

# MARSHAK SCIENCE TOWER, CITY COLLEGE OF NEW YORK

## HVAC UPGRADE

Annual Expected  
Energy Reduction:

**75,000** MMBtu

### IMPROVEMENT DETAILS

- Rebuilt fume hoods with efficiency and low flow features
- Replaced building air handling units and perimeter heating system
- Provided new air handling units for increased make up air requirements
- Upgraded controls
- Replaced ductwork and piping
- Applied state-of-the-art technologies:
  - Chilled beam
  - Liquid desiccant dehumidification
  - Energy recovery



### GOALS AND CHALLENGES

The Marshak Science Building is a 13-story high rise at the City College of New York (CCNY). The HVAC Upgrade Project for Marshak was a major, complex undertaking that needed to be phased in order to maintain the building's operation at all times and to optimize the operational needs and performance objectives of the CCNY. The scope included a feasibility study and implementation as a turn-key project with a guaranteed maximum price and energy savings.



The tower serves the sciences and physical education parts of the CCNY campus and has over 150 fume hoods which necessitated a tremendous amount of heated and cooled outdoor air. The project also addressed several indoor air quality problems and deferred maintenance needs.

### SOLUTIONS AND RESULTS

The Marshak Science Building project was planned for implementation in three phases, each of which includes concept development, preliminary design, preparation of construction documents, construction management, and system start-up and commissioning by Willdan | Genesys.

The first phase retrofitted the existing 150 fume hoods and replaced existing exhaust fans. The second phase added four new high entrainment fume hood exhaust fans, make-up air units for the perimeter area, liquid desiccant dehumidification systems with regeneration units and the associated balance of equipment system. The final phase will replace the four core area central station air handling units with two new air handling units at 50% of the capacity of the existing units; convert the core area airside systems from 100% outside air systems to return air systems; and replace the existing fan coils with chilled beam.

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