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October 4, 2019

Board Members

Mr. CJ Cuppia

Coastal Resort Association Management

Harbor Island, SC

RE: Building Envelope Study for Building L
Harbor Island Beach House and Ocean Villas HPR
Saint Helena Island, SC

Dear Board Members & Mr. Cuppia:

1) Introduction

On behalf of the Board members, Greg Beste, Architect was requested by Mr. JC Cuppia to perform a building envelope study to review the building envelope components such as siding, trim, windows, doors, flashing, walkways and associated transitions with these materials. More specifically to investigate, including potential destructive testing, of the walkway to building transitions and slope of walkways. The flashing and anchorage to building will also be investigated.

2) Purpose

The purpose of this investigation is to determine: 1) the condition of the building envelope materials and components; 2) determine if any materials are damaged or deteriorated to a point that replacement is imminent; 3) document the materials or components for potential life-cycle replacement and 4) look specifically at the walkways and the deck/wall transition detail.

3) Scope of this Investigation

The scope of our investigation was to inspect the exterior of the building and the associated materials, components and details of the building envelope. To complete this investigation, Greg Beste made several site visits to investigate and photographically document the conditions observed. These site inspections occurred over several days during the months of August and September of 2019. A visual inspection was performed, with field notes and

photographs taken building envelope. My findings and conclusions were based on the on-site investigation of the building envelope.

This investigation is based solely on the visual observations of the buildings with no destruction testing performed. The conclusions in this report are therefore representative of our review of the existing conditions coupled with our professional experience and construction knowledge.

4) Background Information

The property is a single 3-story free-standing buildings with twelve units on each floor or a total of 36 units in the building built approximately mid-1980's. The building's northwest facing façade (front façade), has two exterior open-air stair towers near each end and open-air walkways on each floor providing access to each unit. There is an elevator located at the center of the building on the same northwest facing façade (front façade). The building has lap siding of either wood material. Fenestration is aluminum window frames from original construction with double insulated glazing. There are window units on the rear façade with custom single pane "corner glass" units.

The stair towers are constructed of wood framing and have wooden railings, solid timber treads and wood framed joists and decking at each landing. The walkways are of similar construction with wood framed joists and decking with a reported waterproofing membrane on the decking covered with a "outdoor" carpeting. The soffits are wood framed and plywood panels.

5) Documents Referenced or Reviewed

Construction documents were not available or did not exist for the building and were not available at the time of the on-site inspections.

6) On-Site Inspection

A. At the various site inspections in August and September, Mr. Greg Beste, Architect was generally unaccompanied during the site inspection except on the occasion that Mr. Cuppia was present.

B. Building Components

- a. **Treads at Stair towers.** The treads are solid timber with open risers and are supported originally by steel angles or with replacement supports consisting of extensively mitered 2x4 treated lumber. The steel angles appear to be present on approximately 50% of the treads with the remaining treads using the mitered 2x4 material. The steel angles have minor evidence of corrosion in most locations and have moderate corrosion present at the fasteners. A limited number of fasteners are completely corroded away and ***may present a safety hazard for the support of the tread.*** A number of the 2x4 mitered supports have

corroded fasteners also and have split the mitered support piece due to numerous fasteners used within close proximity to each other. This again ***may present a safety hazard for the support of the tread.***



Corroded steel tread bracket



Mitered 2x4 tread bracket and typical steel tread bracket

RECOMMENDATION: The corroded steel angle tread supports should be wire brushed clean and prime the surface with a primer made for metal. Apply two topcoats of paint on top of the primer. Any replacement fasteners shall be minimum #8 stainless steel wood screws.

All mitered wood supports shall be inspected and those with corroded fasteners or split/cracked wood shall be replaced with the new steel angle treated in the same manner as noted above.

- b. **Siding & Trim.** In a number of locations, it was observed that varying degrees of deterioration of the siding and trim was occurring on all four facades of the building. The worse conditions are in the “light wells” which are located between the walkways and the front facades near the entry doors and bedroom windows on the units. The trim and siding around the windows have severely deteriorated in this area and may be associated by the overflow scupper location above and general roof water runoff.



Typical deteriorated window trim and siding near “light well”



Typical condition of wood siding with peeling, pitting and deterioration of horizontal wood fibers.

RECOMMENDATION: The window trim should be replaced. There may be undiscovered wood framing deterioration discovered during repairs. Timeline for replacement should be considered as most of these areas also involve the original windows and flashing associated with the window units. It would be

proactive to replace the windows at the same time that the siding and trim are replaced.

The exterior siding that is still the original wood material and has not been replaced. Consideration should be given to the use of cementitious fiber board siding (equal to “Hardiplank”) in the next 2-5 years depending on the condition of the siding and its location or exposure to the weather elements. This work could be done in phases and in coordination with the window replacement.

- c. **Walkway/Stair Guardrails.** The guardrails consist of nominal 2x2 pickets with vertical supports of nominal 4x4 posts with a nominal 3x3 on an angle top rail and are in good condition. The fasteners in the majority of the pickets are in good condition and have limited visible corrosion. The bottom rail which is a nominal 2x4.



Typical Walkway/Stair Guardrails

RECOMMENDATION. Any corroded fastener conditions should be replaced with minimum #8 stainless steel wood screws.

Windows & Doors. The aluminum framed windows are original and have exceeded their life expectancy as a building component. It has been reported that several windows have either been replaced or are in need of immediate replacement.



Typical side façade windows and siding condition



Typical corner window condition on rear facade

RECOMMENDATION: Develop a plan and select a replacement window manufacturer and unit specification and complete replacement on an as needed basis with the understanding that all windows in the building should be replaced with the next 3-5 years or sooner. This also includes any sliding glass doors.

- d. **Walkways.** The front walkways on each floor having a carpet and a reported water-resistant membrane over a plywood decking. The deterioration of the decking was observed on the end face of the decking at the walkway edge, especially noted at the stairway tread locations. Delamination and deterioration of the inner layers of the plywood decking was observed in limited areas.

Wall and decking transition had several areas of poor or limited continuous flashing observed.



Typical walkway, note various replacements and water staining currently on carpet surface

RECOMMENDATION: Complete removal of the carpeting and complete removal of the water-resistant barrier. Removal of all plywood decking. Install minimum of 5/8" KDAT (Kiln Dried after Treatment) exterior grade treated plywood decking. Use "Hydrostop Traffic Coat Decking Coating" with a "Textured" finish for non-slip applications. Use with "PremiumCoat System" for extendable 5-year warranty by GAF, the manufacturer, when applied by an approved applicator at all plywood decking locations. Prep surface as required by manufacturer. Coordination with the wall/decking detail shall be required and in strict compliance with manufacturer's installation requirements. Provide minimum of 8" up the wall at deck/wall transitions with "Hydrostop" materials. Coordinate with siding replacement schedule as required.

- e. **Pilings.** A number of foundation pilings were observed to have corroded strapping and fasteners.



Typical corroded metal strapping at piling.

RECOMMENDATION: As part of the routine maintenance program, straps should be reinstalled to all pilings where corrosion is observed on existing strapping. Use stainless steel fasteners and double-dipped galvanized straps.

7) Limitations

Our professional analysis and opinions contained within this report are based upon, and therefore limited to, the information available to us at this time and the scope of our investigation as described herein. We reserve the right to amend this report if and when previously unknown or unseen conditions are discovered or additional information becomes available to us.

Following your review of this report, please contact me with any questions, comments and/or directives you may have. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gregory R. Beste'.

Gregory R. Beste AIA, NCARB
Architect
SC License number 3306