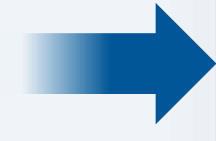


# Colgate University

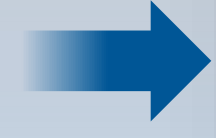
Multiphase Mechanical & Laboratory Renovation at The  
Princeton Review's  
"Most Beautiful Campus in America"



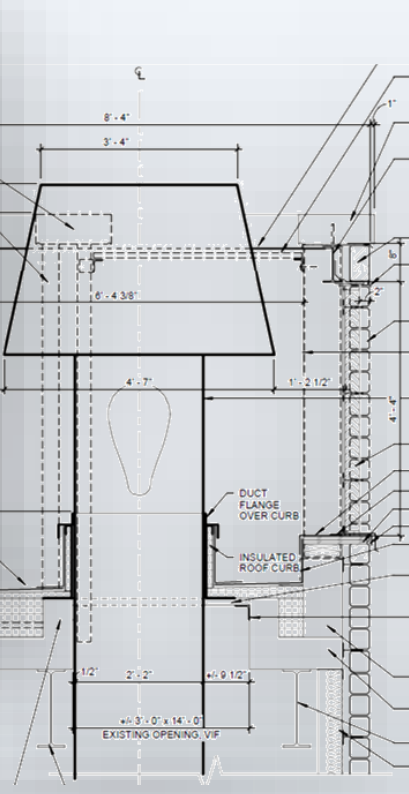
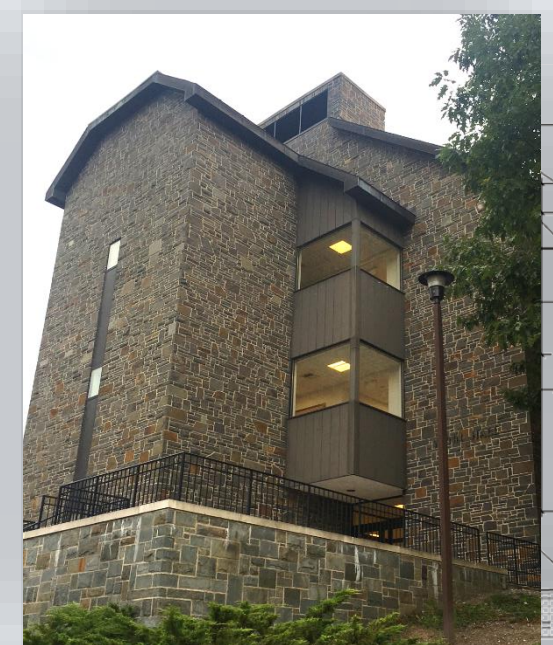
## Mechanical System & General Chemistry Laboratory Upgrade



- Existing mechanical equipment was at it's end of useful life and was replaced by state of the art high efficiency equipment
- Equipment that was once extremely difficult to maintain was redesigned for maintainability
- Installed 22 new variable volume fume hoods at the renovated second floor laboratories



## Improve Occupant Life Safety



- Eliminated chemical latent exhaust air entrainment that has plagued the building since the 1907s
- Improved functionality of outside air intake passages via louver redesign and custom AHU snowmelt system
- Recertified all laboratory fume hoods in building per ASHRAE 110 performance requirements

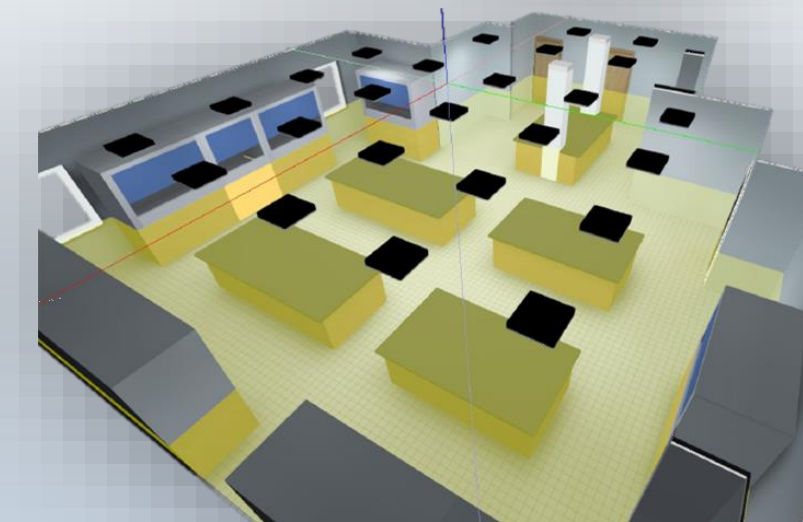
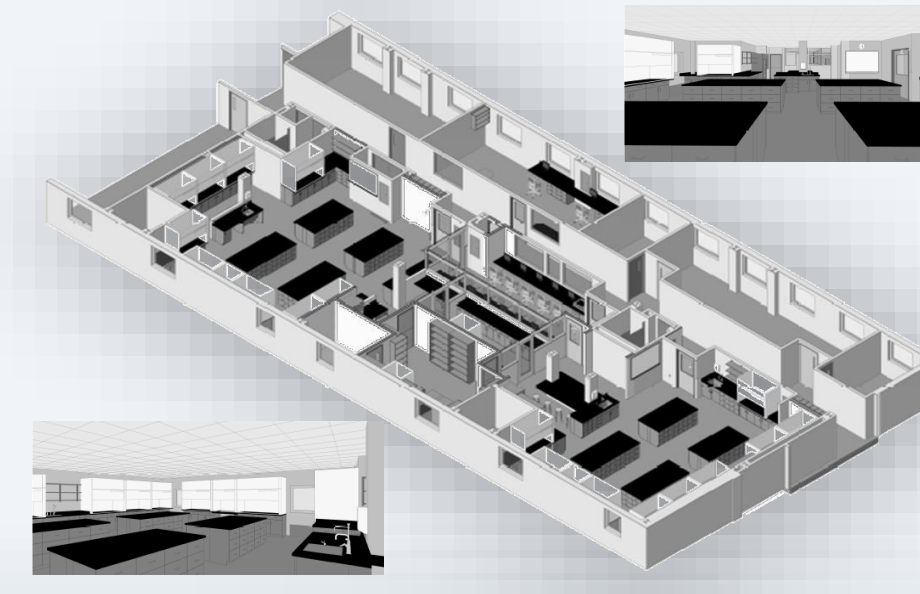


## Improve System Reliability



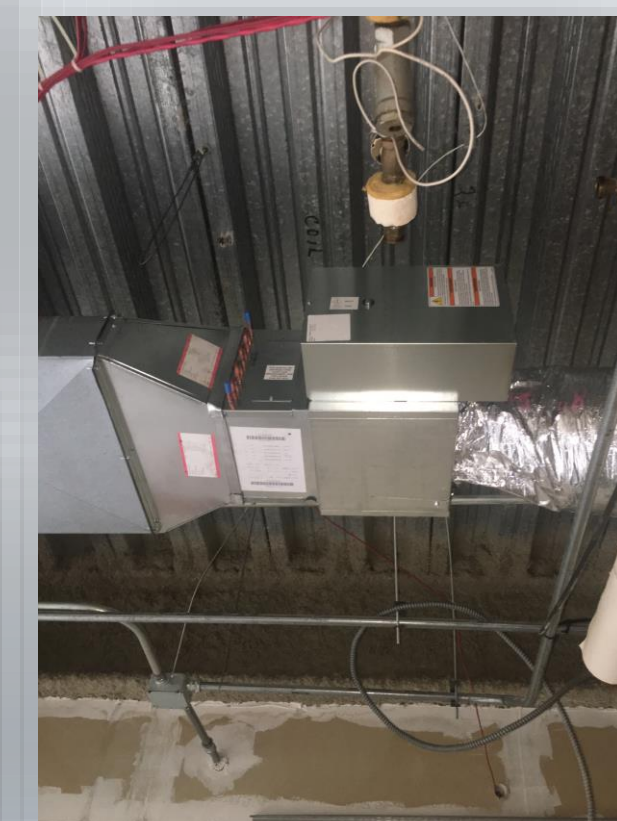
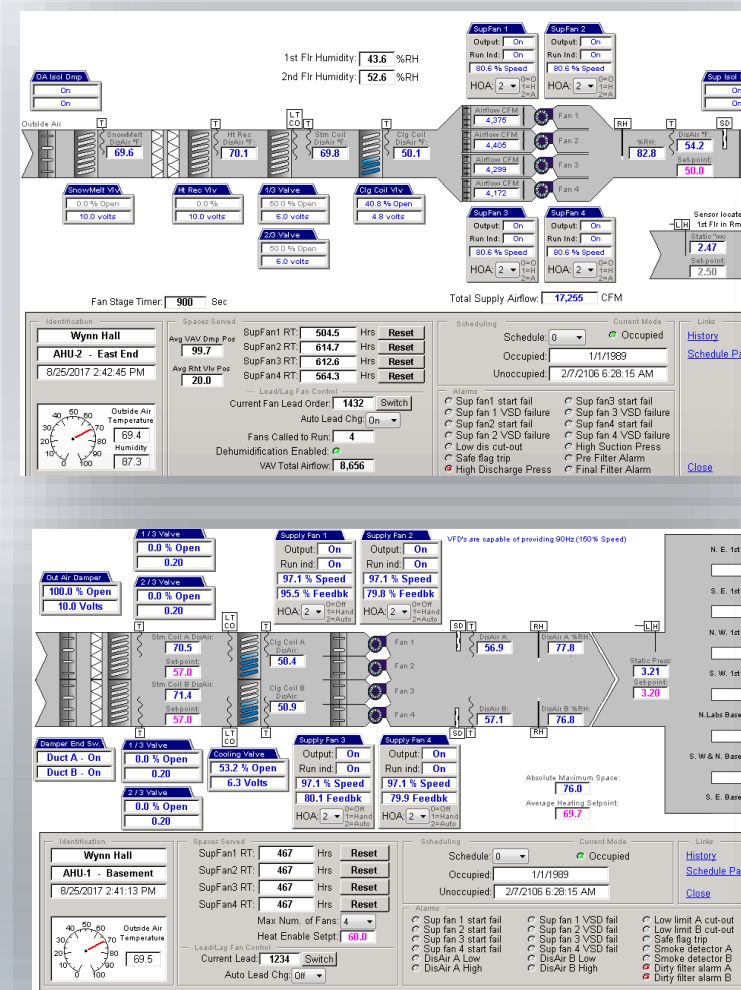
- Consolidated (9) air handling units and (12) exhaust fans while simultaneously improving overall reliability
- Designed all new mechanical systems with prime mover redundancy to minimize expected downtime during maintenance periods

## Comprehensive Design & Construction Service

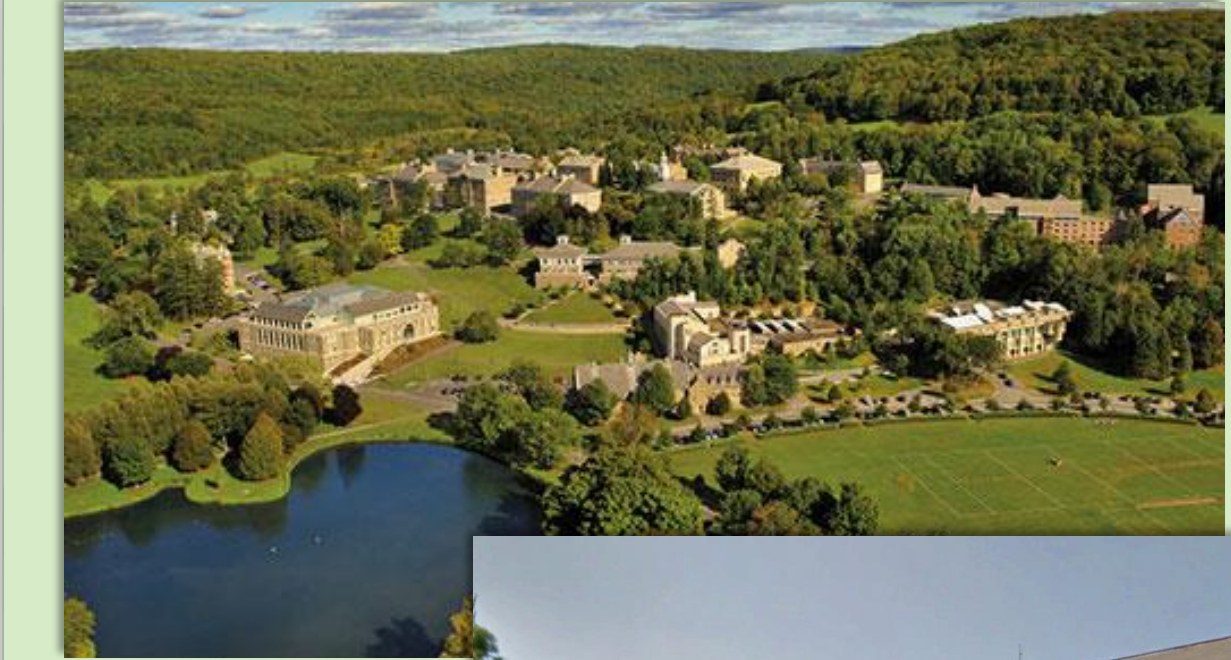


- Provided Prime interdisciplinary consulting services from Schematic Design through project commissioning
- Provided construction administration services including Owner training

## Optimize Building Energy Efficiency



- Designed optimized control strategies including:
  - VAV terminal control
  - AHU fan control
  - Temperature control
  - Lab airflow controls
  - Pumping optimization
  - Energy recovery
  - Steam to hot water heat exchanger controls



## Wynn Hall



## Wynn Hall Renovation Project Goals

- Improve building life safety
- Improve mechanical system maintainability & reliability
- Improve building energy efficiency
- Maintain existing campus aesthetic
- Increase laboratory teaching capacity
- Complete work over six total months

## Wynn Hall Renovation Highlights

- Renovated **9,700ft<sup>2</sup>** of mechanical space
- Reduced total peak outside air by **33%**
- Installed **22** new high efficiency VAV fume hoods
- Reduced total AHU/EAHU quantity by **76%**
- Upgraded **41** original pneumatic constant volume terminals to variable volume with digital controls
- Installed over **450** new control points
- Upgraded **10** pumps and optimized flow controls
- Increased 2<sup>nd</sup> floor lab teaching capacity by **27%**
- Certified **41** existing fume hoods per ASHRAE 110
- Reduced sound levels at 2<sup>nd</sup> floor labs by **4.5-dBA**
- Significantly **improved** equipment maintainability

B2Q provided design, construction, and commissioning services to modernize 14,400ft<sup>2</sup> of 40-year old original mechanical and laboratory space in Colgate University's premier chemistry building: Wynn Hall



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