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July 30, 2024

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 Facilities Management Division
 Facilities and Fleet Management Department
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Reference: Rotunda Building at Collins Park
 Proposed Structural Repairs for Recertification
 Exterior Art Panels
 Miami Beach, Florida

Dear Olga:

As you know, as part of our engineering services for structural repairs in preparation for structural Recertification of the Rotunda Building, we have conducted observations of the exterior precast concrete art panels that clad the building.

Also, as you know, there is an on-going project through the CIP office to renovate the interior of the building and add an exterior entry and semi-attached restrooms (W/O&N is not currently involved in that project). While conducting the work of that project, it was discovered that there is moisture intrusion into the building's interior. We understand that some water testing was conducted and that it confirmed moisture intrusion in the area of the existing entry and in other locations. W/O&N was not involved in the testing and has not been provided a report relative to that testing.

Our recent observations of the panels revealed the following:

- Except for two full-height windows and the existing entry, the exterior of the building is clad with precast concrete art panels. There are three horizontal rows of panels. The tops and bottoms of the panels are supported (gravity) and anchored (wind) by steel angle/plate brackets anchored to concrete members in the building and with anchor rods/threaded inserts to the panels.

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- There is considerable corrosion at most of the brackets and anchor rods/inserts along the bottoms of the panels (above the reflecting pool). There is a lesser, but still significant, degree of corrosion of the brackets at the tops (at roof level) of the panels. The brackets at the intermediate levels are not sufficiently accessible to accurately assess their conditions.
- The bottoms of the bottom row of panels (above the reflecting pool) are spalled for much of the perimeter of the building due to corrosion of the anchor rods/inserts and corrosion of the panel reinforcement. There are a few other locations of spalled concrete and physical damage. There is also some concrete spalling at the tops of the panels (at roof level).
- There is an approximate 2-inch gap between the exterior face of the building and the backs of the panels. It appears that the roofing in the area above the existing entry may have previously extended over the gap. The current roofing does not span the gap. In other areas, there is no firm evidence that the roofing ever extended over the gap. Some of the joints between panels were previously caulked (although it is now, in poor condition). Most joints, however, are not caulked. Therefore, rainwater is persistently in contact with the exterior face of the building wall (behind the panels), the backs of the panels, and the support/anchor brackets.
- It appears that there may be an original damp-proofing material on the exterior face of the building wall (CMU and concrete). Currently, this can only be observed by looking into the 2-inch gap. Therefore, observation is very restricted.

Major issues and concerns:

- Water intrusion into a newly renovated and sensitive space.
- Acceleration of structural deterioration due to water intrusion.
- Corrosion of support brackets, anchor rods and inserts at the top and bottom of the panel installation.
- Uncertainty of the conditions of the two intermediate rows of brackets.
- Concrete spalling at the bottoms of the panels and to a lesser degree spalling at the tops of the panels. Uncertainty of the conditions of the panels at the two intermediate rows of brackets.
- Preservation of the art for some period into the future.

Action Alternatives Relative to the Art Panels

1. Panels Remain in Place
 - a. Shore and brace existing panels for work.
 - b. Sequentially remove all brackets, anchors, and inserts at the top and bottom of the panel installation. Replace with stainless steel brackets and anchors.
 - c. Anchor the panels at the two intermediate joints with large-diameter (likely 1" +/- diameter) stainless steel rods. This will require drilling through the faces of the panels, inserting sleeves, and inserting epoxy adhesive, followed by insertion of rods and patching of the faces of the panels. The existing intermediate support/anchor brackets



will remain in place (with the likely prospect of future corrosion and damage to the panels).

- d. Repair concrete spalls where accessible at the tops and bottoms of the panels and at other visible locations.
 - e. Patch, repair, and restore the faces of the art panels (by art/architectural conservator).
 - f. We recommend the City consult with a waterproofing consultant. We assume, however, that at the least the City would want to extend the roofing over the gap along the perimeter of the roof. The City may also want to consider caulking the joints between the panels (could be set back from the faces of the panels to minimize visibility).
2. Remove and Replace Panels
- a. Remove all existing panels (progressing from top to bottom). Lay panels out (considerable space required) on the ground (with appropriate support as may be required). The City may want to hire an art handler/rigger for removing and replacing the panels.
 - b. Remove all existing brackets, anchors, and inserts. Repair spalled concrete. As may be accessible while on the ground, patch and restore art surface as required. These functions will be more easily accomplished on the ground as opposed to on the building.
 - c. Prepare new stainless-steel brackets, anchors, and inserts.
 - d. In consult with a waterproofing consultant, apply a waterproofing system to the exposed exterior face of the building. Consider extending the roofing over the gap at the roof level and consider caulking the panel joints. To possibly provide some protection to the panels themselves, it may be desirable to apply a clear, breathable sealer to the backs and/or fronts of the panels.
 - e. Re-install panels with new stainless steel brackets throughout.

Alternative 2 will obviously provide the more reliable and longer-lasting results. There is a risk, however, of damage to the panels during the handling. It should be expected that alternative 2 will have a higher initial construction cost.

Please let us know if you'd like to discuss these issues further. Please let us know how the City would like to proceed.

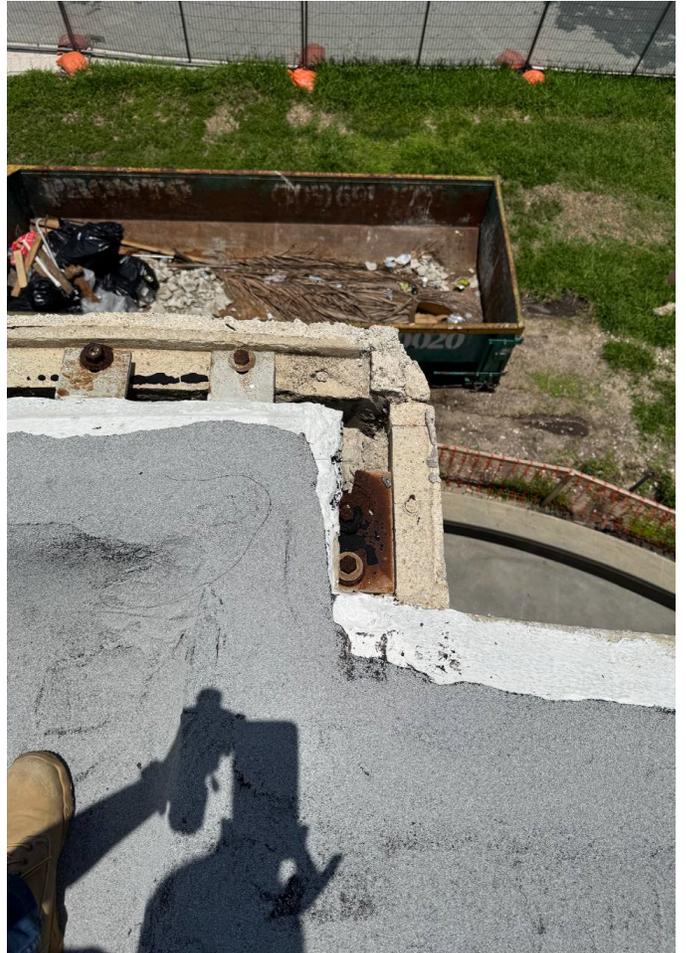
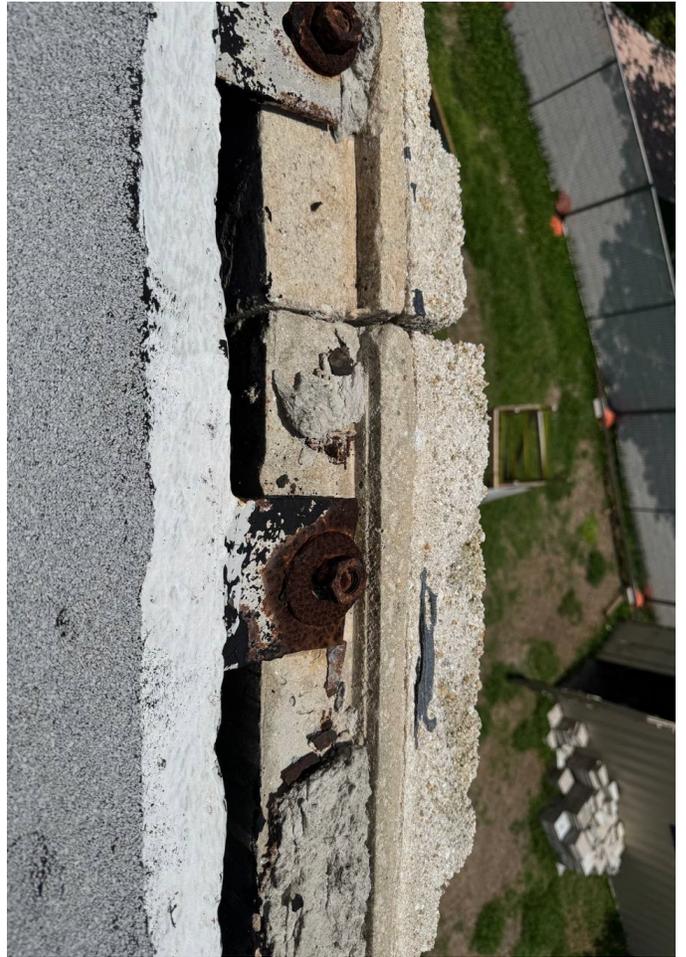
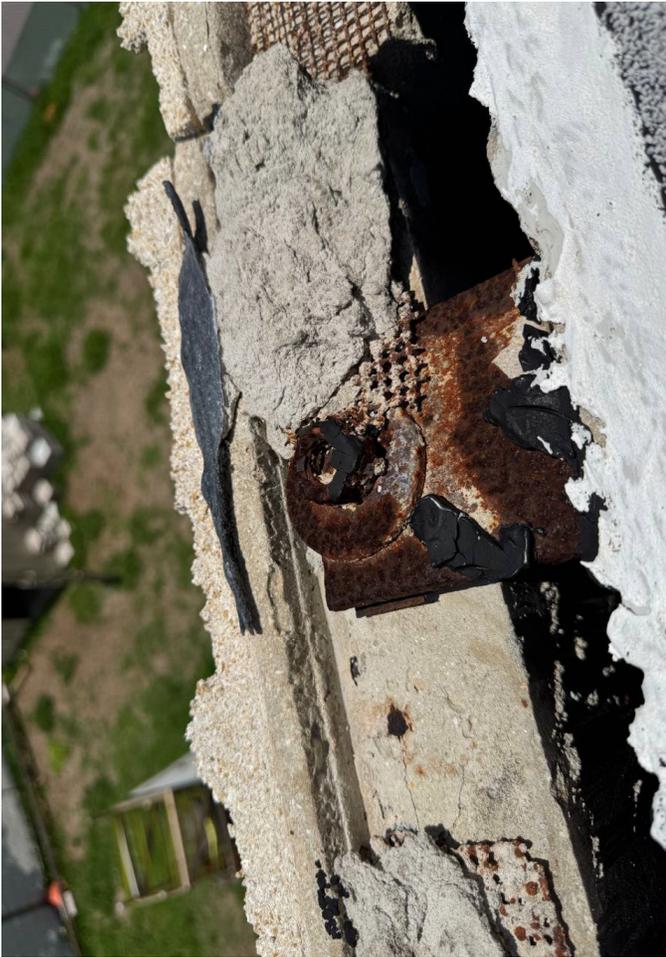
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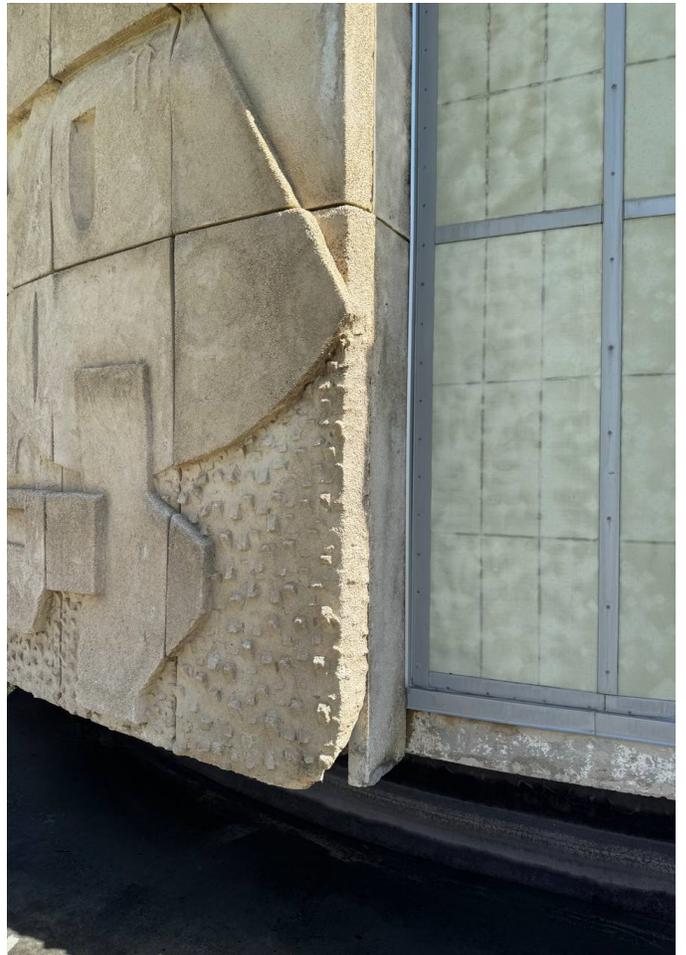
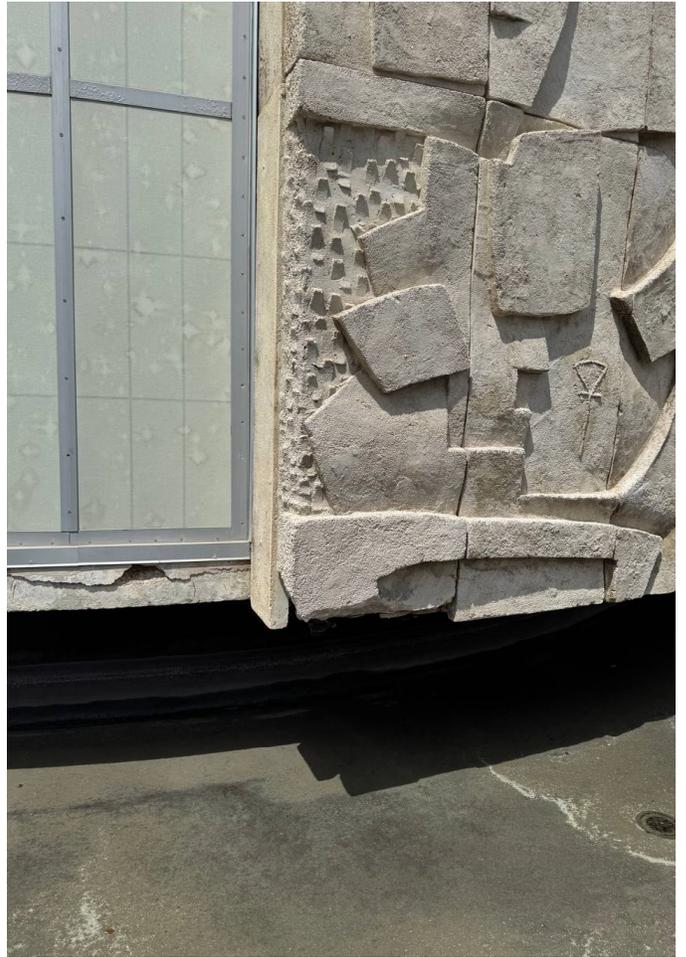
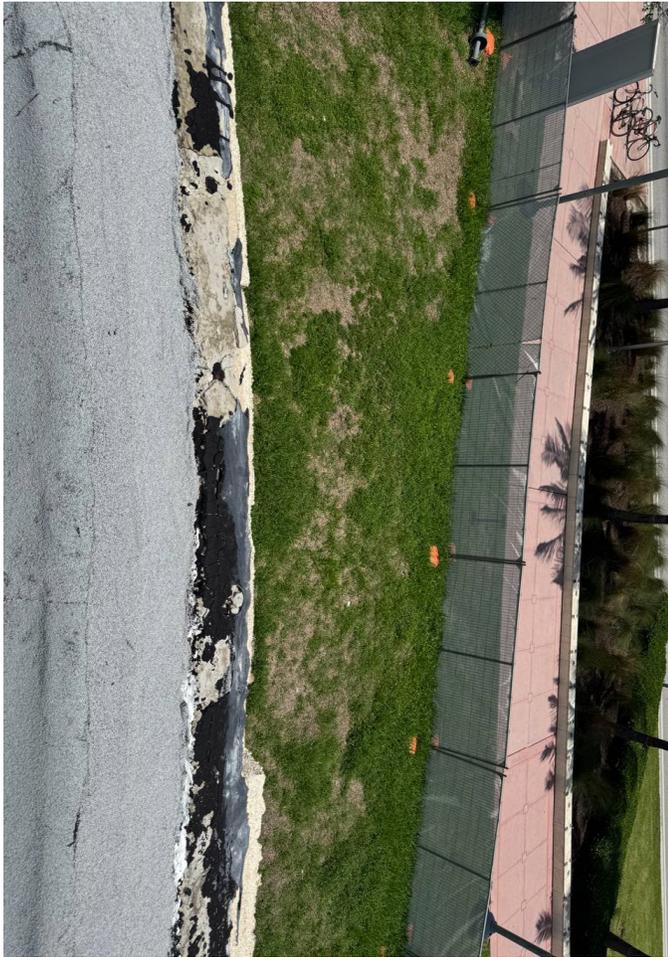
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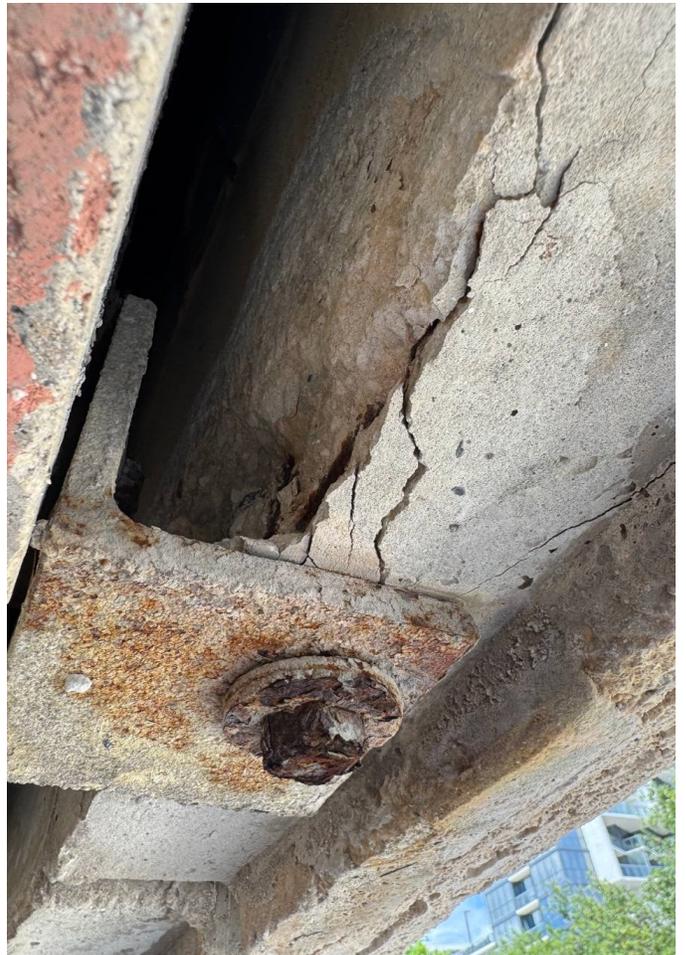
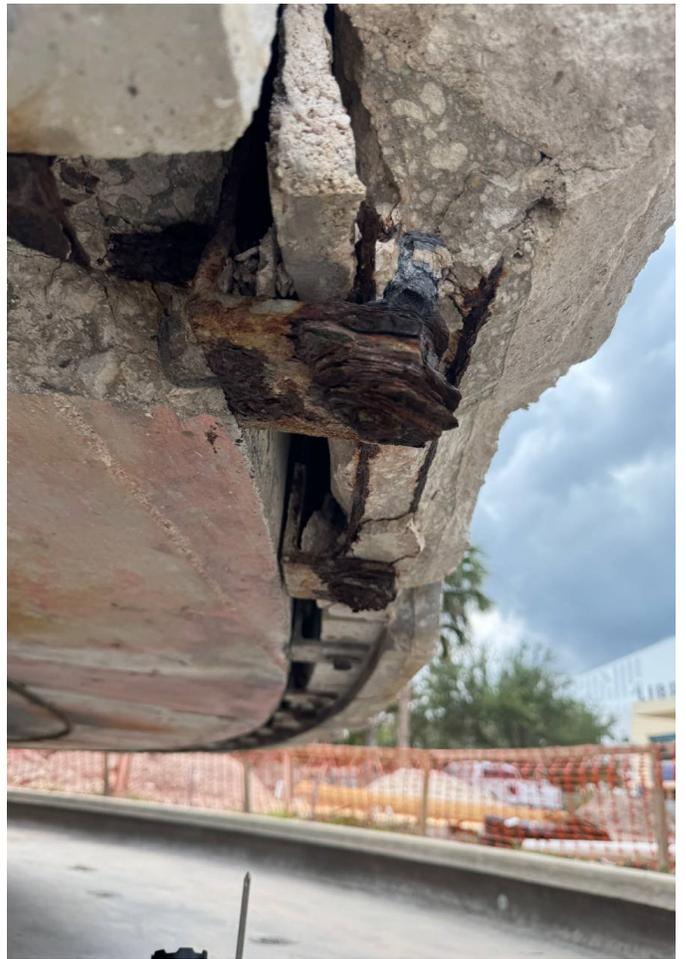
Douglas S. Wood

Douglas S. Wood, P.E., FRSE

Principal







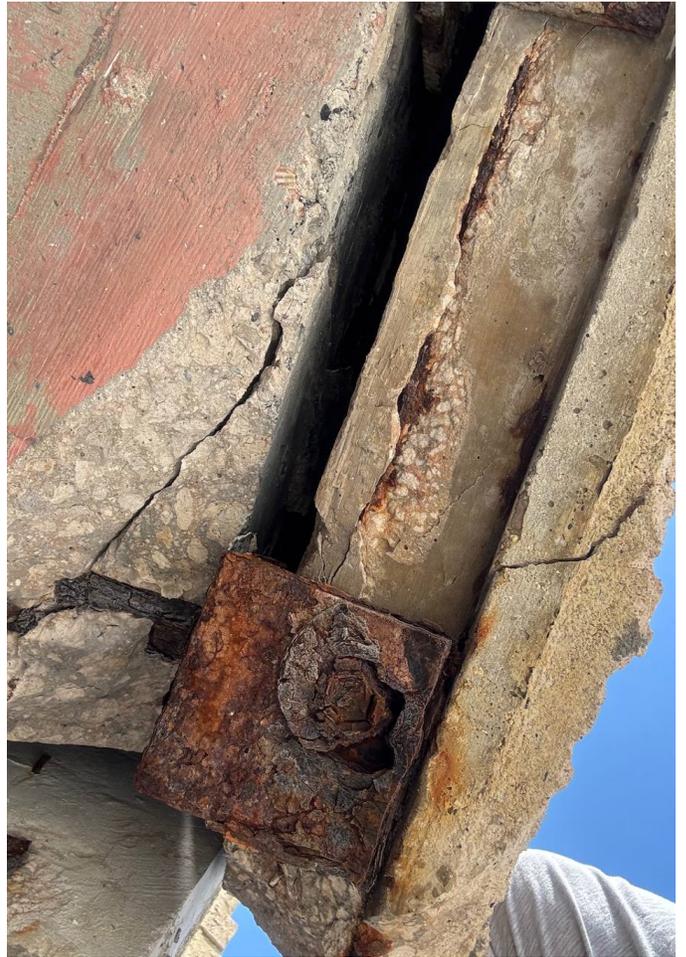


EXHIBIT A

