



Engineer's Report

SUBJECT:

Assessment of structural conditions
2002 Scenic Drive, Austin, Texas

JOB NUMBER:

21206.01

DATE OF REPORT:

June 20, 2022

At the request of Ryan Street Architects, I have visited the site twice to review existing conditions of structural elements and to offer an opinion about the suitability for reuse in a renovation. This report is a summary of my observations and refers to photos in the June 21, 2022 report by Ryan Street Architects.

Apartment

The degradation of the roof and windows has allowed water into the building for an unknown but obviously prolonged period of time. The wood roof framing has obvious rot in areas exposed by holes, and I believe it is likely that further investigation will reveal that none of the roof framing is salvageable. Given the excessive deflection of the roof (photo on page 12) and the concerns about the floor joists mentioned below, I caution against entering this building until the roof and floor can be adequately shored.

The existing floor joists are supported in slots gouged into the face of the exposed limestone cut (photo 1, page 16), which was leaching water (photo 3, page 16) during my visits despite no antecedent rainfall. The ends of the joists are spliced onto the original joists as part of a previous repair which was undoubtedly caused by previous similar rot. The splices are not adequate and show clear signs of deflection and distress. The repair ends are now showing signs of rot. These structural connections are inadequate and dangerous.

The stone wall on the second floor is supported on an inverted steel railroad rail, which is not properly supported at points of bearing or against rotation. The elevated concrete slab over the garage also appears to use steel railroad rails as reinforcement, and the steel shows severe corrosion. Again, I recommend caution under and on this slab until it can be properly shored.

The walls are load-bearing, uncoursed random rubble masonry that do not meet the minimum requirements of modern or recent building codes for thickness and for height-to-thickness ratios. These walls cannot be reused as load-bearing in the renovation.

Two Story House

The exterior walls are load-bearing, uncoursed random rubble masonry, similar in construction and deficiencies to the apartment. These walls cannot be reused as load-bearing in the renovation.

Additionally, the reuse of the existing masonry walls as non-load-bearing is not possible. The south wall has a significant crack (photo on page 19) that was previously patched and continues to move. This wall is noticeably out-of-square and out-of-plumb. Foundation movement is likely occurring. Further investigation will be required, but if the foundation is rubble, which is typical for the era, less invasive stabilization techniques will not be possible. The masonry walls will need to be removed so that the foundation can be rebuilt with reinforced concrete.

Similar to the apartment, widespread water leaks in the roof have damaged wood framing to the point that total replacement will likely be necessary for the roof. The damage may include the floor in several locations, and more investigation will be required to make this determination.

For the floor over the large room (photo on page 22), significant deflection is apparent from above and below. The beams and joists will likely need to be reinforced to support modern loads.

Pool And Landscape

The pool geometry violates modern code requirements, particularly where concrete was added along the east edge, apparently to divert rain runoff around the pool (photo on page 29). Cracks in the shell are significant enough that the basin will not hold water.

The walls of the changing rooms support the slab of the pool deck. These walls and slab have failed (photos on page 30). Again, the load-bearing, uncoursed random rubble masonry has no definable capacity once it cracks and displaces like these walls have. I recommend not allowing anyone on or around these walls and slab until they are shored or demolished. The pool and deck are not suitable for reuse.

Summary

The wood framing has been severely damaged by water and immediate shoring or demolition is recommended.

The masonry walls are not adequate for load-bearing, and their reuse as a non-load-bearing veneer is not practical.

The foundation is questionable and likely not adequate for reuse in an extensive renovation.

Other considerations that are not part of this structural assessment but important to the practicality of a renovation are waterproofing, building envelope and site drainage. All have obvious challenges with no reliable solutions without complete demolition.

SIGNED:



Dennis Duffy, PE



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