BIOENGINEERING BUILDING

All renderings created by Ballinger

BUILDING INFORMATION

LOCATION - Eastern Region, USA
OCCUPANCY TYPE - Research Facility
SIZE - 183,000 gsf
FLOORS ABOVE GRADE - 6
CONSTRUCTION DATES - July 2015-March 2017
OTAL COST - $120,000,000
PROJECT DELIVERY METHOD - Design-Bid-Build

PROJECT TEAM

OWNER - Withheld by request
GENERAL CONTRACTOR - Withheld by request
ARCHITECT & ENGINEER - Ballinger
LIGHTING DESIGNER - The Lighting Practice

VICTORIA RIEDINGER — LIGHTING/ELECTRICAL
Advisor: Dr. Kevin Houser
http://vyr5033.wix.com/vriedingerthesis

ARCHITECTURE

The Bioengineering Building is a large multipurpose facility containing labs, classrooms, offices, and conference rooms. Curtain walls wrap around most of the building, while the remaining façade is a modular brick and cast stone veneer. The large amounts of glass provide daylighting capabilities and allow for a direct relationship to the outside, allowing the building to glow at night. LEED Silver certification was acquired through this design.

STRUCTURAL

The structural system of the elevated floor of the building consists of a 13” thick, cast-in-place, two-way concrete slab with drop panels at the columns. A flat plate system was selected for its economy, ease of constructability, flexibility, and resistance to vibration. Floor slabs were thickened around the perimeter to support heavy or brittle exterior wall finishes and at the interior where added depth was needed to control deflection.

LIGHTING/ELECTRICAL

All lighting in the building is designed with either LED or fluorescent fixtures. Most fixtures allow for dimming and most individual spaces are controlled by occupancy sensors or switches. Electrical service is provided from the existing site medium voltage distribution system. Service comes from 13.8 kV 3-phase, 3-wire loop feeders. The electrical service capacity is designed to server 20% additional load if needed.

MECHANICAL

Three 400 ton electric oil-free centrifugal chillers supply chilled water to the air handling units. Three single cell cooling towers will be used for chiller heat rejection. The mechanical penthouse of the building contains three 100% outdoor variable volume air supply handlers which create a single supply air system. Six fans are mounted to the rooftop plenum which will handle building exhaust.