

MEP Design - Multifamily Riverbend Housing Corporation Boiler Plant Replacement New York, New York

Program

NYSERDA Assisted Multifamily Program Feasibility Study and follow-up implementation services directly with the client

Scope of Services

- Design Services
- Construction Administration Services
- Incentive Assistance

Level of Involvement

Prime Contractor

Facility Size

3 Buildings, 624 Units

Facility Type

High Rise Residential

Riverbend Housing Corporation is a multifamily complex that includes four buildings containing 624 apartments. The facility was constructed in the mid 1960's and included a central boiler plant with four 500 hp steam boilers that generated heating hot water through a heat exchanger for distribution to the buildings. The equipment dated from the original construction and was beyond its expected useful service life with a range of maintenance issues and tenant complaints of inadequate heating. As part of a facility wide energy conservation project, EME Group prepared the construction documents to upgrade the heating and DHW systems including mechanical, electrical and plumbing drawings and specifications and provided construction administration services including submittal review, conducting construction meetings and approving payments.

EME Group performed detailed load calculations that revealed the building heating and DHW load totaled 1000 hp so we downsized the plant to three 500 hp boilers in order to minimize costs while still providing redundancy. We specified hydronic boilers to eliminate the large heat exchanger in the boiler room as well as the ancillary steam equipment including traps, receivers, relief valves, large diameter piping, etc. We worked with the Owner to pre-purchase the boilers through Cleaver-Brooks to minimize construction costs and expedite the tanks that were abandoned in place to avoid future



Rigging New Boilers into Place

leakage. We installed new above ground tanks in an underused storage area with the appropriate fireproofing and monitoring systems. Construction schedule: EME Group coordinated with Con Edison to install a new gas service from a high pressure line located approximately 750 feet from the building to provide the facility with flexibility in choosing their fuel. The facility had multiple underground 25,000 gallon oil tanks.

The pump rooms were also in disrepair with malfunctioning mixing valves, leaking DHW heat exchangers and inoperative controls. We upgraded these systems including plate and frame heat exchangers to eliminate pressure imbalances between buildings of varying heights which also allowed the installation of low pressure hydronic boilers since the primary loop was now all at grade level. In-situ testing revealed that inside of the piping had significant scale accumulations that were impeding flow. We specified a cleaning regimen that included a long term chemical flushing and the temporary installation of a large drum strainer to collect the loosened scale and debris. We also identified lengths of return piping that were undersized and designed larger replacement piping to enhance the heating distribution.

EME Group provided professional services from the design phase through construction administration over a period of approximately 18 months.