

Question of what caused Surfside, Florida, condo to collapse remains unresolved

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In a hearing last Wednesday, September 1, into the case of the Surfside, Florida, condominium collapse that killed 98 people in June, the Miami-Dade County Circuit Court heard a proposal to sell the site to a developer for \$120 million. A counter proposal from a group of the families of victims to create a memorial on the site was contingent, Judge Michael Hanzman declared, on the city's willingness to sell its community center, in place of the site, to raise funds for the financial settlement ensuing from the disaster. Members of the city council intervened quickly to quash the sale of the city's property.

At the same time, the judge set a date for initial visual inspections of the site as a preliminary step to sampling and testing the subsoils and building parts that constitute the scientific investigation necessary to determine the cause of the collapse for after the end of September.

Immediately following the condo collapse in the early morning hours of June 24, the mayor of Miami-Dade County and the county's police department declared the site a crime scene and promptly blocked any scientific study of the cause of the catastrophe, ostensibly in the interest of preserving the evidence of a crime. Since then, such testing has been repeatedly postponed.

On the same day as the hearing, the *New York Times* published a major report headlined "The Surfside Condo Was Flawed and Failing. Here's a Look Inside," by Anjali Singhvi, Mike Baker, Weiyi Cai, Mika Gröndahl and Karthik Patanjali. In it, the newspaper of record claimed to show "how faulty design and construction could have contributed to the collapse of the building in South Florida."

The authors assert, "The *New York Times* created a 3-D model of the tower based on the original design drawings. That model, combined with a review of documents and interviews with structural experts, reveals how design errors, last-minute changes, dubious construction practices and years of worsening deterioration could have

all contributed to the collapse."

The authors take special note, for example, of the reinforcing steel embedded in concrete slabs and columns. Steel is crucial for structural integrity and resistance to catastrophic failure. "There are signs, though," they state, "that the tower was improperly built, with too much steel in some areas and too little in others."

The *Times* authors continue to place special emphasis on these points. "On the east side, the building's thinner columns were designed with excessive steel reinforcement," they write, "violating codes that seek to ensure that there is enough cohesive concrete to give the column its strength, a problem first reported by the *Miami Herald*."

And again, citing a particularly famous photograph of the wreckage, they state, "The design for this column—one of the thickest in the building—called for four steel rods at the top, going in each direction. But in photos after the collapse, only two or three were visible, a potential construction flaw."

The *Times* presents its story as if the causes of the tragedy have been established and the case all but closed. To review these findings, the *World Socialist Web Site* spoke with the eminent structural engineer and forensic expert Allyn Kilsheimer, founder of KCE Structural Engineers PC in Washington, D.C. He was hired by the town of Surfside on the day of the collapse to investigate the disaster but has yet to be allowed on site to begin his investigation.

Kilsheimer was not prepared to condemn the original design nor the methods of constructing the building without first establishing hard, scientific evidence. On the contrary, he categorically repudiated the *Times*'s analysis as premature and with no factual basis. "They do not know that," he said. "That's all speculation."

Regarding the crime scene restrictions imposed by the county, he said, "From an engineering standpoint, there is

no reason I can see why we have not been allowed to do what we have to do down there. We are not allowed to sample, or test, or view anything.”

A structural engineer with decades of experience in the most challenging circumstances, he dismissed the facile allegations of the *Times*’s elaborate presentation. “I don’t know how they know that. There is nobody that can make definitive statements about any of it,” he said.

“Nobody can say that the concrete was the wrong strength or deteriorated. Nobody can say that the reinforcing steel was the wrong strength or had deteriorated. Nobody can say that the number of rebar that were in the deck was inadequate. Nobody can say the placement of the rebar in the deck was inadequate.” He concluded by plainly explaining, “Nobody can say the thicknesses of slabs were inadequate because no one has been able to sample and test any of that stuff.”

For Kilsheimer, the record drawings do not constitute proof that the building was badly designed. “I don’t know how they know that,” he said of the allegation. “The drawings we are working with are the drawings that were in the records of the town of Surfside. I don’t know of any other drawings that exist. I don’t know of any information that talks about beams that were removed, or not removed, or added. All we have is those drawings,” he said and went on to explain his more objective, scientific approach to the documents. “Those drawings have different iterations of them. And most of them don’t even have a date, so there’s no way to determine which drawing preceded which. When there is a date, we use the latest one.”

As a veteran of dozens of structural forensic investigations, he said, “I am not prepared to issue anything. That’s what I have said to everybody for the last two months.

“You wouldn’t believe some of the stuff people are writing,” he said. “The *Miami Herald* did a huge article. They had it all figured out. ... Based on what? There is no evidence. No one has been able to look at and study and test the evidence. No one.”

As an example, the *Times* focused on the photograph of two pieces of rebar protruding from a column and claimed that only two bars had been installed when there were supposed to have been four.

“It is not supposed to be four,” Kilsheimer said. “The drawing says put 25 percent of the top steel in the flat slab in the width of the column. So, if it calls for 16 bars in the slab, there should be four at the column. ... Now in that picture, which I think I have seen, you cannot tell whether

the steel is there but it was sheared off flush with the column. You need to get up close and personal to look at that column. So right now you don’t know.”

“You have vertical column reinforcing that comes up. You have horizontal slab reinforcing in two directions. And you have a relatively narrow column. You are not going to be able to fit all that in the width of the column. When we designed buildings back then and even today a little differently, we say put x number of bars within so many feet of the face of the column because you know you cannot fit it in. So, the guy putting in the rebar does the best he can do. That’s the way it happens all over the world. It is the way it’s done.”

Meanwhile, building officials in South Florida continue to uncover dangerous conditions and force buildings to be evacuated in the wake of the Surfside tragedy. Two apartment buildings in Bay Harbor Islands were evacuated last week after the town’s building official deemed the properties unsafe for occupancy.

After tenants of the Forum, at 1080 93rd St., were ordered out of their homes Wednesday, the town declared a second building at 1060 95th St. shut down the next day citing dangerous conditions, Town Manager Maria Lasday reported.

The four-story Forum building, which was built in 1965, has 24 units. The two-story building at 1060 95th St., built in 1948, has nine units. City officials found “significant structural defects” in both, and all tenants were ordered to leave.

High-rise condominiums line the south Florida coastline one after another in tight succession. Asked if any of them may be in danger, Kilsheimer replied, “I must have been asked that question a thousand times. Until I can begin to investigate, I will not be able to answer it.”



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