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ENGINEERS & ARCHITECTS

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CARLTON HOUSE CONDOMINIUMS

NEW HIGHLAND BEACH INSPECTION REQUIREMENT



Architecture
Structural
MEP/FP
Restoration
Parking

Exterior Envelope
Energy
Studies
Expert Witness
Regulatory & Compliance

JUNE 27, 2022

Submitted By:

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Submitted To:

Carlton House Condominiums
2701 S. Ocean Blvd
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C/O Elissa Goldman

June 27, 2022,

Sent Via Electronic Mail

Carlton House Condominiums
2701 S. Ocean Blvd
Highland Beach, FL 33487
Folio #: 24-43-46-28-33-0000-XXX

C/O Elissa Goldman
Property Manager
800-337-5850
egoldman@castlegroup.com

Re: Carlton House Condominiums
New Highland Beach Inspection Requirements

Dear Ms. Goldman:

O&S Associates, Inc. has completed the Building Condition Assessment and Engineering Report of Carlton House Condominiums. This report was prepared in accordance with the scope of work and limitations included in this report.

Please review the attached findings and contact us at your convenience to discuss the report or any questions you may have.

Respectfully,
O&S Engineers & Architects



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EXECUTIVE SUMMARY

Carlton House Condominiums retained O&S Associates, Inc. to perform a structural inspection of the residential building. Pursuant to the requirement of the Highland beach new building recertification inspection, ordinance No. 2021-011. Our site visit included visual inspection from the ground, the roof, catwalks, staircase and thirty-one of the thirty-two balconies.

Overall, the building and roof are in fair condition. Structural concrete and stucco repairs are needed to return the building to good condition. The most critically deteriorated areas were discovered at the catwalk stairs beam where the harmful effects of the salt laden sea air are most prevalent and potential water intrusion that has deteriorated the reinforcement may have affected this area. The least amount of visual deterioration was inside the protected spaces of the residential units. Additional deficiencies were noted on catwalks overhead and balconies. Structural concrete repairs and guardrail repairs are recommended on the cantilever concrete balconies and additional waterproofing measures are recommended at the catwalk and balconies to mitigate potential future deterioration. We recommend a comprehensive restoration, maintenance and waterproofing program be planned by the community to address the issues observed. The program should include the identified concrete repairs, maintenance of the stucco cladding and waterproofing of the balcony floors, and catwalks.

INTRODUCTION

AUTHORIZATION

O&S Associates, Inc. (O&S) was retained by Carlton House Condominiums to perform the New Highland Beach structural evaluation of the building per our proposal dated February ,7 2022.

OBJECTIVE

O&S understands that Carlton House Condominiums community is aware of some deterioration at the buildings of the community and desires a structural engineering consultant to complete an evaluation of the building and provide an opinion of the building condition and offer recommendations for a repair program. This report provides a condition assessment of the structural and waterproofing elements of the building. The observed conditions were evaluated to the extent required to develop a conceptual repair program and opine the associated probable costs.

Note that we did not observe 100% of the building structure, or façade. Our findings and probable costs are extrapolated from the results of our observations of a portion of the building.

SCOPE

The scope of work performed to date of the structural evaluation of Carlton House Condominiums includes:

1. Review documents made available to O and S Associates including the existing plans, engineering and testing reports, and construction, repair, or maintenance information.
2. Visually observe the project structural and electrical components or conditions, and other incidental appurtenances related to determining the condition of the structure, in accordance with the checklists and forms issued by the Town of Highland Beach.
 - a. Building Roof, Parapets.
 - b. 32-unit balconies, Catwalks, and Staircase.
 - c. Exterior building façade.
3. Perform acoustic impact testing (hammer sounding) of representative areas of the building façade.
4. Compile a report with recommendations, probable costs, and photographic documentation.

REVIEWED DOCUMENTS

O&S relied on the following documents for information throughout the preparation of this condition assessment report:

1. “32 Unit Apartment Building Carlton House Gulfstream Investors Inc” drawings submitted for permit generated by D.E Britt Associates Inc, AIA – 1972.

GENERAL PROPERTY DESCRIPTION

Carlton House Condominiums is a 4-story concrete/masonry “C” shape structure separated by expansion joints built-in 1971. The property contains thirty-two residential units in Highland Beach, Florida. The community includes on-grade parking in front of the building and has several site features and amenities. Building's roof is waterproofed with a built-up asphalt roof with ballast, while its exterior is finished with stucco.

VISUAL OBSERVATIONS & RECOMMENDATIONS

INTRODUCTION

This section of the report contains a summary of our visual observations and recommendations for the building. The structural evaluation of Carlton House Condominiums followed accepted assessment practices and industry standards. The building structural components were evaluated with respect to both structural integrity and weathertightness.

In addition, acoustic impact testing was performed in accordance with ACI 364.1-94 by “hammer tapping” and “chain dragging” select unobstructed areas of the stucco cladding and concrete slab surface. This acoustic testing is used to audibly detect deteriorated/delaminated locations that are not visibly observable. Our field observations were made based on our understanding of accepted industry standards as set forth in voluntary specifications. Photographs were used to document the various conditions and distressed areas (Appendix B – Photographic Documentation).

We did not evaluate the building with respect to hazardous materials, zoning/code compliance, or accessibility to disabled persons.

STRUCTURAL DESCRIPTION

Carlton House Condominium is a concrete-framed four-story building in Highland Beach. The building has THIRTY-TWO cantilevered balconies, and the concrete slabs are 4in thick and have a 6 x 6'-10/10 mesh. Supported by steel bar joists @ 2' - 0" O.C. The steel joists are supported on cast-in-place concrete girders and columns.

BUILDING SUPER STRUCTURE CONCRETE

The Building at Carlton House Condominiums is composed of cast-in-place concrete slabs supported on steel bar joists and cast-in-place concrete beams and columns. We identified multiple spots of spalled concrete on balconies and catwalk soffit. It is likely that additional concrete repairs would be discovered during a repair program. As discussed later, some observed areas of debonded stucco were observed on the exterior of building elevations. When the stucco is removed it may expose deteriorated concrete that will need to be repaired before the stucco is replaced. We recommend the known areas of concrete deterioration be repaired by a contractor experienced with concrete restoration and the work be completed per accepted industry

standards and recommendations. We also recommend an allowance for additional concrete repairs be included in the repair program scope of work.

CONCRETE RETAINING WALL

During our walkthrough of the building, we observed horizontal cracks happening at the retaining wall on the east landing. From our observation and acoustic impact testing by hammer tapping, the horizontal cracks were in sound conditions. The cracks may have occurred due to shrinkage and expansion from heat exposure to the concrete. Another effect may be caused by exposure to the salt in the sea air. To repair the retaining wall, the rails and steps should be removed properly. This will enable better access and it is recommended that an experienced contractor does this. Walls are also suggested to be repainted and coated once all the repairs have been completed.

CONCRETE BEAMS AT CATWALK

Both ends of the Carlton house's south and north elevations have concrete beams that support the slab and the staircase. During our visual inspection, we observed the concrete beam on the first floor of the north elevation under the staircase is in poor condition and has spalling. This is a concern and will require shoring to support the weight once construction is started. There are also other areas that have debonding stucco at the beam, which may be an indicator of deteriorated concrete. Visible spalls are indicators that some corrosion has occurred and is affecting the reinforcement and has advanced to the point of causing deterioration of the concrete balcony.

We recommend that the damaged concrete be carefully removed by a contractor experienced with overhead concrete beam restoration. The repair work will require that the beam be shored, or temporarily supported with supplemental structure. Once the existing concrete has been repaired a new coating should be applied to the entire façade and surfaces exposed to the weather. Additionally, the floors of the balconies should be waterproofed to mitigate potential future deterioration of the balcony framing.

OVERHEAD CONCRETE SLAB AT CATWALKS

We observed deteriorated and spalled stucco at the soffit of the catwalk throughout the building. The deteriorated and spalled stucco may be obscuring deteriorated concrete so should be repaired. The observed deterioration is likely due to water sitting on the catwalk slab that is not waterproofed. We recommend that the damaged stucco/concrete be carefully removed by a contractor experienced with overhead slab restoration and repaired per industry standards.

We recommend a waterproofing membrane be installed on the catwalk floors. This includes removing the catwalk surface finish to waterproof the concrete slab. This will prevent water from penetrating the slab and will extend the useful life of the catwalk. The waterproofing will not eliminate corrosion that has already happened. Stopping the water from accessing the reinforcing steel will slow down or stop the rate of corrosion going forward. The waterproofing membrane has an expected useful life so the association should plan to maintain the waterproofing membrane approximately every seven to ten years.

CANTILEVER CONCRETE BALCONIES

Each unit on the second floor and above includes a cantilevered concrete balcony. We inspected the balconies at 31 of the 32 units and observed that the balconies are in generally fair condition. We noted that all the balconies have decorative concrete floor, none of the balconies have tile. This allows for the balcony slabs to be inspected and review the condition of the concrete. From our observation unit #28 was one of the units that has an area of debonded concrete slab. Following the other units, we observed eight of them with soffit spall on the slab/beam and nineteen with debonded stucco.

Debonded stucco happens due to multiple reason this may occur due stucco losing its bond to the concrete and allowing moisture to penetrate the concrete, resulting in spalling. Soffit spalling can be occurring due to water sitting on balconies slab and it can be due to coating failing.

We recommend that the damaged concrete be carefully removed by a contractor experienced with soffit concrete and vertical wall repair. Following we recommend a waterproofing membrane be installed on the balcony floors. The waterproofing membrane will prevent water from penetrating the slab and will extend the useful life of the balcony. The waterproofing will not eliminate corrosion that has already happened. Stopping the water from accessing the reinforcing steel will slow down or stop the rate of corrosion going forward. The waterproofing membrane has an expected useful life so the association should plan to maintain the waterproofing membrane approximately every seven years.

BALCONY GUARDRAILS

The balcony guardrails at Carlton House Condominiums are comprised of partial height stucco masonry walls with horizontal aluminum rails on top. The aluminum horizontal guardrails are in generally in sound condition. We observed forty-five of the post grout pockets in the catwalk and balcony to be in poor condition and are loose. It appeared that the grout at the post base had deteriorated and the concrete surrounding the post base had deteriorated as well as the grout.

We recommend the concrete be repaired at the post bases where it has deteriorated, and the post has become loose. The grout at the post bases that has deteriorated should be removed and replaced with new non-shrink, high-strength grout suitable for use in an exposed environment. New fasteners should be installed at locations where fasteners have been lost.

STEEL STRUCTURAL SUPPORT AT CATWALK AND BALCONIES

The condominium has structural steel post located at some of the balconies and at the north and south elevation of the staircase. We observed steel post corrosion occurring at the following balconies: 46,45,36,26,16,15. Corrosion occurs due to the presence of moisture and oxygen, and as well the building exposure to harmful effects of the salt laden sea air is most prevalent. Furthermore, it should be repair because it can affect the condition of the concrete and infiltrate water and deteriorate the reinforcement steel and lead to spalling. We recommended that this is done by qualified restoration contractor per industry standards.

VERTICAL WALL REPAIR

During our walk-through of the structural building, we physically sounded with our delaminating tool the walls and observed multiple areas of debonding stucco as well as concrete spalling. This may occur due to the stucco losing its bond to the concrete and allowing moisture to penetrate

the concrete, resulting in spalling. Some hairline cracks were also observed but they were all in sound conditions. We recommend that the vertical wall repair be performed by an experienced contractor and the walls be repainted and coated once all the repairs have been completed.

STUCCO CLADDING

The façade of Carlton House Condominiums is comprised of cement stucco applied over the concrete framing and masonry partition and infill walls. Once cured the stucco is coated with a weatherproofing coating and the two layers act together as part of the waterproofing envelope of the building. As the stucco ages and deteriorates cracks can form which project through the coating. The stucco can also de-bond from the concrete and masonry walls. Left untreated, water can infiltrate through the cracks in the coating and stucco and leak into the building. The infiltrating water accelerates the deterioration of the remaining stucco, can leak into the occupied spaces of the building damaging interior finishes, and eventually cause portions of the stucco to fall from building.

We performed visual observations of the stucco exterior and performed acoustic impact testing of portions of the wall to locate areas of deteriorated and de-bonded stucco. We determined that there is de-bonded stucco present on the façade and visible cracks as well. The deterioration is mostly concentrated around the windows, Catwalk overhead/walls and balconies slab/wall. Finally, we observed locations where storm shutters had been removed from the façade. The shutter anchors were not properly removed, and the stucco was not repaired.

The cracked, de-bonded and deteriorated stucco should be repaired by a contractor experienced with stucco restoration. The damaged stucco should be carefully removed in a manner that does not damage the substrate and will allow for the replacement stucco to be blended into the adjacent stucco that was in good condition. The substrate of the removed stucco should be treated with a bonding agent and new stucco placed in the patch area in lifts or as recommended by the stucco manufacturer.

Once the existing stucco has been repaired a new coating should be applied to the entire façade and surfaces exposed to weather.

SEALANTS JOINTS

The condominium building includes aluminum windows and sliding doors in all facades. We observed locations where the perimeter sealant joint has expired, failed, or had not been properly installed.

The sealant joints on a building are a critical part of the building waterproofing element. A sealant joint is required wherever two dissimilar materials come together in a construction project. The most common sealant joints are between the stucco or concrete wall and the aluminum window frame and between the aluminum window light and the glass panes. The sealant joints should be repaired by fully removing the existing sealants, cleaning the substrate, and installing new sealant joint material with the proper dimensional geometry and tooled profile.

EXPANSION JOINT

The condominium forms a "C" shape with an expansion joint joining the three structures. Each floor has a horizontal joint on its north and south elevations. In addition, in both the north and south elevations of the building, a vertical expansion joint follows the building's height. As we observed, both the horizontal and vertical expansion joints have expired and need to be replaced.

The expansion joint on the building is a critical part of the building's waterproofing element. Additionally, it is necessary when there is a transition between two surfaces to transfer movement and reduce stress. Expansion joint glands should be replaced to maintain the waterproofing envelope of the building.

ACCURACY, LIMITATIONS, AND DISCLOSURES

This report contains professional opinions based on conditions observed as of the dates of inspection. This report is believed to be accurate with the limitations of the stated methods for obtaining information. Nothing in this report shall be interpreted as any kind of guarantee or warranty because we have no control over future events. This report is not intended to be a discourse on safety, nor shall it be used as a specification.

We developed this report to assist in the budgeting for repairs and maintenance related to long-term ownership. Critical statements made in this report on the condition of the property may not be used to justify criticism of previous design professionals, contractors, or anyone responsible for the building. This inspection does not include the examination of building areas for hazardous materials, or for building code, fire, or safety violations.

A review of the facility for ADA compliance was not included in the scope of this project since ADA compliance is a legal determination and not an architectural or engineering finding.

The evaluation required that certain assumptions be made regarding existing conditions, and some of these assumptions cannot be verified without expending additional sums of money or destroying otherwise adequate or serviceable portions of the building. The extent of our evaluation was limited to visual observations and the scope of work indicated in this report. We cannot guarantee that the appraisal discovered or disclosed all possible latent conditions.

The project repair costs are based on available information and from our experience with similar projects.

The report is not for the benefit of or use by others without the written permission of O&S ASSOCIATES. We summarized the evaluation and recommendations in this report for use with additional fiscal and technical judgment. Use of this report without our permission and guidance may lead to erroneous action for which the user shall bear full responsibility.

ATTACHMENT LIST

ATTACHMENT A – PHOTOGRAPHIC DOCUMENTATION

JUNE 27, 2022

Photo #1:



Front Elevation on
Carlton House.

Photo #2:



North Elevation

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Photo #3:



Spall concrete at exterior wall.

Photo #4:



Vertical spalling

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Photo #5:



Spall at concrete at grout pocket

Photo #6:



Corroded steel post

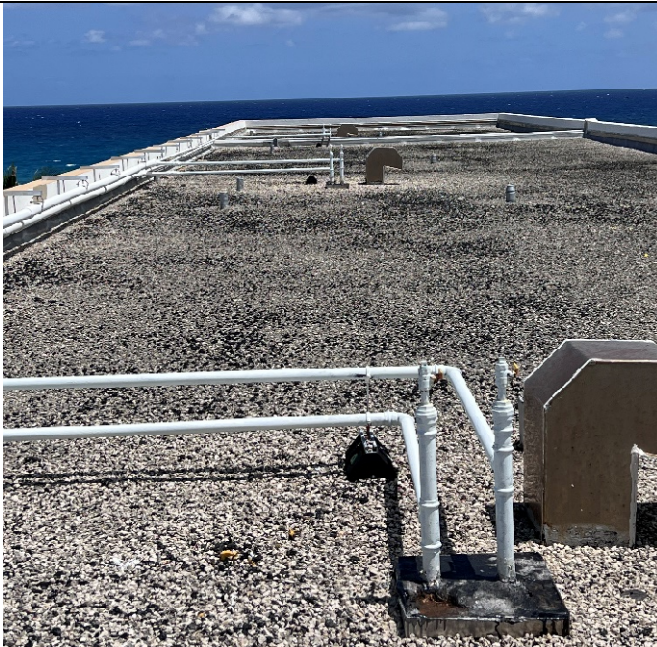
JUNE 27, 2022

Photo #7:



Expired horizontal
expansion joint.

Photo #8:



East elevation of roof.