

## **Energy Audit - Courthouse NYPA / NYC Division of Citywide Administrative Services Manhattan Criminal Courthouse New York, New York**

### **Program**

NYPA Comprehensive Energy Audit

### **Scope of Services**

- Analyze Utility Data
- Review Facility Documentation
- Facility Surveys
- Perform Infrared Imaging
- Develop DOE 2.1E Computer Model
- Identify Energy Conservation Projects
- Quantify Carbon Mitigation Benefits
- Prepare Comprehensive Audit Report

### **Level of Involvement**

Prime Contractor

### **Facility Size**

795,700 sq. ft.

### **Facility Type**

Offices, public assembly, parking, data centers

### **Project Results**

- Install building management system
- Upgrade boiler controls
- Utilize ground water for condenser water system
- Install VFDs for chiller and pumps
- Install efficient lighting
- Install efficient motors
- Utilize day lighting opportunities

### **Projected Annual Savings**

Electric Demand Reduction: 409 kW

Electric Consumption Reduction: 1,551,265 kWh

Thermal Reduction: 183,547 ccf

Energy Cost Savings: \$438,878

The Manhattan Criminal Courthouse (MCC) generates high-pressure steam through four high-pressure water tube steam boilers; two (2) rated at 40,000 lbs/hr and two (2) smaller 9,072 lbs/hr boilers. The boilers, installed in 2001, replaced purchased steam from the local utility, Con Edison. The boiler plant also supplies high-pressure steam to the city jail located adjacent to MCC. There are plans to



### **Manhattan Criminal Courthouse**

install a steam meter to measure the amount of steam consumed by the jail.

MCC has relatively simple mechanical systems which are primarily original to the building. Space cooling is provided by a central cooling plant which serves courtrooms and jury and rooms; window air conditioning units serve the perimeter offices. There is no central cooling to the corridors and common areas of the building. Two pipe vacuum return cast iron radiators serve the perimeter of the building, and a combination of AC units and central HV units serve the courtrooms, corridors and other building common areas. The last recent major change to the base mechanical plant was the installation of a variable air volume AC system to replace the original AC units serving courtrooms 1306 and 1307.

Lighting at MCC totals approximately 495.6 kW, and is almost all efficient T8 fluorescent lamps with electronic ballasts, LED exit signs and CFLs. We did however identify limited locations with T12 lighting and incandescent lamps that can be switched to efficient T8 fixtures and CFLs. These areas include bathrooms, holding cells, locker rooms and some corridors.

The measures we recommended reduce overall energy use by 22%. The building was modeled using DOE-2.1 to evaluate the energy savings.