

## MEMORANDUM

To: John Johnson, Gig Harbor Fire & Medic One (GHFMO)

From: Katy Krall, P.E., S.E., Reid Middleton

Subject: GHFMO Headquarters Station 50 Tree Damage  
Site Visit Structural Observations

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I, Katy Krall, was notified that a tree had fallen on a portion of the roof of GHFMO Headquarters Station 50. I was on site on Wednesday November 15, 2023 to observe the structural damage and provide recommendations for continued use. The tree had been removed and contractors were on site for remediation for water damage from a broken sprinkler line and roof damage. The roof, where the tree had fallen had been covered with a tarp. This memorandum serves to summarize observations and future recommendations.

The tree fell on the southwest corner of the building where the building is a single story with a interstitial space with ductwork and sprinklers. The roof overhang had temporary wood supports and was covered by a tarp; see Image 1. The roof in this area is composed of lumber installed at a slope, that bears on the southern exterior wall and connects to the wall near the upper roof with metal connectors and a wood ledger. This forms the interstitial space with has a plywood floor that is supported by wood I-joists that span north-south and are supported by wood walls.

In the interstitial space, the eastern most portion could not be observed due to the existing damaged roof framing being present. To the western edge of the roof damaged space, multiple roof beams were observed to be split and no longer supported by the Simpson hangers at the ledger at northern wall; see Images 2 and 3. The wood ledger appeared flush with the wall where observable; the eastern end could not be observed. At the low end of the sloped roof, at the southernmost wall, the blocking, Simpson connector, and beam bearing points were observed; see Image 4. A gap was observed below the blocking and the wall top plate. Cracking was also observed horizontally across the blocking and at the Simpson connector.

The high roof is composed of wood trusses and was also observed. The tree did not land on this portion of the roof, but the on-site staff noted that a portion of the tree had clipped the end façade and tails of a portion of the roof trusses. The approximate 3-foot-wide area could be observed from the exterior; see Image 5. At the interior, the bottom chord of the trusses appears to have a horizontal crack; see Image 6. The framing at the exterior wall could not be observed.

The I-joists of the floor of the interstitial space/roof of the office space were observed from below. No cracking was observed in the I-joist framing; see Image 7. Crushing of the sheathing above the joists was observed; See Image 8. Vertical cracking of the wall studs was also observed at the top of the wall; See Image 9. Minor Cracking of the top plate was also observed at the top of the wall studs; see Image 10.

The full height of the first-floor wall studs and bottom plate and the sloped roof at the southern end could not be observed due to the presence of wall finishes, temporary tarping, and the existing damaged wood roof still being in place. It is my understanding that finishes will be removed and demolishing of most of the damaged roof framing will be removed the week of November 20. A second site visit to observe the structure with components removed is scheduled for the week of November 27.

The office space area below the I-joists and interstitial space above can be used by contractors for remediation, demolition of damaged wood, and repair. The space should not be occupied for office use until repairs are completed. If snow is anticipated prior to repairs being completed, it should be removed from the damaged roof portion and the area below not occupied until the snow is removed.



Image 1: Damaged Roof Area



Image 2: Interstitial Space Roof Joist at High Point



Image 3: Roof of Interstitial Space Looking East



Image 4: Blocking at Southern Wall



Image 5: Damaged Roof and Edge of High Roof



Image 6: High Roof Truss Bottom Chord Crack

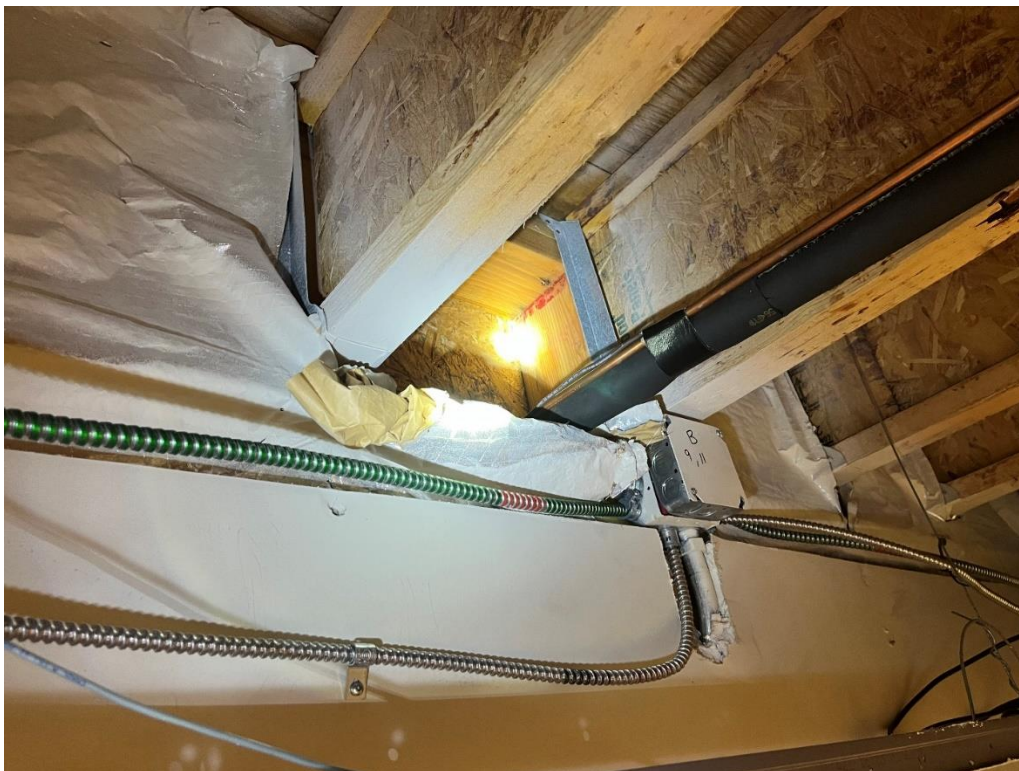


Image 7: I-Joist Framing at Southern Wall



Image 8: Crushing of the Sheathing Above the I-joists



Image 9: Vertical Cracking of the Wall Stud

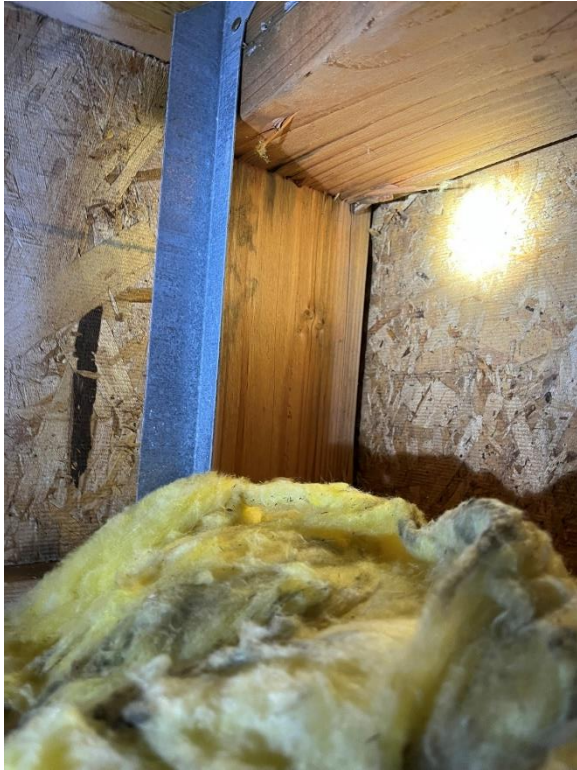


Image 10: Minor Cracking of Top Plate at Top of Wall Stud