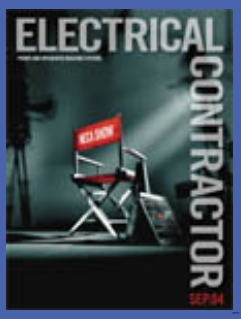

Verizon Building Stands Tall After Attack

by John Fulmer

Michael Mazzeo remembers it was a beautiful morning. On Sept. 11, 2001, he sat aboard a Boeing 767 at New York's JFK Airport, not far from his contracting business in Long Island City, headed for an electrical conference in San Francisco, when someone came into the cabin and said a plane had hit the World Trade Center.

"I looked out the window, it was a sunny day; it was gorgeous," Mazzeo said. "We pushed off from the gate to the tarmac and the pilot came on—it was a little after 9 a.m.—and said we were going to have to wait. And then he came back on and said, 'The airport is closed, we're pulling back to the gate.'"

Inside the terminal, Mazzeo tried to call home but neither cell phones nor landlines were working. Seeing the devastated World Trade Center towers for the first time on a TV screen made him sick to his stomach. He found a cab, but the driver couldn't take him into the city or back to his office. The cabbie said it was impossible; tunnel and bridge closings had snarled traffic. Instead, Mazzeo went to his home in Oyster Bay, on eastern Long Island. His family, certain he was on an airplane, imagined the worst.

"My daughter was ballistic," Mazzeo said. "When I finally reached my home, I called the office. My wife was ballistic, too. She was concerned because nobody knew where these planes were coming from. I got home around 10:30 a.m., and it was just pandemonium. My daughter, who works for me, my CFO, Christine, she couldn't get back to her city apartment unless she walked across the bridge. So she came out to our home, and the rest of my family did the same thing."

Mazzeo's experience was typical for New Yorkers that morning. They faced confusion, fear, uncertainty. But in the aftermath, they showed how a city, often perceived as impersonal and full of disconnected souls, pulled itself together and became a community.

In fact, it wouldn't be long before Michael Mazzeo Electric Corp. (MME) would be intimately involved, employing dozens of journeymen and becoming part of a team that helped renovate the Verizon Building at 140 West St., which serves as a network hub for the telecommunications giant.

The building was hit hard on Sept. 11, but managed to keep standing. Something of a miracle, considering its much taller next-door neighbor—the 7 World Trade Center building—had collapsed on its east side.

Constructed in 1926 as the New York Telephone Co. headquarters, 140 West St. is a striking building with a squat, 17-floor base notched with a series of setbacks that supports a 15-story tower. The massive brown-brick edifice looks unshakable, especially when compared to the willowy, shimmering Twin Towers that once stood to the south. It has an imposing, enigmatic façade on the West Street side, which makes entering the lobby such as surprise. Its corridor walls are covered in marble and the limestone floors are inset with brass decorations. A vaulted ceiling is covered with murals that detail the history of communication. It's a minor Sistine Chapel hidden in Manhattan's financial district.

The Verizon Building handled 200,000 phone lines, many of which fed nearby Wall Street. Which is why Jack Pullizzi thought it was "kind of screwy" when Verizon officials called him the Sunday after Sept. 11, 2001. Pullizzi, an infrastructure, codes-and-standards expert, knows little about teledata.

"I couldn't wire a telephone to save my life," Pullizzi said with a laugh. "I know nothing about the telephone service here, except that it's an important site."

Pullizzi, then a New Jersey-based consultant who now works for Verizon, did know something about disaster relief, and Verizon officials who remembered his work at a hurricane-flooded facility they shared with AT&T wanted him to help coordinate power recovery in the building.

It was a formidable task, an interlocking maze of problems, but experience in disaster relief taught Pullizzi a formula for recovery. First they would secure the building, and then get power back in. Next, he'd have to get the A/C going to cool the equipment, but that presented another problem: the more equipment that would be turned on, the more power he would need. Last, he would have to get the elevators running.

But there was no power anywhere. Prior to the attacks, the Verizon Building had access to transformers on Barclay Street and on Vesey Street. Both sides were disabled. Consolidated Edison, New York's power company, told Pullizzi to forget it, they weren't going to re-energize the Vesey Street side. And those transformers haven't been refed to date.

"So half of my building—and the half that's most important, the network—was on the Vesey Street service," Pullizzi said. "So at best, my thoughts are that I could possibly get Barclay Street going if Con Ed ever runs any temporary feeders in. But that's far-fetched; they don't have any power because all their transformers are in Building 7, which had collapsed. That fed all of lower Manhattan. So Con Ed is scurrying around here, running feeders down the street. You wouldn't believe the stuff they had on the streets. It was like a rat's nest."

Facing a deadline

To compound the problem, President Bush decreed the New York Stock Exchange should be up and running by Sept. 17. Of course, reestablishing phone service from the Verizon hub would be vital for the exchange to ring its opening bell on that Monday morning.

MME has had a relationship with New York phone carriers, of which Verizon was the latest incarnation, dating back to 1980. MME had provided backup power for their central office buildings, restacking jobs, office work and switch preparations. Those jobs are managed by Tishman Construction and Mazzeo wasn't too surprised when Vincent Piscopo, a Tishman vice president, called him on Sept. 13 and asked to meet him at 140 West St.

Armed with clearances from Verizon and the National Guard, Mazzeo got his first look at the building. It was a mess. Steel beams from 7 World Trade Center, strewn like toothpicks, punctured 140 West in several places, including the first of five subbasements, which was filled with cable. The other sublevels were completely under water from broken mains, burst sprinklers and firefighting efforts. It took 10 days to pump out the basements, filled with millions of gallons of water. Power equipment there—including backup generators—was dead. Dust, mixed with water, left a thick coat of paste on switchgear, and duct banks were destroyed by falling wreckage. On a normal day, the hub handled 6 million calls, but now its service to 200,000 access lines and 3.5 million data circuits was lost.

Mazzeo's company went into action, getting portable 2MW generators in the streets, dropping 4/O welding cable from the floors that had interconnected telephone, DMS switches and central-office equipment switches, all of which had to be disconnected from house power. They charged the batteries to get some of the switches running. Crews worked in the street to set up a temporary outdoor distribution system, stepping down the 480 diesels to 208. On the ninth floor, which housed the crucial central switch, crews dropped ropes to the street to pull cable from wheels.

A stirring gesture

By then Mazzeo's team, including president David Parker, general foreman Don Mazzeo, foreman Bruce Edwards and subforeman Gerry Grantz, had 200 electricians from IBEW Local 3 on a 12-hour day shift and 100 more on a 12-hour evening shift. They all had to have passes

from the National Guard.

“That Monday morning (Sept. 17), we got that switch up and running, and on the surface, Wall Street had land-based phones again,” Mazzeo said. “Not many, of course.”

However, it was a stirring symbolic gesture, accomplished under pressure and hardship, and Verizon restored 14,000 circuits. But there was much more work left to be done.

To gear himself up for the first days, Mazzeo said he went into “engineering work mode.” By now, everyone knows conditions at the site were difficult—the lack of food or water, only temporary power, choking dust that may have cause him and others long-term health problems, rumors of looting and possible new attacks—but for Mazzeo, the most devastating part was when rescuers discovered a body. A bell would ring, followed by dead silence as the remains were taken away.

There was little in the media about people who went down to the site, spent a couple hours and said they couldn’t work there, but Mazzeo doesn’t harbor any ill feelings.

“Who knows 20 years from now what the real damage, like asbestos down there, is going to affect the people who did work down there?” Mazzeo said. “When you have to work with respirators, in that heat—it was September—it was very, very difficult.”

Besides the dust storm from the ruined Twin Towers, which clogged air filters on the backup generators’ turbines, the collapse of 7 World Trade Center on the Verizon Building caused structural damage.

“I’m talking 20-, 30-foot steel beams we found up on the 10th, 12th floor,” Pullizzi said. “We’d find on the rooftop and setbacks on the building big, giant steel beams and debris. Overall, we took a good hit.”

Nobody, however, was hurt in 140 West St., which was built in a different era than the World Trade Center. The fire stops, for example, are brick-and-mortar-filled beams.

“That’s the way they used to build and I guess it made a difference,” Pullizzi said.

Water was a constant problem. The fire department hung two large hoses from 18th floor that dumped water on the smoldering pile of Twin Towers’ debris while the cranes and tractors worked on removal and rescuers looked for remains. At one point, they removed some sheet metal, and the wind reignited the pile. When he came into work, people were running scared out of the building, into the street. They thought the building was on fire.

“That’s what we were up against. This is the kind of stuff we just dealt with. And everybody’s terrified. They’re getting the heck out of the building. They don’t know what’s going to happen next,” Pullizzi said.

It was a crazy, surrealistic scene. The debris pile smoldered, fed by escaping diesel fuel from the collapsed building next door. The building interior was dim, lighted only by stringers MME set up, and water kept flowing in from the outside. Everything was coated in dust. Fire-alarm tests could cause panics. The whole area was a no-fly zone, but the military flew reconnaissance missions. The sight of an airplane, Pullizzi said, could freak everybody out. Plus a 60-foot safety area, required for the rear of the building, had to be enclosed, which meant workers had to hump plywood and Sheetrock up many flights of stairs, as the elevators weren't working.

"So any time the crane was in the back pulling a beam from the pile, all work from 60 feet from the back of our building in, had to cease and desist. We had fire watches, fire wardens running through the building, clearing every floor out, because we didn't know if our building would collapse when they started pulling things off that pile," Pullizzi said.

Making an investment

Verizon did a study after the 1993 World Trade Center bombing and determined a central office with a chiller plant and electrical distribution in the basement wouldn't work in an era of terrorist threats. But Mazzeo, Verizon and Con Ed decided not to demolish 140 West. St. because of all its critical networking, and Verizon invested more than $225 million to make the building more terrorist-resistant.

The first problem was the ruined, flooded switchgear. They began drying out the basement, cleaning the switches, but once activated, they began generating heat, and everybody wanted A/C. But three large chillers that helped cool critical switchgear—especially on the network side—were out of commission, flooded in the basement, and 3- and 5-ton spot coolers were installed to counteract the potentially damaging heat buildup. They had chillers on the 17th floor and if they could get power to them, Pullizzi said, they could start cooling the building, which they did.

His crew began to re-energize the network, using generators because feeds that came normally through service had been cut. They ran temporary wires up the side of the building and into panels, to feed power to the battery plants. The three generators in the street were manned by diesel mechanics 24 hours a day.

"In case one of those generators go out," Pullizzi said, "because that's the only thing that's keeping this building up and running."

Eventually, Con Ed provided six 4,000A, 480V permanent services from the street, and MME set up a second-floor distribution center that tied into transfer switches on the ninth floor, used existing backup generators and turbines and added two more 2-MW generators.

"And we ran more than two miles of 4,000A bus duct, and what we did is take the large floors, which is one through 10, and made a distribution on each floor to redo all of the power there. And we

continued up the building with the bus duct for potential offices and a restacking," Mazzeo said.

And with the Vesey Street transformers permanently out of service, MME had to find a way to get power to that side, which housed the phone network. They decided to encase the feeder pipes in concrete and bring the service across the building from the newly re-energized Barclay Street transformers. New York City codes, Mazzeo said, give public-utility exemptions to do that in commercial applications.

"We had the inspectors down there, with the professional engineers and we designed the job to everyone's liking," Mazzeo said. "And the bus duct runs, the horizontal runs are perfectly legal. That question has been brought up, but when you have a situation when you're excavating under a building, you gotta do what you gotta do."

The job was accomplished in stages, in conjunction with several engineers, Verizon and Tishman. The essential-service floors were done immediately. By late April 2004, Mazzeo was turning on floors where people weren't working yet.

"Obviously, there was no way they were going to put out specifications, but with my 20-plus-year history of doing delicate jobs for them in secured areas, we garnered most of the work and the restacking work is going through the normal bidding process," Mazzeo said. "The new generators are installed, the new transfer equipment is installed and running. Now they have a tremendous redundancy system and room for expansion in this building, obviously anticipating the new trade center needs."

MME had finished about 75 percent of the transitions to new services by June 1. The removal process of taking the old wire and distribution that was in the building should end this month—three years after the attacks.

"You know, it's sad. I travel a lot, and coming into New York—and I guess the Trade Center never won an architectural award—but there's something missing coming home,Mazzeo said.

"And even going to the city and coming up the Long Island Expressway, you'd look for the Twin Towers. Now you look down there and you don't see them."

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