



University of Delaware
Newark, DE
19716



UNIVERSITY OF
DELAWARE

PROJECT TEAM

Owner:
University of Delaware
www.udel.edu

Architect:
Ayers Saint Gross
Architects and Planners
asg-architects.com

MEP:
Mueller and Associates
muellerassoc.com

Structural:
Thornton Tomasett
thorntontomasetti.com

Civil Engineer:
Rummel Klepper & Khal
rkkengineers.com

Lab Consultant:
Research Facilities
Design
rfd.com

Stormwater Management:
Biohabitats, Inc
biohabitats.com

INTERDISCIPLINARY SCIENCE & ENGINEERING BUILDING

PROJECT INFORMATION

Owner: University of Delaware
Locations: Newark Delaware
Size: 194,000 SF
Floors: 5 above grade (including penthouse)
Project budget: \$140M
Construction Budget: \$105M
Delivery Method: Design-Bid-Build

LIGHTING/ELECTRICAL

- 2 primary service entrance feeders (34.5kV)
- Distribution throughout building @ 480Y/277V
- Emergency power provided by campus engine generator system
- Lighting primarily fluorescent (T5, T8, CF)
- Filtered Lenses or lamp sleeves for UV elimination in clean rooms
- Daylight harvesting for spaces w/ abundant natural light. (With photocell control of space light fixtures)

STRUCTURAL

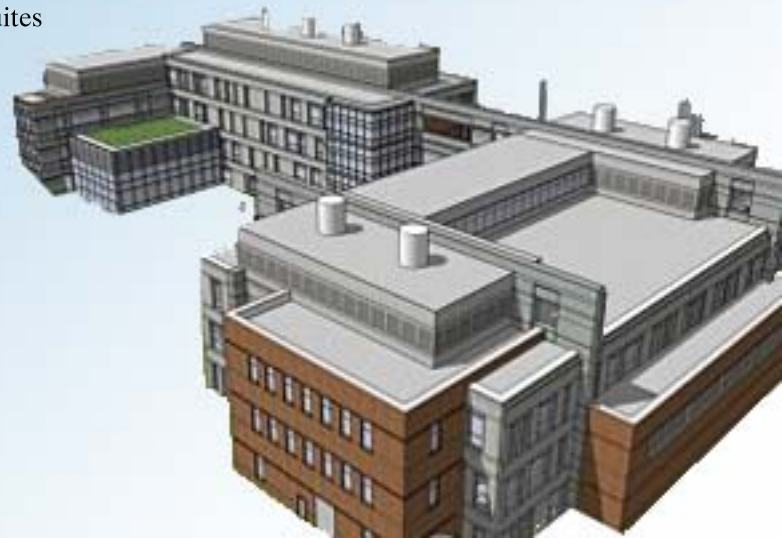
- Ordinary reinforced concrete shear walls
- Gravity system:
 - * two-way slabs w/ edge beams
 - * Flat plate & one-way slabs
 - * Joists
- Strict vibration control needed for imaging suites (33-2,000 micro inches per second)
- Steel pedestrian bridge joins research and classroom wings

MECHANICAL

- Heating provided via steam-to-water HX's in building fed from campus Central Utilities Plant(CUP)
- Cooling supplied by water-to-water flat plate HX's connected to the campus chilled water loop
- Electric drive standby chiller in basement for labs. 6 modules @ 50 tons each, 2 utilize hot gas bypass.
- 10 total AHU's reside in the buildings penthouses
- 7 AHU's are 100% OA with desiccant wheels, and either enthalpy wheels or heat pipes depending on the space served
- High plume dilution type exhaust fans for laboratory exhaust

ARCHITECTURE

- Building allows for connection between research and learning environments.
- East wing = Research Wing
- West wing = Classrooms/Office Wing
- Pedestrian bridge joins the two environments (physical and symbolical)
- Building features:
 - *Brick, stone, metal & glass facade
 - *Green roof on west wing commons
 - *Photo voltaic solar panels
 - * Daylighting incorporated throughout bldg.



JOHNATHAN PENO

MECHANICAL OPTION

<http://www.engr.psu.edu/ae/thesis/portfolios/2011/jpp5060/index.html>