PHASE I

TAHITIAN TOWERS CONDOMINIUM

Structural Condition Survey Report

Prepared for:

Tahitian Towers Condominium Association
19450 Gulf Blvd
Indian Shores, FL 33785

Prepared By:

Belt Engineering, LLC.
Structural & Civil Engineering – Inspections – Consulting
1503 W. Busch Blvd. Suite A
Tampa, FL 33612
Phone 813-961-3075

Inspection Date: March 14&15, 2022
Report Issue Date: April 26, 2022

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April 26, 2022 ET22-0162

TO: Tahitian Towers Condominium Association
19450 Gulf Blvd
Indian Shores, FL 33785

RE: Tahitian Towers Condominium Association – Structural Condition Survey Report
19450 Gulf Blvd
Indian Shores, FL 33785

Contents

REPORT OF FINDINGS

INTRODUCTION

Belt Engineering was contracted to perform a visual, non-destructive structural evaluation and cladding observation of the structure located at the address listed above. Eduardo Godinez, E.I., and Ivan Bitorajc, inspector performed their investigation on Monday, March 14, 2022 and Tuesday, March 15, 2022. The investigation was limited to the structural condition of accessible portions of the above referenced property at the time of our site visit. Belt recorded select cladding and waterproofing observations encountered during our structural evaluation.

PURPOSE

The purpose (scope) of our structural evaluation and cladding/waterproofing observations was the following:

A. Identify any apparent condition of structural concern that was, or could become, a hazard to the health and safety of the building occupants.
B. Identify any apparent cladding and waterproofing concerns or failures in the areas visible and accessed at the time of our site visit. Took out info on roof since we did not look at roofs
C. Collect data of the condition of the structure for the design of repairs to the structural components, cladding, and waterproofing systems.

PROPERTY DESCRIPTION

The structure was a nine-story, multi-unit apartment building located on Indian Shores. The front elevation faced east and the rear elevation faced west. According to the Construction Documents the property was constructed in 1974. There are 5-units at each level with a private covered concrete balcony and the frame walls are finished with painted stucco. The building had stairs that gave access to each level, storage closets and laundry rooms. The site had carport style parking on the first level of the front elevation on the asphalt lot as well as the pool located at the rear elevation of the property.

Picture 1: Typical Front Elevation.

Picture 2: Typical Right Elevation.

Picture 3: Typical Left Elevation.

Picture 4: Typical Rear Elevation.

The structure of the building was built with reinforced concrete. The upper part was constructed cast-in-place (CIP) slabs and columns system. The main flat roof was observed to have an unknown liquid waterproofing membrane applied. The roof was surrounded by a concrete parapet wall. The mechanical air conditioning (AC) components for the apartment units below were located at the rooftop. The building exterior had windows and storefronts. There were some masonry infill walls separating the balconies from each apartment, as well as the stairs.

TYPICAL INSPECTION METHODS

Aside from conventional measurements and visual inspection, the following methods were used to inspect select structural and non-structural elements at the property.

1. Surface Sounding
    a. Superficial sounding was performed using a metal object (golf club or hammer) to locate areas of hollow sounding substrate consistent with delamination.

Belt Engineering performed a visual inspection of accessible and visible structural and non-structural building components. We systematically surveyed the conditions and used the above methods where applicable to locate damage that was not visually discernable.

DEFINITIONS AND DESCRITIONS

The following definitions and descriptions are provided to as an aid to interpreting the information include in this report.

Sounding – method to determine areas of delamination that may not be visibly apparent. This is performed by tapping on the surface with a hard object, usually a hammer or golf club. The objective of these methods is to detect regions of the cladding or substrate where the sound from tapping changes from a clear ringing sound (sound substrate) to a somewhat mute and hollow sound (delaminated substrate).

Spall – A fragment, usually in the shape of a flake, detached from a member by a blow, the action of weather, by pressure, by fire, or by expansion of the larger mass.

Delamination – A separation along a plane parallel to the surface, as in the case of a concrete slab, a horizontal splitting, cracking, or separation, within a slab in a plane roughly parallel to, and generally near, the upper surface and can often only be detected by nondestructive tests, such as tapping with a golf club or hammer.

Pop out – the breaking away of small portions of a surface due to localized internal pressure that leaves a shallow, typically conical, depression with a broken coarse aggregate at the bottom.

Craze Cracks – fine random cracks or fissures in a surface of plaster (stucco) cement paste, mortar, or concrete.

Hairline Cracks – cracks in an exposed to view concrete surface having widths so small as to be barely perceptible.

Stairstep Cracking – cracks in finish, cladding, or masonry construction that follow the underlying mortar joints in the underling masonry construction.

Shrinkage and Temperature Crack – Cracks in concrete or a cementitious finish resulting from shrinkage of the material due to the curing process or thermal expansion and contraction.

Efflorescence – a deposit of salts, usually white, formed on a surface, the substrate having emerged in solution from within either concrete or masonry and subsequently been precipitated by a reaction, such as carbonation or evaporation.

Waterproofing Coating/Membrane: General terms for thick and coatings applied over a surface to protect from water intrusion. Waterproofing membranes are commonly applied to horizontal

concrete surfaces to prevent water instruction into the porous concrete and commonly provide a traffic coating to prevent wear.

Flashing - pieces of sheet metal or the like used to cover and protect certain joints and angles, as where a roof comes in contact with a wall or chimney, especially against leakage.

Joint Sealant Failure – joints opened due to a cracked and/or deboned sealant.

FIELD OBSERVATONS

Belt engineering visually inspected the accessible and visible portions of the structure for conditions of concern as described above and for atypical conditions. As part of our investigation, Belt Engineering took images and notes on these conditions observed during our site visit. A summary of our observations is presented in ***Appendix A.***

SUMMARY OF OBSERVATIONS

STRUCTURAL AND CLADDING

At the time of our visit, we did not note any visible structural conditions that were indicative of imminent catastrophic failure of the main structural components. There were conditions of secondary structural components that were of immediate concern. These are presented below.

Roof

1. High roof ponding water.
2. Corroded metal door frames
3. Concrete spalling and rebar exposure at the wall of communications room.

Balconies

1. Worn terrace deck waterproofing.
2. Spalling and delaminated concrete in multiple areas of some of the balconies.
3. Tile floor popping up at multiple balconies
4. Typical spalling on stucco balcony ceiling.
5. Delamination and cracking with spalling on the slab surface.
6. Corroded metal at multiple areas of the balconies

Units

1. Unit #402: The unit had concrete damage at the ceiling caused from water intrusion from plumbing fixture coming from Unit #502 apparently caused by improper installation.
2. Unit #302: The drywall was opened up at the ceiling and it was stated to Belt Engineering that there was water intrusion, but at the time of our site visit there was no signs of apparent water intrusion or damage.

Hallways

1. Spalling, delamination, and hairlines cracks were observed in multiple areas along balcony surface.
2. Typical worn waterproofing along the hallways.
3. Stucco spalling, delamination and hairlines cracks were observed on hallway ceiling.

Parking Garage

1. Typical spalling on the concrete at the elevated slab of the pump room.
2. Typical exposed metal on concrete ceiling at the pump room.
3. Typical hairline cracking on the side and base in stucco finishes of concrete columns.

Exterior Facade

1. Typical horizontal stucco cracking at walls
2. Hairline cracking in stucco finishes on CMU walls leading up to building entrance.

RECOMMENDATIONS

Structural damage to structural members (concrete balcony spalling/delamination) and damaged or deteriorated architectural finishes (stucco finish, balcony/corridor waterproofing) was observed at the subject property. The observed level of severity of stucco spalling, delamination, and cracking, was considered not severe. Stucco and waterproofing, although not structural components, are the main protection against structural damage from the harsh coastal environment such as was the case at the property. Long term lack of maintenance to, and failures of, the stucco and waterproofing systems, exposes critical structural components to environmental induced corrosion and weathering.

Belt Engineering believes that, as of the time of our site visits, an immediate unsafe structural condition does not exist. However, if proper repairs are not addressed, they will further deteriorate the subject property and therefore could eventually result in an unsafe structural condition.

Belt Engineering believes that additional damage could be presently concealed by the balcony finishes. Based on observations made during our site visits, Belt Engineering recommends the following:

1. Remove delaminated stucco to verify that structural members beyond are not damaged and then replace stucco.
2. Remove popped or cracked tile areas to verify that structural concrete balconies are not damaged.
3. Remove existing balcony and corridor floor waterproofing membranes
4. Repair delaminated and spalled concrete slabs
5. Repair all typical spalling, delamination, and cracking at balconies walls.
6. Install new waterproofing membrane at balconies and corridor floors

7. Repair all cracking at CMU walls with routing a sealant
8. Replace stucco or apply sealant to all penetrations through exterior walls to prevent water intrusion.
9. Remove all corrosion from metal surfaces at the building
10. The entire exterior of the building and all of the elements should be repainted and sealed at the end of the restoration project outlined above.

CONCLUSION

Based on the results of the condition survey, Belt Engineering can prepare construction documents (drawings and specifications) during a design phase (Phase 2) for this project. The construction documents would be issued in the form of a Project Manual.

The Project Manual will contain instructions to bidders, a copy of the condition survey report, terms and conditions for the contractor, a scope of work for the project, technical specifications, required construction details, and estimated repair quantities for bidding purposes. Contractor terms and conditions will include owner project requirements, project duration, and provisions for liquidated damages should project milestones not be met. The bidding documents will be based on estimated repair quantities (please be aware that actual repair quantities are unknown until project construction is complete). Contractors would therefore bid on the same scope of work and repair quantities for more accurate comparison. Bidding contractors will be required to complete a unit cost schedule to be used when repair quantities are higher or lower than the estimated quantities.

LIMITATIONS

The opinions expressed herein are based on the information collected during our assessment, our present understanding of the former site conditions, and our professional judgment in light of such information at the time of this Report. The Report is a professional opinion, and no warranty is expressed, implied, or made as to the conclusions, advice, and recommendations offered in this

report. Belt reserves the right to update this Report should additional information become available. In expressing the opinions stated in this report, Belt has exercised a reasonable degree of care and skill ordinarily exercised by a reasonably prudent Engineer in the same community and in the same time frame given the same facts and circumstances.

REFERENCES

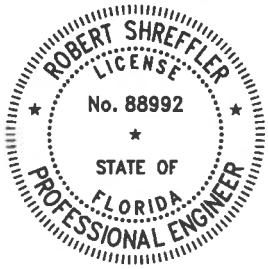
1. 2020 Florida Building Code, 7th Edition - Existing Building (FBC EB).
2. 2020 Florida Building Code, 7th Edition – Building (FBC)
3. Portland Cement Plaster/Stucco Manual, EB049
4. Repair of Portland Cement/Stucco, IS526

CONTACT

Should you have any questions or concerns, please do not hesitate to contact us at (813) 961-3075 or e-mail rshreffler@beltengineering.com

Regards,

Robert Shreffler, PE FL#88992



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Appendix A
Photographic Documentation

Figure A- 1: Typical roof top view.

Figure A- 2: Observation of signs of typical roof ponding water.

Figure A- 3: Observation of protective cover while carrying out maintenance work on the elevator.

Figure A- 4: Typical rusty metal at the door frame on the roof area.

Figure A- 5: Typical view of the communications room in the roof top area.

Figure A- 6: Observation of 1SF of concrete spalling and rebar exposure at the wall of communications room.

Figure A- 7: Typical view of the inspected balconies.

Figure A- 8: Typical spalled area at balcony slab edge.

Figure A- 9: Typical delaminated area at balcony slab edge.

Figure A- 10: Typical delaminated stucco area on side of concrete wall.

Figure A- 11: Typical delaminated area at the bottom of concrete column.

Figure A- 12: Typical delaminated area on side of exterior storage wall.

Figure A- 13: Typical rusty metal at the door frame on balcony storage.

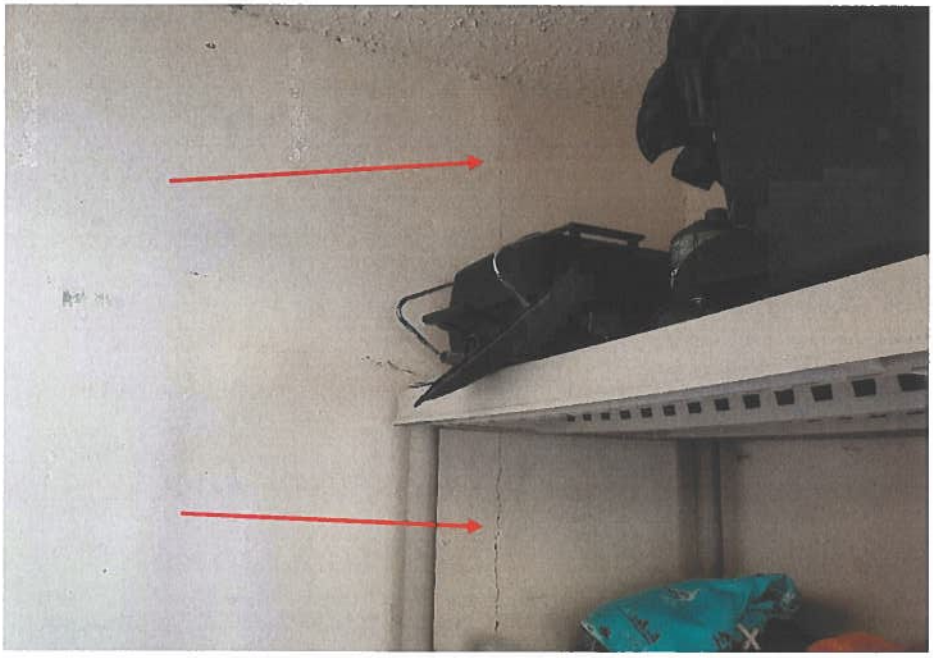

Figure A- 14: Typical hairline cracks on the interior CMU wall of the Storage room at the balcony

Figure A- 15: Typical hairline cracking on top of concrete slab on balcony surface.

Figure A- 16: View of spall area on balcony surface with corroded rebar and penetration through waterproofing.

Figure A- 17: Observation of popped up tile on balcony surface.

Figure A- 18: Observation of tiles with openings that allows water intrusion on the balcony surface.

Figure A- 19: Observation of missing tiles on the balcony surface that allows the entry of water beyond the tile.

Figure A- 20: Spall on balcony surface with missing waterproofing

Figure A- 21: Typical delaminated area at slab edge.

Figure A- 22: Typical spalling area at slab edge with cracked tiles

Figure A- 23: Typical spalling area on top of balcony slab surface with Cracked tiles around guardrail post

Figure A- 24: Typical view of balcony covering that does not allow for proper inspection.

Figure A- 25: View of corroded metal on balcony ceiling.

Figure A- 26: Typical concrete spall on storage ceiling.

Figure A- 27: Unit #402 with concrete damage from leaks from the upper unit.

Figure A- 28: Unit #302 had the drywall was opened up at the ceiling and it was Stated to Belt Engineering that there was water intrusion, but at the time of our site visit there was no signs of water intrusion

Figure A- 29: Typical full-length cracking on top of slab surface at the corridor.

Figure A- 30: Typical delaminated area in front of laundry entrance.

Figure A- 31: Typical hairline cracking with spalling in front of a unit entrance.

Figure A- 32: Typical hairline cracking over apparent repair on corridor surface.

Figure A- 33: Typical spalled area at corridor surface.

Figure A- 34: Observation of spalling over knee wall scupper

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Figure A- 37: Observation of opening at the corridor wall due to elevator maintenance work.

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Figure A- 42: Typical vertical hairline stucco cracking at the column side.

Figure A- 43: Typical cracking at base of wall on parking garage entrance.

Figure A- 44: Spalling with reinforcement corrosion and exposed at the elevated slab on pump room ceiling.

Figure A- 45: View of corroded metal and spalling on the exterior stucco finish.