

## RESEARCH LABORATORY RENOVATIONS

### Nathan Kline Research Institute, Building 39

Owner: New York State Office of Mental Health

Contact: Mr. Ed Killeen, (518) 473-1895

Budget: \$2 Million

Completed: 2004

#### **Key Project Elements:**

- ◆ *Designed to meet strict research lab requirements*
- ◆ *Full HVAC modifications*
- ◆ *Electrical & Plumbing Design*
- ◆ *Design-Build Criteria*
- ◆ *Cost estimates, drawings, & technical specifications*
- ◆ *Phasing to maintain uninterrupted lab operation*



ORANGEBURG, NY — Plumb Engineering, P.C. was responsible for full renovations to an important research laboratory at the Nathan Kline facility. The renovation brings the lab into compliance with the American Association for Accreditation of Laboratory Animal Care (AAALAC), the American Society of Heating Refrigeration Engineering (ASHRAE), and The National Electric Code (NEC).

The facility's research nature requires maintaining specific environmental conditions in certain rooms to ensure accurate results from both long and short-term data collection experiments. Due to this, all designs needed to carefully phase construction to avoid any disruptions.

The mechanical design completely overhauls the heating, ventilating, and air conditioning systems to accommodate increased heating and cooling loads. The design also fully satisfies ventilation requirements for lab applications and animal housing and meets AALAC requirements.

The project requires constant, 100% outside airflow at all times. A direct digital control system controls the various temperature and humidity set points to maintain the proper laboratory environment at all times.

The HVAC design includes positive/negative airflow design, duct system leakage testing, and balancing. The system extends to the sensing chambers, operating room, animal housing areas, cage wash area, clean rooms, and dirty rooms.

The plumbing design consists of a complete design for potable water and water conditioning. It also includes sanitation provisions for both the testing equipment and cage washing areas.

The project's electrical design fully upgrades the building power distribution, lighting system, security system, fire alarm system, and site lighting.

All new electrical upgrades provide for the increased system equipment load and laboratory equipment requirements. In addition, the building's emergency power system is designed to ensure that critical building systems and laboratory equipment can function uninterrupted.

Plumb developed contract drawings, technical specifications, cost estimates, and design criteria that led to a successful Design-build RFP.



*Above: The HVAC system maintains highly-sensitive environments essential to successful experiments*



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