

CLIENT

**NEW JERSEY
INSTITUTE OF
TECHNOLOGY**

LOCATION:

GITC Building
Newark, NJ



Variable Flow Chillers



Chilled Water & Condenser Water Pumps

CONSTRUCTION VALUE:
\$1 Million

DESIGN START:
2008

DESIGN COMPLETE:
2008

CONSTRUCTION
COMPLETE:
2009

SCOPE OF WORK

Design replacement of (2) 400-Ton Chillers and Pumps

PROJECT DESCRIPTION

The GITC Building was served by two (2) 400-Ton Trane Chiller in the Lower Level Mechanical Equipment Room. These constant flow Chillers using R-22 refrigerant were quite old and unreliable.

The Project involved replacing the existing Chillers with two (2) new 400-Ton York Chillers using R-134A refrigerant. The existing chilled water and condenser water piping were modified to re-connect with the new Chillers.

To make the central plant energy efficient, variable flow type Chillers were selected and the existing constant type chilled water Pumps were replaced by new Pumps with VFDs. The existing constant type condenser water pumps were replaced by new Pumps with VFDs for soft start.

A&J developed sequence of operation for the Chilled Water System by evaluating various Chiller optimization techniques for the project. The analysis aimed at optimizing plant efficiency by considering the system curve at different load conditions and attempts to stage the individual system components in parallel to minimize total system energy consumption.