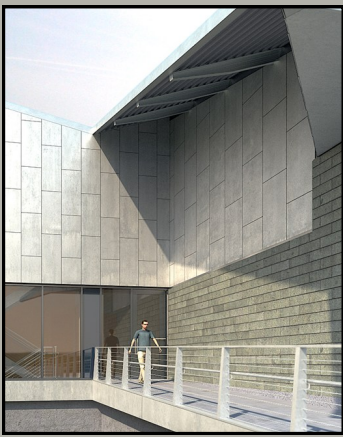


# BIOLOGICAL RESEARCH LABORATORY

University Park, Pa

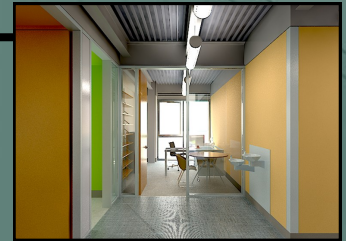


## PROJECT TEAM

<b>Owner</b>	The Pennsylvania State University
<b>Architect</b>	Payette Associates Inc.
<b>Construction Manager</b>	Torcon Inc.
<b>MEP &amp; Structural Engineer</b>	Merrick & Co.
<b>Landscape Architect</b>	Payette Associates Inc.
<b>Civil Engineer</b>	Sweetland Engineering & Associates Inc.
<b>Owner Representative</b>	PSU Office of Physical Plant

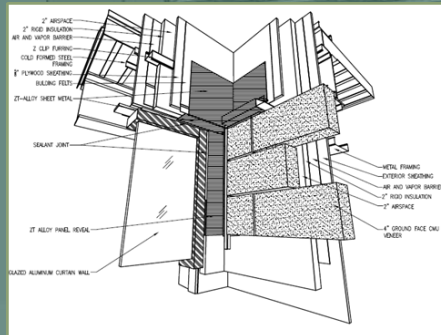
## ARCHITECTURE

- ◆ The laboratory's design of a modern barn captures the nature of the surrounding facilities.
- ◆ Making up the façade, the rusticated concrete masonry units, metal roof and unique windows fit with the agricultural part of campus while providing a high efficiency building envelope.



## STRUCTURAL

- ◆ The structure is primarily comprised of wide flange and Hollow Core structural steel. The beams and columns support metal composite decking with light weight concrete
- ◆ Exterior walls consist of cold formed structural steel studs with a CMU veneer
- ◆ All of the interior walls have increased support due to high positive and negative pressures from incurred from the mechanical system



## PROJECT INFORMATION

<b>Occupant Type</b>	Business (B); Research Facility
<b>Gross Building Area</b>	20,300 SF
<b>Total Number of Stories</b>	4 Stories: (Including Basement and Mechanical Penthouse)
<b>Total Building Cost</b>	Approx. \$23,000,000
<b>Project Delivery Method</b>	Design-Bid-Build (CM at Risk)
<b>Period of Construction</b>	8/27/11- 1/31/13

## LIGHTING/ELECTRICAL

- ◆ The electrical service into the building will be a 480Y/277 service
- ◆ Power flows downstream to a pair of 1200 Amp switchboards which are fed from separate sides of the 1600 Amp double-ended switchgear.
- ◆ These two switch boards will supply the power to the mechanical, lighting and receptacle panel boards.
- ◆ The interior lighting will consist of high efficiency Light Emitting Diode fixtures and T8 fluorescent lamps placed in corridors and common areas.

## MECHANICAL

- ◆ The building utilizes two air cooled chillers supplying 44 degree water to the 5 main AHU units throughout the building.
- ◆ 5 main AHU have heat recovery coils for 100% outside air units which supply fresh air to the containment labs.
- ◆ Along with the AHU's there are a series of fan coil boxes with no humidifiers to circulate air throughout the facility.
- ◆ The research laboratory hydronic systems consists of two boilers rated to be 100% of the winter capacity.

## CONSTRUCTION

- ◆ The laboratory's intense layout of mechanical and electrical systems forces construction to be phased by floors of the building. Zoning and permitting were also a concern prior to construction with regards to occupancy.