

Building Defect Analysis Report

Root Cause Analysis

Report Generated: 1/28/2026, 9:54:10 AM
Property ID: P6
Historical Data Analyzed: 3 records

Identified Root Causes

1. Differential Foundation Settlement

Confidence: HIGH

Reasoning: Large diagonal crack with signs of movement indicates differential foundation settlement, causing structural stress.

Affected Systems:

- Foundation
- Structural Frame
- Wall Systems

2. Plumbing System Leak (Pipes/Connections)

Confidence: HIGH

Reasoning: Significant water staining and mold on ceiling near bathroom strongly indicate an active pipe or connection leak.

Affected Systems:

- Plumbing
- Interior Finishes

3. Inadequate Bathroom Waterproofing/Sealant Failure

Confidence: HIGH

Reasoning: Persistent water damage and mold near bathroom suggest compromised shower pan, grout, or sealant allowing water escape.

Affected Systems:

- Building Envelope (internal)
- Interior Finishes

Ø=Üj Immediate Action Recommendations

1. Immediately engage a structural engineer to assess the cause and extent of structural movement in R1.
2. Locate and stop the source of water intrusion in R2 (plumbing leak or waterproofing failure) without delay.
3. Perform professional mold remediation and thoroughly dry out all affected areas in R2.
4. Monitor crack progression in R1 and implement temporary shoring if structural integrity is compromised.
5. Repair damaged ceiling and finishes in R2 only after the moisture source is fully resolved and the area is dry.

