



Market Segment - HEALTHCARE

Irving Cancer Research Center

The Irving Cancer Research Center of Columbia University Medical Center is a 300,000 square foot, thirteen story research facility located at the medical center's campus in Northern Manhattan. The building contains nine floors of research laboratories, one of which houses Type 2 and Type 3 Animal Bio Safety Laboratories.

In addition, the building contains the Avon Foundation Breast Imaging Center for medically underserved women, and a three-level underground parking garage to serve the building's occupants.

The Irving Cancer Research Center is dedicated entirely to investigators conducting disease-specific research of many cancers, including brain, breast, gastric, pancreatic, prostate, lymphoma and tumor immunology.

BACKGROUND

Project Type:
HVAC

Location:
Upper Manhattan
at 165th Street &
St. Nicolas Avenue

Owner:
Columbia Presbyterian
Medical Center

Architect:
Davis Brody Bond, LLP

Engineer:
Jaros Baum & Bolles

Project Size:
300,000 Sq. Ft.

Facility Usage:
Cancer Research

Third Party Integration:
Trane Chillers

Neighboring the ICRC is the Columbia Medical Center's Russ Berrie Medical Science Pavilion, an eight story research facility focusing on genome, cancer, and diabetes research. Thomas S. Brown Associates was also selected to design and install a building wide flow tracking and building management system for the Russ Berrie facility.

The Russ Berrie project showcased TSBA's

resources in designing and completing a project of the magnitude and technical complexity the facility warranted.

Conditioned air to the ICRC is supplied by six air handlers

complete with variable frequency drives, heat recovery, hot water, and chilled water coils, providing up to 440,000 cfm of 100% outdoor air to the laboratories.

Six general exhaust fans draw 440,000 cfm from the same areas. Fans are staged and their speeds are regulated as a function of load. Waste heat from the exhaust air pre-heats entering outdoor air through glycol heat recovery coils located at the air handling units and general exhaust fans. The glycol is circulated between the supply and exhaust coils by pumping systems.

Primary hot, chilled, and condenser water is produced by central heating and cooling plants circulated by constant speed primary pumps. Multiple secondary water pumping systems with variable speed drives draw from the primary loops and circulate water to air handling unit coils, zone reheat coils, perimeter radiation, and miscellaneous condensers.

Over 600 DDC controlled laboratory flow tracking variable air volume terminal units, 300 reheat coils, and finned tube radiation serve the lab areas. TSBA's flow tracking and temperature control system controls both temperature and air quantity to maintain the required temperature and pressure in the spaces.

Fume hood exhaust air quantities are incorporated into the flow tracking system. Information including lab space and supply air temperatures, lab supply and exhaust flows, lab fume hood flows, terminal unit, reheat and radiation valve commands, and fume hood alarms are displayed at the BMS workstations.

A fume hood exhaust system comprising of four roof



mounted constant speed Cannon fans exhaust air from the lab fume hoods. A static pressure loop controls an inlet relief damper to the fume hood exhaust plenum to maintain the plenum at a negative pressure.

Two ground floor air handling units with airside economizers serve the ground floor lobby and meeting room areas. Direct digital controlled variable air volume terminal unit boxes with reheat coils maintain the ground floor air temperatures at set point.

A carbon monoxide system monitoring the CO levels in the underground garage controls the speed of the garage exhaust fans to prevent levels from reaching harmful conditions.

A local area network of operator workstations, twenty three network controllers, and over 20,000 points monitor and control the building's systems.



For more information, Call
(718) 565-6000 or write to:
Thomas S. Brown Associates, Inc.
38-30 Woodside Avenue
Long Island City, NY 11104