University Sciences Building
Northeastern U.S.

PROJECT OVERVIEW:

OWNER	*Publishing Restrictions*
GENERAL CONTRACTOR	Turner Construction Company
ARCHITECT	Diamond and Schmitt Architects
ASSOCIATE ARCHITECT	H2L2 Arch. Planning & Interior Design
STRUCTURAL ENGINEER	Halcrow Yolles
MECH./ELEC. ENGINEER	CEL International Inc.
TOTAL HEIGHT:	5 Stories
GROSS BUILDING AREA:	138,000 Square Feet
LUMP SUM CONTRACT:	$70 Million
DURATION:	September 2009 - July 2011

ARCHITECTURAL FEATURES:

This is a mixed use facility that will house both students and faculty of the university.

- 39 research and teaching laboratories for bio-medical engineering, biology, chemistry, and fossil preparation.
- 8 classrooms and a small auditorium seating 240 students.
- Large atrium space with a living biowall.
- Plenty of southern facing windows and overhead skylights to supply the plants with ample sunlight.
- Sloped classrooms provide better lines of sight.
- Exposed concrete columns and overhead slabs.
- Scattered arrangement of windows and multiple building shapes give the building its personality.

MECHANICAL AND ELECTRICAL SYSTEMS:

- The mechanical system is a Variable Air Volume (VAV) system with a total of 9 Air Handling Units, 2 Cooling Towers, 2 Chillers, and 6 heat exchangers.
- Power is supplied from an adjacent university building at 13.2 kV on a 15 kV medium voltage cable and stepped down to 480/277V (3Φ, 4 wire).

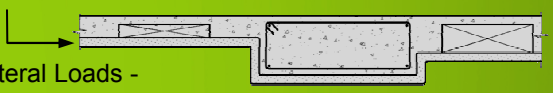
STRUCTURAL SYSTEM:

FOUNDATION:

- 75 drilled caisson piers with grade beams resting on top.

STRUCTURE:

- Filigree precast slabs and beams w/ a cast-in-place concrete.



- Lateral Loads - Combination of shear walls and braced frames are utilized.

FAÇADE:

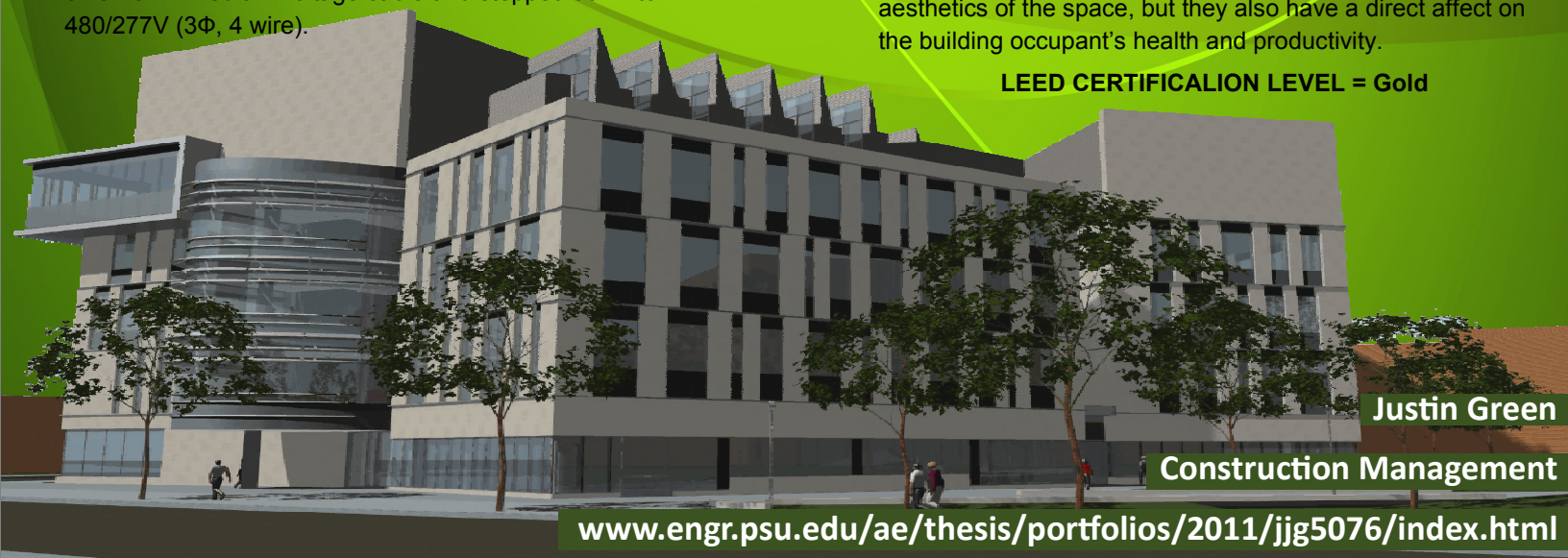
- Masonry non-load bearing walls w/ thin aluminum facing.

SUSTAINABLE FEATURES:

BIOWALL:

- The five story biowall located in the atrium of the building will act as a natural air filter to help remove harmful VOCs and CO_2 levels from the air. As exhaust air is passed through the wall, impurities are removed by the natural photosynthesis process of the plants. Not only do these plants improve the aesthetics of the space, but they also have a direct affect on the building occupant's health and productivity.

LEED CERTIFICALION LEVEL = Gold



Justin Green

Construction Management

www.engr.psu.edu/ae/thesis/portfolios/2011/jjg5076/index.html