

STRUCTURAL CONDITION ASSESSMENT

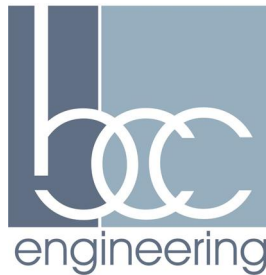
For

JEFFERSON APARTMENTS

542 Jefferson Ave.

Miami Beach, FL

Prepared by:



**BCC Engineering, Inc.
Certificate of Authorization No. 7184**

February 2, 2022

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Florida License No. 74647**

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1. INTRODUCTION

On January 10, 2022, the City of Miami Beach Office of Housing & Community Services authorized BCC Engineering, LLC (BCC) to perform a structural inspection of an apartment building located at 542 Jefferson Ave, Miami Beach, Florida.

1.1. Objectives

The objective of the report is to provide an observation of the existing condition of the residential building, identify any deficiencies, and provide recommendations on our findings.

1.2. Methods and Techniques

BCC utilized the following methods and techniques:

- Visual observation/digital camera

The inspection was based on visual observation of the accessible portions of the apartment building. In order to determine the importance of observations noted at the site, items were categorized as one of three types:

- Immediate: This category refers to items that require immediate attention for one or more of the following reasons:
 - 1) They pose a threat to human health and/or safety.
 - 2) They are in an impending state of failure.
 - 3) Their condition is likely to worsen rapidly and result in more expensive repairs in the future.
- 5 Years: This category refers to items that are currently in acceptable condition but it is likely that within 5 years they will require attention and repairs.
- 10 Years: This category refers to items that are in current acceptable condition, but over the repeated use of the building through the next 10 years, they will need maintenance to remain functional and safe.

1.3. Documents Used in Review

- Miami-Dade Property Appraiser

2. DESCRIPTION OF STRUCTURE

Based on the Miami-Dade Property Appraiser, the existing structure is a 28-unit three-story residential building built in 1924. The existing structure consists of CMU exterior walls. The ground floor to roof levels consist of 2x10 wood rafters spaced at 16" on center with plywood sheathing. The west exterior stairwell is concrete, while the interior stairwell is wood.

3. FIELD OBSERVATIONS

On January 26, 2022, BCC visited the site to observe and document the overall condition of the existing structure. The conditions were based on visual observations during the time of inspection. Table 3-1 summarizes the main observations of the structure. Refer to Appendix A for the photos identified in the Table.

Item	Repair Priority	Item Description	Representative Photos
S-1	Immediate	Delamination & Spall at beam and side walls at entrance.	Photos #1 to #3
S-2	Immediate	Delaminations throughout exterior façade.	Photos #4 to #6
S-3	Immediate	General condition of stucco/façade throughout building.	Photos #7 to #10
S-4	Immediate	General condition of headers and sills around windows. Some sills were observed to have spalled off.	Photos #11 to #13
S-5	5-Years	General roofing condition. Signs of water ponding and bubbles were observed.	Photo #14
S-6	5-Years	General condition of roof top AC units	Photos #15 & #16
S-7	-	Washer and dryer units placed on CMU blocks	Photo #17
S-8	Immediate	Signs of water intrusion in windows at units on east end.	Photo #18
S-9	5-Years	General condition of units.	Photos #19 to 21
S-10	Immediate	Water stains observed at ceiling of electrical meter room.	Photo #22

4. CONCLUSIONS

Overall, the structure is in fair condition with several areas of concern. There are cracks and delaminated areas on the building exterior that need to be repaired. In some locations, delamination of concrete has propagated into spalls leaving steel reinforcing exposed. It is recommended that this be repaired immediately to prevent further damage. Residents reported that some of the architectural bands below the windows have spalled off and fallen onto the sidewalk.

Water was observed to be seeping into the units on the east end of the building. The direct source of water intrusion is unknown but could be a result of water penetrating through cracks on the exterior façade and/or through the window joints. At the ground floor, the washers and dryers in the lobby are resting on masonry blocks to avoid the machines being damaged from water that floods the lobby during heavy storms.

In some units, sagging in the floor was observed which has resulted in tiles cracking. In the bathrooms, the shower head is not located in the center of the tub. Water stains were observed in the electrical meter room and should be further investigated so the source can be corrected. Areas of ponding were observed at multiple locations on the roof. Stagnant water has the possibility of leaking into the building and causing damage. It is recommended that these areas of the roof be sloped to allow water to runoff and eliminate ponding.

Given the age of the building and corrosive environment, spalls/delaminations are expected and do not pose an immediate unsafe condition. If left unresolved, however, these areas will worsen increasing the damaged area requiring repair and creating an unsafe condition. Delaminated portions of the structure will eventually spall off and fall to the ground. If left untreated, cracks can become spalls and delaminations. As water seeps into the unsealed cracks, the reinforcement corrodes which expands and loosens the concrete.

The information contained within this report is based on the conditions observed at the time of inspection. The report is for general condition assessment purposes only and is not sufficient, in and of itself, to prepare construction documents for rehabilitation/repair work. Existing conditions are subject to change.

5. RECOMMENDATIONS

Based on field observations, it is recommended that aforementioned areas of the structure be repaired. A Florida licensed Structural Engineer shall be retained to fully develop construction repair documents. The following types of repairs are recommended:

- Hire a pest control company to tent the structure.
- Repair/Replace roof top AC units.
- Stucco and repaint the exterior of the building.
- Concrete Repair:

Epoxy Injection: Cracks that are in sound concrete (do not have corrosion stains, sound hollow when struck with a hammer indicating delamination, etc.) and have a crack width between 0.005 and 0.25 inches may be injected with an epoxy resin. Prior to epoxy injection, cracks being repaired shall be cleaned to remove any loose debris and organic material.

Concrete Spall/Delamination Repair (without reinforcement): Concrete that is not sound (loose, delaminated, etc.) shall be removed and the sound concrete surface shall be cleaned of any debris and organic material. The area being repaired shall be saw cut to a minimum depth of 1-1/2 inches and form a square/rectangular area with 90 degree sides. Interior corners should be rounded to a minimum radius of 1 inch. Feather edges must be avoided. The area receiving new concrete shall be roughened/keyed in order to provide adequate bond. A bonding agent may be provided in addition for added bond or as a substitute to roughening

the concrete surface. Once the area has been prepped, patch with repair mortar that is suitable for extremely aggressive environments.

For areas that are deeper than 2 inches and/or have section loss greater than 20%, repairs shall be made by shotcrete. Care shall be taken not to adversely affect adjacent, sound concrete. The concrete surface receiving shotcrete shall be prepared as aforementioned.

Concrete Spall/Delamination Repair (with reinforcement): Remove concrete that is not sound (loose, delaminated, etc.) above oxidized (corroded) reinforcement beginning with a ½" deep saw cut perimeter. Use only light, 15 LB electric chipping hammers. Once initial removal is complete, proceed with the undercutting of all exposed oxidized reinforcement providing 1" minimum clearance between exposed reinforcement and sound concrete. Concrete removal shall extend along oxidized reinforcement to a location that is free of bond inhibiting conditions and where reinforcement is well bonded in sound concrete. Repair area shall form a square/rectangular area with 90 degree sides. Interior corners should be rounded to a minimum radius of 1 inch. Feather edges must be avoided.

Oxidized reinforcement shall be sandblasted or mechanically cleaned. Splice reinforcement with equal size bar where section loss of 15-20% occurs. All exposed reinforcement shall be coated with a corrosion inhibitor. Patch area with repair mortar that is suitable for extremely aggressive environments.

6. OPINION OF PROBABLE COST

Based on our field observations, an opinion of probable repair and maintenance cost has been provided for budgeting purposes.

Opinion of Probable Cost of Immediate Repairs			
Item Description	Unit Cost	Unit	Cost
Stucco	\$180,000	1	\$180,000
Exterior Painting	\$35,000	1	\$35,000
Concrete Repairs	\$40,000	1	\$40,000
Subtotal			\$255,000
General Conditions (10% of Construction Cost)			\$25,500
General Requirements (15% Contractor O&P)			\$42,075
10% Contingency			\$32,258
		Total	\$354,833

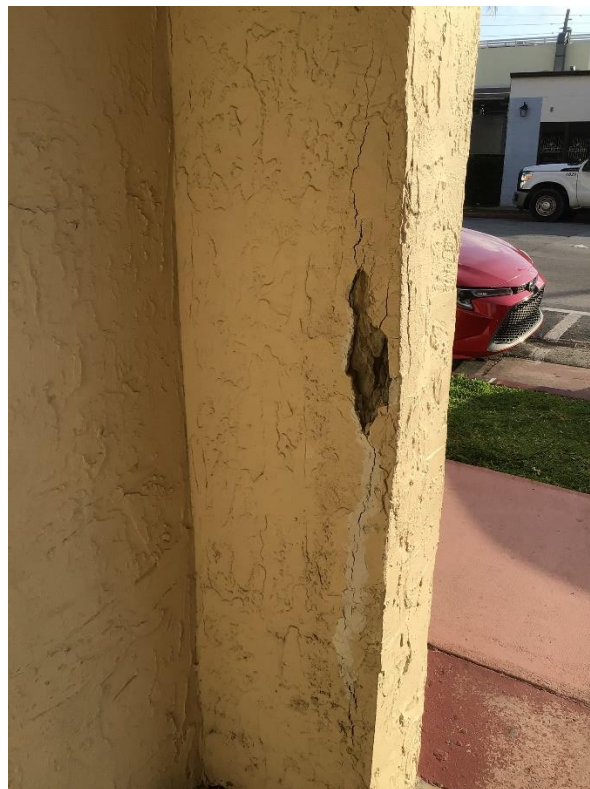
Opinion of Probable Cost for Future Budget			
Item Description	Unit Cost	Unit	Cost
Unit Renovation	\$30,000	28	\$840,000
New Windows & Doors	\$125,000	1	\$125,000
New Condensing Units	\$5,000	28	\$140,000
New Roof	\$90,000	1	\$90,000
Subtotal			\$1,195,000
General Conditions (10% of Construction Cost)			\$119,500
General Requirements (15% Contractor O&P)			\$197,175
10% Contingency			\$151,168
		Total	\$1,662,843

7. DISCLAIMER

The opinions and comments in this report are based on visual observation at the time of inspection only. There is no claim, either stated or implied. This report does not address any other portions of the structure other than those areas mentioned, nor does it provide any warranty, either expressed or implied, for any portion of the existing structure. This report is created solely for the Client's benefit, and no other entity shall have any rights or claim against the conditions assessment professional because of the performance or non-performance of the observations, opinions, conclusions or recommendations contained herein.



Photograph #1



Photograph #2



Photograph #3



Photograph #4



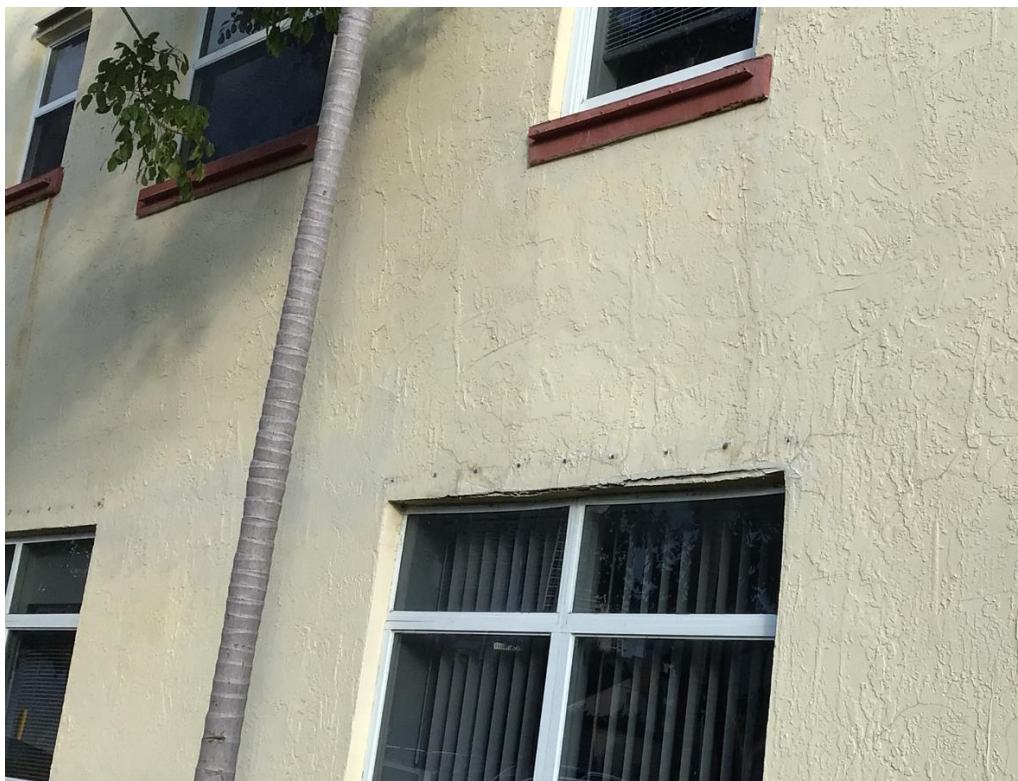
Photograph #5



Photograph #6



Photograph #7



Photograph #8



Photograph #9



Photograph #10



Photograph #11



Photograph #12



Photograph #13



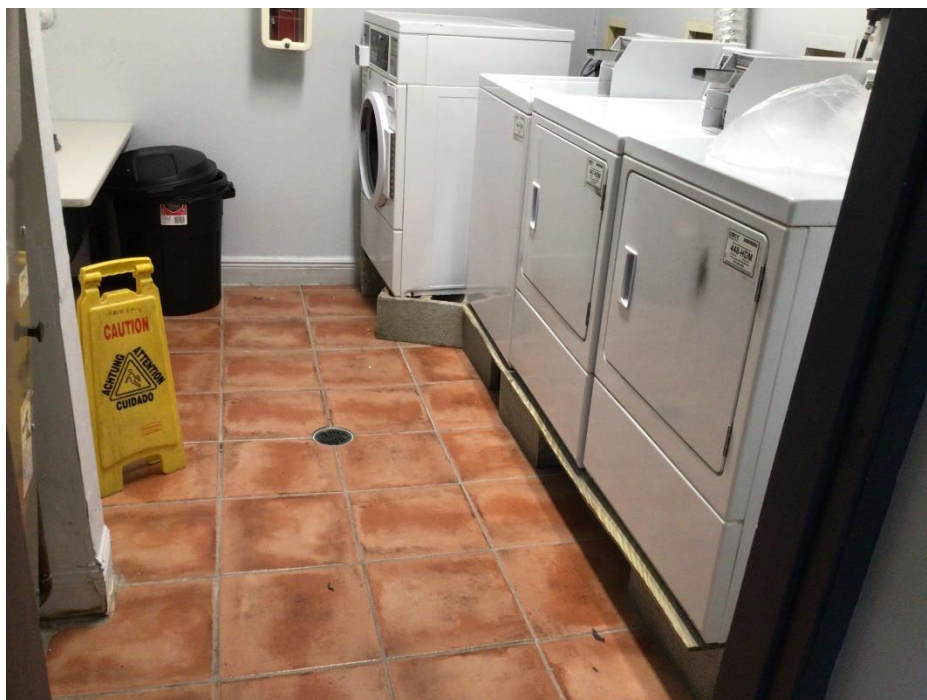
Photograph #14



Photograph #15



Photograph #16



Photograph #17



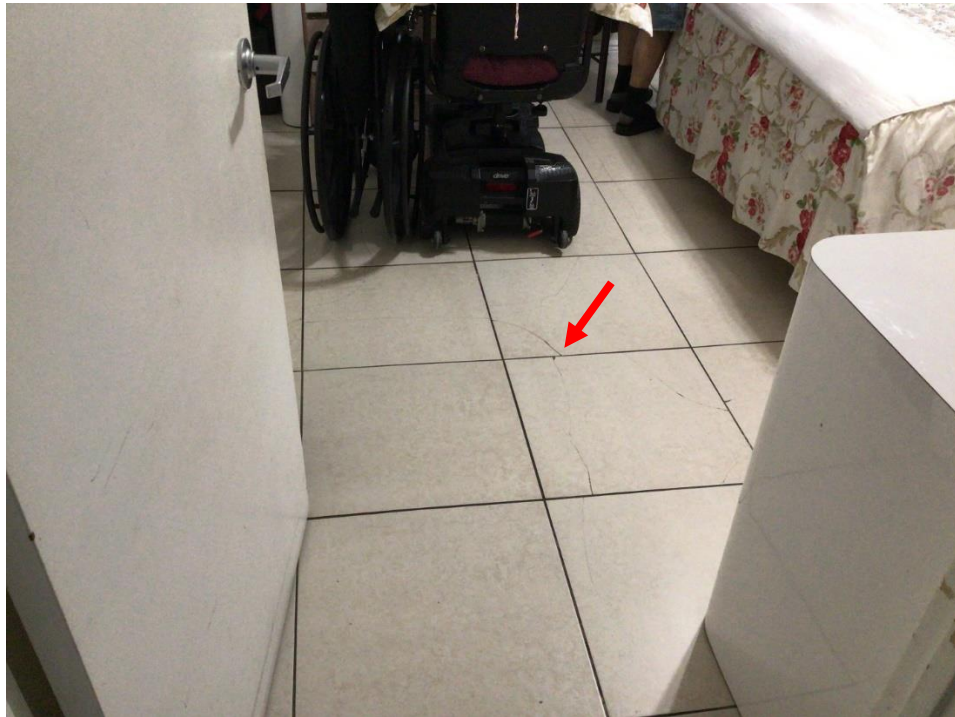
Photograph #18



Photograph #19



Photograph #20



Photograph #21



Photograph #22