March 2022

# BUILDING BLOCKS

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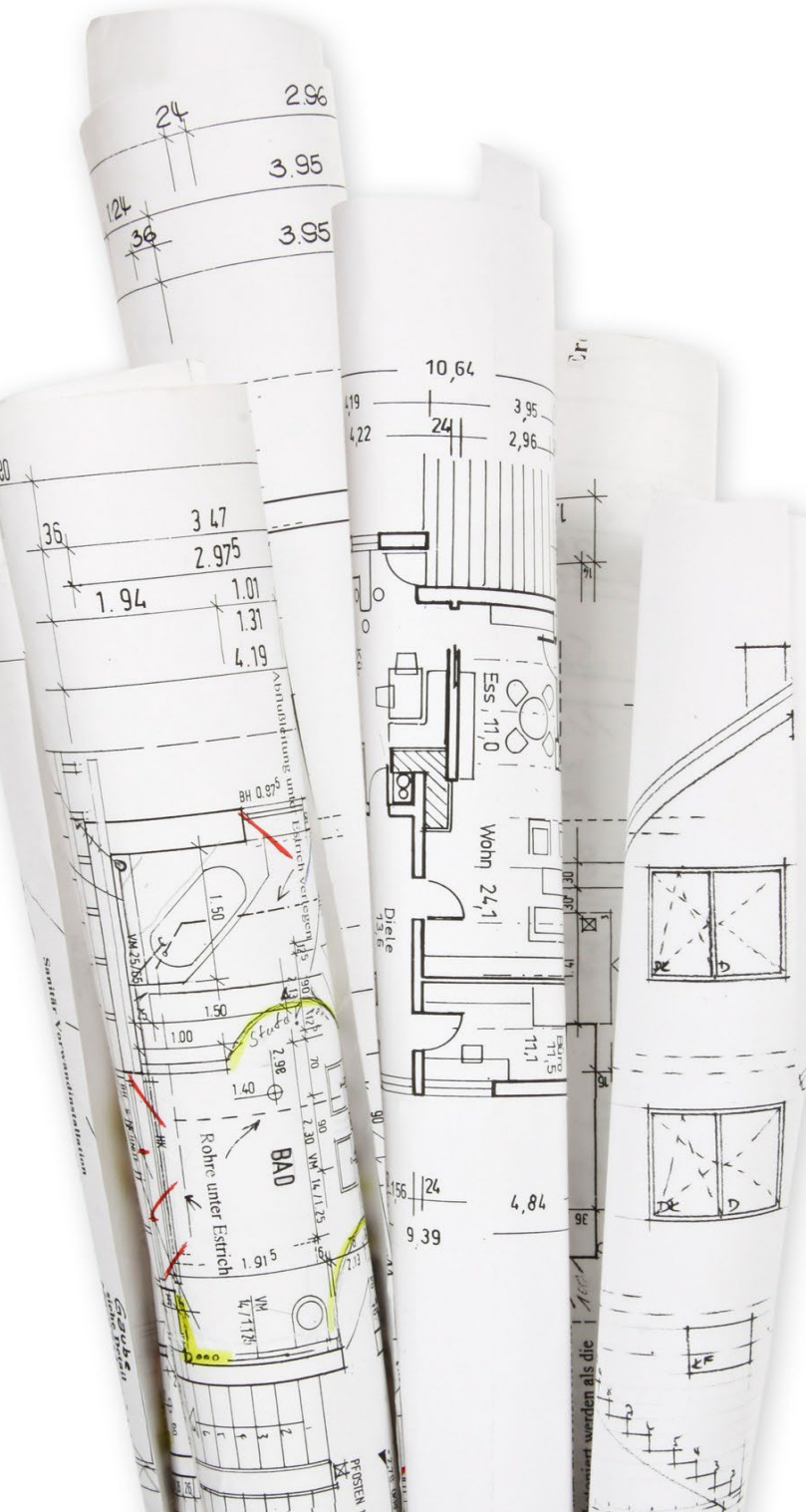


## THE CITICORP OFFICE TOWER: A CASE STUDY OF HEROES, NO VILLAINS

By: Eric O. Pempus, FAIA, Esq., NCARB
DesignPro Insurance Group

In the late 1970's Citicorp began its expansion into global banking, and engaged architect Hugh Stubbins to design its international headquarters. Renowned structural engineer William LeMessurier (pronounced LeMeasure) was engaged by Stubbins to provide the structural design for a 55 story tower in Manhattan. About the same time LeMessurier was elected to the National Academy of Engineering, the highest honor his profession bestows. Citicorp's goal was to take an entire city block for their headquarters. Stubbins' design sports a dramatic chisel top, creating an iconic image in the Manhattan skyline.

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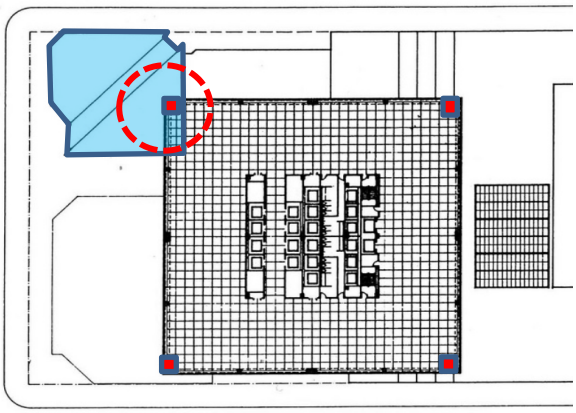
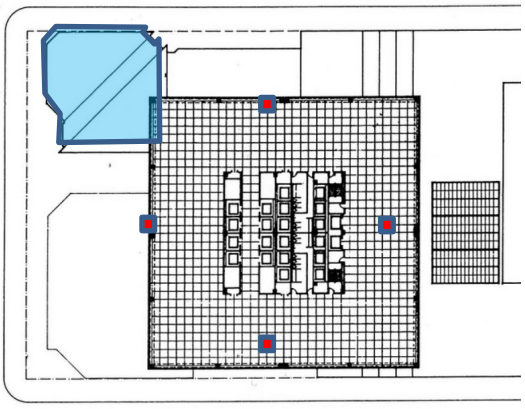
## BACKGROUND OF THE CITICORP TOWER

However, there was a church that briefly stood in the way, until Citicorp and St. Peter's Lutheran Church negotiated a deal where the building would be demolished and placed in a corner on the site, and Citicorp would pay for its design and construction. LeMessurier's design included a 114 foot cantilevered space over the top of the new church, with the four columns at midpoints as opposed to the typical four corners (the church is on the left side of the image, ironically with a chisel top roof).

https://en.wikipedia.org/wiki/Citicorp_Center_engineering_crisis





- Built in 1975, at that time the 7th tallest building in the world
- 59 stories, 915 feet tall
- 1.5 million square feet floor space
- Cost $105 million (in today's cost over $787 million)
- 25,000 ton steel skeleton; cladded in shinning aluminum

## THE STORY REALLY BEGINS HERE

LeMessurier was an adjunct professor at Princeton University. The story really started from a telephone call from one of his students. The student challenged the professor—stating that LeMessurier had put them in the wrong place, creating a tuning-fork, and the building could collapse. "I was very nice to this young man," LeMessurier recalls. Nonetheless, LeMessurier decided to rebut the student's challenge, going to his private island to work through the calculations after he performed the initial structural design.

The revisited calculations resulted a disturbing result—that the building's weakness point was at the 13th floor, and given wind from at an angle (what sailors call quartering winds), the building could indeed collapse with a one in sixteen chance in any year (what meteorologists call a sixteen-year storm). LeMessurier had an ethical dilemma of catastrophic portion.

He concluded that he had three options. He could **stay quiet**, hoping that the building would not collapse during his lifetime. He could **commit suicide**, but he concluded that would be a coward's

way out. Or, he **could come clean**, and blow the whistle on himself. He concluded that "there's no choice to make." The National Society of Professional Engineer's Code of Ethics, Fundamental Canon Number I, states that engineers shall "Hold paramount the safety, health, welfare of the public."

NSPE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

## Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

## I. Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

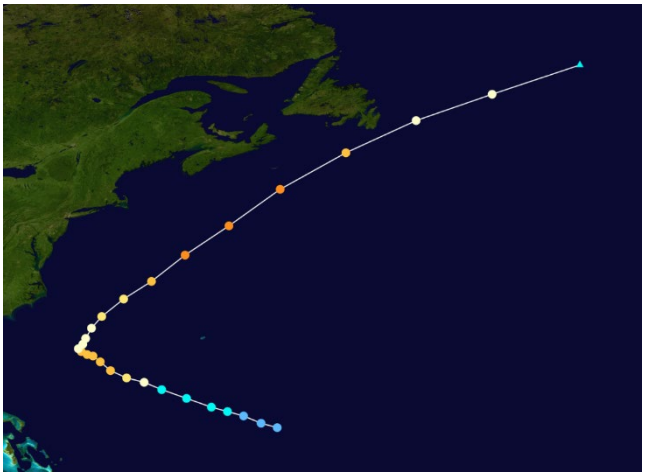
1. Hold paramount the safety, health, and welfare of the public.

### TAKING ACTION

After he returned from his island, LeMessurier immediately contacted Stubbins, and together they approached Citicorp executives, but they could not pierce through the layers of secretaries—until Leslie Robertson entertained them. Robertson had an engineering background, and understood the gravity of the situation. Compounding the problem, it was then discovered that structural connections between major steel chevrons (steel elements), designed to be welded together, where actually installed with bolted connections. It is common during construction, changes do occur, sometimes from suggestions from construction contractors (Bethlehem Steel requested the change to save time and money). LeMessurier outlined his plan to fix the bolted joints. Since the bolted connections were less rigid, the repair included a two-inch-thick steel plate welded in place over every bolted connection (more than two hundred bolted joints).

Citicorp executives, in concert with the Red Cross, New York City Building Commissioner, and others planned a press conference, after they all came together, on the next day. As it turned out, New York City's media, including newspapers, and *The Times*, went on strike, and story did not make the news—until the New Yorker Magazine published this story. On May 29, 1995 Joe Morgenstern's article titled "City Perils, The Fifty-Nine-Story Crisis" hit the newsstands, twenty years after the untold story was brought to light. But, like all news, by then, it was old news.

At night, when all the daytime workers left, a team of contractors working seven days a week removed the drywall covering the connections, and installed the plates. But, during the reconstruction of the steel connections, hurricane Ella was heading right for New York City. LeMessurier recalled "everyone was sweating blood." Miraculously, Ella headed out to sea, before reaching the east coast.



https://www.youtube.com/watch?v=qCrjguk_Dsg

## WHO'S GOING TO PAY FOR THIS?

You are wondering about the field-day when the lawyers would flock to the dilemma, to litigate the problem. Whatever the actual cost, Citicorp's efforts to recoup the cost was remarkably free of the "punitive view that often have poisonous negotiations to settle a matter." When the terms of a settlement were first discussed, without lawyers, LeMessurier proposed $2 million—which was the limit of his professional liability policy, and was what his insurance carrier agreed to pay. After a second meeting, which included the insurance carrier's lawyer, Citicorp agreed to hold Stubbin's firm harmless, and accepted LeMessurier's carrier's offer. No litigation ever ensued.

## CONCLUSION

Everyone went away as heroes and no villains. And there are many spinoffs from this story, with many issues that are not included in this risk management article, in order to keep this March issue of Building Blocks relatively brief. But if you want to get a better deep dive into the story, go to Joe Morgenstern's article:

https://www.uh.edu/ethicsinscience/Media/59Story.pdf or
https://www.newyorker.com/magazine/1995/05/29/the-fifty-nine-story-crisis.
**But view the recommended YouTube video** https://www.youtube.com/watch?v=um-7IlAdAtg.

And that Princeton University engineering student—her name was Diane Hartley, now Principal at Hartley LLC, Washington, DC.

*"Always do right. This will gratify some people, and astonish the rest." Mark Twain*

***About the Author***

*Eric O. Pempus, FAIA, Esq., NCARB has been a risk manager for more than 17 years with experience in architecture, law and professional liability insurance, and a unique and well-rounded background in the construction industry. He has 25 years of experience in the practice of architecture, and as an adjunct professor teaching professional practice courses at the undergraduate and graduate levels for the last 35 years. As a Fellow of the American Institute of Architects and AIA National Ethics Council 2021 Chair, he has demonstrated his impact on architectural profession. He has presented numerous loss prevention and continuing educational programs to design professionals and architectural students in various venues across the United States and Canada.*

*The above comments are based upon DesignPro Insurance Group's experience with Risk Management Loss Prevention activities, and should not be construed to represent a determination of legal issues, but are offered for general guidance with respect to your own risk management and loss prevention. The above comments do not replace your need for you to rely on your counsel for advice and a legal review, since every project and circumstance differs from every other set of facts.*

# MARK YOUR CALENDARS FOR ERIC'S UPCOMING CONTINUING EDUCATION PROGRAMS:


## Speaking Engagements:

***"Empowering Your Ethics in a Changing Architectural Culture"***
May 25, 2022
12:00 – 1:00 pm
AIA Cleveland, Columbus & Cincinnati Lunch & Learn Webinar, I HSW Pending

***"Legal, Regulatory & Ethical Issues for Ohio Engineers"***
June 17, 2022
10:15-11:45 a.m.
Preventing and Defending Professional Liability Claims
12:15-1:15 p.m.
Complying with Rules of Professional Conduct

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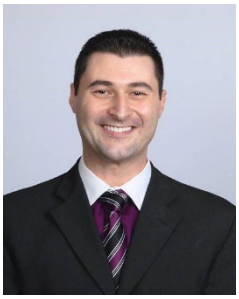

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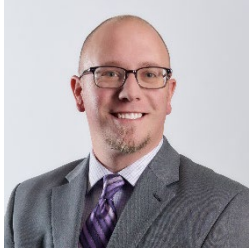

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