



# MY SCARIEST ROOF JOB

By John Goveia

*Photo 1: The newly-clad dome and steeple in 2001. The arrow points to spot where John was when the earthquake hit.*

I am a roof and waterproofing consultant in the San Francisco Bay Area now, but back in April 1984, I had been working in the roof construction trade for almost ten years. I had worked in and out of the Bay Area and a year in Seattle on everything from shake-shingle, metal, and tile, to single plies to deck-wall and below-grade waterproofing. I was fortunate – during most of my roofing career, I worked for a progressive shop in Oakland that did a lot of diversified work, not limiting us to one or two types of roof systems.

In 1984, I was working on a very prestigious project – the cleaning and repair of the copper-clad dome and steeple of the San Francisco City Hall. (*Photo 1* reflects the newly clad dome and steeple in 2001.) The new cladding was installed as a result of a fire that had started while someone was repairing the old copper covering during the City Hall restoration and rehabilitation project.

The steeple is almost 300 feet above the street – a long way down – and a long way up, too. Every trip to the top of the dome took us through steep, narrow, circular stairs perched in what seemed like mid-air within the dome. Dimly lit, there were occasional landings and reverse direction circular stairs and so on until one exited the small door at the top of the dome. No trip was wasted going up; we always took something – 80-pound rolls of roof material, 10-foot lengths of copper flashing, and our harness and ropes.

We had done various projects at City Hall over a few years

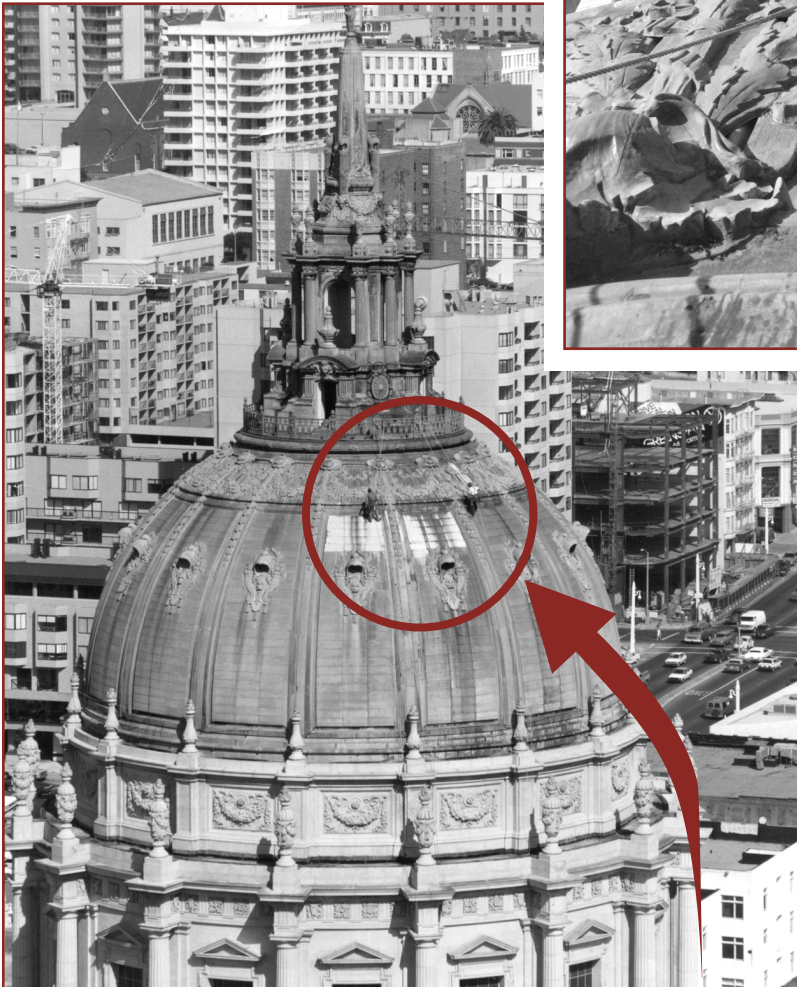
time, but this one was the most memorable of them all. This was my first long-term project utilizing my Alameda County Sheriff's Department OES cliff rescue and recovery training and the use of rope knowledge for roofing. I adapted the use of rappel working line using a saddle harness and a separate fall protection harness and safety line. (It actually wasn't until the year 2000 that a provision finally showed up in the OSHA regulations covering this concept.)

Our cleaning and repair efforts lasted for months. Ultimately, we removed more than 100 bags of pigeon droppings, dead birds, nests, and other debris. We also fixed about 45 bullet holes in the dome, and secured and sealed many of the ornaments.

*Photos 2 and 3* depict Dan Lyons, another employee, and me doing routine daily access and repairs on the dome. We would start at the top, do preparation, cleaning, sealants, and riveting, working and rappelling our way down the dome surface in narrow, radial bands. By the time we reached the base of the copper-covered dome, we were purely vertical, and would have to bypass a narrow roof and rappel down another 40 feet to the roof at the granite base of the rotunda. Then it was in the door, down the stairs, pick up some items, and up the stairs again. It was very tedious and tiring work, physically and mentally. We weren't just working, but always cognizant of where we were, who might be above or below us, and making certain all our tools were tied to us so they couldn't be dropped.

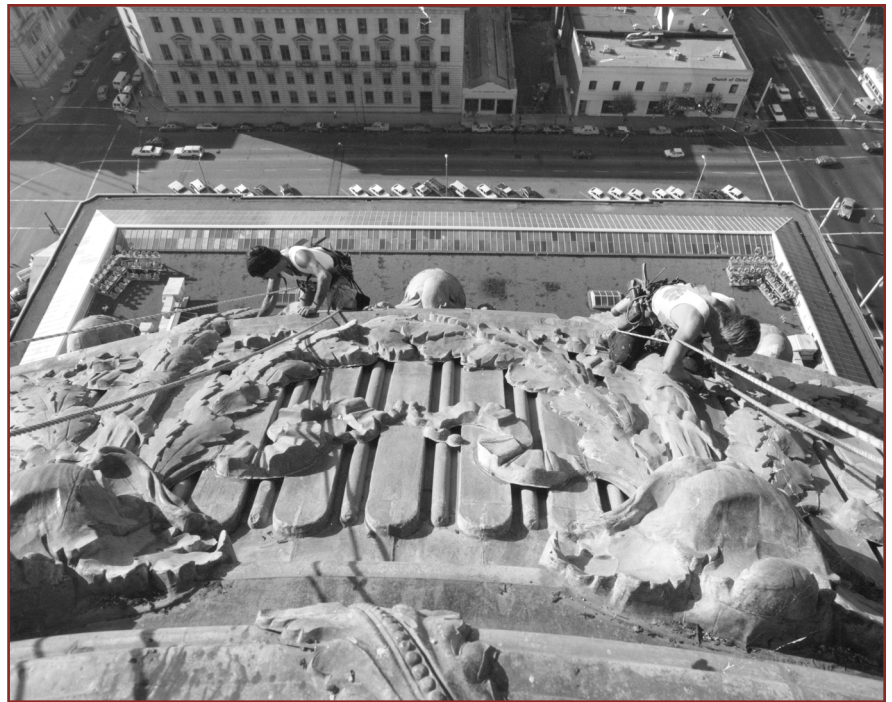
Oh yeah, and now – the scary part!

*Below: Photo 3: Those dark dots are John and Dan.*



We saved the steeple repairs for last. What a challenge! What I didn't mention earlier about the 300-foot rise to the steeple were three things:

- It took a 22-foot wooden ladder to get from the upper dome level to the actual base of the steeple.
- I was never really trained in steeple jacking. By using roof jacks securing as I went up, I did finally get the ropes secured around the top.
- The leaky steeple was covered with copper cladding over wood framing. The wood framing was wired to steel framing with galvanized wires. And many of the wires used for attachment were in questionable condition due to the leakage that created a galvanic action between the copper metal and the galvanized wire. We were in constant fear of the steeple coming down in the wind. And that steeple would move around!



*Above: Photo 2: John Goveia and Dan Lyons doing routine repairs on the dome.*

By the time we were to start working on the steeple, I had four other trained team members. So on April 24, 1984, in the mid-afternoon, I was up on the steeple reviewing the condition of the work in progress, with employees Brian Swanson and Rita Meneley. I was on the upper section with Brian. Since I was using Rita's lines, she was in a safe, secured position at one of the large copper urns, which had vertical steel beams inside.

At around 2:15 p.m., I noticed the steeple moving around a lot more than usual. I yelled over to Brian to stop jumping around. He wasn't jumping. The 6.1 or 6.2 Morgan Hill earthquake was in progress. For those of you who don't have a clue, it was a ground roller, like waves – big waves! I yelled, "Earthquake! Get down!" I looked down to see if Rita was doing okay and noticed the street, the concrete roof deck, and skylights below rippling like waves. In the process of "quickly" getting down, we had not realized that we had been swinging around so much that we had badly bruised our shins. As I recall, Brian kicked out from the steeple and in one swift downward repel swoop (like a SWAT team ready to go in through some windows), he was on the upper landing of the dome, out of his harness, and already on his way through the dome.

I made a quick repel stop to get Rita hooked onto my harness and continued to repel down 30 feet or so to the top of the dome area, both of us shaking. Then Rita said she needed to get her keys for her vehicle. I said, "Go ahead." Rita said, "They're in my jacket," pointing up to the middle of the steeple area (above circle on *Photo 3*) at one of the vertical spires. This was her only set of keys.

By now, my legs were shaking uncontrollably, but I went back up the rickety, 24-foot wooden ladder and halfway up the steeple

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*Photo 4: The San Francisco City Hall from a distance, 2001.*

on ropes to retrieve the jacket, all the while thinking about aftershocks; or even worse – what if this was the prelude to the “big one,” which I just knew was going to hit while I was back up on the steeple. Thoughts went through my head of the steeple coming down and having to cut away my line at just the right moment so I wouldn’t get dragged 300 feet to street level.

Well, the “big one” didn’t hit. We made our way down through the dome and safely to the ground floor. We grabbed some coffee in the City Hall basement snack shop and, because of our shaking, we spilled half of it as we walked down the hall. It appeared Brian had also done the same, based on other coffee spills on the hallway floor. We called it a day.

The earthquake created more damage to the copper cladding, especially at the column covers below the steeple, which extended our work another month or two. Ahh, what a memory, now that I can view it from the ground, and in retrospect! ■

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## ABOUT THE AUTHOR

**John A. Goveia**, cofounder and vice president of Technical Roof Services, Inc. has over 27 years of experience with most types of roof and waterproofing systems. He has consulted on 28 registered historic projects and over 1,425 project assignments. Mr. Goveia is a State of California Credentialed Instructor for roofing and waterproofing, teaching from 1981 to 1990. John has lectured on low-sloped and steep-sloped roof systems, repair and maintenance, general safety, wind uplift, and condensation. He has authored several articles on roofing technology, co-authored one of the State of California Roofing Apprenticeship modules, and provided technical assistance on another. John is a Professional Associate member of RCI.



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