



January 2010

## What a Difference a Year Makes: Construction Progress in 2009

Anyone looking over the WTC site today would immediately see the dramatic change in the construction landscape from a year ago. The Port Authority of New York and New Jersey met a lot of crucial milestones over the course of the year and marked progress on major projects, including One WTC, Vehicle Security Center, Memorial, Transportation Hub, the Chiller Plant and Greenwich Street / No. 1 Subway Box. What follows is a summation of a productive year for The Port Authority and its contractors.



World Trade Center site, December 2008 (left) and December 2009 (right).

### One World Trade Center

The construction progress most readily visible to the naked eye is One WTC. The building is shooting upward, as steel is due to reach the equivalent of 20 floors above ground in early 2010 – pretty impressive, considering that just a year ago, crews were still performing excavation and the structure was below ground level. One WTC is now ringed with 24 jumbo perimeter steel columns, and surrounded by cranes both next to and atop the structure.



One World Trade Center, December 2008 (left) and December 2009 (right).

### National 9/11 Memorial & Museum

The steel and concrete frame for the National Memorial & Museum rose from the depths of the excavation during 2009, and work is on track for the September 11, 2011 opening of the Memorial Plaza and its fountains to the public. More than 90% of the steel had been installed, and over 20,000 cubic yards of the concrete had been placed. The pumps and mechanical equipment for the North Fountain are due to arrive on site in early 2010.



National 9/11 Memorial & Museum, December 2008 (left) and December 2009 (right).

## Chiller Plant

Inside the National 9/11 Memorial and Museum, the Central Chiller Plant is quickly taking shape. The Chiller Plant, with its revamped River Water System, will provide chilled water to many public facilities on site, including Memorial Museum, Transportation Hub and Retail. Where a year ago excavation was taking place, today the construction of the rerouted river water lines outside the west slurry wall is completed, as are the foundations and underslab drainage. The Chiller Plant's core and shell, including structural steel and slabs, are expected to be completed in early 2010.



## Greenwich Street, the No. 1 Subway Box, and Transportation Hub

MTA's No. 1 Subway Box, essentially a tunnel for the No. 1 subway line, is being constructed directly below Greenwich Street, which bisects the WTC site from north to south. In order to execute this complex project, The Port Authority employed the innovative "top down" construction method: the Box is being constructed and continually underpinned, all the way to street level, where Greenwich Street is taking shape. In 2009, The Port Authority completed first level bracing for the Box, with second level bracing and excavation currently underway. Concrete wall placement began in December of last year. The Transportation Hub will be an architectural wonder when built, but the foundation has to be laid down before that happens. Throughout 2009, construction crews have been clearing the area of soil and old concrete structures, and performing excavation and demolition work. Installation of tiebacks is currently underway.



No. 1 Subway Underpinning, December 2008 (left) and December 2009 (right).

## Vehicle Security Center

The VSC complex saw numerous excavations and soil borings over the course of last year. Also crucial was the erection of the Liberty Sidewalk Shed in order to build a cut-off wall, which consists of 19 slurry panels; this, coupled with the installation of 26 perimeter slurry panels, each one containing approximately 40,000 lbs of reinforced steel and 180 cubic yards of concrete, completed the watertight box which will allow for early excavation of the VSC area's western half.



Vehicle Security Center, December 2008 (left) and December 2009 (right). Completed panels are indicated in red.

