

MEP Design - Multifamily New York City Housing Authority Energy Savings Performance Contract 90 Church Street New York, New York

EME Group provided performance contract auditing and design services under an Energy Performance Contract at the New York City Housing Authority's (NYCHA) Amsterdam and Vladeck Houses located in New York, New York.

Services

- Developed Energy Savings and Cost Estimates for the Replacement of Boilers in Amsterdam and Vladeck Houses
- New Underground Steam & Condensate Piping at Amsterdam Houses
- Indirect DHW Heaters at Vladeck Houses
- Replace the Radiator Valves & Traps at Amsterdam and Vladeck Houses
- Replace Float & Thermostatic (F&T) Traps at Amsterdam and Vladeck Houses

At Amsterdam Houses, the underground piping was from the original construction and was installed in brick conduits that contained asbestos insulation. The system was leaking a significant amount of steam and condensate and was a source of excessive energy use.

In order to minimize construction costs, our design abandoned the existing piping in place and ran the new piping in a parallel trench. However, by doing so, we were no longer able to take advantage of the existing provisions for pipe expansion and piping entrances/exits. The runs between buildings were several hundred feet in some instances so the expansion was a significant concern. Our solution was to install vaults that allowed the new piping to enter the building adjacent to the existing penetration and tie immediately into the existing expansion loop.

The design was based on an engineered system that included insulated supply and condensate piping installed within a waterproofed conduit. The product was manufactured according to the shop drawings and shipped to the site ready for installation. After excavation, the carrying pipes and conduit were laid in the trench and welded together.

At Vladeck Houses, EME Group replaced the existing steam fired 10,000-gallon storage tank heaters in



NYCHA's Amsterdam Houses Underground Piping Replacement

each building with steam fired instantaneous heaters. These tanks dated from the buildings original construction and were a source of off-cycle energy losses. In addition, the steam control valves were at the end of their service life and in need of replacement. To install this equipment required the demolition of the existing tanks, so we phased the project such that a temporary heater would be installed first to provide domestic hot water for the week while demolition and the new installation was completed. The project was phased so this temporary heater was moved from building to building until the last building where the tank did not need to be demolished and it became the permanent installation.

Both Amsterdam and Vladeck are large housing developments that contained over 15,000 radiator valves and traps. To account for and size each device we developed an Access database to organize our analysis. We used the original design drawings to develop the unit counts for the traps and valves. Afterwards, we obtained the original bills of lading for the projects from when they were constructed in the 1930's and determined that our design count was within 200 of the number that were originally shipped to the construction sites.

The work also included replacing all the main float & thermostatic traps in the central boiler plants and building tanks rooms.