



# The Research and Economic Development Center (REDC)

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<http://www.arche.psu.edu/thesis/eportfolio/current/portfolios/kre124/>

Construction Management

Advisor: David Riley

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## Building Stats

- Location: Penn State Erie Campus  
Behrend Campus  
Erie PA
- Occupancy Type: Classrooms, Labs,  
and Offices
- Size (Total Sq. Ft.): 161,500 Sq.Ft.
- Stories: 2.5 Floors
- Primary Project Team:
  - Owner: The Pennsylvania State  
University  
and Department of General Services
  - Architect: Weber Murphy Fox, Inc.
- Construction: April 28, 2004 to  
February 2006
- Total Cost: \$30 million



## Electrical System

- Primary service will come into the building through an underground duct bank near the loading docks.
- The first secondary feed, after coming in the building will go through a 480Y/277 volt, 1500KVA transformer and serves the majority of the building.
- The other secondary feed will enter into a 240 volt, 500 KVA transformer and will be sent out to the lab and manufacturing areas.
- The emergency power will be an indoor diesel generator rated for 150 KW at 480Y/277V.

## Architecture

- The building has 2 wings
- Will have engineering labs, offices, classrooms, and computer labs.
- Mechanical rooms are on Basement and Second floor
- The Walls are curtain wall system that supports structural glass, brick with glass windows and metal wall panels
- The Roof is Thermoplastic Sheet Roofing over the high roof with the low roof being Architectural Metal Roofing

## Mechanical System

- The central cooling plant will consist of two 250 ton screw chillers and cooling towers
- The central heating plant will be two 3852 MBH cast iron hot water boilers with natural gas burners.
- There are 12 AHUs.
- Air is distributed through ceiling diffusers.
- The entire building will run off of a Direct Digital Control system.

## Structural System

- The building sits on three different types of foundations.
- The building is a steel building, with a typical column size of W14x61 and W18x35 beams
- There is no typical bay size but they run about 30'x30'.
- All floor slabs are 4" concrete slabs with 6x6 W1.4xW1.4 wire mesh.



## Construction

- This project began in preliminary design stage.
- After the design had been completed a CM Agency General Contractor and Primes were hired through a bidding process.
- Construction began with the ground breaking on April 28, 2004 and is scheduled to finish on February of 2006.
- The building cost came to \$21.5 million. With soft costs added in the total for the building was \$30 million.