

UPENN NEURAL + BEHAVIORAL SCIENCES BUILDING

philadelphia, pa

reinhardt swart
l/e option

building statistics

occupant | University of Pennsylvania
function | Education and assembly
size | 77,100 GSF
stories | Five stories and a basement below grade
construction dates | January 2014 – March 2016
estimated building cost | \$49,300,000
delivery | Guaranteed Maximum Price (GMP)
owner | University of Pennsylvania
architecture & engineering | SmithGroupJJR, Inc.
construction manager | P. Anger
landscape architecture | Christopher Allen
civil engineering | Pennoni Associates, Inc.
a/v, telecomm, acoustics | Shen Milsom & Wilke, LLC

architecture

The NBS Building creates a cohesive street front and inviting place for students and faculty. The modern building is a unifier and connector for other nearby buildings through organic and connective forms. The cantilevered east end is a white metal and glass office block; the west end is a copper clad lab block.

Green building strategies include a green roof, scrim sunshade along the south façade, and a on-site bio-retention basin. Low VOC content, local, and recycled materials are specified.

structural

A composite beam system is used throughout the building. The typical floor construction is 3.25" thick reinforced lightweight concrete on 3" metal deck supported by steel wide-flange beams. A 3' reinforced normal weight concrete mat serves as foundation. Moment frames in the North-South direction and braced frames in the East-West direction resist lateral forces.

lighting + electrical

Primarily LED and linear fluorescent fixtures create a minimal and complementary lighting design. Occupancy sensors are placed in classrooms and offices; corridor lighting responds to time-schedules and photosensors for additional energy savings.

Building power is supplied at medium voltage by the campus power system. In the penthouse, a 15kV switchgear distributes power to 1500 kVA transformers. 480Y/277V, 3PH, 4W, 3200A double-ended substations service building and step-down transformers. A 500kW diesel generator provides emergency power for life safety, required, and optional standby loads.

mechanical

Four air handling units are located in penthouse. AHU-1 and 2 supply 32,000 CFM each. Spaces are fitted with volume control boxes. Heating is supplied by campus steam system; cooling is supplied by campus chilled water. AHU-3 (12,000 CFM) is a DOAS with heat recovery wheels serving laboratory spaces. Fin-tube perimeter heating is typical along the building façade.



Interior view looking South through scrim



Looking South-East at copper clad block facade