

# Surfside building collapse is a shocking wake-up call for coastal condo homeowner associations

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In the middle of the night on June 24, a 40-year-old, 12-story condominium in Miami-Dade County suddenly collapsed. Ten people are confirmed dead and more than 150 more residents are unaccounted for and likely perished.

This is a tragedy of unimaginable proportions for the victims and their families and for those other residents of the condemned building who are now homeless. My company has contributed to relief efforts and, we urge others to do so, as well.

In our view, while it is too early to identify root causes of this catastrophe in the beachside town of Surfside, it is not too soon for HOAs to heed warnings and start making their buildings safer, more sustainable, and resilient.

The New York Times has [reported](#) that in 2018, a consultant for the building urged managers to repair cracked columns and crumbling concrete. The repair work was finally about to get underway during the county's required 40-year recertification process when the building collapsed.

The engineer found alarming evidence of cracking and crumbling columns, beams, and walls of the parking garage under the building.



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While it is likely that the cause of the collapse will have a number of contributing factors, coastal condo HOAs need to be particularly concerned about saltwater corrosion of concrete and steel in the foundations below grade.

“Though the Champlain Towers South collapse is at the catastrophic level, failure of structural elements in coastal high-rise buildings, such as deck and balcony failures, has been an ongoing concern of the engineering and building official communities for decades,” said Clifford Oliver, formerly an engineer with FEMA and now a Professor at

University of Maryland and Principal of Nanticoke Global Strategies, “With the explosive development along the east coast of the U.S. since

the 1970s, there are thousands of coastal buildings that have been exposed to corrosion associated with salt spray, periodic coastal flood water inundation, and seawater/ground water intrusion.”

The [Champlain Towers South](#) was built on reclaimed wetlands and is located on a perpetually shifting barrier island. Sea levels in this area of the Atlantic Ocean have risen about a foot in the past century because of climate change.

Underneath the building’s foundation is sand over a bedrock of porous limestone. The bedrock, actually ancient corals (from an epoch when sea levels were much, much higher), is like Swiss cheese that lets salty ocean water migrate inland beneath the ground surface.

In 2016, Miami-Dade County [published a study](#) entitled: “Report on Sea Level Rise and Salt Water Intrusion.” The purpose of the study was to understand the implications of sea-level rise on increased risks for flooding and saltwater intrusion on public infrastructure and buildings.

The study also made recommendations to building owners on how to adapt to sea-level rise and saltwater intrusion. The study documented higher water-table elevations caused by rising sea level.

It found: “Higher sea levels increased the...percentage of time water-table elevations were less than 0.5 foot below land surface.”

Some building experts are concerned that this kind of environmental assault could have played a role in the collapse.

“Sea-level rise does cause potential corrosion and, if that was happening, it’s possible it could not handle the weight of the building,” Zhong-Ren Peng, professor and Director of University of Florida’s International Center for Adaptation Planning and Design, [told The Palm Beach Post](#). “I think this could be a wakeup call for coastal developments.”

Greg Batista, an engineer who specializes in concrete repair projects, [told the Miami Herald](#) that he suspects concrete spalling, a process whereby saltwater seeps into concrete and ultimately causes support beams to rust, expand, and weaken, to be a factor in the building’s collapse.

The Miami-Dade study made important recommendations for building owners, but, to our knowledge, no major new laws or regulations have been enacted that require these recommendations to be implemented.

Some of the recommendations included:

- Elevate buildings
- Flood-proof buildings with wet flood-proofing; dry flood-proofing; passive flood barriers; improvised flood protection (sand bags or moving equipment to higher elevations); deployable flood panels
- Elevate the height of the interior finished floor elevation
- Elevate mechanical systems
- **Avoid below grade parking or basements.**

### **NEXT STEPS?**

Condo HOA's in Miami-Dade County should not wait until they must comply with the 40-year recertification requirement to take steps to make their buildings safe from the cumulative effects of harsh coastal environments.

Also, the county should consider lowering the recertification period to 20 years or even less. HOAs should have their foundations and other critical structural components checked more frequently by a licensed architect or engineer, especially where there are underground parking facilities, whether below ground or at grade.

When structural problems are uncovered, HOA boards need to take prompt action to implement repairs. Coastal communities should consider requiring licensed architects and engineers employed to conduct such inspections to immediately report structural deficiencies to local authorities. Then, local governments can follow up, ensure that the building is safe to occupy, and assure that essential repairs are made in a timely manner.

Finally, the county's sea-level rise adaptation recommendations should be made into building code requirements for existing and new buildings, as appropriate.

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