TRUSTEE'S COMMUNICATION
STRUCTURAL EVALUATION REPORT - Phase1: Tier 1

February 3, 2022

Esteemed Owners:

As was informed, the ESJ Condominium Homeowners Association (hereinafter "ESJ HOA") retained the services of PSECFL LLC, to perform a structural evaluation detailed under the Phase1: Tier 1, contract description entered with this firm. A final copy of this report with all its attachments is enclosed as **Exhibit 1** to this communication. The Trustee states that this report has been reviewed by José L. Mediavilla, PE, the retained in-house structural engineer, who concurs in all findings and recommendation presented by PSECFL LLC.

To all regrets, the Final Conclusion Statement detailed at page 37 of the report confirms the significant deterioration and conditions that, if not corrected, jeopardize the continued operation of the Condominium. Each owner shall review this report in detail to be aware of the specific urgent conditions detailed and how these conditions could affect and put at risk all residents and guests of the Condominium.

On the other hand, the same reports detail a preliminary estimate on the required repairs which approximates $10,000,000, just to correct the structural deficiencies identified. Refer to pages 91 to 94 of the Report. As the same report indicates, these estimates are submitted as a benchmark for future repairs based on the information available at this time. A final repair and retrofit drawing will need to be produced for then obtaining a licensed contractor to submit a final estimate based on the drawings.

Irrespective of the repairs estimates figures, it is uncontested that the required investment for repairs and improvements required to the Condominium are considerable and, given the limited HOA resources and the uncertainty of additional insurance proceeds, a significant contribution by all owners may be required in the event the outstanding maintenance fees due are not collected.

In any event, while the repairs and reconstruction plan is determined and approved pursuant the provisions of the Condominium Law, the in house engineer will work and propose additional safety and corrective actions to prevent a collapse or rupture of any of the elements in the Condominium and to secure the structure if any unforeseen external conditions or peril were to occur.

Upon this report all owners and residents should be informed of the structural conditions at the Condominium which in a near future most likely should impair the living and regular operating conditions at the property. At the present time the undersigned Trustee is coordinating an owners' meeting for purposes of addressing this and other matters affecting the Condominium. A separate notice will be remitted to all owners no later than next Friday, February 11, 2022.

Best Regards

Wigberto Lugo Mender, Esq. CPA

Exhibit 1 – Structural Evaluation Report

VISUAL CONDITION ASSESSMENT
ESJ TOWER CONDOMINIUM
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CAROLINA, PR, 00979

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PSECFL LLC
STRUCTURAL ENGINEERING CONSULTANTS
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January 28, 2022

Condominio ESJ Tower c/o Mr.
Wigberto Lugo Mender, Esq. CPA
Appointed Trustee for the HOA
6165 Avenida Isla Verde Carolina,
PR, 00979

VIA EMAIL (wigberto@lugomender.com)

Re: Condominio ESJ Tower – Visual Condition Assessment

Dear Mr. Lugo Mender:

In accordance with our proposal, the following report has been prepared by PSECFL LLC to provide visual condition assessment results with respect to the actual conditions at the ESJ tower based on our site visit.
As a routine matter, in order to avoid possible misunderstanding, nothing in this report should be construed directly or indirectly as a guarantee for any portion of the structure. To the best of our knowledge, experience, and ability, this report represents an accurate appraisal of the present condition of the building based upon an evaluation of observed conditions at the time of the visit. Recommendations and conclusions are outlined in the final conclusion statement at the end of this report. Repairs are required as outlined in the findings and observations section in this report. Deficiencies noted in this report are assumed to be common and may be present in other similar circumstances and locations.

We want to thank you for the opportunity to provide this report. Should you have any questions, please feel free to contact our office.
Sincerely,

Augusto Poitevin, PhD, PE.
PR 16501
Principal
PSECFL LLC

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EXECUTIVE SUMMARY:

The intent of this report is to document the results of our visual inspection of the existing condition of the ESJ Tower Condominium. The site visit to the facility was from 10/31/2021-11/5/2021. I had the opportunity of staying in the building, room 1567, looking west on the facility.
As per the proposal submitted on 10/4/2021, the main purpose of the visual assessment was to perform a field survey of the facility to identify evidence and extent of structural damage, weakness, deficient structural elements, modifications, cracks, and overburden conditions.

- The survey shall minimum cover:
  - Concrete deterioration.
  - Balcony deterioration.
  - Rebar replacement, repair.
  - Waterproofing.
  - Water intrusion.
- Buildings included:
  - Main tower (all floor levels and roof)
  - Pool area (all levels including Mechanical roof)
  - Lanais (all floor levels and roof)
  - Parking (all floor levels)

The building consists of a rectangular shape tower, 16 levels above ground, recreational areas, pool, cabanas, and parking. The building consists of a non-ductile reinforced concrete shear wall, concrete beams, and floors. Different floor systems are used throughout the building; one-way joist, post-tension slabs, and poured concrete were identified. Uniform Building code 1967 Edition was used for seismic design.

Our observations found the facility is in need of urgent repairs. Some of these repairs need to be addressed with the most urgency and diligently. Deterioration, cracks, spalling, corrosion, and water damage are some of the items that are addressed in this report. Please refer to the Findings and Observations section and corresponding Appendix for details and descriptions of the existing conditions found on our visit.

Multiple locations were identified during our site visit. An approximate amount of 1,800 pictures were taken, more than 20 miles were walked on the facility, and more than 50 units were inspected during our visit, trying to witness and document the existing conditions. Only a few of those were included in the corresponding Appendices to show the typical conditions for the main and parking building.

The following items described in the next section are not in order of importance and are the main list of items that we consider important and should be in a list of priorities that need to be attended to immediately and in the near future.

A glossary section on Appendix C is provided to ease some of the terms used in this report.

FINDINGS AND OBSERVATIONS:

The following observations presented in this report are the main findings and observations during our visit to the facility. As mentioned before, they are not in order of importance, but they are considered urgent to attend. More images are presented in Appendix D and E.

1) The concrete columns under the pool area on level P1B show an excessive number of wide cracks. Wide cracks are considered more than 0.08 inches (2mm). Concrete spalling, reinforcement corrosion, and signs of member distress and are present on multiple columns in this area. The preliminary location of damaged columns found in our visual inspection can be found in Appendix B. The approximate locations of those columns can be found with a cloud or yellow marker.
   Additional images of multiple columns with the same condition can be found in Appendix E. Unsafe conditions due to the level of deterioration are present due to the possible reduction in capacity and stability to the existing member due to the present deterioration conditions. Please refer to the recommendations section of this report.

2) Concrete beams under the pool deck show signs of distress and excessive deterioration. Signs of spalling, delamination, corroded reinforcement and cracks on the existing concrete members are present in multiple locations. This image was taken on level P1B, under the pool deck level. In addition, possible signs of chemical attack, watermarks, and efflorescence to the existing concrete members are visible. The current conditions in this area need to be addressed urgently. Unsafe conditions due to the level of deterioration are present due to the possible reduction in capacity and stability to the existing member due to the current level of deterioration and damage. Please refer to the recommendations section of this report.

3) The concrete slab below the jacuzzi exhibits cracks and previous repairs and concrete patching and repair. Previous repairs can be noticed by the difference in the color of the existing concrete. Watermarks and water percolation from above are also present. Efflorescence, stalactites, concrete peeling, and spalling of the existing reinforcement are visible in this image. The current conditions in this area need to be addressed urgently. Unsafe conditions due to the level of deterioration are present. Please refer to the recommendations section at the end of this report.

4) Concrete beams, concrete slab, and concrete beam joists above and below the mechanical room exhibit significant deterioration and damage. Cracks, water damage, spalling, stalactites, and corrosion of the existing reinforcement on the concrete joist and beams are present. Delamination of the bottom concrete on the joist is common in multiple locations. The current conditions in this area need to be addressed urgently. Unsafe conditions due to the level of deterioration are present. Please refer to the recommendations section of this report.

5) The concrete beam in this image is located under the pool area, shows a significant portion of the bottom concrete is missing. Corrosion and deterioration of the existing reinforcement are present. Watermarks, previous repairs marks, and cracks in the concrete are also present. It is also shown in this image the plastic deck roof assembly that was installed, below the pool, to control and divert the pool water leakage from above. Unsafe conditions due to the level of deterioration are present due to the possible reduction in capacity and stability of the existing member due to the present level of deterioration. Please refer to the recommendations section of this report.

6) This image shown is on the balcony of Unit 155. The exposed corroded reinforcement spalling concrete, and this image, the entire concrete section, is missing. Fallen and cracked sections at the balcony edge happen in multiple locations and levels throughout the facility. The existing conditions in this area need to be addressed urgently. Unsafe conditions due to the level of deterioration at these locations are present. Debris from falling concrete is a possibility, poses a major threat to guests, visitors, owners, and employees, and needs to be addressed immediately. In addition, in the image is present water accumulation and vegetation growing in the image location showing poor maintenance. Please refer to the recommendations section of this report.

7) The wall between the tower and the parking building, where the expansion joint is located, shows watermarks, paint deterioration, and delamination. The watermarks are a sign and a confirmation that the existing expansion joint needs to be repaired or replaced. This condition is typical in all the levels and multiple locations. The water intrusion due to this condition can be seen even in the executive offices at the Mezzanine level. We were informed during the visual inspection that, especially when it rains, the level of water intrusion between the two buildings is significant. The present expansion joint cannot retain and protect the levels below. It needs to be replaced or repaired. Please refer to the recommendations section of this report.

8) This image shows previous repairs on columns, beams, concrete joists, and floor slabs. This can be noticed by the difference in the color of the existing concrete. No documentation of previous repairs was available at the time of this report. No knowledge of what was repaired or how it was repaired, materials used, etc. No information regarding this item was available at the time of the site visit and inspection. This item is essential because if previous repairs have been made, how they were done and how they would help in future repairs and maintenance of the building. Please refer to the recommendations section of this report.

9) Concrete columns at multiple locations show signs of distress in addition to the ones below the pool deck. The displayed columns are at level P4B, below the lanais on the lowest parking level, South West portion of the parking garage. The columns are cracked, bulged, and spalled at the base of the column. The existing conditions in this area need to be addressed urgently. Unsafe conditions due to the level of deterioration are present due to the possible reduction in capacity and stability to the existing column member due to the present level of deterioration. Please refer to the recommendations section of this report.

10) The concrete floor slabs throughout the parking building show cracks, rebar corrosion, and deterioration in multiple locations. The decay shown in this image is below the concrete slab. The image shown is typical and should be repaired throughout the facility. The existing conditions in this area need to be addressed urgently. Unsafe conditions due to the level of deterioration are present. Please refer to the recommendations section of this report.

11) The balcony railings show anchorage and corrosion problems in many locations. The base of the post railings is damaged and corroded in many posts. The tube anchored to the edge walls exhibits corrosion and spalling of the concrete. The existing conditions in this area need to be addressed urgently. Due to this current condition, the safety of guests, visitors, residents, and owners is at risk. Please refer to the recommendations section of this report.

12) The silicone caulking installed on the glass doors assembly on the balconies exhibits deterioration and decay. It should be repaired to prevent water damage, water intrusion, and better insulation in the unit. This type of material needs to be periodically maintained and repaired. Please refer to the recommendations section of this report.

13) The glassdoor assembly door at the balconies shows the mechanism is corroded. This condition exists in multiple units and locations. This needs to be repaired to prevent further deterioration of the door. The door assembly seems fairly new and in fair condition. Some of these components were excessively corroded, including the door hinges. Please refer to the recommendations section of this report.

14) The apartment doors on the many units visited during our visual inspection have shown deterioration, decay, and malfunction in multiple locations. This image was taken in Unit 858, and it shows the level of deterioration and damage next to the door frame. In some of the units, the door couldn’t be opened, it jammed, or it simply did not operate properly. Please refer to the recommendations section of this report

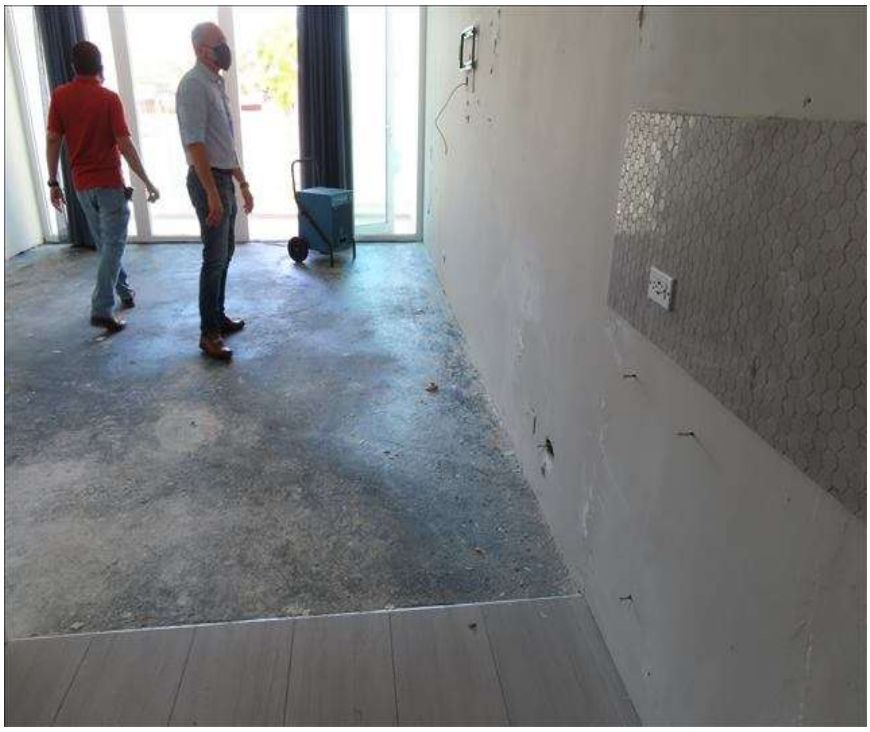
15) This image was taken in Unit 560. It shows mold and humidity on the roof tiles. This condition was present in multiple units at our visual inspection. The mold was present in some units, on the walls and furniture of the units. Some of the units inspected were not open or accessible to the public due to this condition. The existing conditions in this unit need to be addressed urgently. The present conditions due to the mold shall be cataloged as unsafe and should be attended with urgency. Please refer to the recommendations section of this report.

16) Deteriorated equipment was found through the facility. This unit is located on the P1A level showing water accumulation, corrosion, and water damage. The water flows outside the unit pit and falls over and around the slab area at the parking level on P1A. This level of water accumulation and humidity contributes to the decay and corrosion of the surrounding structural elements and should be repaired and addressed. Guest and residents see this water overflow constantly, and the water flowing from this equipment percolates to lower levels. Please refer to the recommendations section of this report.

17) At level P1B, the security lights in the parking at night were highly deficient. Only the lights at the end of the parking were working. The flashing on the columns is the reflection of my camera flash, but in reality, the condition is pitch black. This condition is unsafe for the residents, visitors, employees, and guests. During my inspection, I needed a flashlight during the night to access that area. This condition needs to be addressed urgently because it presents a security risk in this area. Please refer to the recommendations section of this report.

18) The sewer pump room south, at level P4A, shows deterioration, corrosion, and decay on the outside and inside walls. The putrid smell of the pump room could be felt on levels P4B and B2. Inside the pump room, the concrete in some of the members is corroded, and the concrete is spalled and cracked in multiple locations inside the pump room. This condition and maintenance of the pump room should be addressed urgently. Please refer to the recommendations section of this report.

19) The mechanical room in front of the reception desk makes a constant sound, so loud and intense that it is very difficult to hear what the reception clerk has to say at the reception. Inside this mechanical room, there is a lot of equipment that exhibits signs of lack of maintenance and service. Periodic maintenance and repair of the current equipment are necessary and recommended. Please refer to the recommendations section of this report.



20) Water accumulation was coming from the walls into the concrete slab at Unit 281, in the Lanais building. As shown in this image, we can see how water on the right of the image percolates to the concrete floor. Signs of moisture and humidity are clearly shown by the reflection of the humid concrete slab. We could touch the concrete slab with our hands, and the water moisture could be felt. Currently, the unit is under renovation, and the water intrusion is still present. Please refer to the recommendations section of this report.

21) At level P4B, on the west of the parking, water accumulation in the basement was present at the time of our visit. The depth of the water at that time was about 3-4 inches. This condition is not acceptable. Water accumulation helps corrosion and decay at the parking columns and slab on grade. In addition, the level of mosquitoes that are present in that area was severe. Parking spaces for the guests could be used due to the depth of the water accumulation. Please refer to the recommendations section of this report.

22) Spalling concrete at the parking level was present in multiple locations. These concrete portions could fall on a guest, resident, or vehicle, creating an unsafe condition. These concrete members need to be located and repaired immediately. The spalled and cracked portion of the concrete needs to be removed and repaired. Please refer to the recommendations section of this report.

23) The slab topping shown in this image shows water accumulation, cracks, deterioration, damage, and abrasion in multiple locations. This condition also creates an unsafe condition due to the possibility of slipping at the location. The current condition needs to be corrected to prevent further wear and damage to the concrete slab and supporting concrete members below the slab. Please refer to the recommendations section of this report.

24) Planters at all levels need to be evaluated, waterproofed, and the drainage system checked to prevent water accumulation, humidity, and water damage at the levels below. Due to time, planters usually tend to accumulate water, and the drainage system tends to get clogged, and not only the water after a rain event does not percolate, but the overburden of the weight the water needs to be checked and, if needed, addressed and repaired. Please refer to the recommendations section of this report.

25) The roof surface was found to be in fair to poor condition. No documentation was present at the time of the inspection regarding the built-up roof membrane system, type of system used, and time of installation. At roof parapets, a typical separation of flashing at the bottom of the parapet wall was noticed. Multiple locations where water accumulation was visible. Multiple locations were found where delamination of the current roof membrane was present also. Please refer to the recommendations section of this report.

26) Waterproofing of the balconies

Waterproofing systems seem to be present at the terraces and balconies, outside windows, and cladding systems. They looked fairly clean in multiple locations, but they also showed water and dust accumulation in multiple units. The waterproofing system at balconies consists of slopped topping with drainage pipes at the balcony edge. In addition, the rail for the existing storm shutters retains dust and creates water accumulation. As we can see in this image, the water from the AC unit flows and accumulates below the rail. Please refer to the recommendations section of this report.

RECOMMENDATIONS:

The following recommendations of the items on the previous section are as follows, in the same item order as presented in the section before (Findings and Observations):

1) The concrete columns under the pool area on level P1B need to be shored immediately. It is our professional opinion that the present conditions of this area are not safe for their continued use as they currently are. Life safety becomes urgent when we can witness the level of corrosion, cracking, spalling, and deterioration on columns and beams below the pool level. Not only the gravity loading capacity of many elements in this area are compromised just as they currently are, but in the case of a seismic event, the structure could also be severely damaged due to the lack of capacity by the deteriorated condition. A shoring engineer, licensed in the Commonwealth of PR, shall be hired immediately to establish a plan to stabilize and support the existing structure until structural repairs of the affected elements are done. The shoring engineer will submit a schedule to attend to this safety issue as soon as possible. If necessary, the pool area shall be closed due to safety concerns during this process and the installation of the proposed shoring system.
   Once the structure is stabilized and safe, the need for a rehabilitation plan and retrofit of the existing elements is necessary. The ICRI (International Concrete Repair Institute), Puerto Rico Building Code, International Building Code (IBC), ACI (American Concrete Institute), American Society of Civil Engineers (ASCE), or any other approved repair guidelines shall be used for repair procedures. The process needs to establish structural deficiencies, a repair procedure with structural drawings, and specific products and installation procedures. If necessary, due to incremental gravity loads or due to seismic or wind loads, the need to increase the capacity of the element or elements (including foundation) with additional reinforcement in the form of concrete or FRP's (fiber reinforced polymers) or others to increase the capacity and resistance of the existing elements. This would be determined once the seismic evaluation and rehabilitation plan are in place.

2) Concrete beams under the pool deck show signs of distress and excessive deterioration, corrosion, and spalling in multiple locations. Some of the field conditions differ from some of the available structural drawings submitted to our office, making it difficult to quantify the number and location of concrete beams and beam joists through the facility. It is also recommended an inspection and an evaluation of the waterproofing system in the pool deck area, the walking surface, and the pool slabs by a licensed waterproofing contractor. Waterproofing systems are necessary, especially in the pool area. Because there are so many signs of water intrusion and decay, it would be fair to assume that the existing waterproofing system needs repair or replacement. The concrete beams affected in the area needs repair, and retrofit that exhibits signs of decay and corrosion are to be repaired immediately. Life safety is a major concern because of the level of deterioration and loss of strength of some of the concrete beams in this area. The recommendations of Item #1 should be implemented and followed for Item #2. Shoring is necessary to stabilize the elements that are severely deteriorated and damaged. Immediate action is required to prevent a collapse or rupture of any of the elements in this area.

3) Pool cracks, water intrusion, chemical attack signs, corrosion of existing reinforcement below the jacuzzi concrete slab are present. They are signs of concrete spalling in some regions, and efflorescence and stalactites are present. Life safety is a major concern in this area. Recommendations of Item #1 & 2 should be followed in Item #3.

4) Concrete beams and concrete beam joist under the mechanical room below the pool deck exhibit significant deterioration and damage. Because the area displays such a significant amount of damage, please refer to the recommendations of Items 1-3. Shoring first to address and guarantee the immediate safety and stability of the structure and as a next step, coordinate the repair and rehabilitation of all the deteriorated areas in the mechanical room. Recommended is also an evaluation of the electrical and mechanical equipment in the mechanical pool room by a licensed mechanical engineer in the Commonwealth of Puerto Rico. It seems, from our perspective, deteriorated and corroded, as some additional pictures are shown in Attachment E.

5) This concrete beam located under the pool area shows a missing portion of the bottom of the beam. Reinforcement corrosion and water damage are shown in this area. Please refer to Item1-4 for immediate safety measures. Once the structure has been shored and repaired, including the waterproofing system at the pool level, the need for the plastic deck to divert the water from above would not be necessary and should be eliminated from the lower parking levels. The preventive solution of diverting the water from above to the sides with the use of a lower roof level does not address the cause of the problem.

6) Typical balcony edge condition is of a safety concern. Corroded bars are exposed in multiple locations due to spalling and delamination of the concrete at the balcony edge. First, a safety netting is recommended and necessary to be put in place. There are many options available in the market. The number of locations where debris could fall from the balcony edges needs to be addressed and prevented immediately. The safety netting could prevent an accident that could happen at any moment due to falling objects at any of the balcony locations. Until a repair and retrofit process is in place, prevention of an accident on the guests and employees is of the most importance.

7) The expansion joint between the parking building and the tower building shows signs of deterioration, water percolation, water damage, and it is not doing a proper job. Multiple locations that show signs of the need for repair are shown on Attachment E. Renovation, substitution, and repair of the existing expansion joint are necessary and recommended. Water percolation inside the structure shall be prevented, and it is part of the original design of the structure. Expansion joints are mechanical devices, and they do have a life expectance that varies from 10-20 years, depending on the product, manufacturer, and installation process. No documentation of any previous repairs of the existing expansion joints in the building was available at the time of this report. It is recommended to be replaced based on the present conditions.

8) Previous repairs on columns, beams, concrete joists, floor slabs are present throughout the structure. No documentation of previous repairs was available at the time of this report.

No knowledge of what was repaired or how it was repaired was also not available at the time of the site visit. This information is important because we could then establish what kind of previous repairs have been made, how to address any deficiencies, and repairs of the existing work, if necessary. Once the repair and rehabilitation process has been established and in process, investigation of the existing repairs is recommended. This would help establish if the previous repair was done properly, and if not, remediation to the existing repairs is necessary.

9) Concrete columns at multiple locations and different levels show signs of distress also. In addition to the pool area deterioration of the columns at level P1B, multiple locations (please refer to Attachment B for approximate locations) through the parking building were found. Columns exhibit crushing, spalling, and reinforcement corrosion in multiple locations at the base of the columns. This condition reduces the capacity and stability of the existing member to resist the original loads that were originally designed for. Shoring and recommendations similar to Item #1 are necessary to prevent any failure and make the area safe. Once the stability of the structure members has been achieved with shoring, repair and retrofit of the damaged portions are necessary.

10) The floor concrete slabs show signs of cracks, rebar corrosion, and deterioration in multiple locations. Signs of watermarks, cracks, spalling of the existing concrete, and corroded reinforcement are common throughout the structure. Repair of the affected areas is necessary. Safety is a major concern with this issue, and this item should be repaired with the most urgency. In addition to the repair of the base material and reinforcement, waterproofing of the slab is recommended with a material that resists wear and tear of the vehicles above. Many products are available for parking slab repairs that could improve and extend the service of the current slabs.

11) Unit balcony railings show anchorage and corrosion problems in multiple locations. The combination of Item #6 (balcony edge deterioration) and corrosion of the elements and posts of the railing create a safety hazard that needs to be attended to immediately. Multiple locations are shown in Appendix D. The safety of the residents, guests, and visitors is of the most importance. Proper anchorage of the railing system is necessary. Possible repair of the railings should be considered with a combination of the repairs at the anchorage and balcony edges. New railings could also be considered as a repair alternative.

12) The silicone caulking material installed on the glass doors assembly on the balconies exhibits deterioration and decay. It should be repaired and replaced to prevent water damage, water intrusion, and better insulation in the unit. This item was typical in many locations. These materials have a short life expectancy, and depending on the manufacture's specifications, repair or removal of the existing material could be expected and is recommended in the current condition.

13) The glassdoor assembly door at the balconies shows the mechanism rusted in multiple units. This condition needs to be repaired. The level of deterioration in multiple locations of those metal pieces at the perimeter door is not acceptable. The need to investigate if

the assembly system has a guarantee or service agreement is suggested. If not, the need to contact the manufacturer and make the necessary repairs. It is recommended to attend to this condition as soon as possible to prevent further deterioration of the balcony assembly that could potentially destroy or disable the whole assembly.

14) Entrance doors at the apartment units have shown deterioration, decay, and malfunction in multiple locations. In some of the units, the locks do not work; the doors are hard to open and close, in some cases, the lock would not even work with the master key used to open the units. Recommended to inspect the doors, replace or repair as necessary.

15) Mold, humidity, and water accumulation were present in multiple units. It was observed in several units, and the level observed seems unacceptable for a guest or a resident. Mold needs only moisture and a damp environment to thrive. It is recommended to hire a mold specialist or a mold testing company to determine the cause and remediation of the mold in the facility. This item is very important to remediate in terms of life safety because of the long-term hazardous effects of mold and fungus in the human body. The remediation shall include mold testing, removal, demolition if necessary, sanitizing, containment, and mold cleaning by a mold specialist and experience in mold remediation in buildings and similar facilities. It shall also include recommendations on the mechanical systems (air conditioning) and if they influence or promote this condition.

16) Deteriorated equipment was found through the facility. Repair and maintenance of existing equipment are necessary and recommended. The equipment in the picture of this item is leaking water all over the parking area where the equipment is located. The water then leaks thru the concrete slab to lower levels. Next to the equipment is located a fuse box, open and exposed next to the equipment. Safety is involved in this recommendation also very important to maintain the existing equipment to prevent accidents. An evaluation by a licensed Mechanical Engineer in the Commonwealth of Puerto Rico is recommended and encouraged to account for the condition of the existing equipment and recommendations based on the inspection.

17) At level P1B, the security night lights in the parking were nonexistent. During my inspection, I had the opportunity to walk the area at night on more than one occasion. This safety condition is not acceptable for the security and safety of the residents and guests. Adequate lighting in the parking seems like a safe alternative to secure the well-being of guests, residents, visitors, and employees. Repair of the parking lighting is recommended.

18) The sewer pump room, located at the south, at level P4A, shows a severe level of deterioration, corrosion, and decay on the concrete columns, beams, and walls in the room. At that level, the foul odors emissions from that room were felt throughout the parking levels P4A and B2. It is recommended to repair the concrete members deteriorated in this area. Special protecting epoxies and concrete grouts should be recommended that could resist such an environment. Recommended is also an evaluation of the existing equipment by a licensed mechanical engineer registered in the commonwealth of Puerto Rico as in Item #16.

19) The mechanical room, located in from the reception desk, makes an acute constant sound, so loud that it is very difficult to hear what the reception clerk has to say. Even this is not a structural issue because it was heard on more than one occasion, we had the opportunity to visit the mechanical room at that location. Inside this mechanical room, there is a lot of equipment, and one of them is making that noise. It is recommended that maintenance and repair of any damaged equipment throughout the facility are made. Please refer to Item #16 also. An evaluation by a licensed mechanical engineer registered in the commonwealth of Puerto Rico is recommended.

20) Water accumulation was coming from the walls at the Lanais. A waterproofing licensed contractor shall be hired to recommend the different conditions, products, and alternatives to the water intrusion problem throughout the facility. Testing and sampling would be necessary to select the corrective products and installation sequence. Newer products offer guarantees and maintenance support in the range of 10-20 years. The monitoring of this condition is also important because the water could be coming from a different source, like a leak on a water pipe or an air handling unit. Without a proper waterproofing system, this condition could continue making the current repairs and renovations useless in the near future.

21) At level P4B, on the west of the parking, water accumulation in the basement was present at the time of our visit. This condition is not acceptable. Water accumulation helps corrosion and decay at the parking columns and slab on grade. In addition, the level of mosquitoes was felt during the site visit on that particular area. The drainage system is not working adequately in this area. Repair of the water drainage system is recommended and if necessary, pumps to eliminate the water accumulation need to be installed.

22) Spalling concrete at the parking level was present in multiple locations. These concrete portions could fall on a guest, resident, or vehicle, creating an unsafe condition. They are present in concrete beams and concrete slabs. These concrete members need to be repaired immediately, and the unsafe portion of the concrete needs to be removed as soon as possible. The safety of the guest, visitors, employees, and residents are of the most importance, and that condition creates an unsafe environment.

23) Slab topping shows water accumulation, damage, and abrasion. This needs to be corrected to prevent further deterioration and damage to the concrete slab and supporting concrete members below the slab. A condition survey of the parking building is recommended by a waterproofing licensed contractor that could diagnose the cause and the extent of the damage. This could help determine the repair and protection objectives and select an appropriate repair protection strategy and maintenance to be followed in the future.

24) Planters, all levels need to be evaluated, investigated, and waterproofed. The existing drainage system on the planters needs to be evaluated to prevent water accumulation, humidity, and water damage at the levels below. Planters are one of the most common

sources of water intrusion in buildings. Special care needs to be taken with waterproofing products and membranes to ensure the planters are not leaking or contributing to the deterioration of the structure that supports them. This shall be done by the waterproofing contractor to attend the pool evaluation.

25) The roof system was found to be in fair to poor condition, but the membranes and system seem old and deteriorated. No documentation was present at the time of the inspection regarding the built-up roof membrane system, time of installation, or maintenance records. At roof parapets, a typical separation of flashing at the bottom of the parapet wall was noticed. Evaluation from a licensed roofing contractor is recommended to determine if removal of the existing material and the replacement of such material is recommended or additional coatings will suffice to prolong the installed roofing system.

26) Waterproofing of the balconies-It is recommended to install a waterproofing membrane to protect the perimeter parapet at the terrace level and prevent additional damage to the concrete slab at the terrace level. The recommended extent would be the vertical and horizontal surfaces at the planter location to avoid future deterioration of the perimeter walls, including repair to the top of the parapet walls and protection of same.

ADDITIONAL RECOMMENDATIONS:

1. Laboratory testing- Core samples are recommended to be taken and sent to a laboratory. Some of the proposed testings are compressive strength, concrete composition, chloride penetration resistance and permeability, petrographic test, and carbonation. This helps in the correct selection of materials to be used in the repair process.

2. Foundation investigation- One of the items that need to be further investigated is the condition of the existing piles and pile caps at the foundation level. In addition, the geotechnical evaluation will include geotechnical evaluation concerning newer seismic standards and liquefaction conditions (if present)

3. Retrofit and rehabilitation drawings- Necessary in order to correctly estimate the cost of the rehabilitation and repair at the facility.

4. Structural analysis is necessary as part of the retrofit and rehabilitation process for the facility. This will determine if additional reinforcement or retrofit of existing elements will be required to comply with current codes and requirements. Recommended the ASCE41-17 standard for seismic evaluation of existing structures.

FINAL CONCLUSION STATEMENT

In conclusion, under no circumstances, this facility should be operating with the current conditions indicated in this report unattended. Several aspects and items need to be addressed immediately on deteriorated and corroded structural elements throughout the facility. Public safety of the workers, owners, visitors, and guests is of most importance in these recommendations. The visual inspection done witnessed that some of the existing reinforced concrete members may not be functioning as originally intended and designed. Not only the gravity loading capacity of many elements in this area are compromised just as they currently are, but in the case of wind or a seismic event, the structure could also be severely damaged due to the lack of capacity by the deteriorated condition. We conclude that their structural integrity is in danger, and the mentioned conditions and items indicated in this report shall be attended, without delay.

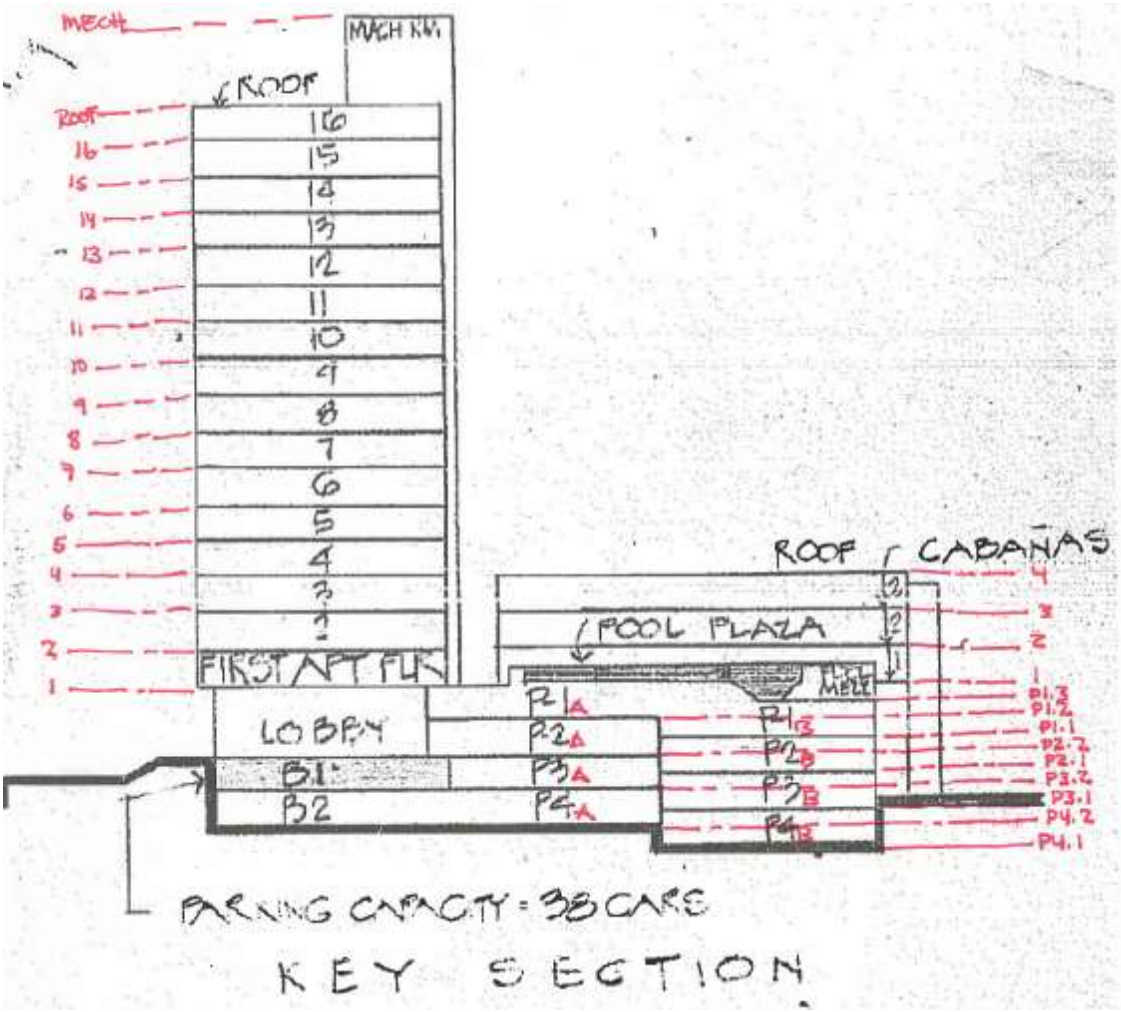
The first recommended step should be the shoring of the deteriorated areas and members where there is immediate danger. Once the areas have been stabilized, the need for repair of the deteriorated elements is necessary. Again, under no circumstances, this facility should be operating with the current conditions unattended and without proper shoring and repair.

The preliminary cost of these items has been submitted. These costs should not be taken as final or official and are only submitted as a benchmark for future repairs based on the information available at the time of this report. Once final repair and retrofit and repair drawings are submitted in the near future, a licensed contractor or estimator can submit a final amount based on those documents. The estimate is focused on the parking building and an additional table just for the balcony edges and railings.

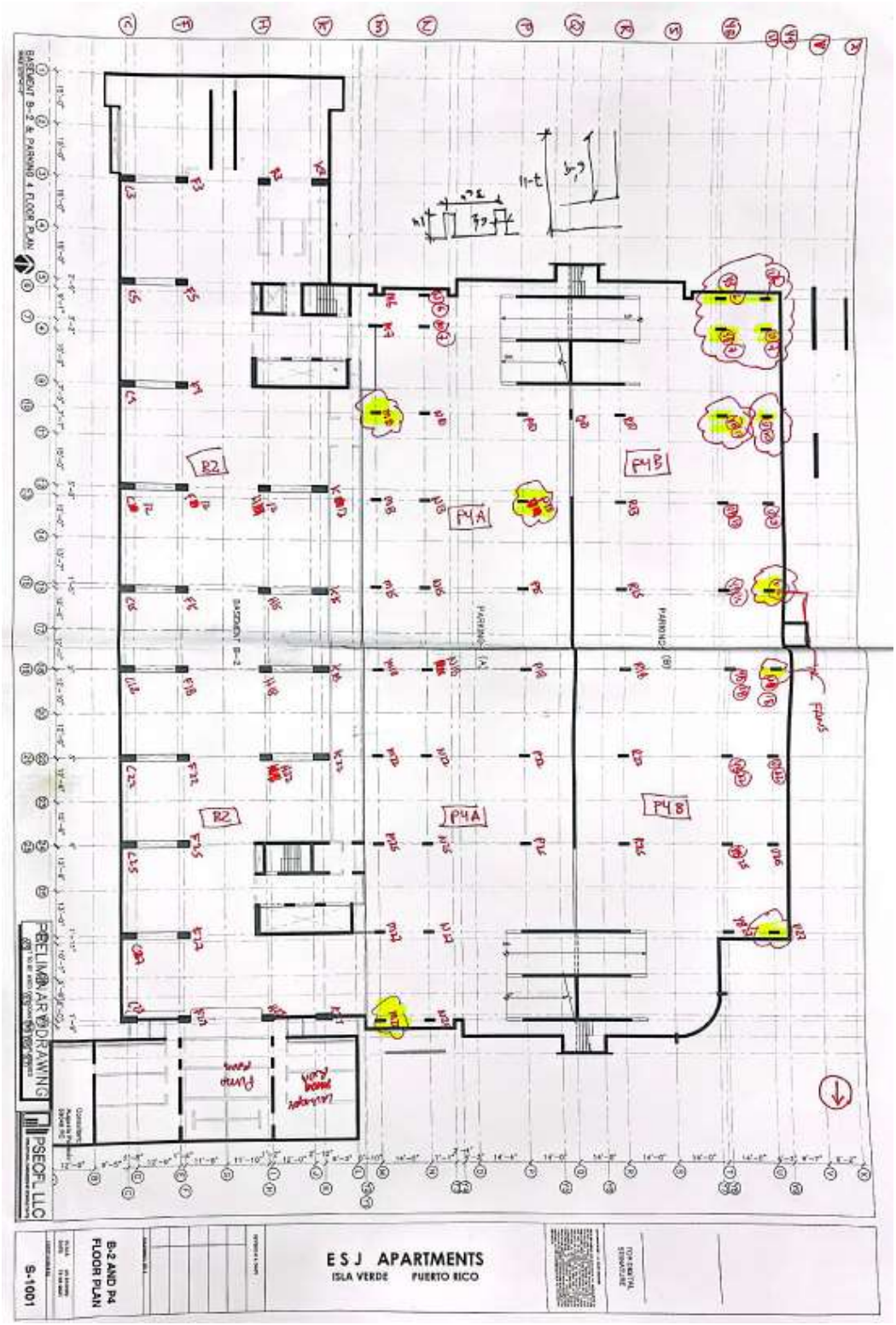
We trust that this report has been responsive to your request. We understand that we couldn’t cover all the spaces and areas in the building during our visit, and some of the areas were covered and could not be inspected. We are confident that the items identified and shown in this report are a good trend of the current conditions on the facility and could give you a clearer image of the actual conditions.

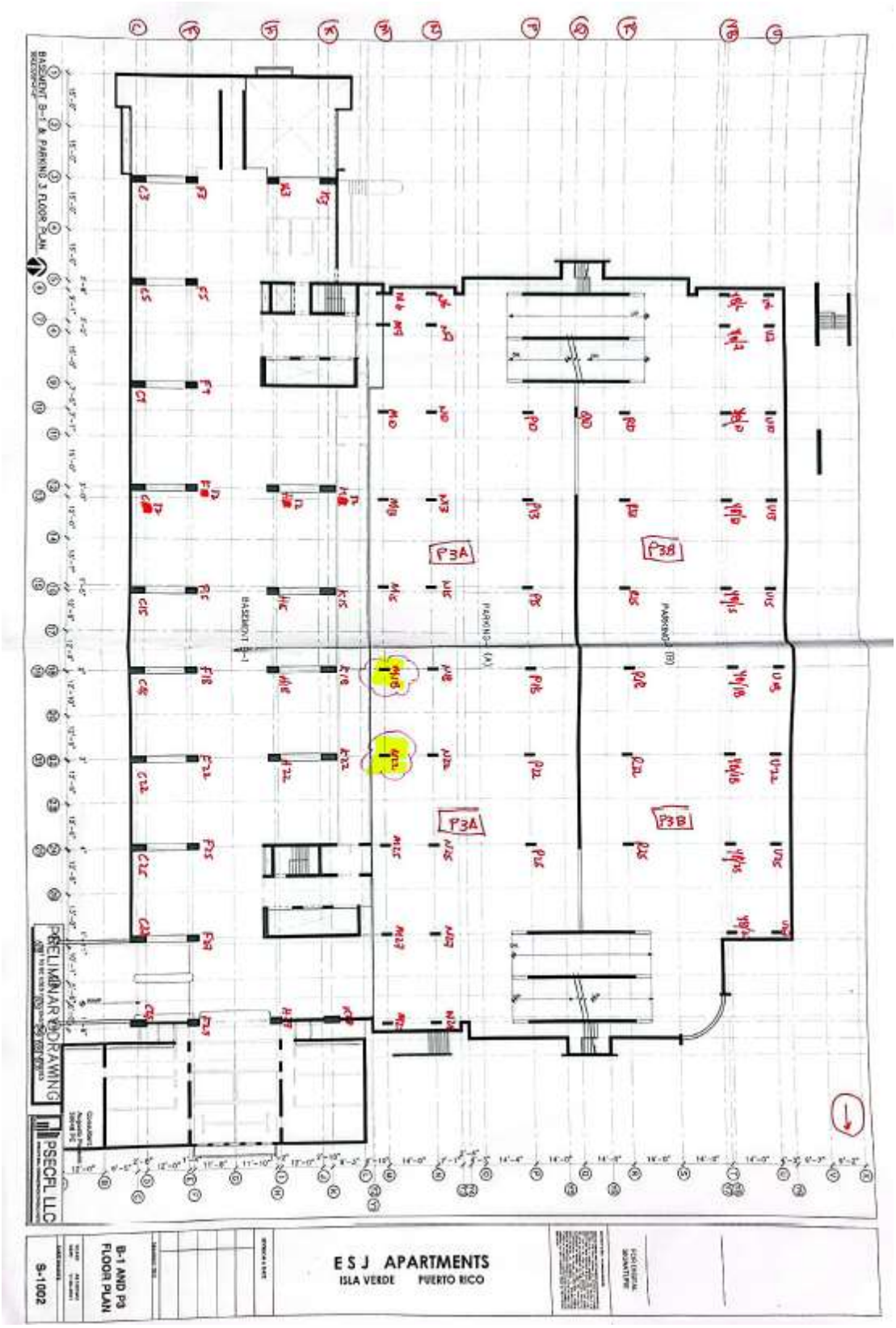
Should you have any questions, please do not hesitate to contact our office.

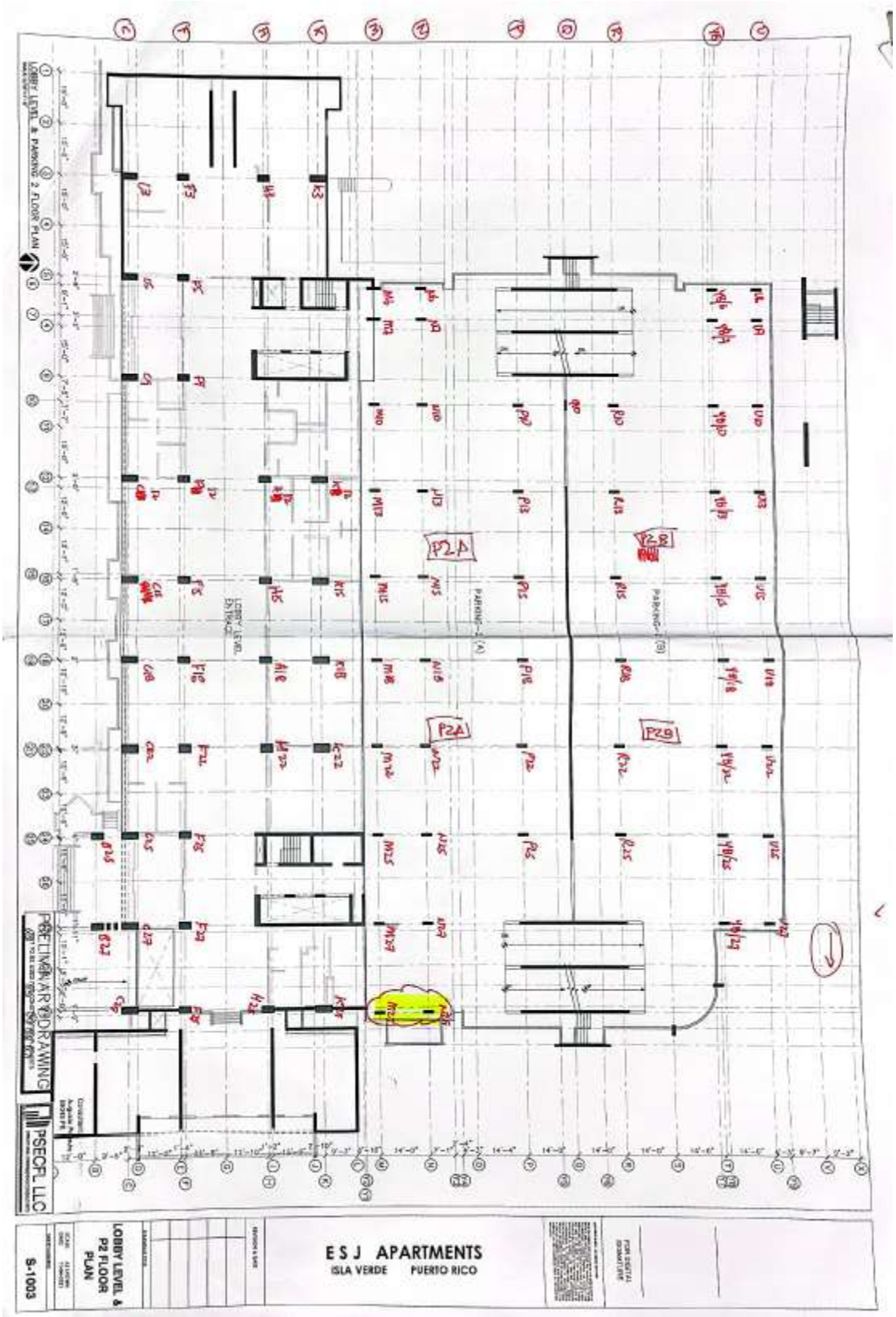
APPENDIX A-TYPICAL BUILDING ELEVATION FROM THE ORIGINAL DRAWINGS PROVIDED TO PSECFL

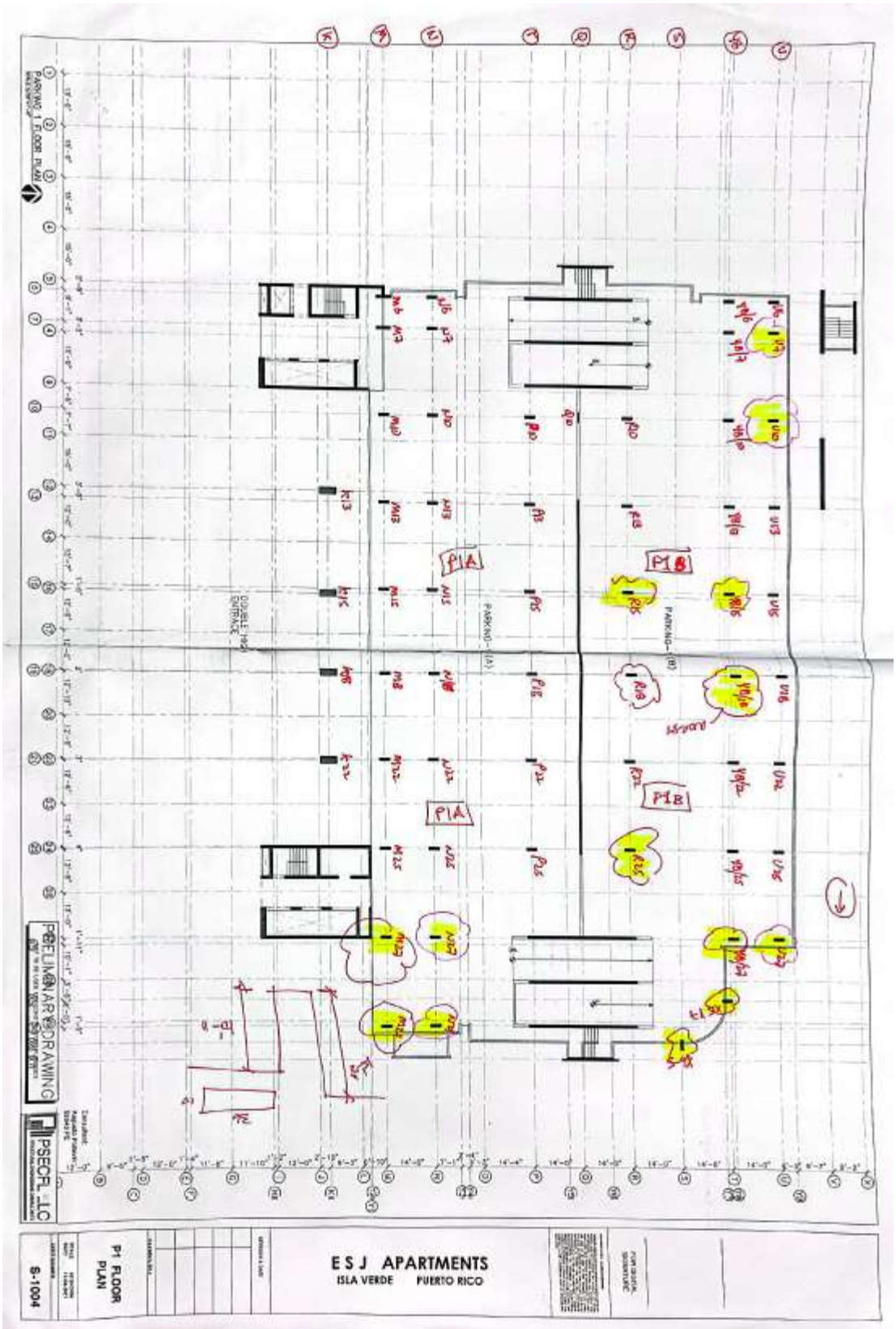


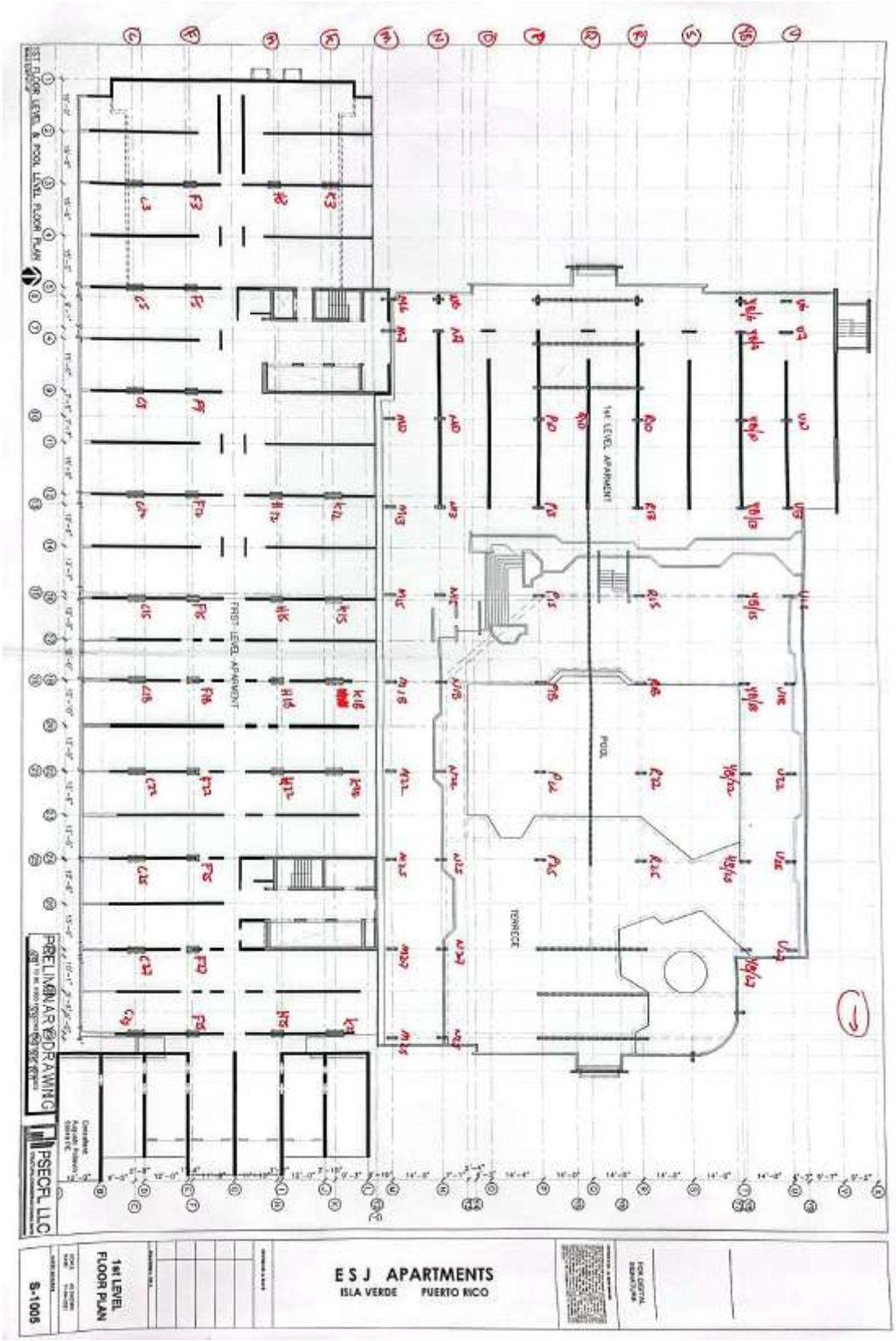
APPENDIX B- STRUCTURAL DRAWINGS CREATED BY PSECFL FOR THE VISUAL INSPECTION




BASEMENT B-1 & PARKING 3 FLOOR PLAN
PRELIMINAR WORKING DRAWING
PSECFL LLC
P3A
P3B
PARKING (A)
PARKING (B)
E S J APARTMENTS
ISLA VERDE PUERTO RICO
B-1 AND P3 FLOOR PLAN
S-1002

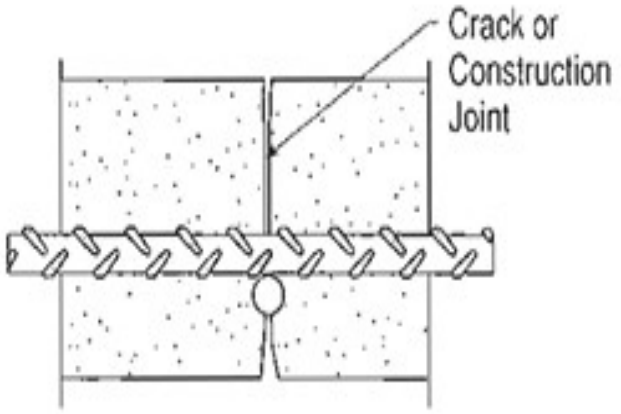

LOBBY LEVEL & PARKING 2 FLOOR PLAN
PRELIMINARY DRAWING
PSECFL LLC
P2A
P2B
LOBBY LEVEL ENTRANCE
PARKING-2 (A)
PARKING-2 (B)
E S J APARTMENTS
ISLA VERDE PUERTO RICO
LOBBY LEVEL & P2 FLOOR PLAN
S-1003


ESJ APARTMENTS
ISLA VERDE PUERTO RICO
P1 FLOOR PLAN
S-1004
PSECFL, LLC
P1A
P1B
PARKING - (A)
PARKING - (B)

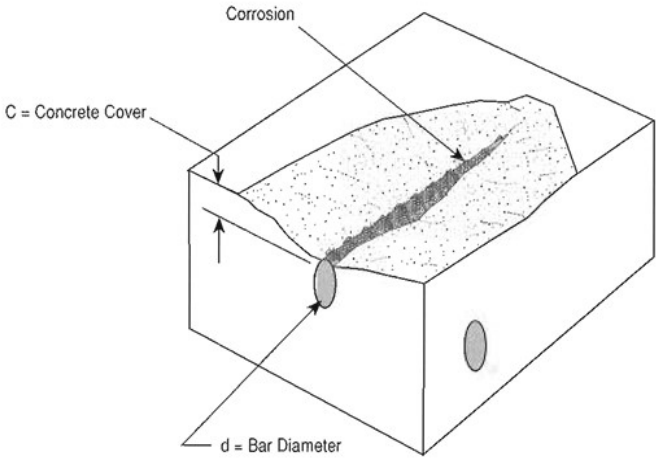

1ST FLOOR LEVEL & POOL LEVEL FLOOR PLAN
1st LEVEL APARMENT
FIRST LEVEL APARMENT
POOL
TERRECE
PRELIMINARY DRAWING
PSECFL LLC
E S J APARTMENTS
ISLA VERDE PUERTO RICO
1st LEVEL FLOOR PLAN
S-1005

APPENDIX C- GLOSSARY OF KEYWORDS

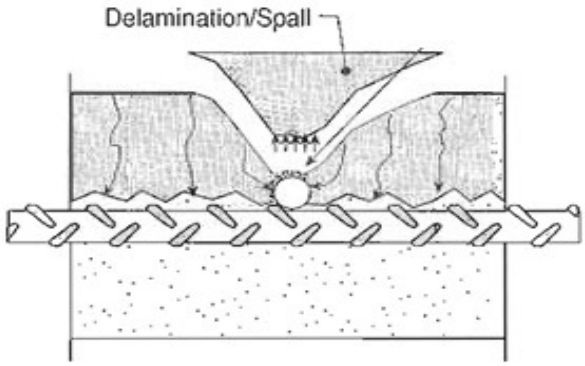
1) Cracks- complete or incomplete separation of concrete into two or more parts produced by breaking of fracturing



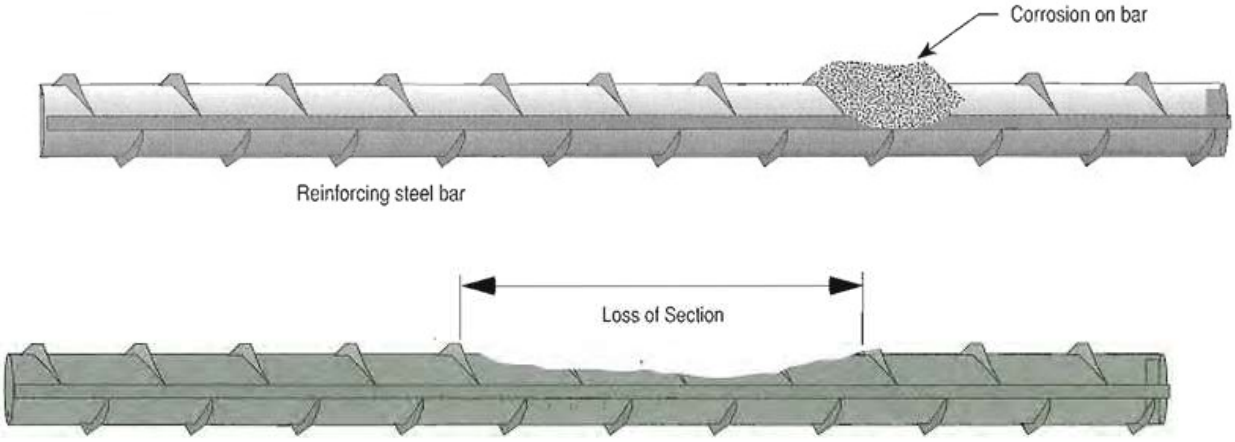
2) Spalling-fragment usually in the shape of a flake, detached from a larger mass, by the action of a embedded corroded rebar.



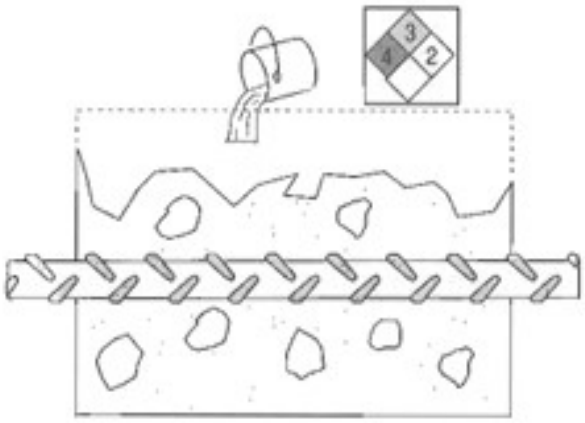
3) Peeling, delamination- Separation along a plane parallel to a surface, usually near the upper or lower surface.



4) Reinforcement corrosion-degradation of concrete steel reinforcement caused by electrochemical or chemical attack.

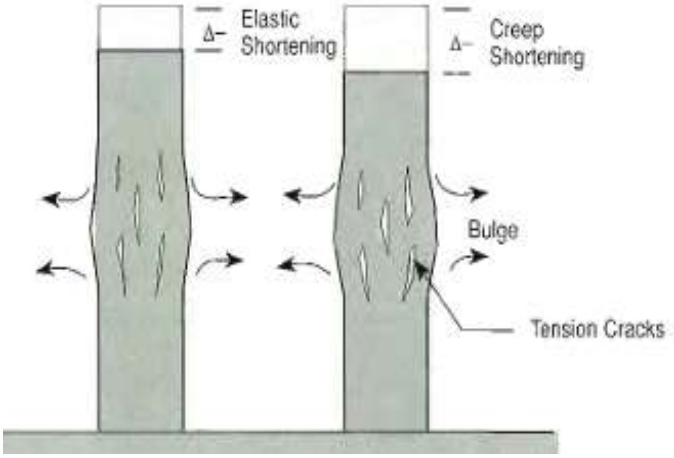


5) Chemical Attack-concrete degradation as a result of the action of chemical agents, such as salts, moisture, chorides.



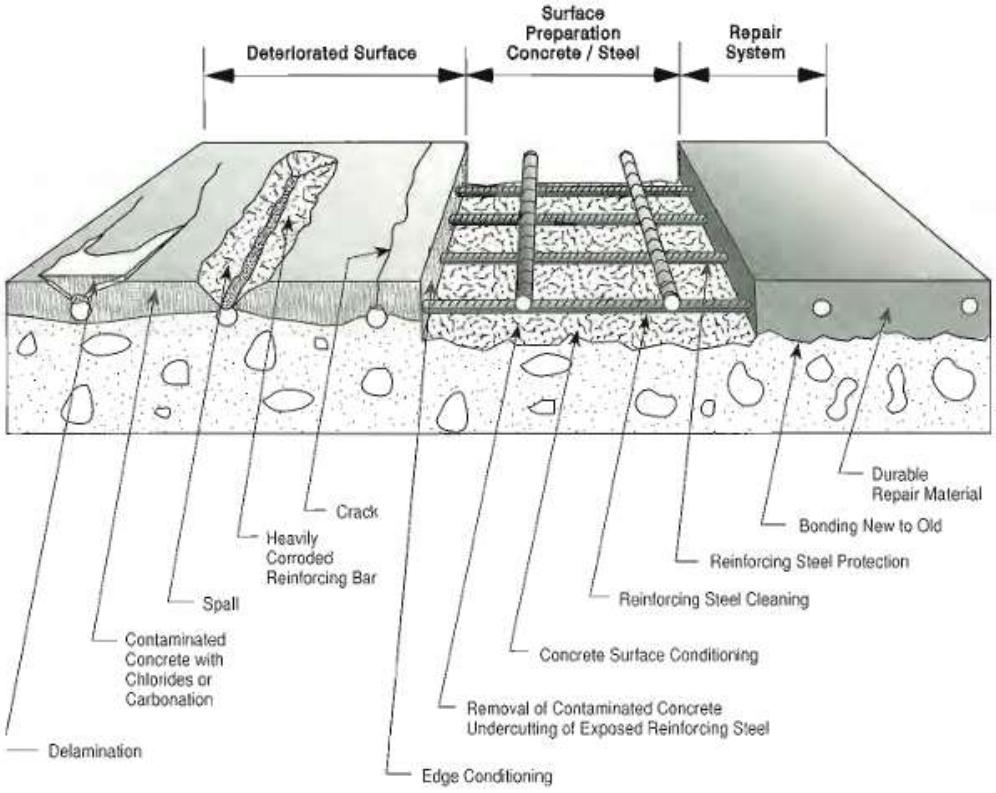
6) Stalactites- downward-pointing deposit formed as an accretion of mineral matter produced by evaporation of dripping water from the surface of concrete, commonly shaped as an icicle.

7) Bulging-concrete deformation that causes the concrete to expand at that different points.



8) Efflorescence-deposit of white salts left on the surface when a solution containing salt leaches from concrete or masonry when it evaporates

9) Surface repairs



APPENDIX D-TOWER ADDITIONAL PICTURES

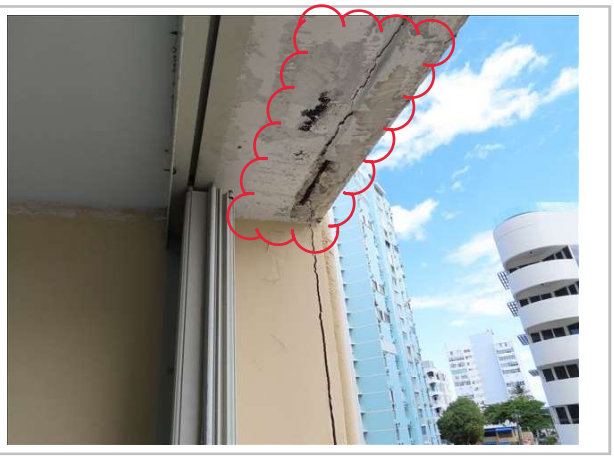
Picture 1: Wall edge delamination at Unit 162.

Picture 2: Concrete roof edge cracks and delamination at Unit 162.

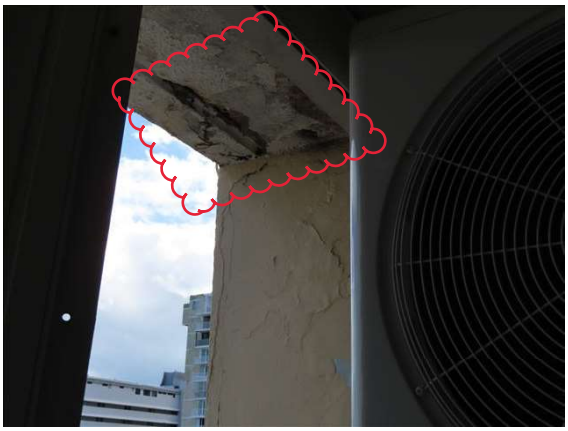
Picture 3: Concrete wall at balcony showing cracks, spalled concrete and corroded reinforcement, Unit 162

Picture 4: Patio wall at Unit 163 showing a vertical crack where the expansion joint of the building is located.

Picture 5: Concrete floor slab, unit 163, cracks where the expansion joint is located between the tower and the parking building.



Picture 6: Concrete roof edge cracks, exposed corroded reinforcement and delamination at Unit 160.



Picture 7: Additional view of Concrete roof edge cracks and delamination at Unit 160.

Picture 8: Concrete wall at balcony showing cracks, spalled concrete and corroded reinforcement, Unit 160.

Picture 9: Additional view of Concrete roof edge cracks and delamination at Unit 160.

Picture 10: Moisture at concrete floor slab, coming from the walls at Unit 281.

Picture 11: Moisture on the existing concrete wall, coming from the AC blower at Unit 283.

Picture 12: Corroded railing post at the base in Unit 266.

Picture 13: Concrete roof edge cracks and delamination at Unit 266.

Picture 14: Wall edge delamination at Unit 266.

Picture 15: Balcony door assembly, corroded and damaged at Unit 266. Multiple locations.

Picture 16: Roof condition over the bathroom on Unit 366. Lot of fungus and mold present.

Picture 17: Roof ceiling tiles showing mold and water marks. Unit 366.

Picture 18: Additional view of roof ceiling showing mold. Unit 366

Picture 19: Roof balcony at Unit 466 showing paint peeling and damage.

Picture 20: Unit 466 showing mold and fungus on the walls and door entrance.

Picture 21: Bottom railing assembly connection to the concrete wall is spalled and wall reinforcement is exposed, Unit 152

Picture 22: Top railing assembly connection to the concrete wall is corroded, Unit 152

Picture 23: Concrete roof edge cracks and delamination at Unit 154. Bottom reinforcement is corroded and exposed.

Picture 24: Top railing assembly connection to the concrete wall is spalled and wall is cracked, Unit 156.

Picture 25: Balcony wall and window assembly sealant and caulking is cracked and deteriorated, Unit 157. Multiple locations.

Picture 26: Existing shutters are still in place, shutter railing accumulates lots of debris and does not allow the water to flow.

Picture 27: Partial exterior West wall elevation, showing multiple balcony edges spalled and reinforcement exposed.

Picture 28: Additional partial exterior West wall elevation, showing multiple balcony edges spalled and reinforcement exposed.

Picture 29: Additional partial exterior West wall elevation, showing multiple balcony edges spalled and reinforcement exposed.

Picture 30: Additional partial exterior West wall elevation, showing multiple balcony edges spalled and reinforcement exposed.

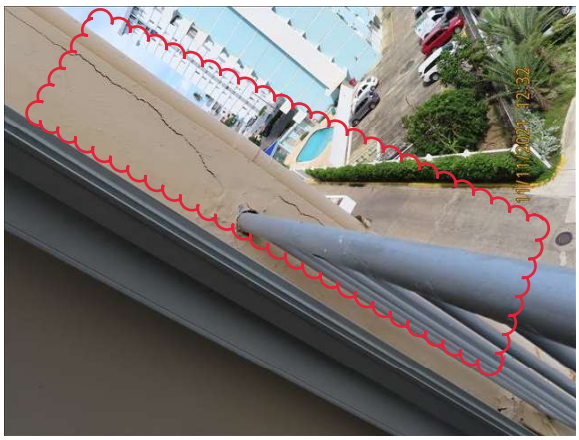
Picture 31: North wall elevation, showing multiple balcony edges spalled and reinforcement.

Picture 32: Partial exterior East wall elevation, showing multiple balcony edges spalled and reinforcement exposed.

Picture 33: Additional partial exterior East wall elevation, showing multiple balcony edges spalled and reinforcement exposed.

Picture 34: Roof ceiling where the paint at Unit 464 has fallen on the floor due to humidity.

Picture 35: Paint from the ceiling at Unit 464 has fallen on the floor due to humidity.

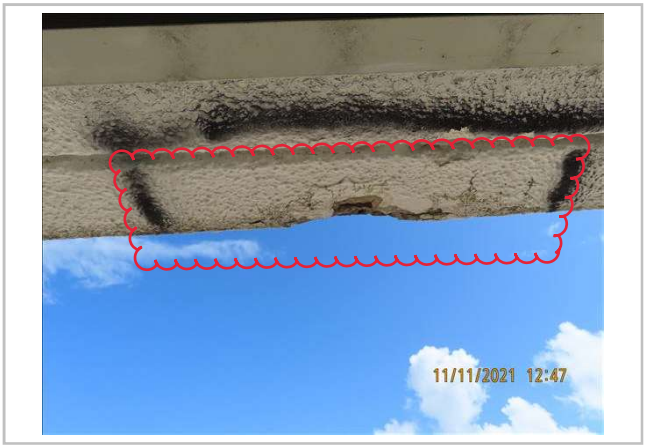


Picture 36: Top railing assembly connection to the concrete wall is spalled and wall is cracked, Unit 466.

Picture 37: Concrete roof edge cracks, exposed corroded reinforcement and delamination at Unit 466.

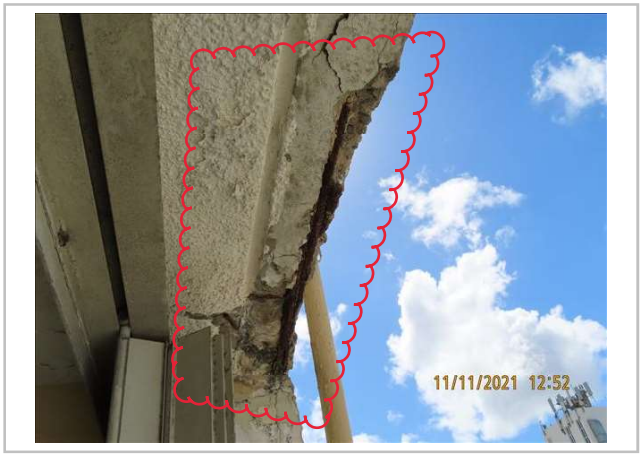
Picture 38: Unit 466 showing mold and fungus on the bathroom ceiling tiles.

Picture 39: Concrete roof edge cracks, exposed corroded reinforcement and delamination at Unit 460.



Picture 40: Concrete roof edge cracks, exposed corroded reinforcement and delamination at Unit 554.

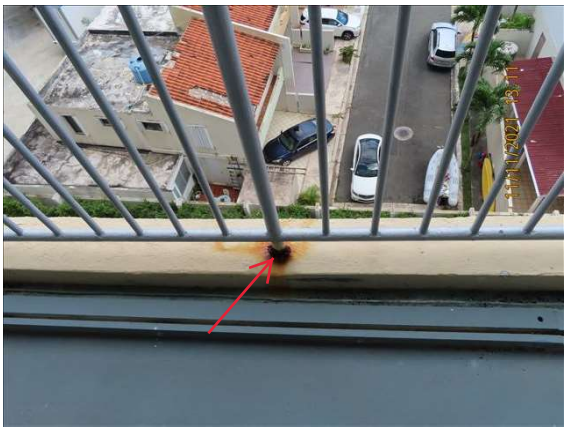
Picture 41: Balcony at unit 555. Lots of dust, and vegetation growing at the storm shutter railing.



Picture 42: Concrete roof edge cracks, exposed corroded reinforcement and delamination at Unit 555.

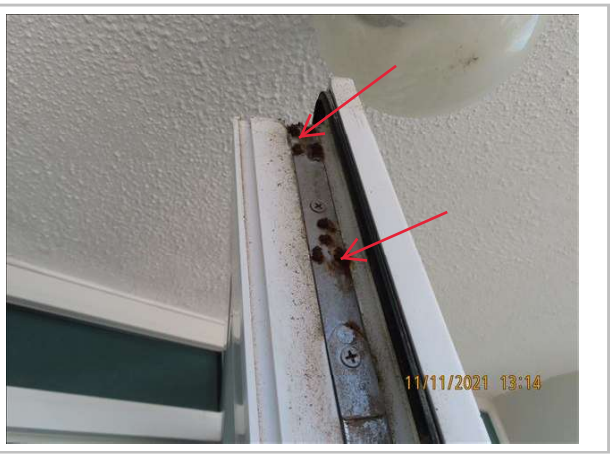
Picture 43: Closer look at the base of the railing post showing deterioration due to corrosion. Closer look to vegetation.

Picture 44: Unit 560 showing mold and fungus on the bathroom ceiling tiles.



Picture 45: Corroded railing post at the base in Unit 560.

Picture 46: Concrete roof edge cracks, exposed corroded reinforcement and delamination at Unit 560.



Picture 47: Balcony door assembly, corroded and damaged at Unit 560. Multiple locations.

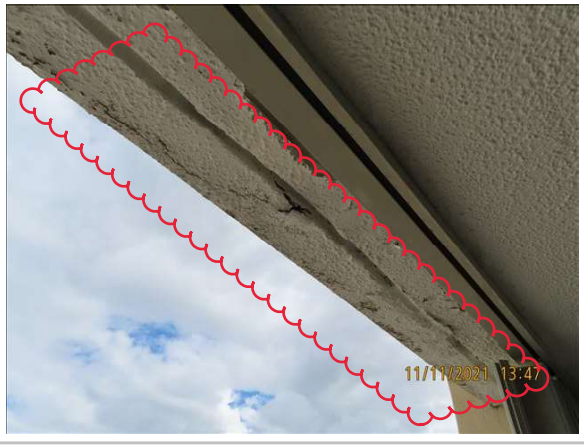
Picture 48: Unit 564 showing mold and fungus on roof ceiling. The mold is located at the paint under the concrete slab.

Picture 49: Balcony at Unit 564 showing water marks, paint peeling and algae due to water accumulation.

Picture 50: Top railing assembly connection to the concrete wall is spalled and wall is cracked, Unit 654.

Picture 51: Balcony roof slab showing cracks and delamination of the existing concrete. Unit 654.

Picture 52: Top railing assembly connection to the concrete wall is spalled and wall is cracked, Unit 659.



Picture 53: Concrete roof edge cracks, and delamination at Unit 659.

Picture 54: Balcony wall and window assembly sealant and caulking is cracked and deteriorated, Unit 662.

Picture 55: Unit 664 showing mold and fungus on unit walls.

Picture 56: Roof balcony showing corroded rebar and spalled concrete.

Picture 57: Spalled concrete from the roof above on unit 664.

Picture 58: Unit 751 full of mattresses. Used as storage.

Picture 59: Unit 759 used at storage.

Picture 60: Balcony door assembly, corroded and damaged at Unit 759. Multiple locations.

Picture 61: Balcony door assembly, corroded and damaged at Unit 759. Multiple locations.

Picture 62: Exterior wall at Unit 761 shown delaminated concrete.

Picture 63: Closer view of the exterior wall delamination at Unit 761.

Picture 64: Interior roof slab ceiling at Unit 760, showing previous repairs.

Picture 65: Unit 760, balcony roof ceiling, showing spalled concrete with different mix colors, and corroded rebars.

Picture 66: Debris from above on Unit 760, showing spalled concrete on the balcony floor slab.

Picture 67: Unit 762 showing mold and fungus on the unit roof slab.

Picture 68: Unit 1258, showing signs of mold and fungus at the AC and the window assembly.

Picture 69: Balcony wall and window assembly sealant and caulking is cracked and deteriorated, Unit 1258. Multiple locations.

Picture 70: Balcony door assembly, corroded and damaged at Unit 852. Multiple locations.

Picture 71: Unit 854 showing mold and fungus on unit walls.

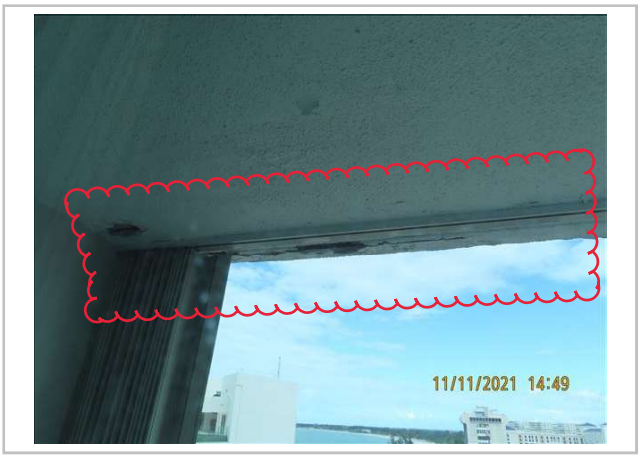
Picture 72: Corroded railing post at the base in Unit 854.

Picture 73: Spalled concrete at the balcony edge, next to the storm shutters, unit 854.

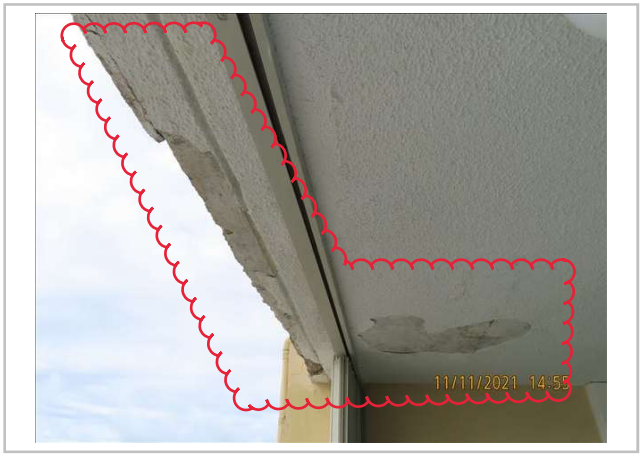
Picture 74: Balcony wall and window assembly sealant and caulking is cracked and deteriorated, Unit 858.

Picture 75: Spalled concrete at the roof slab, unit 858.

Picture 76: Unit 858, deteriorated door lock and door frame.



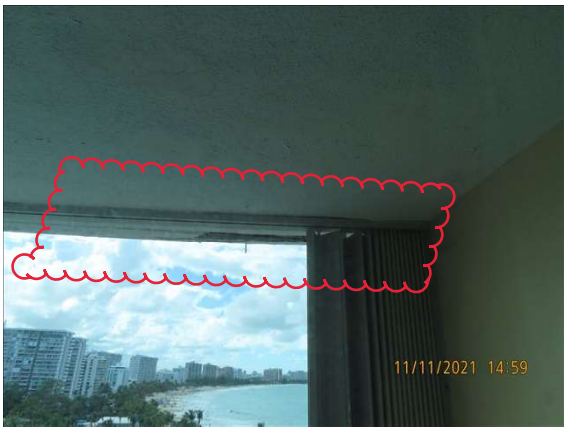
Picture 77: Spalled concrete at the balcony edge, next to the storm shutters, unit 859.



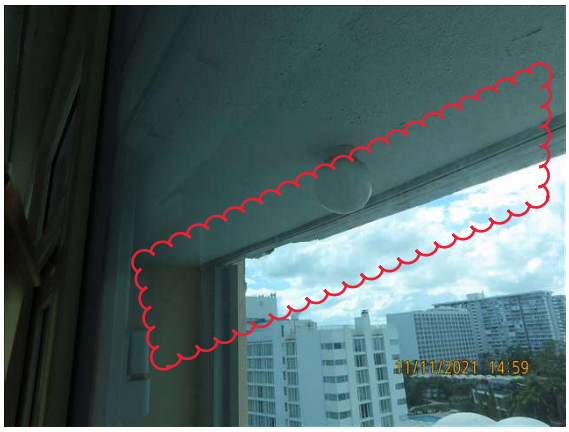
Picture 78: Concrete roof edge cracks, and delamination at Unit 863

Picture 79: Roof slab at unit 863 showing paint peeling and roof slab crack.

Picture 80: Unit 863 shows cracks on the work done to hide the AC duct work on the wall.



Picture 81: Spalled concrete at the balcony edge, next to the storm shutters, unit 863.



Picture 82: Spalled concrete at the balcony edge, next to the storm shutters, unit 863.

Picture 83:

Picture 84:

APPENDIX E-PARKING ADDITIONAL PICTURES

Picture 1: West exterior elevation showing balcony edge delamination and previous marks from previous report.

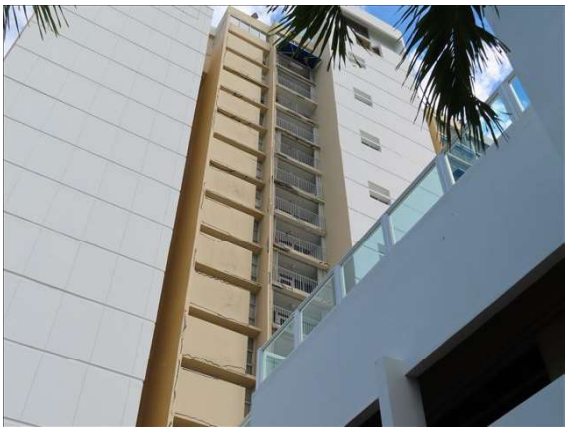
Picture 2: Additional view West exterior elevation showing balcony edge delamination and previous marks from previous report.

Picture 3: Additional view West exterior elevation showing balcony edge delamination and previous marks from previous report.

Picture 4: Closer view of the typical balcony edge concrete delamination, typical in multiple locations.

Picture 5: Additional view West exterior elevation showing balcony edge delamination and previous marks from previous report.

Picture 6: Additional view West exterior elevation showing balcony edge delamination and previous marks from previous report.



Picture 7: Additional view West exterior elevation showing balcony edge delamination and previous marks from previous report.

Picture 8: Additional view West exterior elevation showing balcony edge delamination and previous marks from previous report.

Picture 9: Additional view North exterior elevation showing balcony edge delamination and previous marks from previous report.

Picture 10: Additional view East exterior elevation showing balcony edge delamination and previous marks from previous report.

Picture 11: Additional view East exterior elevation showing balcony edge delamination and previous marks from previous report.

Picture 12: Closer view of the typical balcony edge concrete delamination, typical in multiple locations.

Picture 13: Concrete stair at level P4B, showing water marks and signs of humidity.

Picture 14: Concrete columns at level P4B, this four corner columns on the south west show damage at the lower portion.

Picture 15: Typical interface between the floor slab and the existing retaining wall at level P4B.

Picture 16: Concrete columns y8/6 at level P4B, showing concrete crushing, delamination and rebar corrosion.

Picture 17: Concrete wall at level parking, P4B, exposed corroded rebar, concrete spalling. Multiple locations.

Picture 18: Spalled concrete from previous image that has fallen on the floor.

Picture 19: Concrete column u/6 at level P4B, showing delamination, spalling, bulging.

Picture 20: Concrete column y8/7 at level P4B, showing delamination, spalling, concrete separation at the column corner.

Picture 21: Concrete column u/7 at level P4B showing delamination, spalling, bulging.

Picture 22: Water accumulation at level P4B.

Picture 23: Wall showing mater marks, water damage at lower level P4B. It shows pipe where water from above falls into the ground.

Picture 24: Closer view of water running from a pipe from above at lower parking level.

Picture 25: Concrete column y8/10 at level P4B. showing delamination, spalling and bulging at the column base.

Picture 26: Concrete slab showing cracks, water marks, concrete spalling and rebar corrosion. Multiple locations.

Picture 27: Water accumulation at level P4B

Picture 28: Additional view of water accumulation at level P4B. Extraction fans at the end.

Picture 29: Additional view of water accumulation at level P4B. Extraction fans at the end.

Picture 30: Additional view of water accumulation at level P4B. The extend is about 10-15 parking spaces.

Picture 31: Additional water accumulation area at level P4B.

Picture 32: Previous repairs shown on the concrete beams above. Work was done on the beams and concrete joist. Multiple locations.

Picture 33: Steel form left in place for the concrete joist. Completely corroded and deteriorated.

Picture 34: Closer view of water running from a pipe from above at lower parking level. Concrete spalling, cracks at slab level.

Picture 35: Additional water accumulation. Paint exhibits marks of water intrusion, humidity.

Picture 36: Concrete joist slab, showing water marks, efflorescence and a longitudinal crack.

Picture 37: Previous repairs not done properly. Concrete is spalling at the repair location. Multiple locations.

Picture 38: Concrete slab shows rebar corrosion, spalling, deterioration, water marks and incorrect electrical installation.

Picture 39: Additional concrete slab shows rebar corrosion, spalling, deterioration, water marks and incorrect electrical installation.

Picture 40: Additional concrete slab shows rebar corrosion, spalling, deterioration, water marks and incorrect electrical installation.

Picture 41: South sewer room at level P4A. Extremely corroded interior elements. Smell could felt through the lower level parking.

Picture 42: Interior concrete beam with the existing rebar, completely corroded and spalled inside the south sewer room.

Picture 43: Exterior wall outside the south sewer room. Signs of concrete corrosion, water marks from the expansion joint.

Picture 44: Concrete columns M/10, level P4A showing bulging, concrete spalling and corrosion outside the south sewer room.

Picture 45: Additional col M/10, level P4A showing bulging, concrete spalling and corrosion outside the south sewer room.

Picture 46: Concrete columns P/13 at level P4B. Rebar corrosion, concrete spalling, bulging.

Picture 47: Concrete wall showing water intrusion, marks from the expansion joint from above.

Picture 48: Concrete column M/29 at level P4B. Rebar corrosion, concrete spalling, bulging.

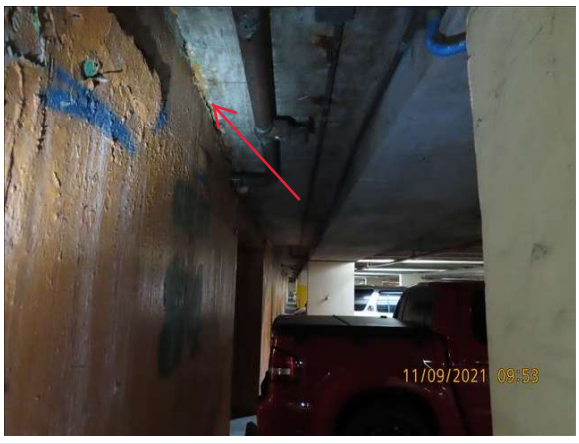
Picture 49: Previous repairs not done properly. Concrete is spalling at the repair location. Multiple locations.

Picture 50: Previous repairs at concrete joists. Multiple locations.

Picture 51: Additional concrete slab shows rebar corrosion, spalling, deterioration, water marks.

Picture 52: Cold form channel installed at the expansion joint. As we can see, it is deformed and not collecting any water from above.

Picture 53: Concrete joist bottom reinforcement exposed and corroded. Concrete spalled and cracked at location.



Picture 54: Concrete wall showing water intrusion, marks from the expansion joint from above and spalling.

Picture 55: Concrete joist slab showing signs of rebar corrosion, spalling and previous repairs.

Picture 56: Bottom of concrete joist cracked at level B2. Multiple locations.

Picture 57: Concrete joist slab showing cracks, efflorescense, and water marks.

Picture 58: Water accumulation from the expansion joint above at parking level.

Picture 59: Concrete joist slab showing signs of rebar corrosion, spalling, efflorescense and previous repairs.

Picture 60: Fan screen showing the present condition. Screen needs to be replaced or cleaned.

Picture 61: Previous repairs at concrete joists. Bottom flange of joist shows an AC duct full of drops crossing with an elec duct.

Picture 62: Typical concrete wall rebar spalling at parking level. Multiple locations.

Picture 63: Concrete wall showing water intrusion, marks from the expansion joint from above and spalling at drainage.

Picture 64: Closer look at drainage location from below. Cracks, water marks, water intrusion, spalling and corrosion.

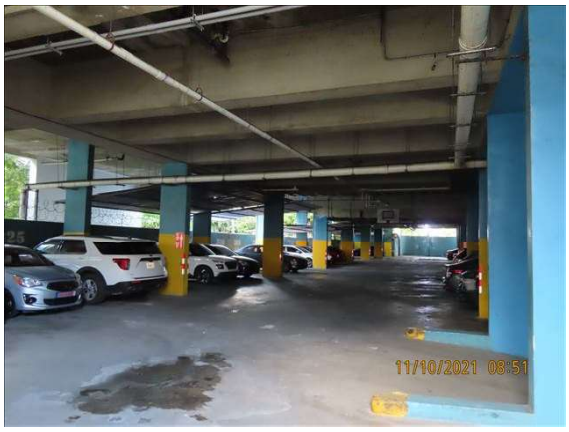
Picture 65: Concrete columns M/18 at level P3A. Rebar corrosion, concrete spalling, bulging.

Picture 66: Concrete columns M/22 at level P3A. Rebar corrosion, concrete spalling, bulging.

Picture 67: Unfinished repair at level P3B, concrete crack at floor slab.

Picture 68: Exhaust fans at parking level.

Picture 69: Previous repaired cracks at concrete beam.



Picture 70: Level P1B looking north, below pool level.

Picture 71: Cantilever beam, looking west below the pool deck. Previous repairs are present.

Picture 72: Water damage and marks from the pool above. Previous repaired cracks are present. Plastic deck to deflect pool water.

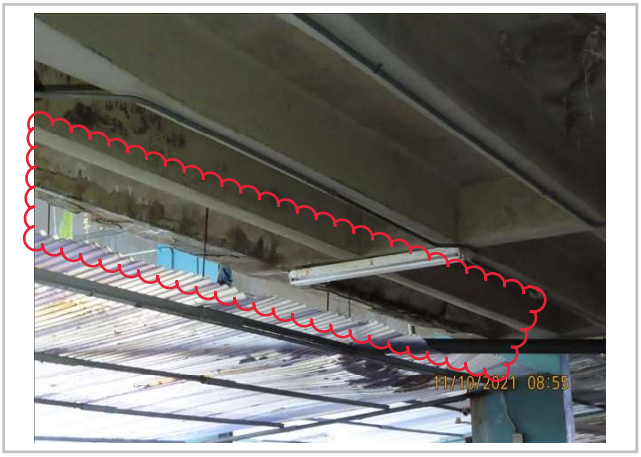
Picture 73: Water damage and marks from the pool above. Previous repaired cracks are present. Plastic deck to deflect pool water

Picture 74: Plastic deck to deflect pool water from above.

Picture 75: Water marks, efflorecense on the concrete beams and concrete joists.

Picture 76: Spalled, corroded, cracked concrete beam below the pool deck level. Visible efflorescense on the existing concrete.

Picture 77: Concrete column below pool deck showing cracks at the joint, corrosion, water marks on the columns and concrete beam.



Picture 78: Reinforced concrete beam below the pool deck showing extreme corrosion and spalling.

Picture 79: Concrete beam below the pool deck showing signs of extreme spalling and rebar corrosion. Debris falled on top of deck.

Picture 80: Stalactites below the pool deck concrete slab. Multiple cracks and previous repairs are noted.

Picture 81: Corner of columns Y18/15 showing excessive cracks, spalling and exposed corroded rebar on the concrete beams.

Picture 82: Pool water that falls from the cracks of the pool slab above and accumulates on the concrete slab at P1B.

Picture 83: Use of the Profoscope, non destructive rebar locator for a field verification of the vertical reinforcement on some of the cols.

Picture 84: Concrete beam and slab showing water marks, deterioration, spalling and corrosion.

Picture 85: Concrete joist showing spalled concrete, cracks, efflorescense and exposed corroded reinforcement at the joist bottom.

Picture 86: Concrete slab, joist and blockage showing signs of spalling and corroded bars.

Picture 87: Water from the pool level falling into the womens bathroom below and was kept in a trashcan that was full.

Picture 88: Electrical wiring below the pool deck, inside the womens bathroom showing water damage and corrosion.

Picture 89: Concrete joist below the pool deck, inside the pool mechanical room. Spalled concrete, corroded reinforcement.

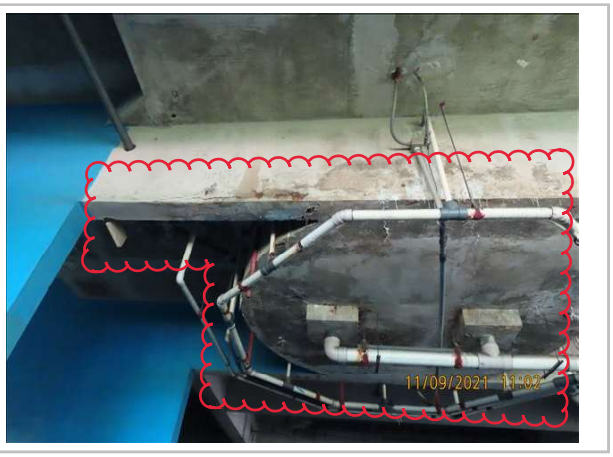
Picture 90: Concrete joist below the pool deck, inside the pool mechanical room. Spalled concrete, corroded reinforcement, water marks.

Picture 91: oncrete joist below the pool deck, inside the pool mechanical room. Spalled concrete, corroded reinforcement, water marks.

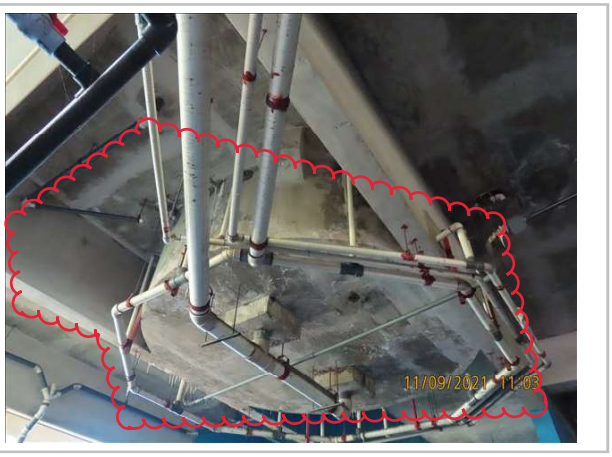
Picture 92: Exhaust fan at the pools mechanical room, showing corrosion and dust.

Picture 93: Concrete column X6/5 at level P1A showing concrete spalling and cracks at the columns base.

Picture 94: Concrete column X5/Y7 at level P1A showing concrete spalling and cracks at the corner of the column.



Picture 95: Concrete beam, slab showing cracks, water intrusion, water leakage, corrosion, cracks, stalactites.



Picture 96: Additional view concrete beam, slab showing cracks, water intrusion, water leakage, corrosion, cracks, stalactites

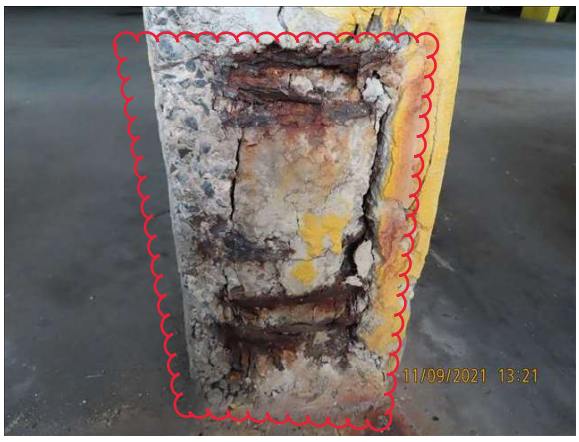
Picture 97: Concrete columns Y8/27 at level P1B, showing concrete crushing, extensive delamination and rebar corrosion.

Picture 98: Concrete columns U/27 at level P1B, showing concrete crushing, delamination and rebar corrosion.

Picture 99: Concrete columns R/25 at level P1B, showing concrete crushing and delamination.

Picture 100: Concrete columns Y8/18 at level P1B, showing concrete spalling, delamination and rebar corrosion.

Picture 101: Additional view column at Y8/18 at level P1B, showing concrete spalling, delamination and rebar corrosion.



Picture 102: Additional view column at Y8/18 at level P1B, showing concrete spalling, delamination and rebar corrosion.

Picture 103: Concrete column Y8/15 at level P1B. It shows concrete spaling, cracking and bulging at the base of the column.

Picture 104:. Concrete column U/10 at level P1B. Shows concrete crushing and corroded rebar reinforcement.

Picture 105: Concrete column U/7 at level P1B. Spalled concrete shows at the corner of the column.

Picture 106: Concrete slab below pool level showing corroded and exposed rebars, cracks and previous repairs.

Picture 107: Cracked and spalled concrete under the jacuzzi level. Efflorescense and previous repairs are noted.

Picture 108: Efflorescense on the concrete beams below the pool level. Previous repairs noted on the concrete slab.

Picture 109: Concrete column Y8/15 at level P1B showing vertical and horizontal cracks, spalling and water marks.

Picture 110:. Additional view of concrete column Y8/15 at level P1B. It shows deterioration of the column and beam joint.

Picture 111: Additional view of concrete column Y8/15 and level P1B, where in addition to the column cracks, show beam spalling.

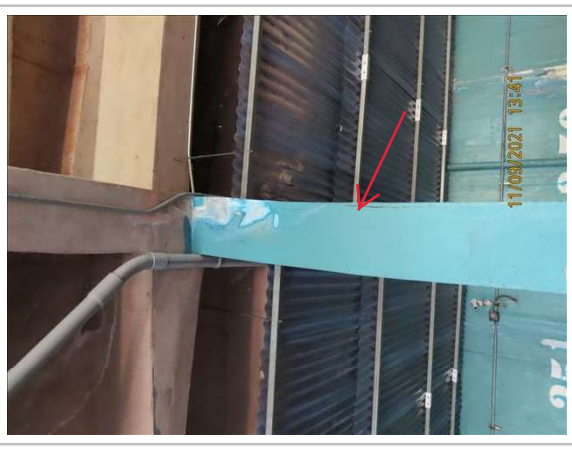
Picture 112: Additional view of concrete columns P1B, showing additional cracks, spalling, and efflorescense in the concrete.

Picture 113: Perimeter concrete beam under the 8ft perimeter on the west. Concrete spalling and corrosion at the member bottom.

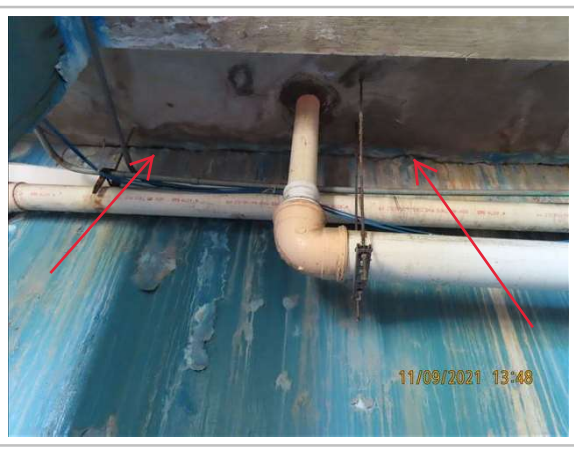
Picture 114: Concrete cracks, previous repairs and stalactites under the pool slab.

Picture 115: Concrete column Y8/18 at level P1B showing signs of corrosion, cracks and water damage.

Picture 116 Concrete column R25 at level P1B showing delamination of the south face of the column.



Picture 117: Additional view of the concrete column R25 at level P1B showing deformation and partial buckling.



Picture 118: Typical interface below the expansion joint at level P1A. It shows water intrusion, water marks.

Picture 119: Concrete columns N/27 at level P1A. It shows spalling, concrete separation at the columns corner.

Picture 120: Concrete joist deterioration, cracks and corrosion. Efflorescense and cracks on the slab are present. Level P1A.

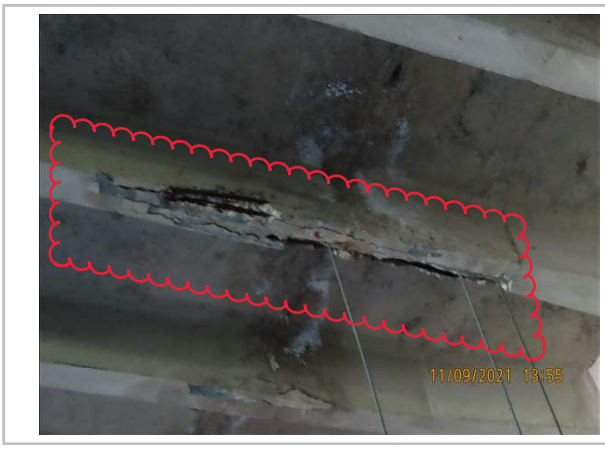
Picture 121: Concrete column N/29 at level P1A. Vertical crack, separation and delamination of the corner concrete.

Picture 122: Additional view of concrete column N/29 at P1A. It shows the separation is on the east face of the column.

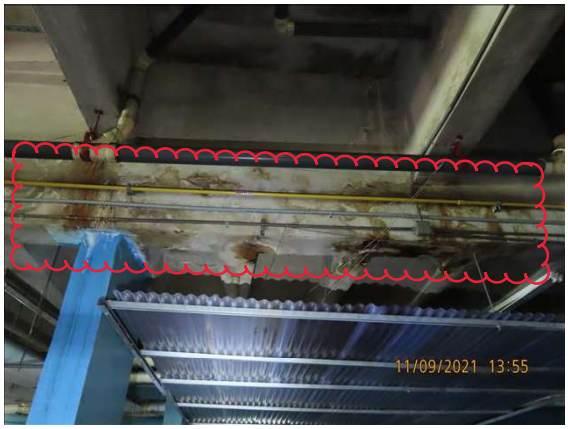
Picture 123: Concrete column M/27 at level P1A. It shows crushing and bulging at the north portion of the column.

Picture 124: Additional view of column M/27 at level P1A at the top. It shows cracks and signs of previous repairs.

Picture 125: Additional view of the typical interface below the expansion joint at level P1A. It shows water intrusion, water marks

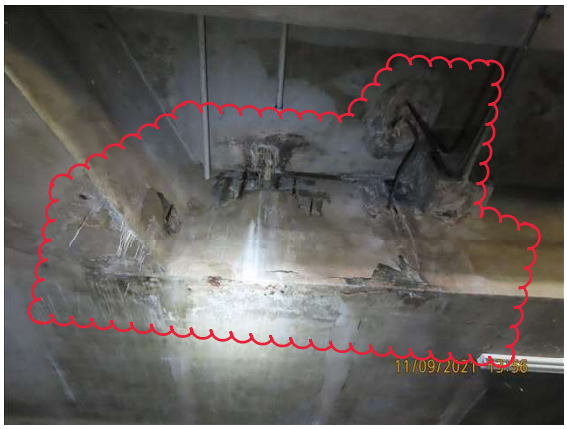


Picture 126: Closer view of the corroded reinforcement at the bottom of a concrete joist under the pool level above level P1A.



Picture 127: Concrete beam under the pool level showing water marks, corrosion marks, cracks and a plastic deck to channel water.

Picture 128: Concrete slab at level P1A showing water accumulation and cracks.



Picture 129: Concrete beam showing cracking, efflorescense, stalactites and rebar corrosion under the pool.

Picture 130: Closer view of Concrete beam showing cracking, efflorescense, stalactites and rebar corrosion under the pool.

Picture 131: Equipment at level P1A showing deterioration, water accumulation and corrosion.

Picture 132: Additional view of equipment at level P1A showing deterioration, water accumulation and corrosion.

Picture 133: Electrical box completely corroded and showing wires at level P1A.

Picture 134: Hanging steel duct at level P1A, complete corroded and hanging from a roof wire.

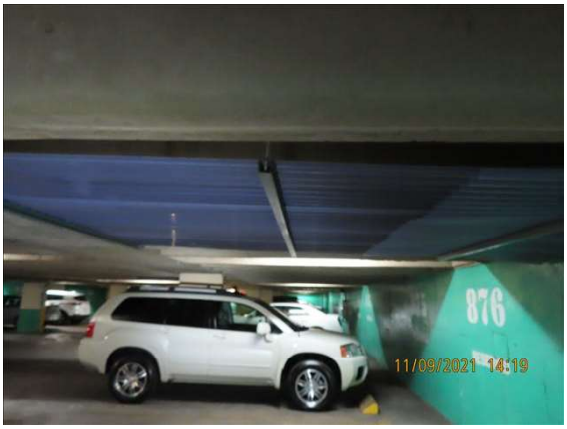
Picture 135: Concrete slab joists showing cracks, efflorescence and water marks, showing signs of water penetration.

Picture 136: Concrete slab showing previous repairs, and cracking at the east corner.

Picture 137: Vertical crack at the corner of the concrete wall at parking level.

Picture 138: Concrete column N/29 at level P2A, showing concrete crushing and delamination.

Picture 139: Concrete column M/29 at level P2A, showing concrete crushing and delamination.



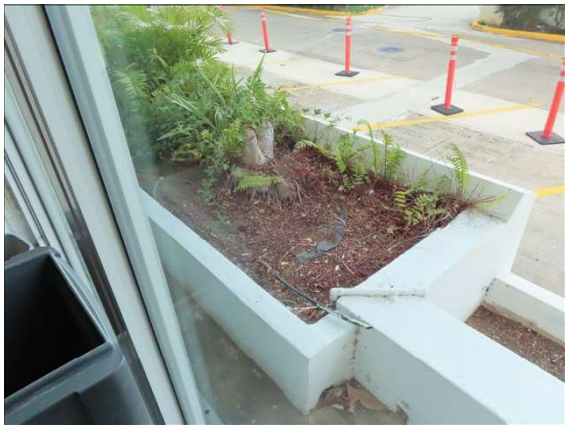
Picture 140: Plastic deck installed to control the water intrusion at lower levels. It does not solve the water intrusion problem.

Picture 141: Concrete joist slab at parking level showing cracks, water marks, efflorescence and bar corrosion. Multiple locations.

Picture 142: Concrete joist slab at parking level showing cracks, water marks, efflorescence and bar corrosion. Multiple locations

Picture 143: Closer look at column N/15, level P2A showing cracks, water marks

Picture 144: Concrete column M/10, level P2A showing cracks at the corner.



Picture 145: Planters at the east, need to be checked for water intrusion and drainage. Same at the pool level on the west.

Picture 146: Water collection device at the entrance of executive offices.

Picture 147: Source of the water intrusion at the executive offices at the mezzanine level.

Picture 148: Mechanical room below the pool level showing signs of efflorescense, stalactites, corrosion and cracks.

Picture 149: Planters at the west, need to be checked for water intrusion and drainage. Same at the pool level on the east.

Picture 150: View at the north sewer pump. Located in the mechanical room on the north side.

Picture 151: Interior view of the water cistern, located on the north east side of the property.

Picture 152: Corroded equipment at roof level, next to the elevator mechanical tower at roof level.

Picture 153: View of the existing roof membrane. Small water accumulation and membrane delamination in multiple location

Picture 154: View of the existing roof membrane. Small water accumulation and membrane delamination in multiple locatio

Picture 155: View of the existing roof membrane. Small water accumulation and membrane delamination in multiple locatio

Picture 156: Small concrete spalling and delamination at the elevator mechanical tower.

Picture 157: View of the existing roof membrane. Small water accumulation and membrane delamination in multiple locatio

Picture 158: View of the existing roof membrane. Small water accumulation and membrane delamination in multiple locatio

Picture 159: View of the existing roof membrane. Small water accumulation and membrane delamination in multiple locatio

Picture 160: View of the existing roof membrane. Small water accumulation and membrane delamination in multiple locatio

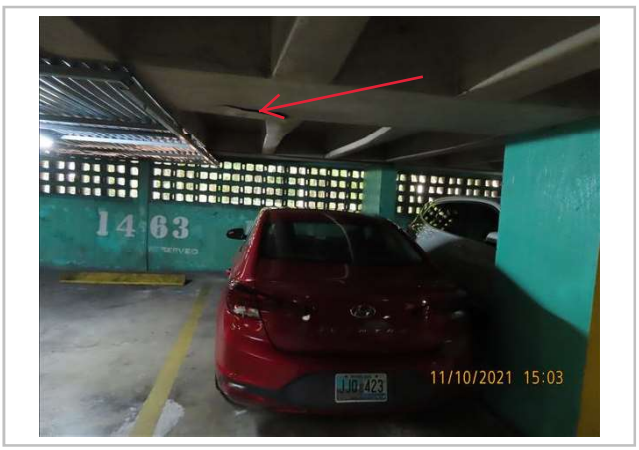
Picture 161: Corroded junction box with too many wires to count.

Picture 162: AC equipment without a platform, safety anchorage. Multiple units in multiple locations.

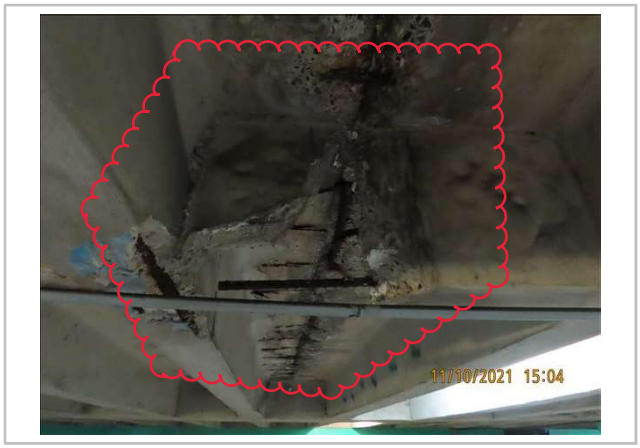
Picture 163: Concrete floor joist with bottom of concrete spalled and delaminated. Multiple locations. Corroded rebar exposed.

Picture 164: Concrete floor joist with bottom of concrete spalled and delaminated. Multiple locations. Corroded rebar exposed

Picture 165: Spalled concrete portion hanging from the existing beam at parking level.



Picture 166: Location of spalled concrete portion hanging from the existing beam at parking level.



Picture 167: Concrete floor joist with bottom of concrete spalled and delaminated. Multiple locations. Corroded rebar exposed

Picture 168: Concrete floor joist with bottom of concrete spalled and delaminated. Multiple locations. Corroded rebar exposed

Picture 169: Pool mechanical room, showing the electrical boxes.

Picture 170: Pool mechanical room showing the existing equipment.

Picture 171: Additional view of the pool mechanical room, showing the existing equipment. Deteriorated concrete roof joists.

Picture 172: Additional view of the pool mechanical room, showing the existing equipment. Deteriorated concrete roof joists.

Picture 173: Additional view of the pool mechanical room, showing the existing equipment. Deteriorated concrete roof joists.

Picture 174: Concrete cracks at wall, inside the pool mechanical room. Efflosrecence coming out of the wall.

APPENDIX F- COST ESTIMATE

REPAIR ESTIMATE FOR COLUMNS, BEAMS, SLAB SHORING AT THE PARKING BUILDING.

P4B

# cols	Height (ft)	$$$	Total
9	8	$250	$18,000
# beams	Length (ft)	$$$	
40	25	$150	$150,000
Slab area (ft^2)	% repair	$$$	
12200	15	$45	$82,350
Shoring (ft^2)	%shored	$$$	
12200	15	$30	$54,900
			$305,250

P3B

# cols	Height (ft)	$$$	Total
0	8	$250	$0
# beams	Length (ft)	$$$	
40	25	$150	$150,000
Slab area (ft^2)	% repair	$$$	
12200	15	$45	$82,350
Shoring (ft^2)	%shored	$$$	
12200	15	$30	$54,900
			$287,250

P2B

# cols	Height (ft)	$$$	Total
0	8	$250	$0
# beams	Length (ft)	$$$	
40	25	$150	$150,000
Slab area (ft^2)	% repair	$$$	
12200	15	$45	$82,350
Shoring (ft^2)	%shored	$$$	
12200	15	$30	$54,900
			$287,250

P1B

# cols	Height (ft)	$$$	Total
10	16	$250	$40,000
# beams	Length (ft)	$$$	
40	25	$150	$150,000
Slab area (ft^2)	% repair	$$$	
12200	15	$45	$82,350
Shoring (ft^2)	%shored	$$$	
12200	15	$30	$54,900
			$327,250

P4A

# cols	Height (ft)	$$$	Total
3	8	$250	$6,000
# beams	Length (ft)	$$$	
40	25	$150	$150,000
Slab area (ft^2)	% repair	$$$	
12200	15	$45	$82,350
Shoring (ft^2)	%shored	$$$	
12200	15	$30	$54,900
			$293,250

P3A

# cols	Height (ft)	$$$	Total
3	8	$250	$6,000
# beams	Length (ft)	$$$	
40	25	$150	$150,000
Slab area (ft^2)	% repair	$$$	
12200	15	$45	$82,350
Shoring (ft^2)	%shored	$$$	
12200	15	$30	$54,900
			$293,250

P2A

# cols	Height (ft)	$$$	Total
2	8	$250	$4,000
# beams	Length (ft)	$$$	
40	25	$150	$150,000
Slab area (ft^2)	% repair	$$$	
12200	15	$45	$82,350
Shoring (ft^2)	%shored	$$$	
12200	15	$30	$54,900
			$291,250

P1A

# cols	Height (ft)	$$$	Total
4	16	$250	$16,000
# beams	Length (ft)	$$$	
40	25	$150	$150,000
Slab area (ft^2)	% repair	$$$	
12200	15	$45	$82,350
Shoring (ft^2)	%shored	$$$	
12200	15	$30	$54,900
			$303,250

B2

# cols	Height (ft)	$$$	Total
0	8	$250	$0
# beams	Length (ft)	$$$	
20	25	$150	$75,000
Slab area (ft^2)	% repair	$$$	
21000	10	$45	$94,500
Shoring (ft^2)	%shored	$$$	
21000	5	$30	$31,500
			$201,000

B1

# cols	Height (ft)	$$$	Total
0	8	$250	$0
# beams	Length (ft)	$$$	
20	25	$150	$75,000
Slab area (ft^2)	% repair	$$$	
21000	10	$45	$94,500
Shoring (ft^2)	%shored	$$$	
21000	5	$30	$31,500
			$201,000

LOBBY

# cols	Height (ft)	$$$	Total
0	8	$250	$0
# beams	Length (ft)	$$$	
20	25	$150	$75,000
Slab area (ft^2)	% repair	$$$	
21000	10	$45	$94,500
Shoring (ft^2)	%shored	$$$	
21000	5	$30	$31,500
			$201,000

Grand Total		$2,991,000
%contingency	10	$3,290,100

Notes:

1) Input in yellow cells only
2) # of columns based on site visit
3) # of beams estimated based on site visit.
4) areas estimated based on site visit.
5) Estimate for discussion purposes only.
6) Only with final repair drawings an accurate amount could be calculated.

SUMMARY OF REPAIR ESTIMATE FOR COLUMNS, BEAMS, SLAB SHORING AT THE PARKING BUILDING.

Level	# cols	Height (ft)	$$$	# beams	Length (ft)	$$$	Slab area (ft2)	% repair	$$$	Shoring (ft2)	%shored	$$$	Total
P4B	9	8	$250	40	25	$150	12200	15	$45	12200	15	$30	$305,250
P3B	0	8	$250	40	25	$150	12200	15	$45	12200	15	$30	$287,250
P2B	0	8	$250	40	25	$150	12200	15	$45	12200	15	$30	$287,250
P1B	10	16	$250	40	25	$150	12200	15	$45	12200	15	$30	$327,250
P4A	3	8	$250	40	25	$150	12200	15	$45	12200	15	$30	$293,250
P3A	3	8	$250	40	25	$150	12200	15	$45	12200	15	$30	$293,250
P2A	2	8	$250	40	25	$150	12200	15	$45	12200	15	$30	$291,250
P1A	4	16	$250	40	25	$150	12200	15	$45	12200	15	$30	$303,250
B2	0	8	$250	20	25	$150	21000	10	$45	21000	5	$30	$201,000
B1	0	8	$250	20	25	$150	21000	10	$45	21000	5	$30	$201,000
LOBBY	0	8	$250	20	25	$150	21000	10	$45	21000	5	$30	$201,000

Grand Total		$2,991,000
%contingency	10	$3,290,100

REPAIR ESTIMATE FOR BALCONY EDGE & RAILING AT THE APARTMENT TOWER.

LEVEL 1

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	4	$300	$50,400
			$325,400

LEVEL 2

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 3

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 4

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 5

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 6

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 7

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 8

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 9

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 10

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 11

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 12

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 13

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 14

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 15

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	8	$300	$100,800
			$375,800

LEVEL 16

Floor edge (ft)		$$$	Total
500		$250	$125,000
Railing (ft)			
500		$300	$150,000
# of Wall edge	Wall edge vertical (ft)		
42	4	$300	$50,400
			$325,400

Grand Total		$5,912,000
%contingency	10	$6,503,200

Notes:
1) Input in yellow cells only
2) # of lineal ft based on site visit and existing drawings.
3) Estimate for discussion purposes only.
4) Only with final repair drawings an accurate amount could be calculated.

SUMMARY REPAIR ESTIMATE FOR BALCONY EDGE & RAILING AT THE APARTMENT TOWER.

Level	Floor edge (ft)	$$$	Railing (ft)	$$$	# of Wall edge	Wall edge vertical (ft)	$$$	Total
LEVEL 1	500	$250	500	$300	42	4	$300	$325,400
LEVEL 2	500	$250	500	$300	42	8	$300	$375,800
LEVEL 3	500	$250	500	$300	42	8	$300	$375,800
LEVEL 4	500	$250	500	$300	42	8	$300	$375,800
LEVEL 5	500	$250	500	$300	42	8	$300	$375,800
LEVEL 6	500	$250	500	$300	42	8	$300	$375,800
LEVEL 7	500	$250	500	$300	42	8	$300	$375,800
LEVEL 8	500	$250	500	$300	42	8	$300	$375,800
LEVEL 9	500	$250	500	$300	42	8	$300	$375,800
LEVEL 10	500	$250	500	$300	42	8	$300	$375,800
LEVEL 11	500	$250	500	$300	42	8	$300	$375,800
LEVEL 12	500	$250	500	$300	42	8	$300	$375,800
LEVEL 13	500	$250	500	$300	42	8	$300	$375,800
LEVEL 14	500	$250	500	$300	42	8	$300	$375,800
LEVEL 15	500	$250	500	$300	42	8	$300	$375,800
LEVEL 16	500	$250	500	$300	42	4	$300	$325,400

Grand Total		$5,912,000
%contingency	10	$6,503,200