

Evaluation Report for Turtle Kraals

Stantec Project Number 215613030



Prepared for:

The City of Key West

Prepared by:

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Evaluation Report for the Turtle Kraals Tower Bar Structure at 231 Margaret Street

Key West, Florida

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November 20, 2015

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I. INTRODUCTION

The following is a structural condition report for the existing Turtle Kraals Tower Bar structure as a result of visual observations performed on all the visible/exposed building structural elements in order to identify any structural deficiencies or weakness in the tower bar structure. The following report summarizes the findings observed during a visual inspection of the building structure performed on November 16, 2015.

This investigation has been performed by means of visual observation of all exposed building structural elements, and the derived conclusions are to the best of my knowledge, belief and professional judgment.

II. DESCRIPTION OF STRUCTURE

The building structure is a wood frame structure built in 1974, consisting of wood column posts and wood beam support configuration as the main support system, supporting a wood framed second floor/roof structure. The ground floor roof structure also serves as a floor deck for the upstairs bar. The roof/floor framing consists of two bays of 2x12 wood joists spaced at 12" o.c., supported by built up wood beams and wood columns. The roof/floor deck consists of plywood panels. The upstairs bar is a gazebo type free standing structure consisting of wood column posts supporting wood beams and a wood framed hip roof.

III. VISUAL OBSERVATIONS

A. Wood Columns:

The majority of the wood columns were observed to be generally in good condition. Several column posts displayed an inadequate bearing configuration, where a gap exists between the bottom of the column and the concrete support, relying solely on the connecting metal bracket and bolts to sustain full gravity loads (See Pic.6). Several column base support brackets were observed to possess some level of corrosion, from mild to severe, due to exposure to moisture.

B. Wood Beams:

The wood support beams were observed to be in good condition, displaying no visible signs of distress or deterioration. The beams were observed to possess adequate support for both gravity and wind uplift loads (See Pics.2&3).

C. Flat Roof/Roof Deck:

Large areas of the 2"x12" flat roof/roof deck floor joists and plywood deck appeared weathered, displaying discoloration due to moisture intrusion from a deteriorated roofing (See Pic. 4). At the time of inspection, a large area of the roof framing was still wet from a recent rainfall (See Pic. 5). No sagging or excessive deflections were observed.. The roof framing was observed to possess adequate support for both gravity and wind uplift loads.

D. Gazebo Structure (2nd Level Bar)

The upstairs bar building structure consists of wood column posts supporting perimeter wood beams, supporting a wood framed hip roof structure (See Pic.9). The free standing gazebo structure: column posts, beams, roof framing, and roof sheathing appear to be in good condition. The roof rafters do not appear to possess adequate lateral and uplift load connections to the wood beams, at least not visible (See Pic. 12). Also no rafters to ridge connections were visible. One wood beam to column post connections was observed to be insufficient since the connection was placed at the beam end, possessing no edge distance (See Pic.10). The wood lateral bracing was observed to be in good condition, however at one corner bracing, the bottom connecting bolts is missing (See Pic.11).

E. Secondary Structures:

Secondary structures such as the roof canopy structure at the walkway at the rear of the building, was observed to possess deficiencies.

- i) Roof Canopy at the rear covered walkway: Both beam end supports were observed to possess inadequate, possessing insufficient gravity and wind uplift support capacity, thus requiring new support columns (See Pics.7&8).
- ii) Exterior Cladding: an area of the exterior wood cladding at the building's north west corner was observed to have rot due to water intrusion (See Pic.1).

IV. RECOMMENDATIONS

A. Wood Columns:

At the locations where the wood columns possess gaps at their base, wood shim plates should be placed within the gap space in order to create full bearing. Where the base plates/metal connectors have corroded, the plates should be replaced.

B. Wood Beams: No action at this time.

C. Flat Roof/Floor Framing:

In its current condition, the roof/floor wood framing does not pose a structural concern. However, the roofing should be repaired/replaced as soon as possible to eliminate the moisture intrusion into the roof/floor framing which will result eventually in the deterioration and weakening of the floor structure. In our opinion, the Durable plywood deck waterproofing system by Duradek will be the best suitable deck waterproofing system for this application.

D. Gazebo Structure (2nd level bar):

The roof framing requires further investigation to assure that their connectors are not hidden, exploratory investigation will be required. In the event that no connectors are found, new connectors are to be installed. The new connections are to be designed to resist a combination of uplift and lateral loads due to wind. This may require the use of metal clip angles and metal straps at each wood rafters. The inadequate wood beam to post connection shown in pic.10 requires to be redesigned to achieve a connection possessing adequate edge distance; This may

require the replacement of the entire wood beam at that location. The missing bracing bolt shown in pic.11 requires to be installed.

E. Secondary Structures:

Rear walkway roof canopy: Beam end support columns are required to properly support the wood beams (See Pics. 7&8). The new wood columns should possess the same configuration as the existing remaining canopy support columns.

Exterior Cladding: The areas deteriorated wood cladding/siding requires replacement (See Pic 1).

V. ENGINEER'S OPINION OF COST

F. Wood Columns: \$1500.00

G. Wood Beams: N/A

H. Flat Roof/Floor (Roofing): \$10,000.00

I. Gazebo Structure (2nd level bar): \$5500.00

J. Secondary Structures:

Rear walkway roof canopy: \$2000.00

Exterior Cladding: \$750.00

VI. PICTURES



(Pic. 1) Exterior cladding
(Deterioration from moisture)



(Pic.2) Typical Interior Roof
Framing and Support



(Pic.3) Typical Perimeter Roof
Support



(Pic.4) Typical Roof Framing
(2x12 spaced at 12" o.c.)



(Pic.5) Typical Roof Framing
Weathered & Wet from Moisture
Intrusion



(Pic.6) Wood column post at covered walkway (Gap at base)



(Pic.7) Inadequate beam support at walkway canopy structure



(Pic.8) Inadequate beam support at walkway canopy structure



(Pic.9) Upstairs bar roof structure (no visible roof rafter uplift connections)



(Pic. 10) Upstairs bar wood beam (Inadequate connection)



(Pic. 11) Upstairs bar wood bracing (Missing bolt connector)



(Pic.12) Upstairs bar roof rafters (No visible roof uplift connections)