



Memorandum

Memorandum No: 24-091

Date: June 14, 2024

To: Honorable Mayor, Vice Mayor, and Commissioners

From: Susan Grant, Acting City Manager 

Subject: New Police Headquarters – Roof Deck Cracking/Deflection

This memo is being sent to update the City Commission on a construction issue that became apparent during the installation of glazing on the new Police Department Headquarters (PDHQ).

On March 25, 2024, as part of a regularly scheduled meeting, AECOM staff along with engineering firm Thornton Tomasetti (the Engineer of Record) informed the City, verbally, of a structural crack that was forming along the roof slab on the northwest corner of the PDHQ Building as a result of continuous deflection and bending moment. Thornton Tomasetti stated that this was due to a structural design error in the calculations for this area. The roof cantilever was causing stress and deflection and after the precast panels were installed, a crack started to occur. Basically speaking, the support structures were incorrectly designed in relation to the weight of the cantilevered roof area above the third floor of the building.

This crack referenced is obvious to the naked eye and continuous along the entire length of the beam (both sides) as evidenced by documentation on file with the Building Services Division. A drawing showing a detail of a potential correction for this condition was also presented by Thornton Tomasetti to City staff during this meeting. These drawings proposed repair work involving additional rebar and concrete for the northward expansion of the third-floor columns. Along with this, the ground floor footings were redesigned to incorporate an additional rebar cage to account for the additional loads created by the expansion of the third-floor columns.

This issue was of great concern to City staff present on the call who were assured that this was minor in nature and posed no harm to the building and/or future construction work in this area.

Immediately following the meeting, City staff met internally to discuss this issue with the Development Services Department's (DSD) Building Services Division on how best to address this issue. The initial response was communicated to the development team of Moss & Associates, AECOM, and Thornton Tomasetti to implement the following initial remedial steps to begin to address this issue:

1. Immediate written notification to the Contractor and City Building Division (structural), of any shoring and/or bracing that is being installed to prevent any further damage and maintain life safety.
2. Submission of a revised building permit set to be filed with the Building Services Division of DSD, prior to any structural repair work being proposed.
3. Immediate inspection by the Building Services structural reviewers and inspectors until a remedy is agreed upon.
4. No continuation of any work in the general area that might add to the already stressed load causing additional deterioration of the structural integrity of this portion of the roof slab.
5. No further repair work without obtaining the proper Building Services reviews and approvals.
6. A written letter by the structural engineer stating a description of this deficiency in detail and a thorough re-examination of the balance of the building's structural calculations and written findings and confirmation that no other beams and/or components are found to have similar deficiencies.
7. All Threshold Inspection Reports and Material Testing Reports submitted immediately to the Building Services Division as required by the Florida Building Code.

Due to the urgent, emergency nature of the work, AECOM, along with Thornton Tomasetti developed the initial corrective measure which Moss & Associates implemented. A permit revision was requested by the Building Services Division and approved on March 27, 2024.

The Building Services Division continued monitoring the deflection reports of the referenced beam submitted by Thornton Tomasetti and informed senior level staff that the beam was in fact continuing to deflect at 1/100th of a foot over a five-day period. This is after the proposed repair work had been completed and after the complete concrete cure time frame period of 28 days.

As a result of a city inspection, the City placed a partial stop work order on the project for this area. This was done to allow the City time to engage a third-party structural engineer to review this condition and make recommendations on whether a more suitable repair solution should be implemented. It is important to note that work is permitted to proceed in other areas of the construction site as there has been no indication this issue exists elsewhere on the site.

On May 13, 2024, the City engaged Lakdas/Yohalem Engineering, Inc as a third-party structural engineering firm to validate the repair and offer additional recommendations if needed. In the report from Lakdas/Yohalem Engineering, Inc dated May 31, 2024, recommendations were made to include additional structural repairs as the repairs implemented by Thornton Tomasetti were deemed inadequate to fully address the deflection of the beam.

Currently, the City's development team is fully engaged with Moss & Associates, AECOM, Thornton Tomasetti, and Lakdas/Yohalem Engineering on moving forward with implementation of the additional structural repairs. These include additional temporary structural support in specified areas, along with engineered structural solutions to supplement those already implemented by Moss & Associates as specified by Thornton Tomasetti.

At this time all parties are collaborating on the final work that needs to occur to have this addressed. AECOM and Moss & Associates have been very cooperative with the third-party engineer and are working with City staff and the engineer of record (Thornton Tomasetti) to move forward.

The deflection of the roof slab in this area does not pose an immediate threat to the structural integrity of the building, however, from what has been explained by the City's Building Services team and various engineers working on the project, this deflection does have the potential to cause issues after the building is completed and occupied. These may include the displacement of glazing allowing for water intrusion and additional structural repairs needed as time passes. This may impact warranty claims and other forms of remedies if not suitably addressed at this time.

Based on the continued discussions with the third-party engineering firm and the development team of Moss & Associates and AECOM we are optimistic that a suitable solution can be implemented to address this issue. As more information becomes available, we will make sure to update the City Commission.

You may contact Assistant City Manager Anthony Fajardo at 954-828-5758 or via email at afajardo@fortlauderdale.gov should you have any questions or concerns.

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