

Grunenwald Science and Technology Building



Clarion University of Pennsylvania

Clarion, PA

Project Information:

- Size:** 108,562 sf
- Stories:** 3 + Penthouse
- Occupancy:** Educational Facility
- Cost:** \$34 million
- Delivery:** Design-Bid-Build
- Duration:** October 2006 to June 2009

Architecture and Construction:

- The newly renovated planetarium was preserved from the previous Pierce Science Center along with a large lecture hall located on the first floor, directly below the planetarium. The new building replaces the wings of the previous science center
- The building facade uses brick masonry, recycled pre-patina colored copper, and various curtain wall systems to establish the entrances of the building. The material used on the roof is a white EPDM, which increases the amount of heat that is reflected.

Construction Team:

- Owner:** Clarion University
- Architect:** Bohlin Cywinski Jackson
- General Contractor:** L.S. Fiore
- MEP Engineer:** Brinjac Engineering
- Structural Engineer:** Brinjac Engineering
- Civil Engineer:** Brinjac Engineering

Electrical/Lighting:

- The service enters double ended switchgear rated at 15kV; the service is stepped down from 12470 V using a 750 KVA oil filled transformer to 120/208 3 phase and using a 2500 KVA oil filled transformer to 277/480 3 phase. The building is backed up by a Natural Gas Emergency Generator, 250 KW 277/480 3 phase, 4 wire.
- Recessed & pendant fixtures using T5HO and T8 lamps are used, along with CFL's in recessed can fixtures.



Structural System:

Foundation:

Cast-in-place concrete is used for caissons, piers, and walls. Slab on grade 4" concrete reinforced by welded wire fabric over a vapor barrier and 4" crushed stone.

Structure:

Steel construction is used for the columns, girders, and beams with various W flange sizes for the elevated floors and roof. Elevated slabs are 4-1/2" concrete slab on 20 gage, 2" deep galvanized steel floor deck, reinforced with welded wire fabric. The roof slab is 3-1/2" concrete slab on 18 gage, 3" deep galvanized composite steel floor deck, reinforced with welded wire fabric.

Mechanical System:

- The Science and Technology Building contains (5) modular air handling units, (2) 250 ton centrifugal chillers, (2) 750 gpm cooling towers, and a plate and frame heat exchanger to produce hot water from the campus generated steam.
- There are (3) 100% outdoor air units in which two of these units are approximately 42,000 CFM, and serve the typical lab spaces and the chemical storage rooms. The 3rd AHU is 23,000 CFM serving the specialized Organic Chemistry Labs.
- The (2) VAV units serve classrooms, offices, and other public spaces. Both units are 25,000 CFM in size and contain energy recovery wheels.