



Dome-Tech, Inc.
A UTC Power Company

Case Study

Project Scope:

Retro-Commissioning &
LEED for Existing Buildings

Facility Description:

- ACS Children's Center
- Crossroads Juvenile Detention Center
- Horizon Juvenile Detention Center
- DOT Fleet Maintenance Facility
- Hunts Point Youth Center
- Williamsburg Daycare Center
- Harlem Men's Shelter

Project Results:

- 160 energy opportunities uncovered to equal \$400,000 in annual savings
- 25% annual energy cost reduction
- 2000 tons annual CO₂ reduction

Outcome:

6 of 7 buildings pursuing full Retro-Cx

Completion Date:

June 2008

New York City

Department of Design and Construction

New York, New York

In a proactive effort to identify energy saving opportunities and evaluate the costs and benefits of the U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design for Existing Buildings (LEED-EB) green building rating system, Dome-Tech, Inc., was contracted by the New York City Department of Design and Construction (DDC) to provide sustainable building services, as part of a pilot program, for seven city owned facilities. Based on the success of this project, these services could then be applied to the entire portfolio of DDC buildings in New York.

Overall, the project goals were to:

- Utilize the USGBC LEED-EB process on a sample of NYC owned and operated facilities to assess the potential of earning LEED Silver certification.
- Uncover energy savings through Retro-Commissioning (Retro-Cx) and the implementation of cost effective measures.
- Determine costs & benefits for LEED-EB implementation across the DDC's portfolio.

To achieve project goals, a Retro-Cx Scoping Study was performed on each facility's HVAC system. The study evaluated energy-consuming equipment and operation, as well as identified the current energy usage index, generated an Energy Star score and uncovered several opportunities for energy savings. In addition, a LEED-EB study was conducted and an Infrared survey was performed.



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The Retro-Cx process identified more than **160 opportunities** for energy usage improvement with a total estimated annual savings of over **\$400,000**. This equates to reducing the annual energy costs for the seven facilities by **25%** and a reduction of **more than 2,000 tons of CO₂**. Savings were based solely on the equipment sampled and can be achieved at relatively low cost through easily implemented recommendations.

The majority of the energy conservation measures (ECMs) identified would yield significant annual energy savings, with less than one year payback.

In addition, it was determined that:

- Four buildings are candidates for LEED-EB with Retro-Cx
- Two buildings are candidates for Retro-Cx
- One building is an Energy Audit candidate

Taking into account opportunities, costs and recommendations, the DDC pilot program is moving into the second phase of Retro-Commissioning for six of the seven buildings to implement ECMs and achieve the energy savings uncovered.