

MEMORANDUM

TO: Marcelo Chialastri
FROM: Javier Rodriguez, JRV & Associates
DATE: April 22nd, 2017
RE: 730 Coral Way Condominium – Basement Garage Water Intrusion

The purpose of this memorandum is to provide JRV's assessment on the reported water intrusion at the basement level parking garage at 730 Coral Way Condominium. Per request and in coordination with Mr. Chialastri. The inspection was performed on April 15th 2017, by Javier Rodriguez in the presence of Board Members Ali Nayer and Isabel Pena Greenways. All observations were discussed and agreed with mentioned Board Members on the site. The inspection consisted of a visual assessment of the areas where water intrusion was reported at the basement parking garage.

OBSERVATIONS

Basement Level Parking Garage and Pool Deck Concrete Slabs

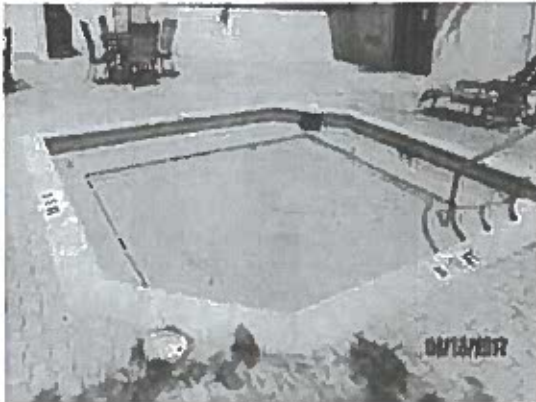
JRV performed an assessment of the Basement parking garage and the South side pool deck slab at the three-story residential building located at 730 Coral Way, Coral Gables, FL 33134. This investigation was based upon current construction methods and standards, which are considered normal and customary as of the date of this inspection. JRV did not perform any destructive testing, nor were any plans reviewed as part of this assessment.

During the walkthrough, the following issues were observed and are brought to your attention:

1. Multiple locations were observed with stains from ponding water around the pool. This is a sign of inadequate minimum slope requirements to drainage system on the pool deck. Ponding water for a period exceeding 48 hours is a violation of current Florida Building Code.
2. Some cracks were observed through the concrete pavers and joints at the West side of the pool deck with signs of water intrusion and efflorescence.
3. Significant corrosion signs with minor deterioration of the finished surface were observed at top of the pool wall along the decorative tiles, North wall.
4. Overflow scuppers at the roof level are missing a downspout system to divert heavy water downfall falling directly on the pavers during raining periods.
5. At the basement parking garage, severe reinforcing steel corrosion, concrete cracks and large areas of spalling concrete were observed at the West wall of the pool, West face. This condition is a direct result from water intrusion through the pool deck slab and/or the pool walls.
6. Several areas of spalling concrete and exposed steel reinforcement with signs of corrosion were observed at the underside of the pool deck slab, West and South of the pool. At

some locations, it appears that some crack or concrete spalling repairs were performed but could not be verified.

7. Numerous cracks with signs of water intrusion, efflorescence and calcium formation were observed at the underside of the pool deck throughout areas exposed to the elements above.
8. Water marks/stains were observed on top of the basement parking slab, particularly noticeable along construction joints, cracks, area surrounding building columns, at the joint between slab and perimeter basement walls and in the vicinity of the two drains serving the basement parking garage.
9. Exposed and corroded steel reinforcement was observed at the bottom of some concrete columns at the basement parking garage.



Pool



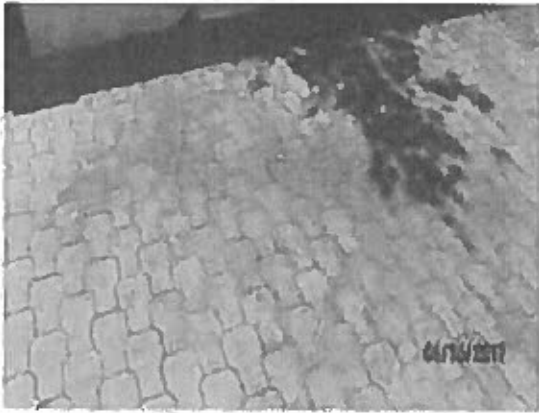
Corrosion at North wall of pool



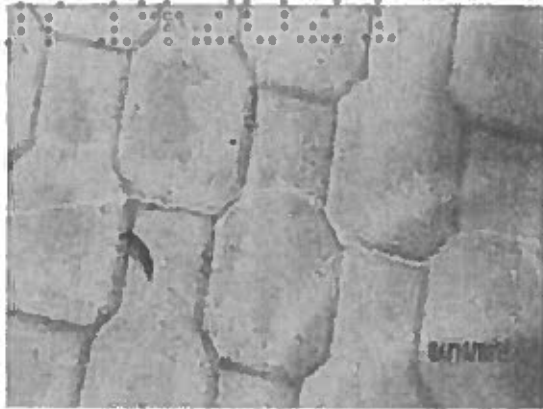
Water/stain marks at pool deck pavers



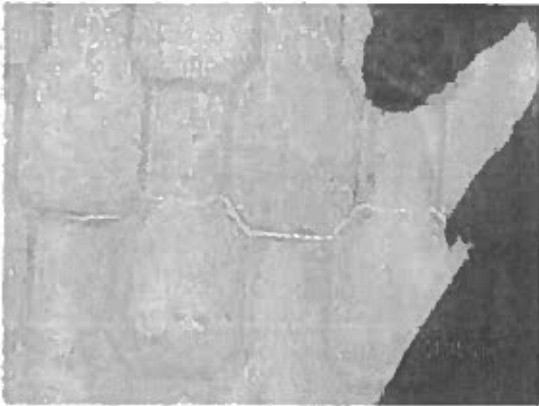
Water/stain marks at pool deck pavers



Water/stain marks at pool deck pavers



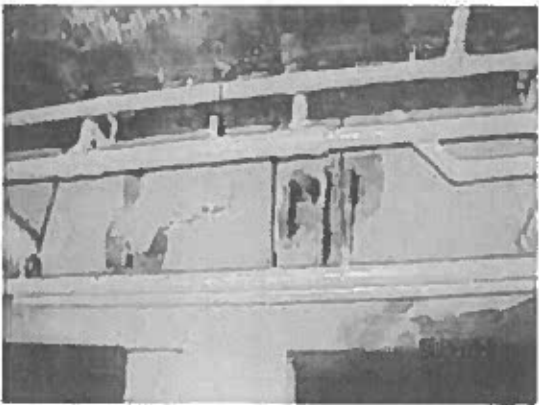
Cracks at concrete pavers



Cracks at concrete pavers



Overflow scuppers without downspout



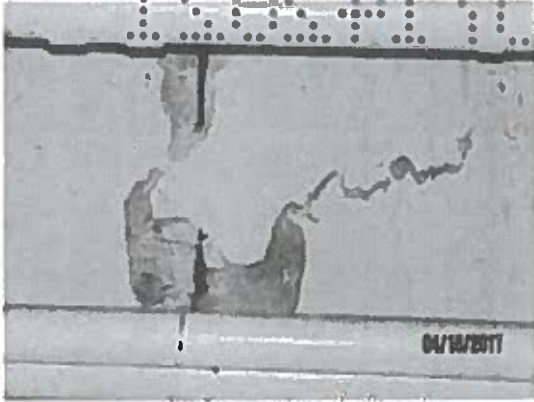
Damaged pool wall at Basement



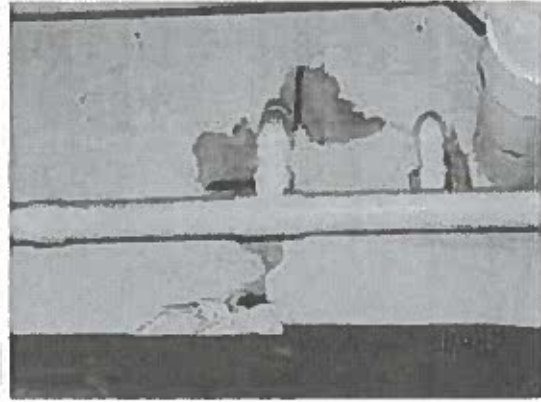
Damaged pool wall at Basement

30

RESURFACING



Damaged pool wall at Basement



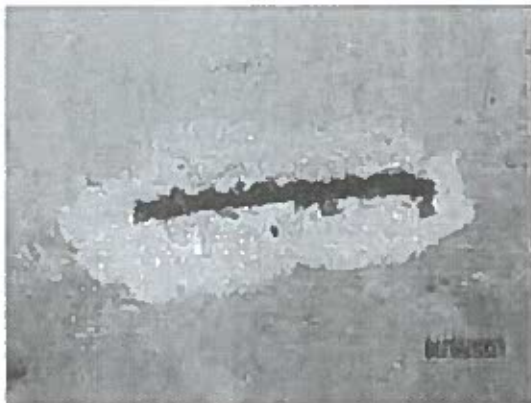
Damaged pool wall at Basement



Spalled concrete at underside of pool deck



Spalled concrete at underside of pool deck



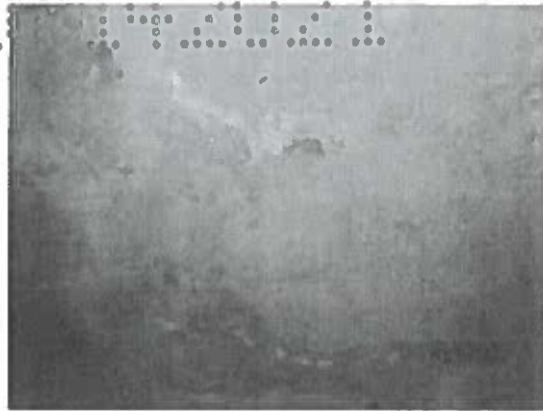
Spalled concrete and exposed steel reinforcement at underside of pool deck



Spalled concrete at underside of pool deck



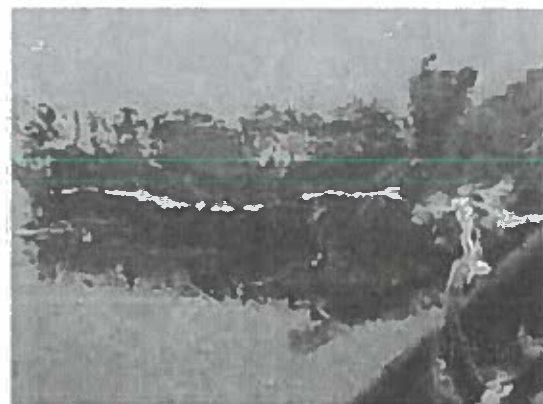
**Cracks with water intrusion signs
at underside of pool deck**



**Cracks with water intrusion signs
at underside of pool deck**



**Cracks with water intrusion signs
at underside of pool deck**



**Cracks with water intrusion signs
at underside of pool deck**



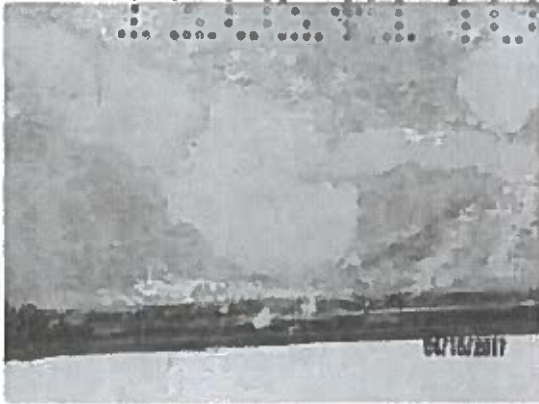
**Water intrusion signs at underside of
pool deck**



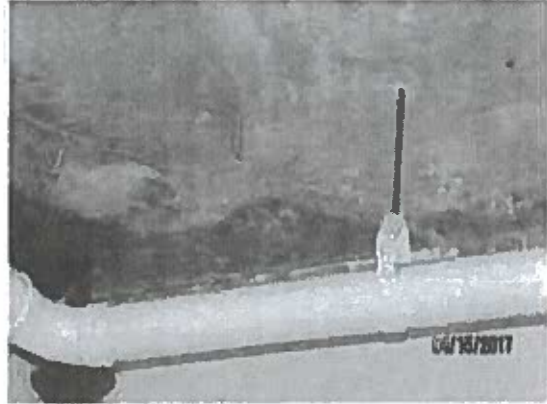
**Water intrusion signs at underside of
pool deck**

30

1505150



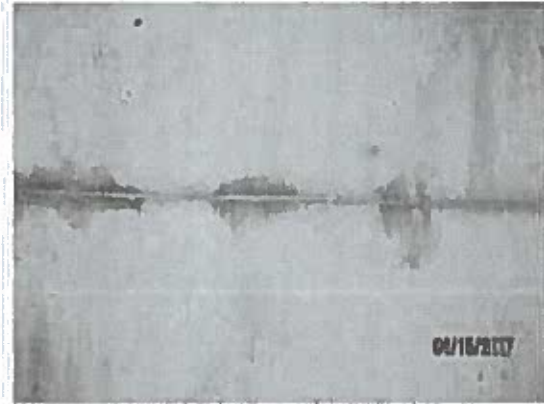
Repairs with water intrusion signs at underside of pool deck



Repairs with water intrusion signs at underside of pool deck



Water marks/stains at basement slab



Water marks/stains at basement slab



Water marks/stains at basement slab



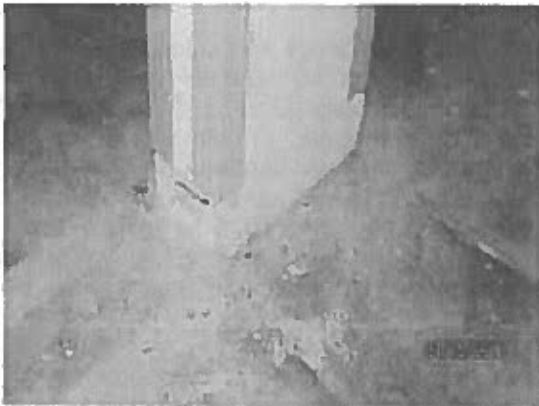
Water marks/stains at basement slab



Water marks/stains at basement slab



Water marks/stains at basement slab



Exposed and corroded column steel reinforcement



Exposed and corroded column steel reinforcement

CONCLUSIONS & RECOMMENDATIONS

Parking Garage

Parking garage was reported to have severe water intrusion issues and flooding through construction joints, cracks, area surrounding building columns and at the joint between slab and perimeter basement walls. At the time of the inspection, JRV observed multiple locations of water stains at the floor slab throughout although no standing water was present. Two concrete columns were observed to have exposed and corroded vertical and horizontal steel reinforcement at the bottom of the columns. At these columns, the minimum required concrete cover for steel reinforcement as specified by ACI 318 was not achieved at the time of construction.

Pool Deck

Cracks, concrete spalling efflorescence and calcium formation at multiple locations were observed at the underside of the pool deck slab. At some locations, corroded steel reinforcement was observed, as well as severe deteriorated concrete and heavily corroded exposed steel reinforcement at the West wall of the pool. Water marks/stains were also visible on the concrete

pavers of the pool deck. Some cracks across the pavers and joints were noted with signs of efflorescence and calcium formation. Signs of corrosion and minor deterioration of the finished surface were also observed at the top of the Northern pool wall along the decorative tiles. The majority of water intrusion issues located at the pool deck as positioned above, indicates insufficient or negative slope to existing drains and the failure of the waterproofing system.

RECOMMENDATIONS

Based on our findings, the most possible cause of water intrusion at the garage is deteriorated and failed waterproofing system of the pool deck areas on the ground level as well as inadequate design of the basement parking garage slab.

JRV's professional opinion is that repairs of the cracked and spalling concrete as well as the corroded steel reinforcement on the West pool wall be addresses without any delays and prior to any other repairs. The present condition of the wall is may be hazardous and may represent a life safety situation in case concrete pieces get detached from the wall.

Existing cracks at underside of pool deck slab where efflorescence and calcium formation are present should be epoxy injected to avoid further deterioration of the steel reinforcement and subsequent spalling of concrete, which is already present in some areas. Concrete pavers at the pool deck and existing waterproofing shall be removed. A suitable and approved waterproofing system should be installed on all exposed areas over parking garage at basement level after all cracks are properly sealed and repaired by a Florida licensed General Contractor. New pavers or alternate finish as chosen by the Board Members shall be installed after all previous repairs are inspected and approved by a certified Building Inspector. It is necessary to address these concerns or it will further deteriorate the building which may cause more serious and costly structural deficiencies.

At the basement parking garage, in order to avoid underground water from coming through cracks and joints on the slab when the water table rises due to periods of rain, a complete redesign of the basement slab would be required. This would be very costly and would take an extended period of time which will be very inconvenient to the residents. At this time, the most economical and suitable way to remediate the claimed flooding of the basement parking garage would be to clean and maintain the floor drains unclogged and in working condition at all times to prevent excessive accumulation of water on the slab.

The two concrete columns were exposed and corroded steel reinforcement was visible, should be repair promptly by cleaning corroded sections of reinforcement and providing a minimum of 1½ inches concrete cover as specified by ACI 318 and Florida Building Code.

Please note that by addressing all of necessary concrete repairs prior to the installation of new waterproofing, it is possible that more prominent damages may be discovered and scope of repair work may be modified.