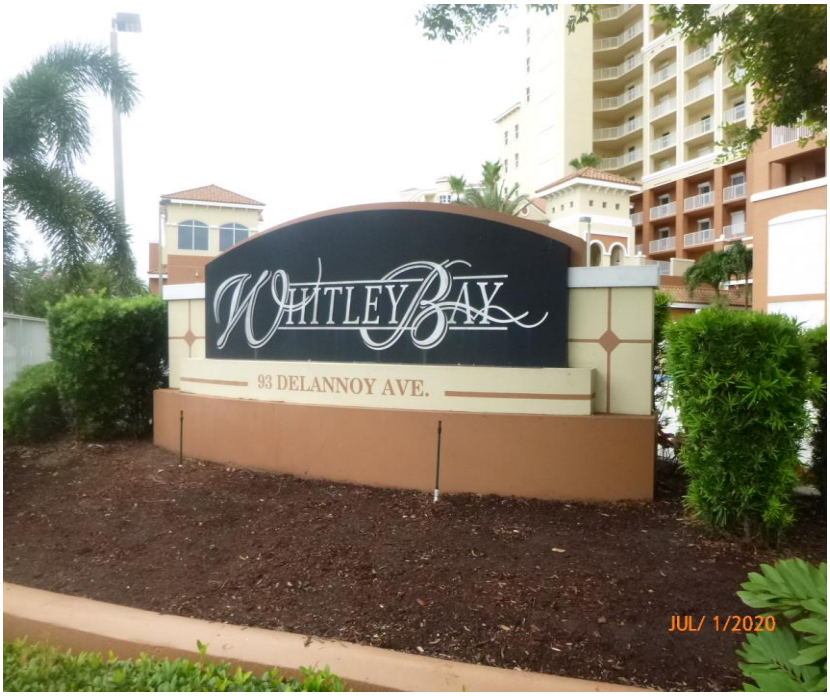
Whitley Bay Condominium Assoc.
93 Delannoy Ave,
Cocoa, FL 32922

Condition Survey Report Of: Balconies, Walkways and Garages



Project Consultant:

Karins Engineering Group, LLC

Certificate of Authorization No. 30466

1172 Pelican Bay Drive • Daytona Beach, Florida 32119-1381
Telephone: 386-944-9244

September 4, 2020
Rev. 1

HECTOR VELAZQUEZ-ABREU
LICENSE
No. 80204
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Hector Velazquez-Abreu, PE on the date indicated above using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Hector Velazquez

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DN: CN=Hector Velazquez, OU=A01410D0000016DBC1B917800000AA5, O=Unaffiliated, C=US
Contact Info: Karins Engineer
Date: 2020.09.09 13:18:01-04'00'

Hector Velazquez-Abreu
Florida PE #80204

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September 4, 2020

Whitley Bay Condominium Inc.
c/o Stan Bowers
President - BOD
93 Delannoy Ave
Cocoa, FL 32922

RE: Whitley Bay Condominium – Concrete Restoration and Painting
Cocoa, Florida
KEG File No.20RD-0207

REPORT OF LIMITED CONDITION SURVEY AND RECOMMENDATIONS

1 INTRODUCTION:

Karin's Engineering Group, LLC (herein after called "KEG"), in conformance with our proposal dated on June 8, 2020 and approved on June 16, 2020, was present at the above captioned project location to perform a professional evaluation of the existing condition of the selected balconies, walkways, and garage. KEG's limited condition survey is limited to visual and sounding observations, and the survey is further limited to physical and visual access provided on the day of the visits. The purpose of the evaluation is to determine the existing condition of the balconies, walkways, and the garages and to provide a report of the findings.

KEG engineers utilized the following guidelines in the assessment of the building components:

- ASCE Standard SEI/ASCE 30-00; Guideline for Condition Assessment of the Building Envelope
- ICRI Strengthening and Stabilization of Concrete and Masonry Structures
- Concrete Repair Manual - Published jointly by ACI, ICRI and BRE
- ACI 201R; Guide for Making a Condition Survey of Concrete in Service

2 DESCRIPTION OF BUILDING AND COMPONENTS:

Whitley Bay Condominium consists of one thirteen (13)-story building. The building consists of sixty (64) units with a private balcony and a 2 story parking garage with adjacent single story parking garage. Most of the structure appears to be comprised of reinforced concrete and CMU block wall with a painted cementitious finish.

3 CONDITION SURVEY FINDINGS:

KEG was hired to prepare an evaluation of specific common area elements, including interior of the parking garages, and all mechanical rooms, stairwells, 14 selected balconies, a portion of the south east planter box, and to provide a report of the findings. The project was visited by KEG representatives from July 1st through July 16th of 2020. The survey was performed on fourteen (14) units including the penthouse, common walkways of all floors and the parking garages. Sounding and visual survey was performed at locations physically and visually accessible.

3.1 Balcony Inspection

The units observed during our balcony inspection included unit 301, 405, 504, 505, 506, 701, 802, 805, 901, 1006, 1102, 1105, 1201 and 1205. Balconies are covered with what appears to be a deck membrane with a cementitious finish coating (Hybrid System). Most of the units observed have roll down shutters at the edge of the balcony ceiling and supported by metal columns with fasteners penetrating the concrete deck.

From our survey of the selected balconies, we were able to observe delaminated stucco, stucco cracking and rust spots/exposed metal. Stucco delamination is a failure of the cementitious finish to properly adhere to the substrate. Cracked stucco is a failure on the cementitious finish that could be caused by expansion and contraction of the building, inappropriate mixing during installation, and in more serious cases, a reflection of stress or damage of the substrate. Rust spots are, in most cases, small dots of corroded metal embedded in the stucco. Exposed Metals are screws, fasteners, and any other type of metal that was left behind and attached to the wall or column. A concrete spall occurs

when the reinforcing steel begins the corrosion process. We were able to observe a minimum of 159 square feet of delaminated stucco, a minimum of 4 feet of stucco cracking, and a minimum of 5 rust spots as well as 6 exposed metals. We were also able to observe a minimum of 1 cubic foot of concrete spalling.

3.2 Common Walkways Inspection

The walkways appear to be coated with a deck membrane with a cementitious finish coating (Hybrid System). All the walkways were surveyed for this report. From our survey of the common walkways, we were able to observe delaminated stucco, cracking, rust spots/ exposed metal, peeling paint, and spalling. We were able to observe a minimum of 278 square feet of delaminated stucco, a minimum of 152 feet of cracking on the walkway floor and walls, a minimum of 1 rust spot as well as 4 exposed metals, and a minimum of 9 feet of peeling paint. We were also able to observe a minimum of 19 cubic feet of concrete spalling.

3.3 Parking Garages Inspection

From our survey of the garages, that includes the west wall, we were able to observe cracking, rust spots/ exposed metal, and spalling. We were able to observe a minimum of 590 feet of cracking, a minimum of 6 exposed metals, and were able to observe a minimum of 11 cubic feet of concrete spalling. Also, we observed two areas that were showing the post tension cables housing.

The west wall of the parking garage is part of the planter box next to the ramp. The west wall is showing water intrusion which indicates that the planter is holding water and the west wall is not properly waterproof or the waterproofing system has exceeded it useful life. The west wall is partially reinforced and allowing water to gain access to the interior of the wall could cause additional deterioration.

3.4 Parking Garage Ramp

From our observations of the parking garage ramp, we were able to notice cracking of the driving surface, spalling on the perimeter walls, and joint sealant failure at the lower sections of the walls where it meets the parking garage ramp. Some of the cracking pattern are consistent with expansion and contraction of the concrete slab. All cracks should be repaired to minimize the water intrusion to the structural elements.

3.5 Paint

From our inspection performed on the paint system on the walls, columns, and ceilings, we could identify some areas of peeling paint, blisters, deteriorated paint, and missing paint. Peeling paint or blistering of the paint is a failure of coating not properly adhering to the subsurface. Moisture, high alkalinity, surface contamination, and paint applied over multiple layers of paint are some of the common reasons for paint failure. KEG observed an estimate of 9 square feet of paint issues on the walkways.

3.6 Sealant and Expansion Joints

From our observations, we could identify some damaged or deteriorated sealant, which is a failure of the sealant to properly adhere to the floor, wall, or ceiling surfaces. This condition enables soil and dirt accumulation and will allow infiltration of water as well. All sealants should be replaced at every painting cycle.

3.7 Concrete Repairs

From our observations made to walls, columns, beams, and ceilings, we could identify the following deteriorations:

- **Cracked Stucco**

  Cracked stucco is a failure on the cementitious finish that could be caused by expansion and contraction of the building, inappropriate mixing during installation, and in more serious cases, a reflection of stress or damage of the substrate. From our observation, it is KEG's understanding that the cracked stucco is attributed to the expansion and contraction and not associated with a more serious condition. In total, KEG could identify 746 lineal feet of cracks at all areas surveyed.

- **Delaminated Stucco**

  Stucco delamination is a failure of the cementitious finish to properly adhere to the substrate. In more serious cases, this is one of the first signs of concrete damage. Based on our observation, KEG understands that the topping delamination is attributed to a failure of the cementitious finish to properly adhere to the substrate. In total, KEG could identify an estimate of 437 square feet of delaminated stucco.

- **Concrete Spall**

  A concrete spall occurs when the reinforcing steel begins the corrosion process. The reinforcing steel starts to expand, stressing the surrounding concrete until the concrete breaks. This is structural deterioration that should be addressed with the utmost importance as to minimize additional structural damage to the buildings. In total, KEG observed an estimate of 31 square feet of spalls on the walls, columns, beams, floors, and ceilings, including a minimum of 1 square foot of exposed rebar with spalled concrete at the garage. Exposed rebar represents a severe deterioration condition of the concrete. In this condition, the concrete has lost section which means the concrete no longer has the designed strength and exposed rebar has no protection from the environmental conditions that will cause it to deteriorate at a rapid rate.

- **Rust Spots /Exposed Metals/holes**

  Rust spots are, in most cases, small dots of corroded metal embedded in the stucco. Usually, it is caused by metals left behind during the construction process.

  Exposed Metals are screws, fasteners, and any other type of metal that was left behind and attached to the wall or column. These metals tend to corrode creating “bleeding” of the metal oxide to the wall and can create additional damage to the structure by allowing water to access the structural members. In total, KEG observed 22 rust spots and exposed metal on the wall, ceiling columns and beams.

A detailed and categorized presentation of our observation is provided in Table 9.1.

4 ADDITIONAL OBSERVATION

In addition to the observations made at the balconies, common walkways, and garages, KEG representatives were able to identify other issues. The concrete columns and CMU walls in the parking garages have numerous amounts of concrete pitting. This occurs all throughout both levels of the parking garage as well as the south west parking garage. We also observed that the stair wells contained multiple areas of cracking on the outside of the stair treads and at the rear of the landings.

In general, the building appears to be well maintained, the balconies and walkways were clean, and the amount of damages found are aligned with a building of this age and its location in a coastal environment.

5 RECOMMENDATIONS:

After evaluating all the documentation provided by the Association and after completing a field condition survey of the property as noted above, it is our opinion that the deficiencies as noted in this report should be properly addressed as to extend the life of the building/garage. Spalls and areas were water can reach the structural elements, should be corrected as to minimize the deterioration of the structural elements, and minimized future expensive repairs. Please see Table 9.1 for a complete categorized presentation of our survey observations.

5.1 Balcony Repairs and Common Walkways

Concrete repairs should be of the outmost importance to address on any restoration project. All repairs should comply with the ACI and ICRI standards for concrete restorations. The Association should consider addressing as much of the items describe in this report as part of a restoration project. See Forward Planning for other options.

5.2 Parking Garage

Besides the concrete repairs, the Parking Garage has two additional elements that should be addressed, the exposed post tension cable housing and the water intrusion at the west wall adjacent to the planter box. To address the post tension cables, a more detail analysis must be made to determine the location, tension and other components of the post tension cables to provide a proper solution. The post tension plans used during construction, if available, should be provided to KEG to properly evaluate the condition and determine solutions to remediate the exposed housing.

The water intrusion at the west wall adjacent to the planter box could have various methods of repair. The critical part to determine a proper solution is to determine the location of the water intrusion. Since this is a CMU wall, the water could be penetrating from areas higher than the bottom section, that is showing the water leaks. The most effective way to waterproof the wall is by removing all the dirt next to the wall and apply a waterproof system. However, this method is expensive, and most Associations avoid this method. A more economical solution could be the use of injection materials along the wall to create a seal.

5.3 Parking Garage Ramp

The damage at the parking deck ramp should be address as a concrete repair including crack repair procedures. The joints between the walls and remap should be replaced and as well as the expansion joints.

5.4 Paint

Paint is the first layer of protection of the building. It was informed that the building will go through its painting cycle in one or two years. Based on this information the areas that are bubbling, or detaching should be repair, to avoid water intrusion. Once on the painting cycle, a pressure wash and new paint should be applied to extend the life of the building.

5.5 Sealant and Expansion joint

All damaged and deteriorated sealants and expansion joints should be replaced. They could be done as part of a restoration project or can be done in sections as needed. The installer should properly remove the old sealant or expansion joint and replace it. No material should be added to damaged sealant.

5.6 Concrete Repairs

All concrete repairs should be address as a priority. Concrete damages are typically located on structural elements that provide support to the building, thus requiring proper repair and attention. Repairs should be performed by qualify personnel and with proper products manufactured for concrete repairs. All areas with concrete repairs should be evaluated and inspected by a qualify engineer that has experience on concrete restoration.

6 FORWARD PLANNING

KEG recommends, that the most efficient approach would be to include as much of the priority list as can be funded. KEG recommends that all building component repairs, painting, (or a total building recoating if requested), be addressed as a single restoration project. Our experience with other similar projects has proven this to be the most cost effective, timely and manageable approach. The ability to have a single General Contractor perform one comprehensive repair project will reduce mobilization and permitting fees, potential costs of redoing work, and inconvenience to the guests.

There are situations that Associations might not have sufficient funds to address a full restoration project, requiring to address the repairs on a priority basis. Karins Engineering Group recommends addressing items that are structural components and that allow water intrusion to the building as a priority. For Whitley Bay, it includes all spalling items, cracks on floors and walls, including the planter at the parking garage, and delaminated stucco on structural members. By addressing these items, the Association would be limiting water intrusion or moisture into the building extending its useful life. For a second phase the Association should consider all other items not included on the first phase and other items that might become apparent when addressing the second phase.

The Project Manual will be organized per phase and it will contain necessary bid documents, repair specifications and drawings to allow the solicitation of competitive bids from qualified General Contractors. It will also provide adequate levels of detail for repair to all areas where deficiencies were observed and recorded and is a necessary component to obtain the lowest competitive bids. The bid schedule included in the Project Manual will provide for line item costs of each component of repair per phase, to allow KEG and the Association to review all repair costs and, if necessary, make adjustments to the Scope of Work to meet budgetary allowances prior to the association entering into a repair contract with a General Contractor. The Project Manual will include the repair recommendations made in this report and as authorized by the Association.

7 CLOSING:

These observations, and resulting opinions, are based upon construction standards and methods that are considered normal and customary as of the time of this report. The observations that were made were visual in nature and therefore were non-destructive unless otherwise described. KEG did not provide direction for removal of floor coverings, walls, ceilings or other interior or exterior cladding components so that hidden, covered, or concealed conditions could be observed as a portion of the initial survey.

KEG has performed these services and prepared this report in accordance with generally accepted construction and engineering consulting practices, and makes no warranties, either expressed or implied as to the character and nature of such services. This report is not to be construed as a guarantee or warranty of future building conditions. KEG used its best engineering judgment and ability to observe and report the items presented herein, but KEG cannot guarantee that all past, present, or potential deficiencies or defective conditions have been found during this initial assessment.

This report does not include a representation of active or past termite infestation and/or treatments. Additionally, this report does not indicate nor include any investigation of environmental conditions at the subject property structures and grounds. This report does not make any representation as to the property being free of hazardous or toxic materials.

This report has been prepared for Whitley Bay Condominium Association, in conformance with KEG's proposal dated June 8, 2020. Personal responsibilities of KEG, or any individual or company working on behalf of KEG, do not extend to a third party, other than as defined above, under any circumstances. An original copy of this report remains on file at the office of KEG, and no changes may be made to this report without the prior written permission of KEG. KEG reserves the right to modify this report upon discovery of additional information and charge an additional copying fee for release of this report to an additional party if requested.

If there are any questions or more information is required, please do not hesitate to contact our Professional Engineer, Hector Velazquez, at hv@karins.com or by phone at (386) 871-0783.

Respectfully Submitted,

Karins Engineers,

Certificate of Authorization No. 30466

Hector Velazquez

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Hector Velazquez-Abreu, P.E.
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This item has been electronically signed and sealed by Hector Velazquez-Abreu, PE on the date indicated above using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Attachments: *Photograph Log*
Table of Findings
Opinion of Cost

8 PHOTOGRAPH LOG

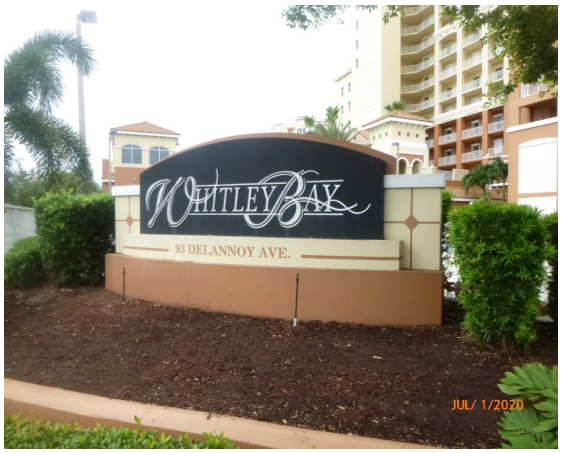

Photo #1: Front entrance

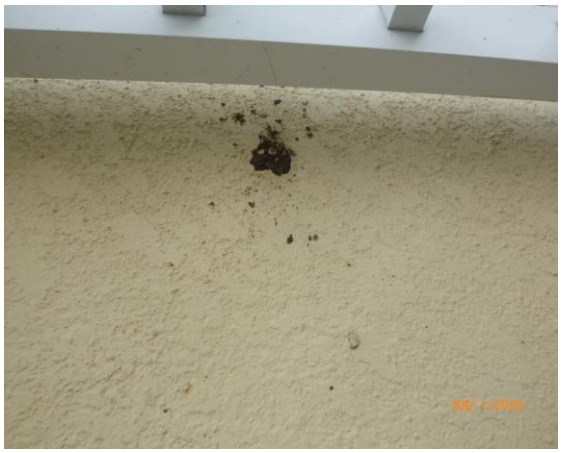

Photo #2: Rust spot at unit 701

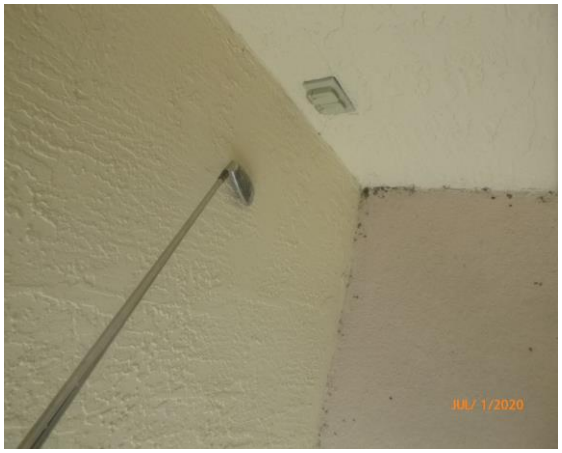

Photo #3: DLS on the wall at unit 1105

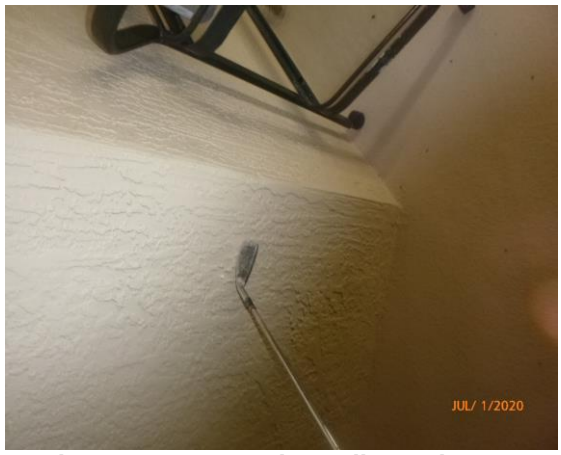

Photo #4: DLS on the wall at unit 1006

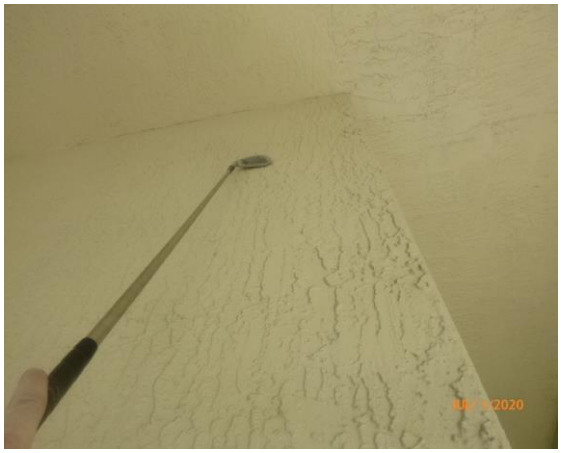

Photo #5: DLS on th wall at unit 1201

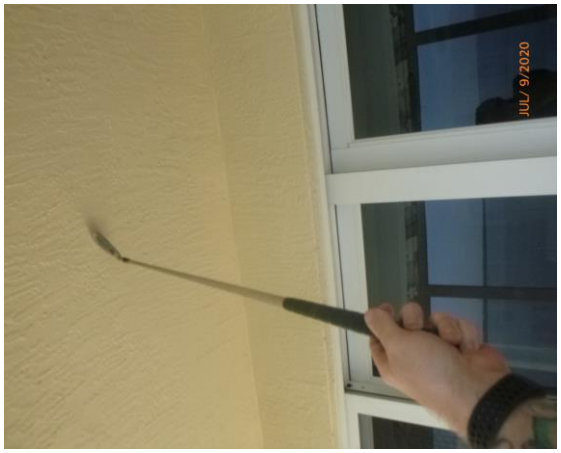

Photo #6: DLS on ceiling at unit 805

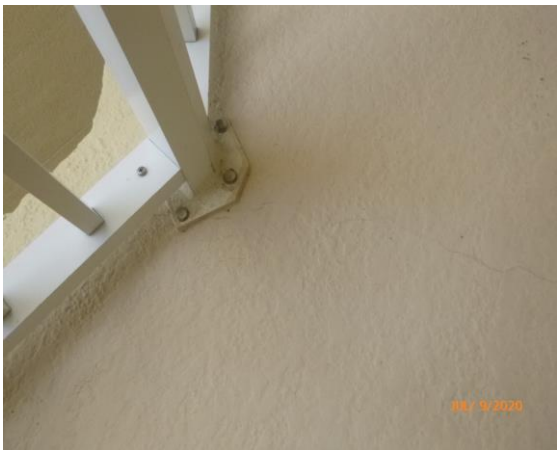

Photo #7: Crack on floor on PH walkway

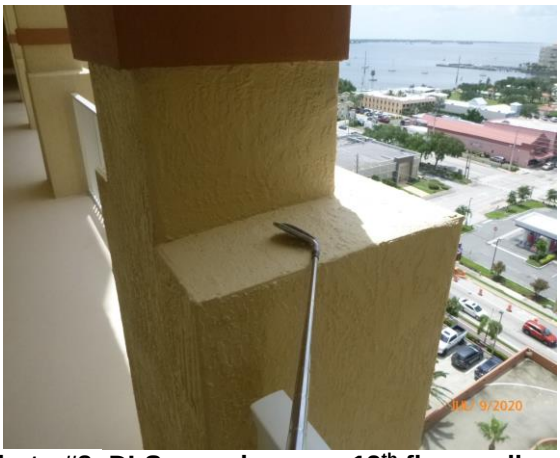

Photo #8: DLS on column on 12th floor walkway

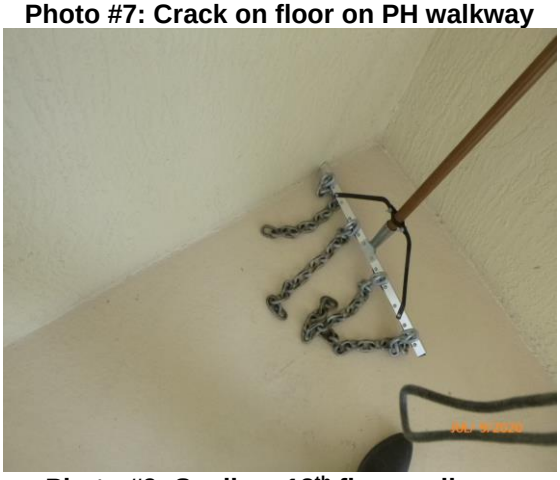

Photo #9: Spall on 12th floor walkway

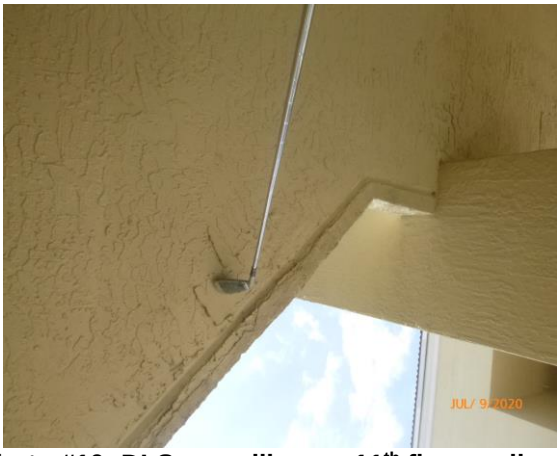

Photo #10: DLS on ceiling on 11th floor walkway

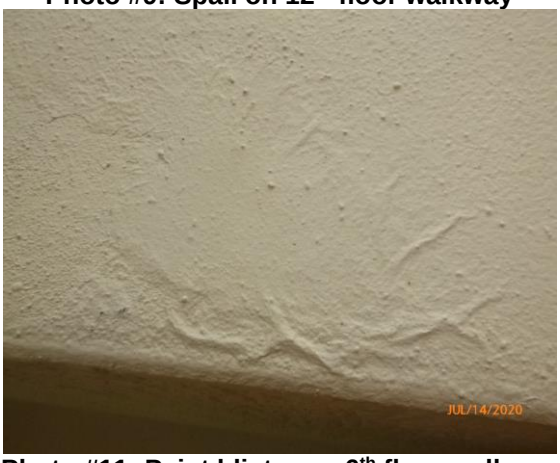

Photo #11: Paint blister on 6th floor walkway

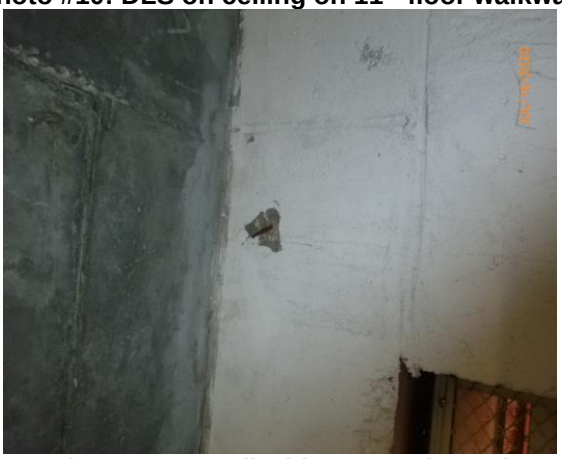

Photo #12: Spall with exposed metal

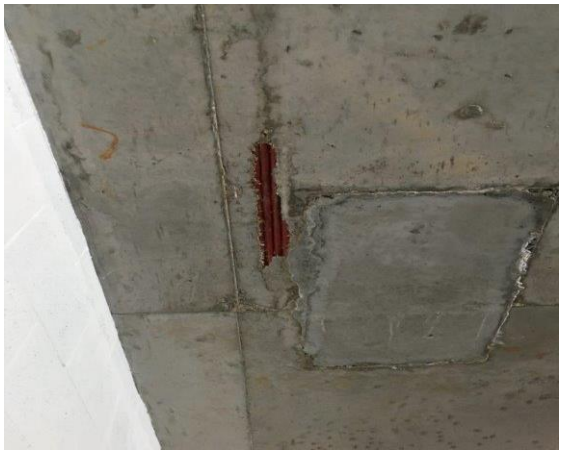

Photo #13: Exposed Post Tension Cable Housing

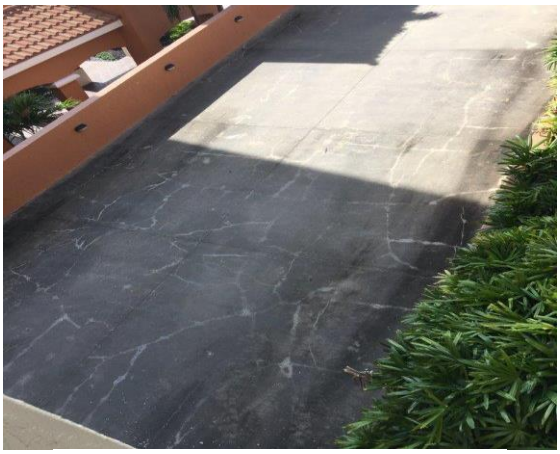

Photo #14: Ramp at Parking Garage

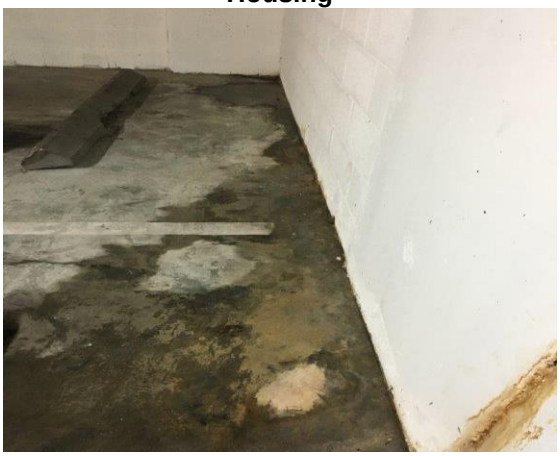

Photo #15: West Wall Water Intrusion

9 TABLE OF FINDINGS

Table 9.1

	Deck			Wall/Column					Ceiling	
Location	**CR**	**SPL**	**RS**	**PP**	**CR**	**DLS**	**EM**	**SPL**	**DLS**	**RS**
	(ft)	**(cu-ft)**	**(#)**	**(ft)**	**(ft)**	**(sq ft)**	**(#)**	**(sq-ft)**	**(sq ft)**	**(#)**
Balconies										
301					2	8				
405						24				
504		1								
505						2	1			
506			3							
701			2			10	1			
802										
805	2					13			3	
901							1			
1006						7				
1102							3			
1105						14			1	
1201						18				
1205						59				
Walkways										
Penthouse	12					29	1			
12th	19	8				34				
11th	19					18	1		8	
10th	24			2		30				
9th	21	2				22				1
8th	12					11				
7th	13					5				
6th	8			5		15				
5th	8	9				18	1			
4th	4					38				
3rd	7			2	5	50	1			
Garages										
1st(east)	11						2			
1st(west)	462	6			24			1		
2nd	76	4			17.33		4			
TOTALS	**698**	**30**	**5**	**9**	**48.33**	**425**	**16**	**1**	**12**	**1**

Legend

#	- Number		**ft**	- Feet		**EM**	-Exposed Metal
BPTP	- Bad Post Tension pocket		**PP**	- Peeling Paint		**ESPL**	-Edge Spall
CR	- Crack		**RO**	-Railing Oxidation			
CD	- Corroded Doors and Jams		**RS**	- Rust Spot			
DDC	- Delaminated Deck Coating		**RF**	- Rust Fastener			
DLS	- Delaminated Stucco		**SPL**	- Spall			
DS	-Damage Sealant		**SPLR**	- Spall with exposed rebar			
DLT	- Delaminated Topping		**sq ft**	- Square Feet			
DLTT	- Delaminated Tile		**WP**	-Water Ponding			
ECR	- Edge Crack		**IM**	-Impact damage			