

SOUTHPOINT CONDOMINIUM

4453 South Atlantic Avenue
Ponce Inlet, Florida 32127

LIMITED BUILDING CONDITION SURVEY REPORT

PROJECT NO. 19-1086



Prepared By:

UNITED ENGINEERING CONSULTANTS, INC

214 Loomis Avenue

Daytona Beach, Florida 32114

Timothy J. Snook, P.E.

FL License No. 83208

TJ@unitedengineeringconsultants.com

www.unitedengineeringconsultants.com



UNITED ENGINEERING CONSULTANTS, INC.

• Building Condition Surveys • Contract Administration • Corrosion Control Design
• Structural Inspection & Design • Project Planning and Management

May 30, 2019
Project No: 19-1086

Southpoint Condominium Association
4453 South Atlantic Avenue
Ponce Inlet, Florida 32127

Attention: Mr. Phil Danley, Board President

Subject: **Limited Building Condition Survey Report
Southpoint Condominium, Ponce Inlet**

Dear Ladies and Gentlemen of the Board of Directors,

United Engineering Consultants, Inc. (UEC) is pleased to submit this report following our inspection of the accessible exterior components of both the building and the parking structure to identify structural and waterproofing deficiencies. This report includes our observations, discussion of the issues and our recommendations.

I. EXECUTIVE SUMMARY

The walkways and balconies are structurally in relatively good condition for the age of the structure. All the damage identified can be repaired using conventional methods. The parking structure has a significant amount of concrete damage to the beams supporting the slabs.

Corrosion has manifested at the guardrail base plates and should be monitored for further structural damage.

Windows are in poor condition and should be replaced. Sliding glass doors should be serviced to extend their useful life.

The cost to repair concrete structures on the Florida Atlantic Coast is well documented and has been shown to be far more expensive than the cost to protect and maintain concrete structures. The key to protecting reinforced concrete structures, and thereby prolonging their life, is to keep the concrete dry and to mitigate the effects of chloride ions already in the concrete. The most effective strategy to keep concrete dry is to maintain coatings and sealants and utilize commercial grade windows and doors.

II. STRUCTURAL DESCRIPTION

Building plans were not available for review. The building appears to be constructed of hollow core slabs with cast-in-place columns and beams. The divider walls between units appear to be load bearing concrete masonry unit (CMU) walls. The infill walkway walls and miscellaneous walls between the balconies and windows appear to be framed construction.

Aluminum guardrails are surface mounted on the balconies atop a curb. The walkway guardrails are constructed of a framed wall with a surface mounted aluminum rail on the top of the wall.

III. INVESTIGATION METHODOLOGY

Representatives from United Engineering Consultants performed the field inspection from May 2 through May 7, 2019. The survey was performed by two State of Florida registered Professional Engineers, Christopher Longman and Timothy Snook.

The inspection process included visual observations and auditory soundings on the exterior of accessible concrete surfaces. Destructive evaluation or testing was not conducted. The nature and estimated quantity of the distress or other observations were recorded. Each unit was entered with a Representative from the Association to access the balconies.

IV. OBSERVATIONS

The following sections provide a comprehensive description of our findings and recommendations. Our observations are further depicted on the photographs in Appendix "A".

Balconies and Walkways (Structural): Concrete spalling was minimal on the balconies. However, some of the spalls may affect the sliding glass door, the shutters or the interior of the unit. Interior spalling was found in Unit 601 and may affect the door of 701. Spalling was located on the bottom of the 1st floor slab and may affect the interiors of units 103 and 109. Cracked stucco was common on the framed divider wall between the balcony and East facing window. Shutters at units 109 and 207 will need to be removed to make the stucco repairs.

Concrete spalling on the walkways was more prevalent on the bottom side of the slabs. However, spalling on the top of the slabs was identified. The topside spalling may be limited to the topping that is cast over the precast panels used to provide positive drainage. Some of the topside spalling was located in the storage rooms adjacent to the elevators. The spalling adjacent to the stairwell or common doors may require the door be removed to make a proper repair.

The ground floor parking area had many spalls located on the load bearing walls. Stucco disbondment was widespread on those walls as well.

Parking Structure and Ground Floor Parking (Structural): The parking structure accounts for approximately half of the structural damage to the entire property. The main extent of damage on the parking structure is on the beams supporting the hollow core panels. The perimeter walls on the topside of the parking structure had many locations with smaller spalls and there was minimal damage on the columns and hollow core planks.

Stairwells: Structurally, the stairwells are in relatively good condition with minimal spalling. Spalling was identified on the exterior of the stairwell on the jambs of the stairwell doors. The South stairwell has a loose grab rail from the 1st floor down to the ground level close to the exit. The stairwell doors varied in condition; however, corrosion and rust bleed out was observed on some of the door frames.

Waterproofing: The waterproof coatings on the balconies and walkways were generally in good condition with a few exceptions. These exceptions include blistering or torn coating potentially from furniture. It is our understanding there may be two deck coating systems applied. Carpet is installed on the walkways in front of the elevators. It was noted that some of the unit entry mats would hold water keeping the deck coating saturated. On the walkways by units 208 and 209, there were two areas of wrinkled and blistered deck coating.

The parking structure deck coating is generally failing. There are many areas where the coating is no longer bonded to the concrete substrate. Aggregate loss is common. Blistered paint was common on the perimeter wall on the topside of the structure.

Joint sealants around windows and sliding glass doors varied in condition. However, many of the perimeter sealants had lost adhesion and had little residual elasticity. This includes the unit entry doors as well. Black Spotting and bulges were observed in the sealants around many door and windows.

Guardrail System: It is our understanding that the balcony guardrails are around 10 years old and the walkway guardrails are approximately 5 years old. Oxidation is typical on the balcony base plates and was minimal on the framing members. The oxidation is less common on the walkway base plates and limited to the area directly around the fasteners. The coating on some of the base plates is flaking. The nuts and washers on the balcony base plates are corroding and causing rust staining on the plates. Outside of the base plates, the coating on the guardrail system appears to be in good shape. Cracking was typical on top of the walkway guard wall system, mainly at the location of the base plates.

Windows and Sliding Glass Doors: The windows were generally in poor condition. Many of the frames have oxidized, leaving holes through the frames which in turn is causing coating failure. The sliding glass doors were in better shape than the windows. However, some of the sliding glass door thresholds were oxidizing as well as some door frames or trim pieces. Typically, door hardware was oxidizing or missing. Several doors were difficult to open.

Miscellaneous:

- a. Walkway Unit Doors: It appears a concrete topping was applied in front of the unit door for drainage. However, in some areas the topping is higher than the door threshold which will trap water against the door.
- b. Minimal blistered or peeling paint was observed on the building walls.
- c. Unit 502: Astro turf was installed over the urethane coating on the balcony. The condition of the coating or spalling could not be inspected.
- d. The drains on the parking structure are corroding.
- e. Rust spots were common on the bottom side of the drop-down soffit in the ground floor parking area.

V. DISCUSSION/CONCLUSIONS

Concrete spalling and cracking are caused by the expansion of reinforcing steel in the concrete when it corrodes. As the steel corrodes, the cross-sectional area of the reinforcing steel expands and ultimately fractures the concrete. Corrosion is a slow process. It takes many years to start, but the rate of corrosion increases exponentially with time. What took 20 years to start to corrode can double its ductile metal loss in the next 5 years. Corrosion of steel cannot be stopped but it can be slowed and managed by proper maintenance and protection. The American Society of Civil Engineers, American Concrete Institute and US Army Corps of Engineers have all released reports demonstrating that maintaining concrete before failures begin is far less expensive than repairing failed concrete.

The most effective actions you can take to maintain the structure is to keep the concrete dry and isolate dissimilar metals. Wet concrete is electrolytic, meaning it will conduct electric charges between dissimilar metals in the concrete, causing the less noble metal to corrode. Dry concrete significantly reduces the rate of corrosion. We keep concrete dry with properly sealed joints, waterproof coatings and paint.

The locations of some of the spalls on balconies and walkways may affect the sliding glass doors or

walkway common doors and will necessitate the removal of the door to make the repair. Documentation will need to be provided to the local municipality showing that it is a code compliant door before it can be reinstalled. The other driving factor dictating if the door can be reinstalled or not is the availability of replacement parts. If the parts are not available, a new door may have to be installed.

The cracked stucco on the framed walls between the balconies and the windows has the potential to allow water to ingress into the structural framing and unit interiors. This can have the potential to cause damage to the wall studs or the wall sheathing. Unfortunately, this will not be known until the stucco is removed and the extent of damage can be determined.

The rust spots on the bottom of the drop-down soffit in the ground floor parking area may be caused by the fasteners used to attach the sheathing to the framing. More exploratory work needs to be done to determine the cause of the rust spots. This will provide the information needed to direct a proper repair.

The guardrails still provide fall protection for both the balconies and walkways. The oxidation produced on aluminum guardrails undermines the coating's adhesion and results in flaking and peeling coating. The oxidation cannot be stopped and therefore stripping and re-coating the rails generally is not an economical long-term solution. If aesthetics is an issue, the guardrails can be prepared and have a field applied coating applied. However, the oxidation will cause the new coating to fail in an unknown time frame. At some point in the future, the oxidation will begin to undermine the rails adequacy to perform structurally.

The steel stairwell door slabs and frames are corroding causing rust bleed staining. Trying to strip the paint, prepare the steel substrate and paint the doors and frames is not an economical long-term solution for the same reason as the aluminum guardrails. The corrosion is coming from inside the frames, so it will continue to occur and continually cause rust bleed out. Eventually, it can cause metal loss and holes in the frames or slabs. However, if the aesthetics is an issue, the doors can be prepared and have a field applied coating applied.

It is our understanding that there are two full systems of urethane deck coating on the walkway and balcony slabs. Typically, the manufacturer does not recommend a third application of a coating system. Liquid applied coatings will tighten as they cure. This gives the potential to cause the older coating to lose adhesion to the substrate and result in blisters. That being said, the options are limited to removing all the coating to bare concrete and applying a new system, taking no action or applying a coating potentially without warranty. The other item to consider is if the coatings are not replaced, locations with concrete slab repair will need to have the deck coating patched which will have a repaired appearance. The ponding of water on the urethane coating systems either caused by the unit entry mats or low spots in the decks will cause the coating to degrade faster than normal wear and tear. The carpet on the walkways in front of the elevator can trap and hold moisture. Any spalling under the carpet can not be identified with the carpet in place.

The sliding glass door thresholds and frames were oxidizing which manifests itself as pitting in the aluminum. A sealant will not properly bond to an oxidizing threshold or frame, making the joint susceptible to water penetration into the unit. The black spotting found on some of the perimeter sealants is indicative of painting the sealant prior to the sealant fully curing. In UEC's experience, subsequent paint coatings may not hide the spotting. The bulging behind the sealant appears to be caused by the oxidation of the aluminum. The oxidation creates a biproduct that can create these bulges.

VI. RECOMMENDATIONS

Concrete and Stucco Repair: UEC recommends repairing all the concrete damage in accordance with the International Concrete Repair Institute Guidelines, ACI Building Code 562 and as specified by UEC. All concrete repairs should be inspected by an Engineer prior to casting back. The damaged areas will be excavated to sound concrete and uncorroded reinforcing steel. The excavations should be repaired with polymer modified repair mortars.

Where unsound stucco was cracked or appeared bulged, removal of the stucco is recommended to evaluate the cause of the disbondment and to properly adhere new stucco. A new latex modified stucco shall be specified as a replacement. Any damaged sheathing or framing should be replaced as needed when it is uncovered.

Waterproofing and Paint: Perimeter sealants around the sliding glass doors should be replaced with a new urethane sealant.

The building should be painted as recommended by a paint manufacturer. Any failed paint should be removed and all tight hairline stucco cracks should be sealed with an elastomeric patching compound. All perimeter sealants and stucco joint sealants should be painted to protect the sealant from UV light degradation.

The balcony and walkway deck coatings should be stripped to the concrete substrate and a new pedestrian grade urethane waterproofing system applied. There are different options for coating systems that can be discussed during the specification development phase. The parking structure deck coating should be removed to the concrete substrate and a new vehicular grade urethane deck coating system applied. A new floor to wall cant bead should be applied on the balconies, walkways and parking structure.

The unit entry mats that hold water should be replaced with mats that do not trap moisture.

Guardrails: The rusting nuts and washers can be replaced on an as needed basis to prevent rust staining. The Association should begin budgeting for the replacement of the guardrails starting with the balcony rails. New fully welded surface mounted aluminum rails should be specified to be pretreated with a chromatic phosphate pretreatment before application of Kynar coatings.

Sliding Glass Doors and Windows: The windows should be replaced with code compliant proper commercial or better grade fenestrations that meet higher performance standards for resisting water penetration, air infiltration and new energy standards.

The sliding glass doors should be serviced from a licensed sliding glass door installer familiar with the doors installed on the building. This can include replacement of oxidizing trim pieces and hardware if available. The threshold snap cover should be removed to inspect and repair any failed sealant over the fasteners.

Any doors adjacent to concrete spalling must be removed to allow proper repair of the structure.

Walkway Common Doors: It should be budgeted to replace walkway common doors and frames with new fiberglass assemblies that meet the appropriate fire code. At this point in time, it is not cost effective to repair and paint the frames and doors from a longevity standpoint. Any doors that need to be removed to make proper concrete repairs may need to be replaced. The local municipality will need to provide direction if they will allow the door to be reinstalled.

Stairwells: The loose grab rail noted in the observations section should be repaired as soon as possible.

Unit Doors: Options need to be explored for the proper remedy of the areas where the topping is higher than the door threshold.

Parking Structure Drains: The drains and drain covers should be replaced with new corrosion resistant drains and covers.

Soffit Rust Spots in Ground Floor Parking Area: Exploratory work should be conducted to determine the cause of the rust spots to determine the proper repair.

Storm Shutters: We recommend that a Licensed Shutter Contractor inspect the shutters for deterioration and make repair recommendations. Concrete or stucco repair may require some of the shutters to be removed. Any shutters that are attached directly to the deck, should have the attachments and posts removed, so the slab can be properly waterproofed below the shutter framework.

VII. REPORT LIMITATIONS

The proposed study is limited to accessible areas. Hidden defects may exist that were not in accessible areas or were covered by stucco or other finishes. The Association understands and agrees that UEC is specifically not liable for the discovery of hidden defects.

VIII. CLOSURE

Attached as enclosures are photographs of typical conditions observed (Appendix A) and an order of magnitude planning budget (Appendix B). This report is property of United Engineering Consultants and was prepared for the exclusive use of the Condominium Board of Directors as an instrument reflecting the services provided as detailed in our proposal. No other warranty is expressed or implied. The unauthorized use of this report for any purpose or by any third party is at the user's own risk.

Thank you for providing us the opportunity and we look forward to working with you on this project.

Very Truly Yours,

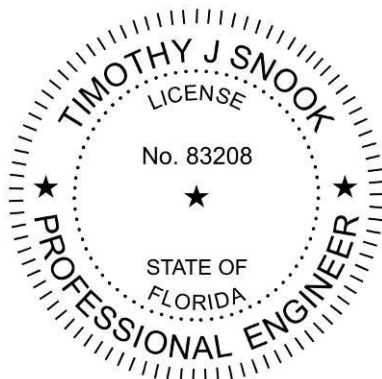
UNITED ENGINEERING CONSULTANTS, INC.



Christopher B. Longman, P.E.
Project Engineer



Timothy J. Snook, P.E.
Project Engineer
Florida State License No: 83208



Printed Copies of this Document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies.

APPENDIX A
PHOTOGRAPHS



Photograph #1 – Typical ceiling spall on walkways



Photograph #2 – Typical jamb spall on stairwell door



Photograph #3 – Typical spall on load bearing wall in ground floor parking area



Photograph #4 – Typical spalling on beams supporting the parking structure



Photograph #5 – Typical column spalling on parking structure



Photograph #6 – Typical cracking on framed wall section between balcony and window



Photograph #7 – Cracking in framed wall between the balcony and window



Photograph #8 – Typical corrosion of common walkway door frames



Photograph #9 – Typical corrosion on walkway common door slabs



Photograph #10 – Typical corrosion on walkway common doors



Photograph #11 – Deck coating failure on balcony



Photograph #12 – Water being held under unit entry door mat



Photograph #13 – Wrinkles in walkway deck coating



Photograph #14 – Failed deck coating on parking structure



Photograph #15 – Failed deck coating on parking structure



Photograph #16 – Failed perimeter sealant at unit entry door



Photograph #17 – Black spotting through sliding glass door perimeter sealant



Photograph #18 – Blisters in perimeter sealant



Photograph #19 – Typical balcony guardrail base plate with oxidation and rust bleed



Photograph #20 – Typical flaking paint on balcony guardrails



Photograph #21 – Typical oxidation on walkway guardrail base plates



Photograph #22 – Oxidizing sliding glass door framing



Photograph #23 – Typical oxidizing sliding glass door hardware



Photograph #24 – Typical oxidizing sliding glass door threshold with failed coating



Photograph #25 – Typical oxidizing window



Photograph #26 – Typical oxidizing window



Photograph #27 – Unit door with topping higher than threshold



Photograph #28 – Typical corroding parking structure drain



Photograph #29 – Typical rust spots on drop down soffit of ground floor parking area

APPENDIX B

ORDER OF MAGNITUDE PLANNING BUDGET

**SOUTHPOINT CONDOMINIUM
 ORDER OF MAGNITUDE PLANNING BUDGET**

Item (See Notes)	Estimated Budget
Concrete and Stucco Repair, Main Building (1)	\$300,000.00
Concrete and Stucco Repair, Parking Structure (2)	\$130,000.00
Balcony and Walkway Deck Coating (3)	\$160,000.00
Parking Structure Deck Coating (4)	\$90,000.00
Paint and Sealants (5)	\$225,000.00
Allowance for Wall Framing Repair (6)	\$20,000.00
Mobilization and General Conditions (7)	\$111,000.00
Preliminary Construction Budget Estimate	\$1,036,000.00
Contingency (15%)	\$155,400.00
Engineering Budget (Planning, Contract Administration, Inspections and Construction Management), 10%	\$103,600.00
Estimated Project Budget	\$1,295,000.00

Notes:

1. Concrete Repair Balconies, Walkways Ground Floor Parking Area:

Concrete Topside Spall Repair:	160 CF x \$375.00/CF	= \$60,000
Concrete Bottom side Spall Repair:	160 CF x \$400.00/CF	= \$64,000
Concrete Edge Spall Repair:	50 CF x \$400.00/CF	= \$20,000
Concrete Wall/Col Spall Repair:	200 CF x \$400.00/CF	= \$80,000
Concrete Beam Spall Repair:	75 CF x \$400.00/CF	= \$30,000
Stucco Repair:	2,000 SF x \$20.00/SF	= \$40,000
Rust Spot Repair:	150 EA x \$35.00/EA	= \$5,250

2. Concrete Repair Parking Structure:

Concrete Topside Spall Repair:	10 CF x \$375.00/CF	= \$3,750
Concrete Bottom side Spall Repair:	10 CF x \$400.00/CF	= \$4,000
Concrete Wall/Col Spall Repair:	25 CF x \$400.00/CF	= \$10,000
Concrete Beam Spall Repair:	250 CF x \$400.00/CF	= \$100,000
Stucco Repair:	500 SF x \$20.00/SF	= \$10,000
Rust Spot Repair:	20 EA x \$35.00/EA	= \$700

3. Balcony and Walkway Deck Coating: Strip Coatings and apply a hybrid deck coating system

Elevated Balcony Coating:	5,000 SF x \$10.00/SF	= \$50,000
Elevated Walkway Coating:	11,000 SF x \$10.00/SF	= \$110,000

4. Parking Structure Deck Coating: Strip Coatings and apply a vehicular grade deck coating system

Deck Coating:	9,000 SF x \$10.00/SF	= \$90,000
---------------	-----------------------	------------

5. Paint and Sealants:

Paint Buildings:	\$225,000
------------------	-----------

6. Allowance for Framed Wall Repair: The actual amount will be unknown until the stucco is removed.

7. Mobilization and General Conditions: 12% of Project Cost

*All take offs are rough estimates for budgeting purposes. Contractors will perform their own measurements.

**The concrete quantities in the budget have been inflated from the survey numbers to account for spall growth.