Sample Gardens. The inspection was undertaken on 7 August 2026 and was visual and non-destructive, limited to reasonably accessible areas and conditions observable at the time of inspection.

Overall finding

Localised significant timber deterioration and decay is present to multiple exposed timber elements.

Primary defect mechanism

Repeated environmental wetting and drying, moisture retention at exposed end grain, horizontal surfaces and member junctions are considered likely contributing factors.

Moisture testing

Clearly legible photographed readings ranged from approximately 8.5% to 13.8% at the time of inspection. Readings are point-in-time measurements only.

Recommended response

Replace materially deteriorated timber components and improve detailing, sealing and moisture management to reduce recurrence.

Key Findings

- Visible cracking, checking, splitting and localised loss of timber section were observed to a number of exposed timber members.
- The most pronounced deterioration was observed at exposed top surfaces, end grain and junctions between horizontal and vertical timber components.
- Some affected elements exhibit deterioration beyond what would reasonably be addressed by filling, sanding and recoating alone.
- The timber construction is immediately adjacent to garden beds, mulch, vegetation and external ground surfaces. The sleeper members appear consistent with treated timber intended for external landscape/retaining applications, however, preservative treatment does not prevent indefinite deterioration and the timber is showing age-related weathering, checking and localised breakdown.
- No conclusion is made regarding active termite activity by this report. The present investigation is concerned with the visible building defect, moisture exposure and resulting timber deterioration.

Risk Classification

AMBER - Major Defect / Further Deterioration Risk. Rectification is recommended to prevent continued loss of timber integrity and further deterioration of adjoining components.

2. Inspection Details

Inspection Date	7 August 2026
Approx. Inspection Time	3:40 pm - 3:49 pm
Weather / Conditions	Dry at the time of the photographed inspection.
Inspection Method	Visual inspection and moisture testing of accessible external timber elements.
Moisture Meter	Lutron MS-7002 Concrete/Wood Moisture Meter, set to Function 1 (Wood) as shown in the photographic record.
Access	External landscaped courtyard and accessible timber planter / seat elements.

3. Scope of Investigation

- Inspect affected timber elements.
- Investigate the likely cause of timber deterioration.
- Assess moisture ingress, drainage, sealing and other contributing factors where reasonably accessible.
- Undertake moisture testing at accessible timber surfaces.
- Photographically document observed conditions.
- Provide findings and recommended rectification methodology.

4. Inspection Limitations

This investigation was visual and non-destructive. No timber members were dismantled, cut, drilled, removed or opened up. Concealed portions of posts, fixings, interfaces and timber below or behind adjacent finishes were not visible. The full extent of deterioration may therefore only become apparent when affected components are dismantled during rectification. No dedicated drainage outlet or drainage system was visible to the inspected face of the timber sleeper construction, and the concealed drainage arrangement behind the wall could not be confirmed.

Moisture meter results are surface/point readings taken at the time of inspection. They do not establish the historic moisture content of the timber or exclude previous prolonged wetting that may have contributed to decay.

5. Moisture Testing Results

The moisture meter was photographed in Wood mode (Function 1). The following readings are clearly legible in the photographic record and are recorded as point-in-time observations only.

Photo Ref.	Reading	Observation
P01	8.5%	Accessible external timber surface
P02	8.6%	Cracked top surface of timber post/block
P03	12.3%	Deteriorated/cracked timber member
P10	12.8%	Accessible timber surface
P11	12.8%	Accessible timber surface
P08	13.8%	Timber junction / top surface



P01 - Moisture reading of 8.5% to accessible external timber.



P02 - Moisture reading of 8.6% adjacent to visibly cracked timber.



P03 - Moisture reading of 12.3% adjacent to deteriorated timber.



P04 - Moisture reading of 13.8% at an external timber junction.

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6. Defect Records

DEFECT RECORD 1 - Timber Decay and Loss of Material

Risk Rating	AMBER - Major Defect
Defect Category	D - Material Deterioration / C - Moisture Exposure
Inspector Description	Localised timber decay and physical breakdown were observed to exposed timber elements, including areas where the surface and edge fibres have deteriorated and timber section has been lost.
Potential Consequence	Continued exposure may result in progressive decay, reduced durability, loosening of connected elements and increasing extent of replacement required.
Recommended Action	Remove and replace timber components where decay has materially reduced the sound timber section. Do not rely on cosmetic filling where the underlying timber is soft, friable or materially degraded.



P12 - Close-up showing breakdown and loss of timber fibres at the edge of a horizontal member.

P05 - Cracked and deteriorated exposed top of timber post/block.

DEFECT RECORD 2 - Extensive Checking and Splitting

Risk Rating	AMBER - Major Defect / Maintenance Concern
Defect Category	A - Damage / D - Material Deterioration
Inspector Description	Extensive longitudinal checking and splitting were observed to multiple posts, blocks and horizontal members. Cracking is particularly evident at exposed end grain and top surfaces.
Potential Consequence	Open checks and splits provide pathways for water entry and can increase moisture retention within the timber, accelerating weathering and decay.
Recommended Action	Replace severely split or structurally compromised sections. Sound retained timber should be cleaned, allowed to dry, repaired where appropriate and fully recoated with a compatible exterior timber coating system, including exposed end grain.



P06 – General area of affected decay occurring .



P09 - General close-up of cracked timber and open joint at the planter edge.

Observed Pattern

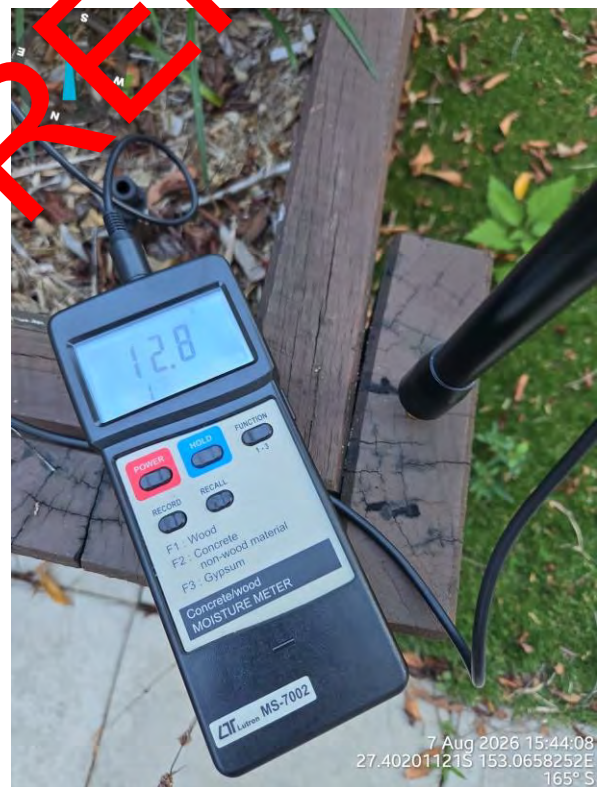
The observed deterioration is not confined to one isolated impact point. Similar cracking and weathering occurs at several exposed junctions around the landscape timber construction, indicating an environmental and detailing component rather than a single localised mechanical damage event.

DEFECT RECORD 3 - Moisture-Susceptible Detailing at Timber Junctions

Risk Rating	AMBER - Rectification Recommended
Defect Category	C - Water Penetration / Dampness Risk / F - Detailing
Inspector Description	Several junctions comprise exposed horizontal top surfaces, exposed end grain and close-fitting interfaces between adjacent timber members. These locations can trap water and are slower to dry after rainfall or irrigation.
Potential Consequence	Repeated wetting and restricted drying can promote coating breakdown, checking and biological decay over time.
Recommended Action	During rectification, detail replacement timber to shed water and minimise horizontal water traps. Seal exposed end grain and cut ends before installation, maintain drainage/air gaps where practicable and apply a suitable exterior coating system to all exposed faces.



P04 - Moisture testing adjacent to a cracked exposed timber junction.



P10 - Moisture reading of 12.8% with exposed horizontal and vertical timber interfaces visible.

DEFECT RECORD 4 - Landscape Interface and Restricted Drying

Risk Rating	GREEN / AMBER - Contributing Condition
Defect Category	C - Moisture Exposure / Maintenance
Inspector Description	The timber planter/seat and sleeper construction is located directly adjacent to landscaped garden beds, mulch, vegetation and ground surfaces. Leaf litter and organic material are also present around portions of the timber construction. No dedicated drainage outlet or drainage system was visible to the inspected face. It is noted that timber sleeper construction commonly incorporates joints and gaps between individual members that can permit incidental water passage and drying; however, the concealed drainage arrangement behind the wall was not visible and could not be verified.
Potential Consequence	Vegetation, mulch and debris can retain moisture against timber, obstruct inspection and reduce airflow and drying. Repeated environmental exposure, including rainfall and any nearby irrigation may contribute to deterioration over time. The absence of a visible drainage outlet is not, by itself, evidence of a drainage defect in this form of construction.
Recommended Action	Remove accumulated organic debris from timber interfaces, maintain separation between soil/mulch and susceptible timber where practicable, confirm irrigation is not discharging directly onto timber and keep available drainage paths and joints clear. If dismantling exposes evidence of retained water or ineffective concealed drainage, the drainage arrangement should then be reviewed and rectified as necessary.

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P11 - Moisture testing at a planter corner with garden bed immediately adjacent.



P12 - General view showing timber planter/seat elements in close proximity to landscaped areas.

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7. Probable Cause and Contributing Factors

Based on the visible pattern of deterioration, the location of the affected components and the condition of exposed timber surfaces, the deterioration is considered most consistent with long-term external exposure, repeated wetting and drying cycles, age-related weathering and localised moisture retention at exposed end grain, horizontal top surfaces and member junctions. No single identifiable drainage defect was established during the visual inspection.

The sleeper members appear consistent with treated timber intended for external landscape/retaining applications. Such treatment improves durability but does not make timber immune to checking, splitting, weathering or decay over its service life. The moisture readings obtained during the inspection were not unusually high at all tested locations; however, these are point-in-time measurements and do not exclude previous prolonged wetting or historical moisture exposure as contributing factors.

8. Recommended Rectification Methodology

- Carefully dismantle affected sections as required to expose concealed faces and establish the full extent of deterioration.
- Replace timber posts, blocks, boards or trim where decay, splitting or loss of section has materially affected the soundness or durability of the member.
- Use replacement timber suitable for the intended external exposure and service condition, with an appropriate preservative treatment/hazard classification for the application, and install in accordance with the timber supplier/manufacturer requirements.
- Pre-seal cut ends and exposed end grain before installation and coat all accessible faces in accordance with the selected coating manufacturer's requirements.
- Improve junction detailing so that exposed surfaces shed water and avoid unnecessary water traps.
- Maintain clearance from soil, mulch, leaf litter and other moisture-retaining materials wherever practicable.
- Check nearby irrigation and visible drainage paths. Keep joints and available drainage paths clear and redirect direct water discharge away from timber where required. Concealed drainage should only be altered if opening-up identifies retained water, blockage or another condition requiring rectification.
- Following opening-up, inspect adjoining concealed timber and fixings. Any additional deterioration discovered should be documented and included in the repair scope before closing up.
- Implement a routine inspection and coating maintenance regime after rectification.

9. Priority

Rectification should be programmed within a reasonable maintenance period rather than deferred until visible failure occurs. Any component found to be soft, loose, unstable or materially weakened during opening-up should be replaced promptly.

10. Inspector Conclusion

The inspection identified localised but significant deterioration to a number of external timber landscape and seating/planter elements. Observed defects include extensive checking and splitting, localised decay and loss of timber integrity, with the most pronounced deterioration generally occurring at exposed top surfaces, end grain and member junctions.

On the available visual evidence, the deterioration is considered most consistent with long-term external exposure, repeated wetting and drying, age-related weathering and localised moisture retention at susceptible timber details. No dedicated drainage outlet was visible to the inspected face of the sleeper construction; however, gaps between sleeper members can permit incidental water passage, and no specific drainage defect was established by this non-destructive inspection.

The sleeper members appear consistent with treated timber intended for external landscape/retaining use. Treatment improves durability but does not prevent normal ageing and eventual breakdown indefinitely. Several components appear beyond reasonable cosmetic repair. Replacement of materially deteriorated sections is recommended together with appropriate treated replacement, sealing of cut ends/end grain, water-shedding detailing and ongoing landscape maintenance. The full extent of concealed deterioration can only be confirmed during dismantling and rectification.

11. Reliance and Limitations

- This report is prepared solely for Sample Management Group in relation to the inspected property.
- The inspection was visual and non-destructive and limited to reasonably accessible areas.
- No engineering calculation, destructive testing, timber species verification, preservative treatment grade verification or laboratory analysis was undertaken. The description of the sleepers as treated external landscape/retaining timber is based on their appearance and application; no treatment certification or product documentation was available for verification during this inspection.
- This report is not a timber pest inspection and makes no independent determination regarding active termite activity.
- Concealed deterioration may exist and may only become evident once components are removed during repair works.
- Recommendations are based on conditions observed on 7 August 2026 and the photographic/moisture testing record available to QSEMS.

12. Inspector Certification

Inspector	Michael Arvanitakis
Company	QSEMS
Position	Director
Report Date	8 August 2026
Signature	_____

END OF REPORT