The New New Amsterdam

by Dean Olsher

In a part of New York City called Battery Park, on the lower end of Manhattan, lies the South Ferry subway station. It's the newest one in the city, and when Superstorm Sandy hit in 2012, it was completely inundated.

Tom Abdallah, chief engineer of the New York City subway system, in the South Ferry station. (photo: Donna Ferrato)

Tom Abdallah is the chief environmental engineer for the New York City subway system. It's his job to make sure that never happens again.

"Your heart sank to the middle of your stomach when we saw the devastation, and that all that hard work would go down the drain," Abdallah says. "But we're at it again and we'll put it back together better than it was before."

Abdallah walks behind a temporary wall of the new station to a feature he helped to design. It's a mosaic map of the old city, back in the mid-1600s when it was still called New Amsterdam. The map is at the top of a stairway leading up from the subway track about 65 feet below.

Stairs in the South Ferry station during Sandy (above) and today (below) photos: Donna Ferrato (bottom), courtesy of Tom Abdallah (top)

After Sandy, the floodwaters came as high as the bottom of that very map, covering the lower tip of Manhattan. It was a spooky parallel to what was going on in real life aboveground, since water from the ocean completely covered the southernmost end of Manhattan.

After studying the map, Abdallah leads the way down to the platform to see the current state of the cleanup. They've made a lot of progress.

"It's kind of eerie to be on a station platform that's not inundated with a lot of people," Abdallah says.

As he walks, he passes large ventilation fans that his crew installed.

He says suction caused by trains moving through tunnels naturally ventilates most of the subway, but here in the South Ferry station there was an HVAC system.

"That was completely destroyed" by Sandy, he says. "That's why we have these fans running. We want to keep it as moisture-free as we can so that mold doesn't develop."

Back above the South Ferry station is Battery Park. There is no place that better tells the story of New York City's relationship to the sea.

It was there that just over 400 years ago Henry Hudson sailed his ship, the Half Moon, into the natural harbor. That meant calm waters for shipping, and a perfect place to locate a settlement.

Battery Park lies at the southern tip of Manhattan. (photo: Donna Ferrato)

Now, the very factors that made this place safe are the source of the trouble New York has been experiencing as a result of Sandy.

It was in Battery Park a year ago that the floodwaters caused by Hurricane Sandy overwhelmed the entire lower tip of Manhattan.

Malcolm Bowman is an oceanographer who runs the storm surge group at SUNY Stony Brook. In Bowman's vision of the future, New York will, in a way, be New Amsterdam once again.

In 2008, Mayor Bloomberg appointed Bowman to the New York City Panel on Climate Change. But Bowman is frustrated by New York City's response to Sandy.

"The buzzword around town, the mantra, is 'resilience,'" Bowman says. "And what does resilience mean? In this context it means 'Look, it's inevitable. It's going to happen again, but let's just hope that next time around we're better prepared.' That's resilience."

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Bowman says that sounds like admitting defeat.

"It's a statement that we cannot protect the city so that this never happens again," he says.

Perhaps New York has been a little complacent because of the natural features. Lots of bedrock below all of those skyscrapers makes it well positioned to withstand rising sea levels.

"There was a feeling of invincibility, really," Bowman says. "That although New York City is obviously a city built on the water's edge, that we were safe, we were protected between the coastlines of Long Island and New Jersey and no hurricane could possibly hit here."

Hurricanes are not the only threat. Other storms, just as dangerous, are now a part of life.

"The quality that made this spot so attractive to Henry Hudson—the fact that it is a protected harbor—is the same quality that leaves it so vulnerable to storms," says Roland Lewis, the president of the Metropolitan Waterfront Alliance.

Lewis says the same natural features that keep storms out can also keep water in.

"If you look at a map, you see the shore of New Jersey, you see Long Island, and they point toward the New York Harbor," he says. "And when the cards line up as they did for a storm even like Sandy, that attribute of being a protected harbor, having a small opening, becomes a liability, and water is forced in."

In the case of Sandy, that water was forced into basements and ground floors of buildings. In some parts of lower Manhattan, the floodwaters were 6 feet and higher.

Because of Sandy, New York has to once again renegotiate its lease with the sea.

The city is getting high marks around the country for its leadership on dealing with rising sea levels. In June, the Bloomberg administration responded to Sandy with a 438-page plan called "A Stronger, More Resilient New York."

The Bloomberg Plan calls for sealing up tunnels and strategically positioning a series of levees and dikes at vulnerable points around the city. Roland Lewis describes this as "dry-proofing."

"And then there's wet-proofing," Lewis says, walking through Battery Park. "The idea that you can let water in; let water out. And parks are wonderful places for that. The harm will be minimal, or expected, if there's flooding."

It is a sunny fall day in the park. Suddenly, Lewis finds himself standing in front of something he did not expect. A wild turkey has taken up residence in Battery Park, and park workers have adopted it.

"Zelda!" One of the workers calls out. "Zelda, come here!"

The turkey continues walking right at Lewis. She thinks he has food, maybe.

"Zelda!" yells the park worker.

The scene provokes the feeling that nature is trying to take back the city. That's certainly how it has felt in Breezy Point in the year since Sandy.

Breezy Point is a beach community in the Rockaways. With the Manhattan skyline about 20 miles off in the distance, it looks as if it's in another state. But in fact, the point is still within New York's city limits.

Rebuilding in Breezy Point still had a long way to go in the fall of 2013. (photo: Dean Olsher)

It was at Breezy Point that water from Sandy came into contact with electrical wires and caused a fire that burned 126 homes to the ground. A year later, all that is visible is one bare foundation after the next. The rebuilding is only beginning.

It is from Breezy Point that Malcolm Bowman's vision for New York's future begins, modeled after projects undertaken in Europe.

"Go to London and see the Thames River barrier," Bowman says. "Go to the Netherlands and see the Delta project."

The Delta project resulted from a storm surge in the North Sea in 1953, causing widespread flooding in the Netherlands, Belgium and the U.K., and leaving about 1,800 people dead. The Dutch response included building storm surge barriers—huge walls in the sea that keep out the ocean.

Malcolm Bowman envisions two similar barriers for New York City. One of them would stretch from Breezy Point about five miles across the harbor, over to Sandy Hook in New Jersey. It would do triple duty: as a bridge for cars, and also for rail tracks, and as a gate that would open and close as necessary to keep the ocean away from New York and northern New Jersey. It would cost about the same as the

Iceberg Slideshow
Gretel Ehrlich narrates photos of her boat trip among the icebergs near Ilulissat, Greenland.

Bloomberg plan, which Bowman says is necessary but not sufficient.

One argument against storm surge barriers is that they may be too ambitious, and not everyone is convinced they would work. Roland Lewis says he thinks they should be tested.

Bowman, though, is disappointed that the Bloomberg plan specifically excludes them.

“That surprises me,” he says. “Because Bloomberg, his first degree is in engineering.”

For years, long before Sandy, Bowman has pushed for these barriers. As a result, he has been called a prophet: Noah, in particular.

When it comes to his idea of walling out the ocean to protect New York City from future storms, he does seem like a lone voice in the wilderness.

“Some of my colleagues say, ‘Look, Malcolm, the city is eventually doomed. Let’s start planning a retreat. Let’s start heading for the hills,’” Bowman recalls. “And I say, ‘Look, that’s never going to happen. That’s not realistic.’”

Bowman looks to the Netherlands for inspiration.

“You can’t tell the Dutch to run for the hills,” he says. “There are no hills. The whole country is flat as a pancake. And Germany and France and Belgium don’t want 20 million refugees.”

So, Bowman says, the Dutch have decided to “stand and fight.”

“They’ve decided, ‘That’s in our genes, that’s in our history,’” Bowman says. “‘So we’re going to strengthen our coastal resources, we’re going to do what’s necessary, we’re going to train our engineers to be the best in the world, and if we get 150, 200 years more, then we’ve done well.’”

And New York should do the same, Bowman says. To retreat is to betray the trust of New York City’s children.

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Emily Haavik edited this story for the web.

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