Physical Sciences Complex

Basic Information

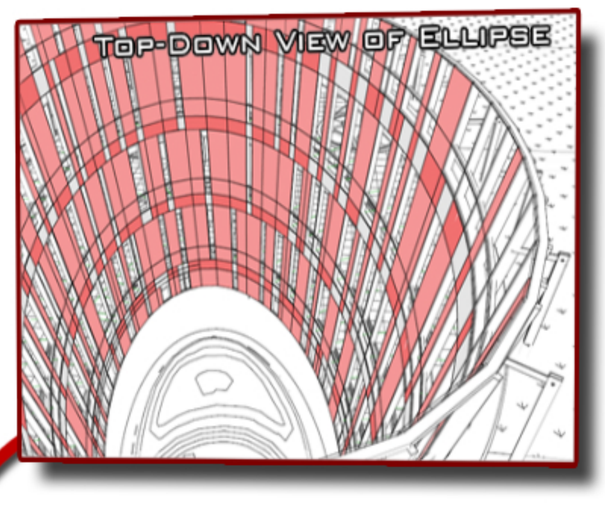
$80 million
158,068SQFT
5 above ground stories
2 basement levels
53 new laboratories
1208 days Construction
5/25/2010 to 9/13/2013
CM/At Risk, GMP

Project Team

Owner: University of Maryland
Architect: HDR Inc.
CM Agency: Gilbane Inc.
Structural Engineer: Hope Furrer LLC
Civil Engineer:Goldin and Stafford LLC
Mechanical: Denver-Elek Inc.
Electrical: Mona Electric Group
Fire Protection: Capitol Sprinklers Inc.

Construction:

- Phase two of a three phase plan by the university to expand the sciences.
- Clever use of a crane inside of the large elliptical opening through all construction.
- Deep excavation for two-tiered basement that will house microresearch laboratories.


Top-Down View of Ellipse

Architecture:

- Unique "open" interior curtain wall: An elliptical glass facade follows an elliptical path through the interior of the building.
- Designed for natural light.
- Large hallways for social and acedemic gatherings.
- Bridges the gap between a traditional brick look and sharp modern


Ground level covered outdoor area


Ellipse Section Through Office

Structural:

- 3'6" Diameter Caisson, deep foundation.
- 17" thick total slab on grade thickness (vibration cancelling).
- Post-tensioned concrete beams and girders on all floors.
- 1-way concrete slab for each floor.

Electrical:

- 480Y/277V, 4000A Switchgear supplies 167 panelboards with power.
- Designed peak operating load of 3230KVA.
- New transformer to have a max load of 3750KVA.
- Redundant back-up of two 750KW diesel generators.

Mechanical:

- Three 23,000CFM VAV AHU (Type 1 Labs)
- Two 48,000CFM VAV AHU (Type 2 Labs, Under ground)
- Three 21,000CFM VAV AHU (Underfloor air system)
- One 13,500CFM VAV AHU (Mechanical building)
- Two custom, 800 ton centrifugal water chillers.
- One 2-cell 4,800GPM water tower (Roof)

John Melching | Construction Management
http://www.engr.psu.edu/ae/thesis/portfolios/2013/jcm362/

Gilbane