

NYCHA Capital Projects Fact Sheet:

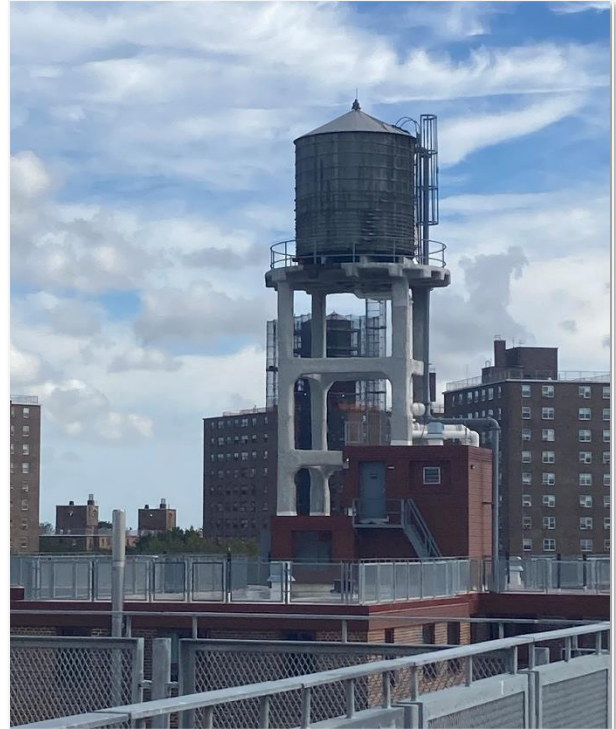
ROOF TANK REPLACEMENTS

1. Project Overview

- Projects in the roof tank replacement scope area may include: repairing and/or replacing house water tanks, supply pumps, tank ladders and platforms, fire line components, domestic down feed pipes, tank fill lines, and bypass lines.
- The objective of this scope area is to upgrade leaky, aging roof tank assets to ensure a reliable and sanitary water source for residents.
- The useful life of this asset is 25-50 years.

2. Key Terms

- Roof Tanks: Large storage containers used to hold water on the rooftops of many buildings in the city. These tanks are essential for providing reliable water supply to residents living in multi-story buildings.
- Gravity Flow: The natural flow of water due to the force of gravity, often utilized in roof tanks to create water pressure without the need for additional pumps.
- Drainage System: Removes debris and contaminated water from tank when necessary.
- Fire Standpipe System: A system designed to detect and control fires, often utilizing water stored in roof tanks to provide a rapid and accessible source for firefighting.
- Water Alarm and Monitoring System: Alarm alerts building management to abnormal water levels or potential issues; monitoring System utilizes sensors and technology to track water quality, pressure, and other parameters.
- Water Pressure: Essential for ensuring effective water distribution throughout a building, water pressure is a critical factor in the functionality of roof tanks, particularly in multi-story structures.
- Inlet Pipe: Brings water into the tank, often connected to the building's water supply.
- Outlet Pipe: Allows water to exit the tank and flow into the building's plumbing system.
- Overflow Pipe: Prevents the tank from overflowing by directing excess water away.
- Level Gauge: Indicates the water level inside the tank, allowing for monitoring and control.
- Pressure Relief Valve: Releases excess pressure to prevent damage to the tank or plumbing system.
- Float Valve: Maintains a consistent water level in the tank.



Roof tank at Sotomayor Houses

3. Why is this capital project needed? Why is it important?

- Roof tanks store water, regulate water pressure through gravity, provide emergency fire suppression, serve as a backup during municipal water disruptions, ensure compliance with regulations, and contribute to sustainability by storing rainwater for non-potable uses.

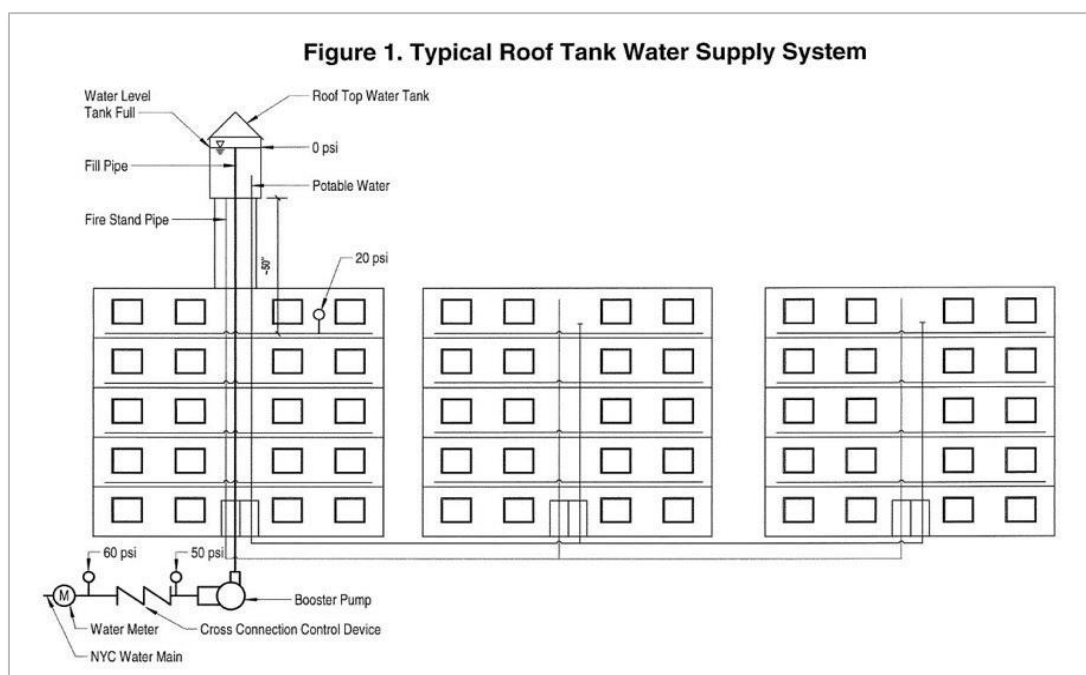
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- Many older buildings in NYCHA's portfolio (and NYC overall) were constructed without/before pressurized water systems became the norm. As a result, water pressure was insufficient to reach the upper floors of taller structures. To combat the issue, booster pumps were installed and used to deliver domestic water to the roof tank first, with water tanks then utilizing gravity to supply water to all the tenants in the building. Roof tank replacement projects are designed to substantially improve the functionality and safety of the existing water storage systems.

4. Scope of Work Details

- The **basic steps of roof tank replacements** are as follows:
 - Assessment and planning: Select a new tank that meets the building's water storage needs and complies with local regulations. Assess structural supports to ensure the roof structure can support the new tank's weight when full of water.
 - Preparing for installation: Drain the old tank and safely disconnect pipes, valves, and any associated equipment.
 - Removing the old tank: Disassemble the tank and safely lower the tank to the ground for disposal.
 - Installing the new tank: Anchor the new tank properly to the roof and reattach pipes, valves, and water alarm monitoring systems.
 - NYCHA development roof tanks are typically made of wood. If tanks are made out of wood, planks for the tank are measured and cut in the contractor's shop according to specification for that particular building. Pre-cut planks are sent to the site and transported with crane and hoist, where the tank company's crew assembles the structure like a giant jigsaw puzzle – no glue, nails, or screws are needed.
 - Testing: Confirm that water flows correctly to the building's plumbing and that the pressure levels are appropriate.



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5. Construction Trades & Other Roles Involved

Type	Possible Roles
Trade	<ul style="list-style-type: none"> • Carpenter • Electrician • Plumber

6. Typical Project Construction Timeline

- The installation period is generally less than two days, as city fire code requires that buildings have some type of water storage in place. Once an outage begins, a temporary water tank is brought onsite to ensure backup supply is provided should the project last longer than two days.



7. What to Expect During Construction

- Building Perimeter: Perimeter of building with roof tank often gated off and sidewalk sheds are installed to protect residents from falling debris. Scaffolding also required around tower itself.
- Crane/hoist Usage: used to transport items up to roof. Area around crane blocked off with tape and gates.
- Parking Plan: Coordinated with the Resident Association Board, Property Management, and NYCHA's parking operator.

8. Mitigating Construction Impacts

- Outages: Water will be turned off during the installation of the tanks. This usually takes 1-2 days per building. Firewatch measures and a backup water tank is stationed at the site during this time. Residents are notified in advance.
- Access and Safety: Sidewalk sheds are installed to protect residents to protect residents from falling debris and will be removed post-construction. Gates around the building during the project can limit walkways and parking due to staging. All accessways are measured to ensure emergency vehicles can still mobilize where necessary.
- Seasonal Considerations: Winter conditions make it difficult for installation. Work cannot be done in snow or sleet because of safety/slipping hazards.



Scaffolding during a roof tank replacement at Patterson Houses