G. BATISTA
ENGINEERING & CONSTRUCTION

August 2nd, 2021

Marbelle Club of Marco Island Condominium Association, Inc.
c/o Kimberly Ouimet – Property Manager
840 S Collier Boulevard
Marco Island, FL 34145
Phone: 239-394-7668
Email: manager@themarbelleclub.net

RE: Structural Visual Inspection
Inspection performed at 840 S Collier Blvd., Marco Island, FL 34145

Dear Board of Directors and/or Mrs. Ouimet:

G. Batista & Engineering & Construction (Jose L. Encarnacion, P.E.) performed an inspection of the abovementioned property on Friday, July 30th, 2021, in response to our agreement to perform an engineering assessment of particular issues as follows:

- Structural visual inspection of the existing building at the above address.

This property is a structure with the following traits:

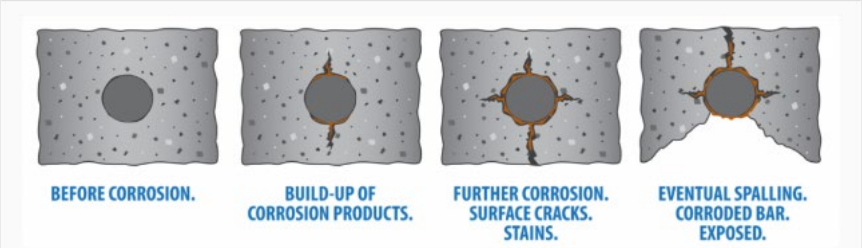
- Residential use (Multi-Family)
- Eighteen-story
- CMU-walls & concrete column framing system
- Roof is comprised of a cast-in-place concrete slab (flat configuration)
- Intermediate slabs are comprised of cast-in place concrete
- Ground floor is comprised of a typical concrete slab-on-ground.
- Deep foundations comprised of piles and pile caps
- Square footage approximately – 20,000 sf
- Year built approximately – 1982

OBSERVATIONS

This is an eighteen-story CBS (concrete block structure) building with a detached parking garage. Each floor has six units, except for the first floor which has just two units. The building has two passenger elevators located at the East side of the interior corridor and one service elevator located at the West side of the interior corridor. The building has a staircase on the middle of the building. According to the information submitted by Mr. Sean Austin (Secretary of the Board), this building is a flat slab floor system. A flat slab system is a two-way reinforced concrete slab that usually does not have beams and girders (as in this case), and the loads are transferred directly to the supporting concrete columns. A two-way reinforced concrete slab is a slab which is generally supported on all sides.

During our inspection we performed a walk-through of each floor with the maintenance personnel of the building. Access was granted to all mechanical rooms, electric rooms, chute rooms, stairs and some storage closets, permitting us to observe the conditions of exposed structural elements. In addition, we went to several units under construction and all of them have structural elements exposed, giving us the opportunity to evaluate their structural condition. An active leak was noted in the corridor of the 18th-floor at the West side of the staircase shaft. We were informed that the Condominium is in the process of replacing the existing roofing system, which will take care of the active leak observed in the corridor of the 18th-floor. No signs of distress, excessive deflection, concerning cracks, or any other deficiencies were noted during our inspection, except for three "spalling" spots. The first of the two spots (column and beam) are located in the staircase between the 18th-floor and roof level. The last one is located on the floor of the boiler room (on the roof).

What is "spalling"? Chloride Ions (of which are in abundance in the air at coastal properties) and water penetrate into concrete causing the reinforcing steel to rust. As the rust layers build, tensile forces generated by the expansion of the oxide cause the concrete to crack and delaminate. When cracking progresses, accelerated corrosion takes place until spalling or breaking away of the concrete occurs. This cycle leads to the eventual collapse of the structure if it goes unattended.



An insight into how rust breaks apart concrete structures

On the exterior of the building no sign of distress, excessive deflection, concerning cracks, or any othe deficiency was seen during this inspection, except for a damaged picket on unit #1101's balcony railing.

The parking structure is comprised of precast concrete joist system with cast in place slab, beams and columns. The maintenance personnel informed us of several water leak from the garage ceiling at the ground level. The upper level of this garage is where the tennis courts of the condominium are located. We noted that the water leak is right at the expansion joint of the precast system. We were told that a resurfacing project for the tennis court is pending, and the engineer in charge of preparing the plans for this project took into consideration the repair of the expansion joints.

CONCLUSION

To the best of my knowledge, belief and professional judgment and based on my visual inspection of the above-mentioned property, the whole structure is structurally sound. However, the "spalling" spots observed need to be addressed as soon as possible to avoid further damages to the structural integrity. Since the re-roofing of the building and re-surfacing of the tennis courts are being scheduled, those water leak issues will be taken care of. If there is any damage under the existing roofing system, it will be detected once the project begins when the roof is opened up.

RECOMMENDATION

We recommend that the following steps be taken:

1. Repair the concrete "spalling". The work must be performed by an experienced, licensed, and insured contractor. Keep in mind, this work involves a structural component of the house, and a permit will be required. The city will request a set of plans and specification to do this work.

We recommend the following:

- Properly shore (or support) the surrounding areas with "Jacks" while the repairs are performed. Proper shoring of the existing the affected areas is critical to avoid over-stressing the surrounding structural element and causing a local collapse. This must be repaired and supervised by a licensed contractor with vast experience in concrete restoration.
- Remove all damaged or unsound concrete. Preparation of concrete surface shall be in accordance with ACI 546 R-96 Chapter 2 entitled "Concrete Removal, Preparation and Repair Techniques".
- Saw cut the perimeter of the repair area; a minimum of 0.5-inch deep all around forming a shoulder perpendicular to the substrate.
- Chip out the concrete to expose the entire circumference of the rebar. Removal shall continue along the length of the reinforcing steel until at least 6 inches of un-corroded rebar is observed.
- Sandblast the concrete and exposed rebar. All scale shall be removed from rebar, restoring bars to their original "white metal" condition. Surface and existing rebar shall be prepared as per "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion" ICRI Guideline No.03730. Insert new bars of equal diameter next to those that have deteriorated by more than 10%. All new steel shall be ASTM A- 615 Grade 60. Lap splices shall be in accordance with ACI 318-14.
- Coat all new and existing rebar with an anti-corrosive coating.
- Repair mortar shall be approved by the ACI & ICRI standards.
- Bonding agent shall meet ACI & ICRI standards.
- Cure and finish as required by the mortar manufacturer.

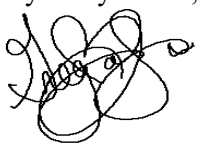
2. Repair damaged picket on the unit #1101's balcony railing.

Items of Discovery

The items detailed in this report are based on our ability to make a visual assessment. There may be additional damage to structural components that could not be observed at the time of the inspection because they are not readily apparent and could, after several years, become apparent. GB&A cannot be responsible for the integrity of any item not listed or observed and identified in this report. The sole purpose of this report is to make a visual assessment of the general condition of the structure and to point out items found to be of concern at the time the inspection was made. GB&A cannot be responsible for any structural damage or failure that may occur due to conditions occurring after the date of the site inspection, nor for structural failure of items that were addressed and not repaired. In addition, GB&A may in certain circumstances be required to open exploratory holes in walls or ceilings to determine the nature of a problem. GB&A shall not be responsible for the costs of repairing any components we have affected for the purpose of our investigation.

Please do not hesitate to contact me if you should have any questions.

Very Truly Yours,



Gregorio Batista
President

This item has been digitally signed and sealed by Gregorio Batista, PE using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Gregorio Batista
Date: 2024.04.02 13:39:42 -04'00'

G. Batista Engineering & Construction
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Photos:

Column “spalling” at the staircase between the 18th-floor and roof level.

Column “spalling” at the staircase landing of the 18th-floor. (Stair #1)

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Floor “spalling” at the boiler room. (Roof)

Damage picket at the unit #1101 balcony railing.

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