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## **STRUCTURAL INTEGRITY RESERVE STUDY**

### **WELLINGTON H CONDOMINIUM ASSOCIATION**

CENTURY VILLAGE  
WEST PALM BEACH, FLORIDA 33417

OCTOBER 2024

THOMAS J. TWOMEY, PROFESSIONAL ENGINEER, STATE OF FLORIDA,  
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## **OVERVIEW**

The Wellington H Condominium is a four-story residential building located in Century Village in West Palm Beach, Florida. The building was constructed in 1972 and is a concrete structure with three staircases, two trash chutes and one centrally located elevator shaft. There are a total of 56 dwelling units in the building, all of which have rear, non-cantilevered balconies. The units are accessed via open air common walkways which run along each level of the north faces of the building.

## **BACKGROUND**

Twomey Engineering was initially hired by the Wellington H Condominium Association to provide engineering services in the form of mandatory statewide milestone inspection(s). These mandatory milestone inspection(s) have been established as part of the recently enacted Florida State Senate Bill 4D (SB-4D) legislation which requires all co-op and condominium buildings three-stories tall or more to have a licensed engineer or architect visually inspect the overall structural envelope of such buildings. In general, Phase 1 of the milestone inspection program entails non-destructive, visual inspection of the structural elements of the building. Phase 2 of the program (if necessary) typically involves exploratory, potentially destructive investigation of damaged structural elements in need of immediate repair/reconstruction which were discovered in the Phase 1 inspection.

Twomey Engineering personnel were on-site in August of 2024 to perform Phase 1 of the milestone inspection program. It should be noted that the building was found to be in excellent condition structurally and deemed safe for continued occupancy at this time. Phase 2 inspections were not required. The new statewide program additionally requires a Structural Integrity Reserve Study to be conducted upon completion of the required milestone inspection(s) for such buildings. Twomey Engineering has also been contracted by the Wellington H Condominium Association to conduct this required reserve study.

## **SITE VISIT**

Representatives from Twomey Engineering conducted an on-site visit for the Structural Integrity Reserve Study on September 4, 2024 where we met with a board representative. We were informed at this time that the roof was fully replaced in 2021. We also know from previous concrete restoration projects which we were involved with at Wellington H that the building has had extensive remediative repairs completed on the common walkways, staircases, columns, walls, rear balconies, etc. recently completed and that the board has been very attentive to the need for such restorative maintenance. With this information in mind, we were better able to assess the existing conditions of the various structural components of the building as well as the fire safety and plumbing systems.

During our reserve study site visit in September, as seen in August, the building was again found to be in good condition from a structural engineering standpoint. An assessment of individual structural elements that generally necessitate periodic repairs was done at this time and projected life spans for these elements were estimated for the purpose of establishing a realistic plan for the setting aside of funding for future repair needs.

## **GENERAL FINDINGS**

### **I. ROOF SYSTEM**

The reserve study site visit began with a rooftop inspection. This included a visual inspection of the roof system, low walls at tower heads, deck flashing and rooftop equipment stands. As mentioned earlier, we were told that the roof was replaced in 2021. Our findings suggest that the roof system is in excellent shape overall and likely has an estimated remaining life span of 15-20 years before needing replacement. A total of 14 rooftop equipment stands sit atop the roof of Wellington H. We found all equipment stands and mounting assemblies to be in satisfactory condition at this time but some will surely need to be replaced in the next 7-10 years. These estimated life spans for the rooftop elements were taken into account during our field study and used as a basis for our projection of future fund reserves (Note: Equipment stands are included in funding).

## **II. STAIR SYSTEMS / CHUTES / ELEVATOR SHAFT**

The structures of the three staircases, two trash chutes and elevator shaft at Wellington H displayed virtually no signs of deterioration at the time of our site visit. Concrete restoration work completed on the building in recent years addressed all areas in need of repair at these north facing towers. It is estimated that substantial concrete restoration work will not be required on any of the north face towers for 7-10 years. This 7-10 year period is the projected remaining life basis used in our reserve funding estimate for concrete repair work that will be needed in the coming years.

## **III. COMMON WALKWAYS / RAILINGS / BALCONIES**

The common walkways, railing systems and rear balconies likewise exhibited no signs of minor or significant damage during our recent site visit. For reserve funding purposes, we have estimated that these areas have a remaining life span of 7-10 years before repair work will be needed. Again, this 7-10 years was used as our baseline for future funding required. A summary of funds to be set aside for these building elements can be found in the table on Pg. 6 of this report.

## **IV. BEAMS / COLUMNS / FLOOR SLABS / WALLS**

To recap, the building envelope was found to be in excellent condition overall. Structural beams, columns, floor slabs and walls showed no signs of deterioration or damage and should not need repair work done for a period of 7-10 years. General concrete restoration of these components of the building can be done as needed before 2034 but beams, columns, floor slabs and walls will not need substantial reconstruction for 7-10 years from now. Please see the table on Pg. 6 for an overview of our recommendation for projected reserve funding requirements.

## **V. ELECTRICAL SYSTEMS**

We inspected two (2) electrical rooms on the second floor of the building and found that the condo units are serviced by a total of eight (8) 400 Amp, single-phase (240/120 Volt) panel boxes. The main panel in each electrical room is also a single-phase system (240/120 Volt). To the best of our knowledge and belief, the existing electrical systems at

Wellington H are adjudged to be in good condition and should not need replacing for a period of 15-20 years. Minor repairs to conduits, circuitry, breakers and electrical panels can be done on an as-needed basis. Future funding for these systems for the next 10 and 20-year periods is broken down in the table on the next page.

## **VI. PLUMBING SYSTEMS**

Existing plumbing systems can also be repaired on an as needed basis over the course of the next 10 years. No signs of leaks or plumbing malfunctions were reported to us during our site visit and we were informed that no serious plumbing issues have occurred at the building in recent years. See the table on the next page for a breakdown of funding for future replacement of plumbing systems.

## **VII. WINDOWS/DOORS**

The existing windows and doors of the building were adjudged to be in good condition overall. Individual unit owners are responsible for their windows and doors and can replace these items at their discretion. Generally for condominiums, the cost for replacing windows and doors for individual condo units is an expense to be covered by unit owners. All new windows and doors shall be impact rated for high velocity hurricane zone (HVHZ) winds in accordance with FBC 2023, 8th Edition for 170 MPH wind speed, Exposure C, Risk Category II.

## **VIII. PAINTING**

The existing exterior walls of the building were found to be in good condition throughout and general painting of the walls of the buildings will not be needed for a period of 10-15 years. This can be done at the discretion of the condo association prior to the 10-year mark as a form of upkeep on the aesthetic appearance of the building but painting will likely not be necessary until the year 2034.

## **PROJECTED RESERVE FUNDING REQUIRED**

The table below is a breakdown of estimated funds that we recommend be set aside for future repair costs (2024 U.S. Dollars). If the work for these four primary structural elements is undertaken in 10 years or less, the funding will be significantly less as shown. If these areas of the building are neglected beyond the 10-year mark, the 20-year column will better reflect our recommendation for funds that will be required to make the necessary repairs in order to ensure building safety. Please note that for the Roof System, the 20-year column is indicative of the cost to replace the roof system once in the next 20-year period. To reiterate, we recommend the roof be replaced in the next 15-20 years to keep future costs down. The 10-year column reflects the target number we recommend be set aside under the expectation that the roof will not need to be replaced for at least the next 15 years. It should also be noted that these estimates for future repair costs include engineering plans and certification of completion of construction upon satisfactory findings. Photographs of the building can be found on the following pages.

<b><u>ELEMENT</u></b>	<b><u>10-YEAR</u> <u>(2034)</u></b>	<b><u>20-YEAR</u> <u>(2044)</u></b>
ROOF SYSTEM (FULL REPLACEMENT)	\$230,000	\$485,000
STAIR SYSTEMS / CHUTES / ELEVATOR SHAFT	\$ 72,000	\$172,000
COMMON WALKWAYS / RAILINGS / BALCONIES	\$138,000	\$305,000
BEAMS / COLUMNS / FLOOR SLABS / WALLS	\$ 57,000	\$120,000
ELECTRICAL SYSTEMS	\$ 80,000	\$150,000
PLUMBING SYSTEMS	\$ 64,000	\$136,000
WINDOWS / DOORS	\$188,000	\$346,000
PAINTING	\$ 69,000	\$125,000

**TOTAL**

**\$898,000**

**\$1,839,000**

## **PHOTOGRAPHS - ROOFTOP**





## PHOTOGRAPHS - ROOFTOP (CONTINUED)





## PHOTOGRAPHS - ROOFTOP (CONTINUED)



## PHOTOGRAPHS - BUILDING





**PHOTOGRAPHS - BUILDING (CONTINUED)**



**PHOTOGRAPHS - BUILDING (CONTINUED)**





**PHOTOGRAPHS - BUILDING (CONTINUED)**

