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To: Building Official - Miami Beach Historic Preservation Board (HPB)

From: Alexis Martinez, PE - Structural Engineer, FL Reg. No. 80430

Date: January 21st, 2019

Re: **Park Hotel Project**
335 19th Street, Miami Beach, FL 33139

Dear Madam/Sir,

Pursuant to our client, Ivan Busto Jr.'s request (M&C - Buslam), the purpose of this letter is to provide our professional opinion on the feasibility of raising the elevation of the existing structure located at the address above.

The existing structure, as per available MicroFilm As-builts, consists of exterior load-bearing CMU walls (Skeleton Frame Construction), reinforced concrete cantilever breezeway slabs and stairs, and interior load-bearing wood partitions supporting wood joists at the Second and Roof levels. The ground floor slab is a wire-mesh reinforced slab-on-grade. The structure is supported on reinforced concrete stem walls and reinforced concrete continuous wall footings.

The structure lies on a Special Flood Hazard Area designated as Zone AE (8 feet - FEMA, 9 feet per Miami Beach) NGVD Base Flood Elevation. The Design Flood Elevation would be 10 feet NGVD. As per the information provided by our client, the existing ground floor level is at 5'-6" NGVD.

In general, a typical retrofitting project that involves lifting or jacking an existing structure consists of one of two alternatives: (1) lifting the existing home and structural framing along with its foundations and new foundations are erected below the existing ones OR (2) keep the existing foundation in place, remove existing floor systems; extend the existing walls and reconnect the floor systems at higher levels. It is our understanding that option (1) is the one being considered by the HPB for this site.

In addition to both of these techniques being very costly alternatives, these retrofitting projects incur considerations and decisions that affect the operability/service of the building including revised access of existing stairways (new landings/treads), disconnecting and extending service equipment (water, sewer, gas, electric, etc.), and enlarging/strengthening the existing structural framing to take increased overturning moment and shear effects from increased wind loads around the building envelope. Other costs include the temporary foundations for the jacking system, clearing and securing access around the building and erecting new foundations below the existing ones after the underside soil has been recompacted per instructions from a new geotechnical report signed and sealed by a Florida Engineer.

In our particular case, since the slabs-on-grade are separated from the exterior stem walls by an isolation joint, the existing slab-on-grade would need to be abandoned and cut back at an offset distance from all load-bearing walls to allow for clear lifting of continuous wall foundations along with framing at upper levels. A new ground floor system would need to be framed at the higher level or have the elevated space back-filled, compacted, and have a new slab-on-grade poured at the higher level.

Furthermore, openings would need to be saw-cut or core-drilled on existing stem foundation walls to run temporary steel lifting beams across the width of the building. The current framing transfers gravity loads from the structure per lineal feet onto its foundations - the formation of these new openings may compromise the integrity of the existing walls and cause exterior cracking and/or spalling of finishes, load-bearing walls and brittle materials due to the increment of spacing between points of bearing of the existing framing on the jacking system framing during lifting.

Although lifting the existing structure will provide increased flood protection to the dwelling, it is my opinion that this process can be detrimental to the existing structure for the following reasons:

- Limited access around the North side for required lifting jacks/framing/temporary foundations.
- The existing building contains a large (over 20,000 sq. ft.) footprint that would need to be evenly and simultaneously lifted to avoid differential stresses.
- New access holes on foundation walls for lifting temporary framing may cause damage to its structural integrity.
- Brittle materials/components such as interior and exterior finishes/windows and doors may incur cracking due to lifting stresses.
- The existing slab-on-grade is detached from the existing foundation and will need to be abandoned – a new floor system would have to be framed at the new proposed floor level along with a new foundation.
- The existing Main Wind Force Resisting System (MWFRS) would have to be reassessed and possibly reinforced due to the wind load increment from raising the Mean Roof Height. This may generate another retrofitting project in and of itself.

The opinions expressed in this letter are not to be construed as a comprehensive construction sequence and they are limited to the knowledge of a structural engineer not specialized in lifting/jacking of existing structures. All construction procedures would need to be permitted through the city and performed by a qualified and licensed general contractor with prior experience in lifting/jacking of existing structures.

If you have any additional questions or comments, please do not hesitate to contact me.

Very truly yours,



Alexis Martinez, MSCE, PE
FL Reg. No. 80430