STRUCTURAL CONDITION ASSESSMENT
1415 Marseille Dr.
Miami Beach, Florida 33141

May 28, 2021
H210920

PREPARED BY

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I. INTRODUCTION

General

Per the request of ownership, we have conducted a visual structural condition assessment on the existing structure located at 1415 Marseille Drive in Miami Beach, Florida (the "Structure").

The purpose of the inspection is to assess the structural condition of the existing structure to determine the feasibility of preservation or reuse.

Structural System

The Structure is a two-story masonry building constructed in 1941. The existing Structural System is as follows:

- First Floor:
    - Elevated wood floor framing, with wood planking
    - Exterior masonry bearing walls,
    - Interior wood load bearing stud walls
    - Walls are supported by concrete stem wall on shallow foundations.
- Second Floor:
    - Wood floor framing, with wood planking
    - Exterior masonry bearing walls
    - Interior wood load bearing stud walls

The components and cladding of the building, such as doors, windows and roof waterproofing are not addressed in this report. Moreover, it is recommended that Ownership perform termite and asbestos testing on the building. The electrical and electrical systems are not part of this report.

II. METHODOLOGY

This inspection was visual in nature from the exterior and interior of the building. Our office did not perform any destructive or non-destructive testing.

No structural analysis was performed on the building to determine the capacity of the structural systems. It is our opinion that the current structural system of the building does not comply Florida Building Code 2020 (7^{th} edition), HVHZ (High Velocity Hurricane Zone) edition.

III. STRUCTURAL SYSTEMS

Based on Miami Dade County tax records, the structure was originally built in 1941 with an area of 2,334 square feet.

The building has a crawl space under the building. The building's structural members are as follows:

Foundations: The building is built on shallow foundations and stem walls. The foundations support the concrete stem walls (interior and exterior). The interior stem walls support the interior wood stud walls, and the exterior stem walls support the exterior masonry walls.

Exterior Walls: The exterior walls of the building are concrete masonry unit (CMU) block bearing walls. The CMU block is the three cell block, which is typical for a building constructed in 1941.

Interior Walls: There are two types of interior walls, load bearing and non-load bearing. Both types are wood 2"x4" stud walls. The load bearing walls support the floor joists system extending from the exterior walls. These stud walls are in turn supported by the concrete stem walls and foundations.

Floors: The flooring system is typical on all floors. The wood floor joists are 2"x10" spaced at 16" on center. The joists system is supporting 1"x6" wood planks making up the floor system. All wood joists are "Fire Cut" into the CMU wall, meaning the wood joists are resting in openings in the CMU wall and are not connected to the walls via strapping or any other mechanism.

Roof: The roof of the building is a gabled end on the second floor and partial hip on the first floor. The garage (detached) is flat roof.

IV. SITE OBSERVATIONS

We have inspected the structure on May 21, 2021, and our summary of the evaluation of the existing conditions of the structural components are as follows:

Concrete members observed; including the tie beams over openings and corner columns, have variable levels of deterioration. It is evident that there is rebar corrosion and concrete spalling in these members at varying levels from severe to moderate. Moreover, previous repairs have been performed on the concrete members.

There are substantial cracks in walls, beams, and columns indicating settlement of the structure at different locations throughout the building.

Stucco cracking and delamination is evident on all elevations of the building.

Wood members, including the roof wood members and the 2nd floor wood members, have evidence of heavy termite and wet rot damage.

Masonry members, which comprise the exterior walls of the building, have joint cracks in many locations. There are several stucco cracks in the masonry on all elevations of the structure that are attributed to age, exposure to the elements, and settlement of the foundations.

Moisture intrusion into the structure is evident in several locations. Moreover, heavy mold presence is evident on the ceiling of the first floor.

V. STRUCTURAL EVALUATION

There are several factors to be considered in the structural evaluation of this building:

Initial Construction:

Building construction and standards of the 1940's are considered deficient by today's building standards. This applies to this structure and other structures built in the 1940's. Under the current building code, the Structure would be deemed deficient. The structure's roof connections to protect against wind uplift forces, and for wind lateral resistance are non-existent. Moreover, openings protection, and CMU reinforcing is also non-existent. Preservation or reuse of this building would require level III alteration of the Florida Building Code 2020 (7th edition) for existing structures. This means that the building has to be strengthened to comply with the current Florida Building Code. This would require that the roof connection tie downs be implemented to strengthen the roof, and lateral load structural systems be installed, such as shear walls, if needed, based on structural analysis. Wall openings such as doors and windows and the exterior CMU walls

have to reinforced. All corners of the building would need concrete columns. Hence, the foundations would also have to be strengthened to resist such lateral loads. Lastly, foundations would need to be augmented to stop settlement of the structure.

VI. RECOMMENDATIONS

Based on the site observations of the conditions of structural members of the building, and level III alteration required by the Florida Building Code, the structural members of this building need to undergo extensive rehabilitation, including CMU reinforcement, lateral systems construction, and strengthening of the foundations. Moreover, repairs to the roof and spalled concrete has to be done, and foundations augmentation has to be done to remedy the settlement.

Pursuant to FEMA, if the cost of the renovations exceeds 50% of the value of the structure without the land, the structure has to be elevated to meet current flood requirements, hence the structure has to be elevated up to Base Flood elevation +1'. Current Base Flood Elevation is 8.00' NGVD. Then the structure has to be raised so the first floor would be at elevation 9.00' NGVD. Current elevation of first floor now is at 6.05' NGVD. Hence, the structure has to be raised at least 3 feet.

There is high probability that the structure will sustain further damage in the process of elevating the structure. The existing foundations have settled, and its unknown how damaged they are, but more likely than not they are damaged to the point that they cannot be used to elevate the structure, as the foundations cannot be depend upon to support the structure during the elevation process, which will lead to more damage to the structure.

APPENDIX A

PHOTOS

Photo 1- Front Elevation

Photo 2- Concrete beam cracking in back of garage

Photo 3 – Wall cracking on East elevation

Photo 4 – Beam cracking over window on East elevation

Photo 5- wall / roof separation on East elevation foundation settlement

Photo 6 – Drop in office (South west corner) due to foundation settlement

Photo 7 - North East Elevation wall and beam cracking

Photo 8 – NW corner beam cracking over eyebrow

Photo 9 - Concrete Cracking SW elevation

Photo 10 – Concrete spalling on SW elevation

Photo 11 - West Elevation, concrete spalling

Photo 12 – Roof eave termite damage

Photo 13 – SE Elevation, roof Eave damage

Photo 14 – Mold on ceiling of first floor

Photo 15 – SE Elevation cracking over window

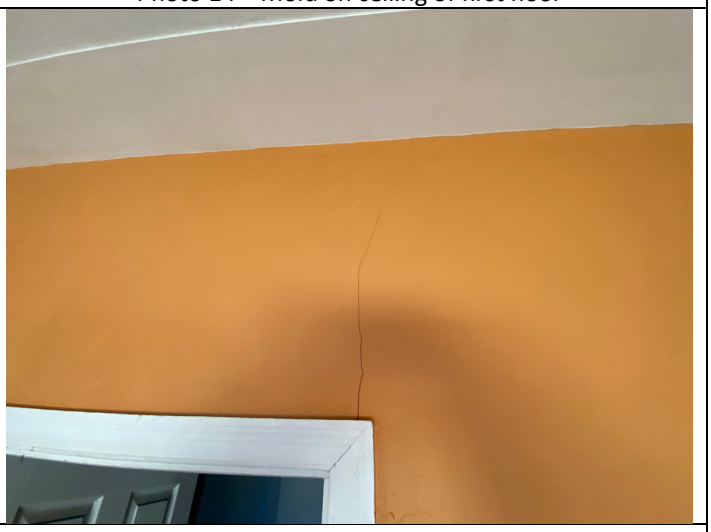

Photo 16 – Plaster cracking over door indicative of settlement

Photo 17 – Plaster cracking over door indicative of settlement

Photo 18 – Wood Damage of 2nd floor

Photo 19 – 2nd floor wall plaster cracking due to settlement

Photo 20 – 2nd floor wall plaster cracking due to settlement

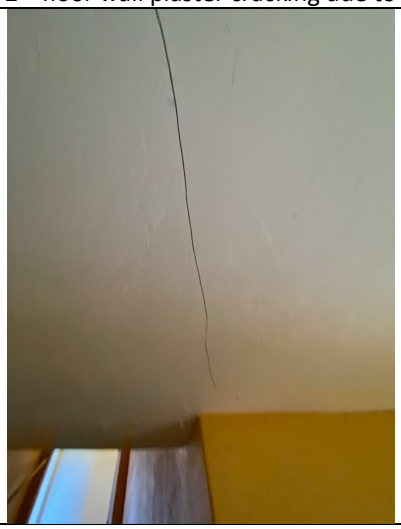

Photo 21 - 2nd floor ceiling plaster cracking due to settlement

Photo 22 – mold presence in the second floor

Photo 23 – bedroom on NE corner

Photo 24 – Moisture damage on walls

	
Photo 25 – Roof Membrane damage	Photo 26 – North corner living room ceiling damage