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STRUCTURAL EVALUATION REPORT

REPORT #: 001 ***DATE:*** January 22, 2024

PROJECT TITLE: Augusta Boathouse ***JOB #:*** 3042.2401

OVERVIEW:

Maria Rivera-Rivera, Augusta Richmond County (ARC) Deputy Director of Facilities, Central Services Department, contacted Johnson Laschober & Associates, P.C. (JLA) regarding a potential structural issue at the Augusta Boathouse (101 Riverfront Dr, Augusta, GA 30901.) JLA structural engineering personnel met a Central Services representative at the facility on January 19, 2024 to perform an observation of the structure. The building had power but was not occupied or in use at the time of the observation. It was unclear whether the HVAC system was operating, but a technician (from another company) was present at the time to test the air quality.

JLA understands that this facility was originally built as a restaurant but was most recently being used as a community/event center for the city. The lower level was being used as the home of the Augusta Rowing Club as a workout, storage and training facility. According to the Central Services representative, this building had not been open or used for approximately 2 years, although it was not clear whether the club was using their portion of the facility at the time of the observation. The primary stated concern was the condition of the exterior decks surrounding the building and the potential for other water-related structural damage. ARC contracted with JLA to perform a structural evaluation of the building. Reference ARC Purchase Order P465281.

OBSERVATION:

The building was comprised of two perpendicular legs each approximately 60 feet wide by 140 feet long. One leg was parallel to the river and built at the top of the embankment. The other leg was perpendicular to the first and extended across the embankment and into the river on a sheet-pile-supported earth-filled platform. Each leg had intersecting hip roofs with a clerestory at the peak. There was an upper-level penthouse at the intersection of the building legs approximately 25 feet wide by 50 feet long. There were large 5 to 15 foot-wide wooden decks on all sides of this building with the street side deck containing a set of entry stairs and an ADA ramp.

This building was built around a series of approximately 12” diameter wooden poles (piles.) Most appeared to have been driven into the ground. Smaller, approximately 8” diameter piles, driven into the embankment and riverbed supported the riverside decks. There were some additional concrete pier-supported posts holding the deck at the embankment. Several of these piers were undermined due to erosion. The piles elevated the main level of the boathouse approximately 8-10 feet above the grade. This space below the main level including the filed sheet pile platform had a stepped concrete slab floor and was enclosed primarily with a series of garage-style doors along the exterior perimeter. It was unclear if this slab and enclosure was built when the building was constructed or added later. This space appeared to be used exclusively by the rowing team and contained locker rooms, a large workout room, and storage for their boats and other gear. This space did not appear to be conditioned except for the natural ventilation from opening the doors.

The main level contained a large “event-style” space in the river leg, and a “bar-reception” space in the embankment leg. Each of these spaces were built around the wooden poles and had ceilings open to the

clerestories at the peak. The intersection of the legs on the main level had a commercial style kitchen and other support spaces with a lower ceiling hung from the roof structure. The penthouse space appeared to be a smaller "breakout" event space with a private restroom and dedicated deck facing the river.

Discussion:

The pole construction of this building was a typical type of construction for marine-type structures including piers, docks, and related pier-style buildings such as this. The poles driven into the embankment both above and below water allowed for a minimal disturbance of the environment and were relatively resistant to shifting embankments and riverbeds due to natural currents. There was no apparent structurally significant compromise to the larger building or smaller deck poles. This included the zone at the water level where deterioration would typically initiate.

The backfilled sheet pile platform appeared to be in acceptable structural condition. Although dented and scratched from use and exposure, the weathering steel (intentional rusting to provide a protective coating) is self-healing against ordinary wear. Note that JLA was not able to examine the condition of the sheet pile (or poles) below the water level. Like the poles, deterioration would more likely be at the water level than below it and marine construction sheet piling and pole piles are usually driven deeper than potential underwater riverbed scour.

The exposed wood framing on the main level, specifically at the roof level, appeared to be in good structural condition. This included the primary girders framed between and around the poles. The secondary wood roof rafters were above a wood plank ceiling and was not observable except in the kitchen area where there was a drop ceiling. This revealed multiple roof leaks and damage (as well as previous repair attempts) to the wood deck under the shingle roof. The wood rafters were water stained in places but were not significantly structurally compromised. It was not evident at the time of the observation if any leak was active.

The main level floor was similarly constructed with primary wood girders framing between and around the building poles and wood floor joists on top of the girders. This framing would have likely been intentionally exposed initially in the building crawl space, allowing it to breath and dry naturally. It was subsequently (partially) enclosed to add the lower-level Rowing Club buildout. This enclosed interior space would have to either be conditioned or naturally ventilated to allow this natural breathing process in a wet humid environment. This space did not appear to be conditioned or provided with ventilation except for natural ventilation from open garage doors and it was not clear if the doors had been opened on a regular basis since the building was closed several years ago. This issue was worsened by the addition of a drywall ceiling on the bottom of the framing and the wrapping of drywall around the primary girders. Like the kitchen roof deck, there was evidence of water leak staining on the drywall ceiling and localized holes in the drywall revealed some damage/rot on the framing. However, there was no apparent evidence of significant widespread deterioration of this floor system typified by soft spots, bounce or cracked floor tile.

The decks surrounding the building, however, had multiple areas of significant structural failure. This was most evident in the deck boards which were soft and could be broken through with the average pressure of a person's foot. The exposed wood joists below the deck were significantly stained by water and there was widespread surface rot on the wood. While the rot did not yet appear to be significant enough to fail the floor joists, it will progress to failure if not addressed. The metal handrails around the deck perimeter were in adequate structural condition, but their attachment to the deck was compromised by the deck's condition. As previously stated, the poles supporting the deck were in acceptable structural condition, as well as the associated cross bracing. However, there were several locations where the concrete piers supporting the supplemental deck support posts were displaced due to embankment erosion.

The metal deck support frame in the utility courtyard also appeared to be in acceptable condition but the wood deck on top of it had the same structural compromise as the rest of the decks.

CONCLUSIONS AND RECOMMENDATIONS:

In JLA's professional opinion, the BUILDING PORTION of this structure is currently structurally safe to occupy and use. There are structural items that need to be addressed, however, before they become a compromising issue, but they have not yet progressed to the point where they present a threat to the health and safety of the occupants or public at the time of this structural evalluation. JLA defers to others to determine if the indoor environment of the building is safe for occupation and use.

The exterior DECKS, however, are currently unsafe structurally and pose a significant threat to the health, safety and well-being of the public. This was more troubling since JLA found evidence that the current barricades are being bypassed and the decks are apparently being accessed and used for unauthorized purposes.

JLA recommends the following be implemented as soon as possible:

1. Physically block all access to the decks from the outside and post warning signs about the danger of the decks up to and including the possibility of collapse.
2. Run and maintain the HVAC system to minimize the humidity level on the main and penthouse levels. Monitor to keep relative humidity levels below 60 percent. Add supplemental dehumidification as required.
3. Periodically, open all the garage doors on the lower level to naturally ventilate the space as required to minimize relative humidity levels. Monitor this humidity to maintain it at or below the relative humidity of the exterior air. Supplement with fans as required.

JLA recommends the following be implemented as soon as practical:

1. Demolish and remove all deck handrails.
2. Demolish and remove all the deck floor boards and joists. Supporting poles and cross bracing may remain and potentially be re-used. JLA can provide specific direction as required.
3. Demolish and remove deck stair and ramp access. Lock and block doors leading to the decks from the inside.
4. Check the condition of the roof for leaks and repair/replace as required.
5. Demolish and remove the drywall ceiling and girder covers on the lower level to expose the wood and allow it to breathe and acclimate naturally. Repair any compromised structure, if any.
6. Removal of existing vegetation from deck substructures and sheet piling.

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cc: File

Boathouse Overhead View

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Boathouse from the front.

Streetside entry and ADA ramps.

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Home of the Augusta Rowing Club.


East deck. Note supporting poles and lower level garage doors.

Underside of East deck showing typical poles supported construction

Steel reinforcement of deck girders. Note bad condition of framing beyond the protective building eaves of roof above deck.

Enclosure under East Deck with independent roof/gutter.

Overview of building leg intersection showing main level and upper level decks.

River leg showing sheet pile platform at embankment. Note garage doors with railings around perimeter.

Loose railing due to rotted deck.

New hole in deck inadvertently created at time of observation.

River leg deck pole supports. Some supported on concrete piers others driven into the riverbed.

Erosion-compromised (non-pile) deck pier supports.

Cable cross bracing at deck support poles.

Deck framing above lower enclosure. Note pole support.

Condition of sheet pile platform and tie-back supports.

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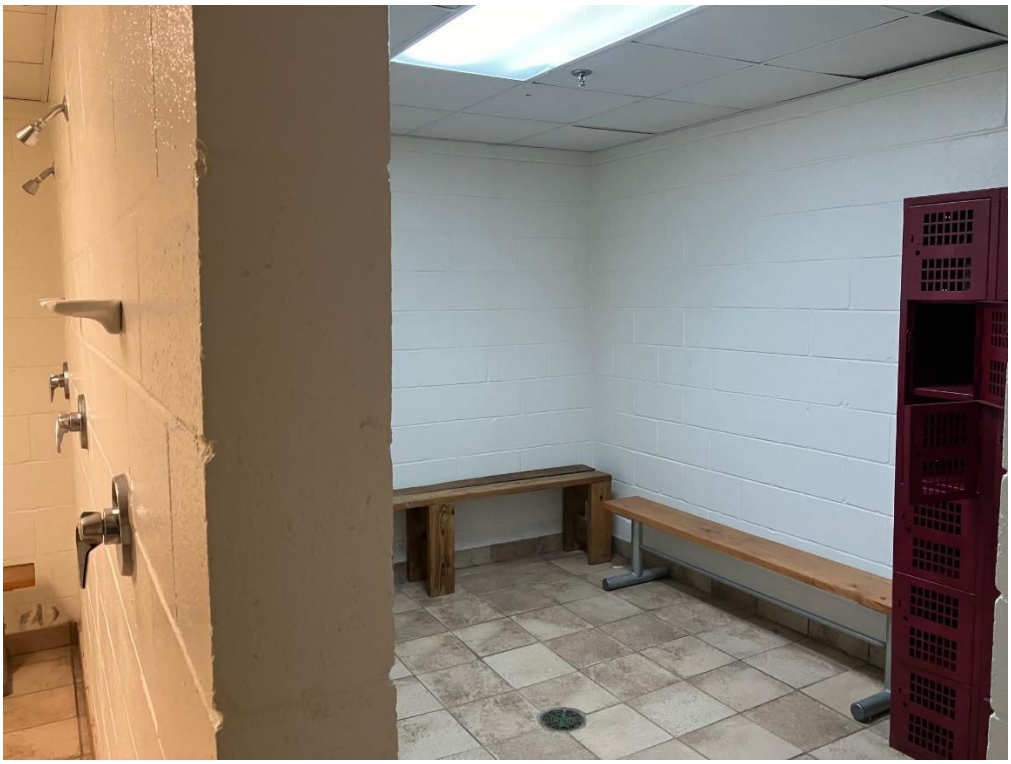
Rowing Club storage, lower level. Note pole construction and associated drywall-covered wood girder framing.



Presumably non-original concrete block locker room and shower, lower level.

Kitchen at main level leg intersection.


Roof structure above drop ceiling in kitchen. Note previous leaks and repairs.

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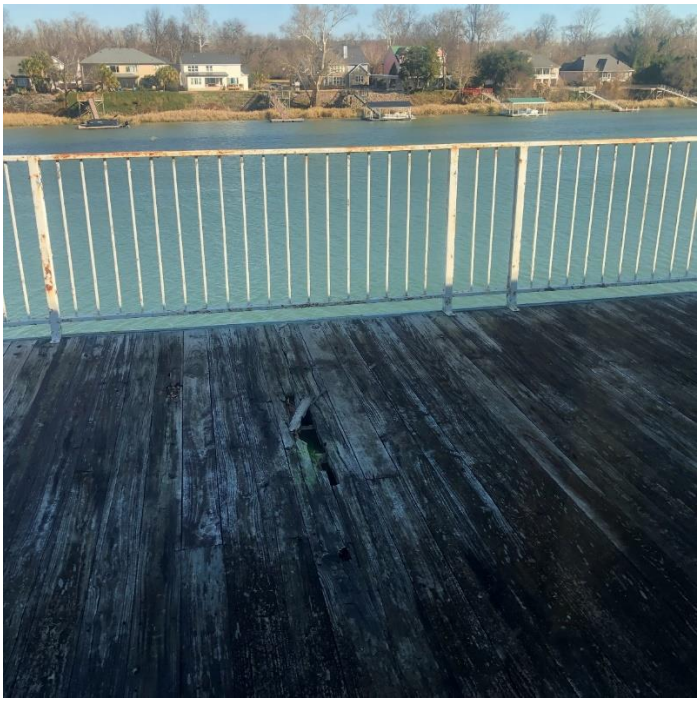
West side deck.

Unpassable condition of West side deck and stairs.

Utility courtyard with steel-supported platform/deck.



North deck (above water) showing one of many existing holes in decking.

East deck of River leg. Note pole supporting deck and penthouse above.

North deck showing previous “repair” attempts.

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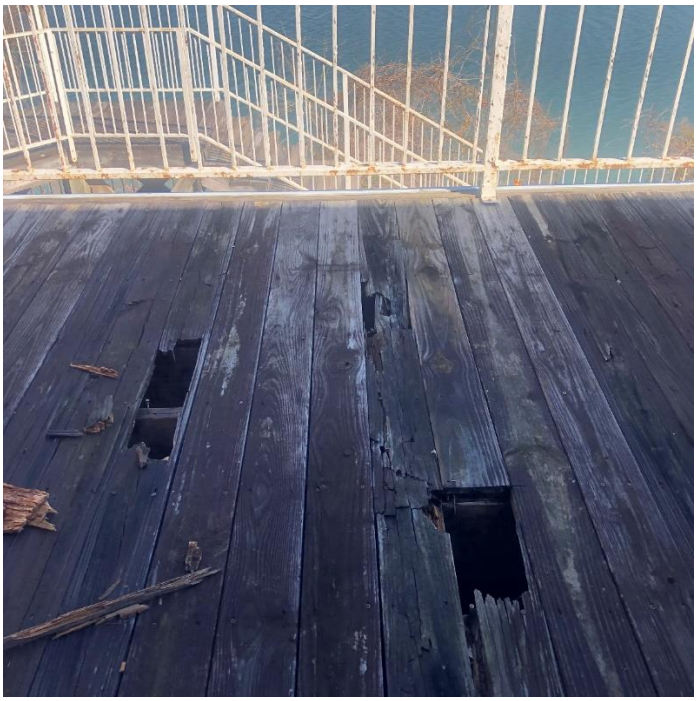
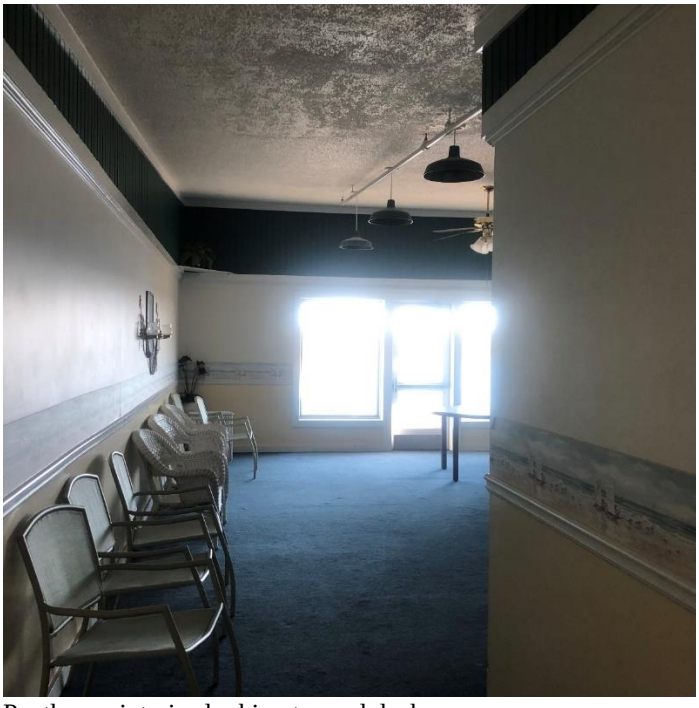
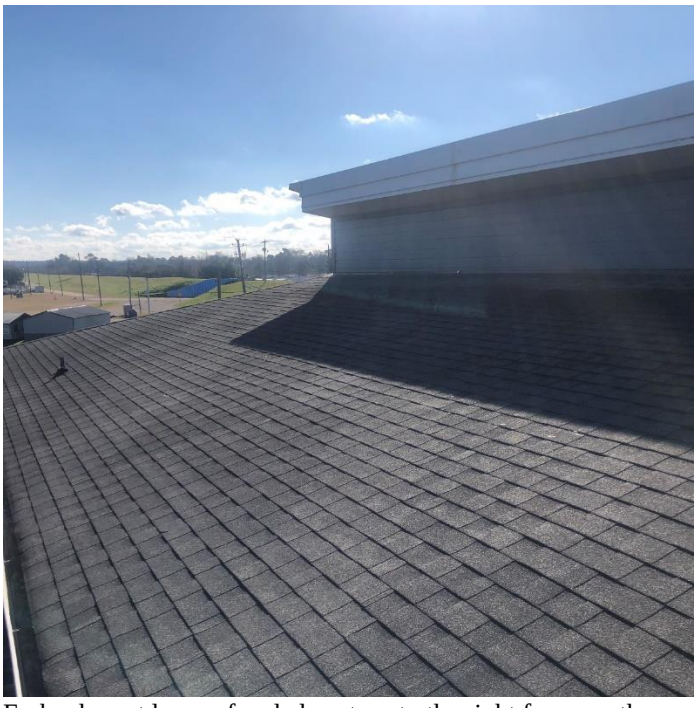


Common existing foot-sized holes in deck.

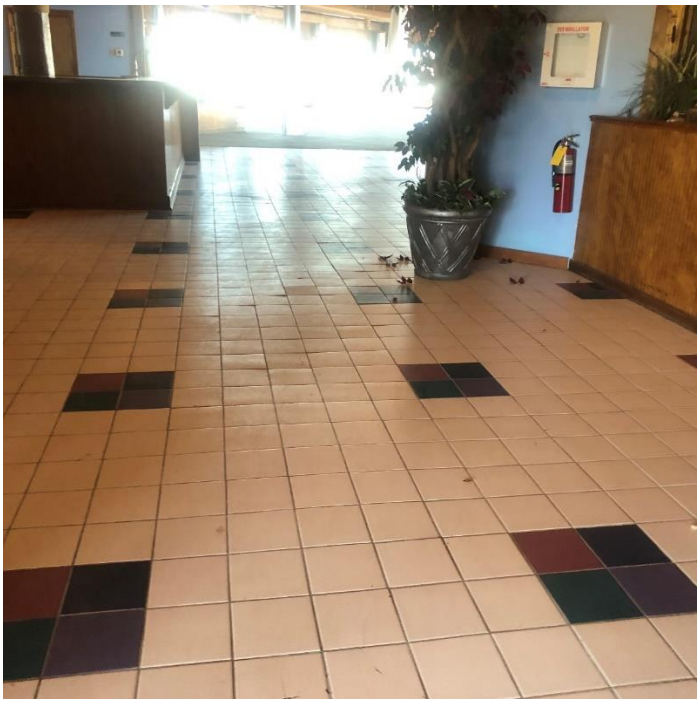


Penthouse interior looking toward deck.

Condition of penthouse deck with roof of River leg to the left.



Embankment leg roof and clerestory to the right from penthouse deck.



Entry tile floor with minimal cracks.

Embankment leg bar area showing typical pole and framing construction.

Structural splice at corner pole.

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