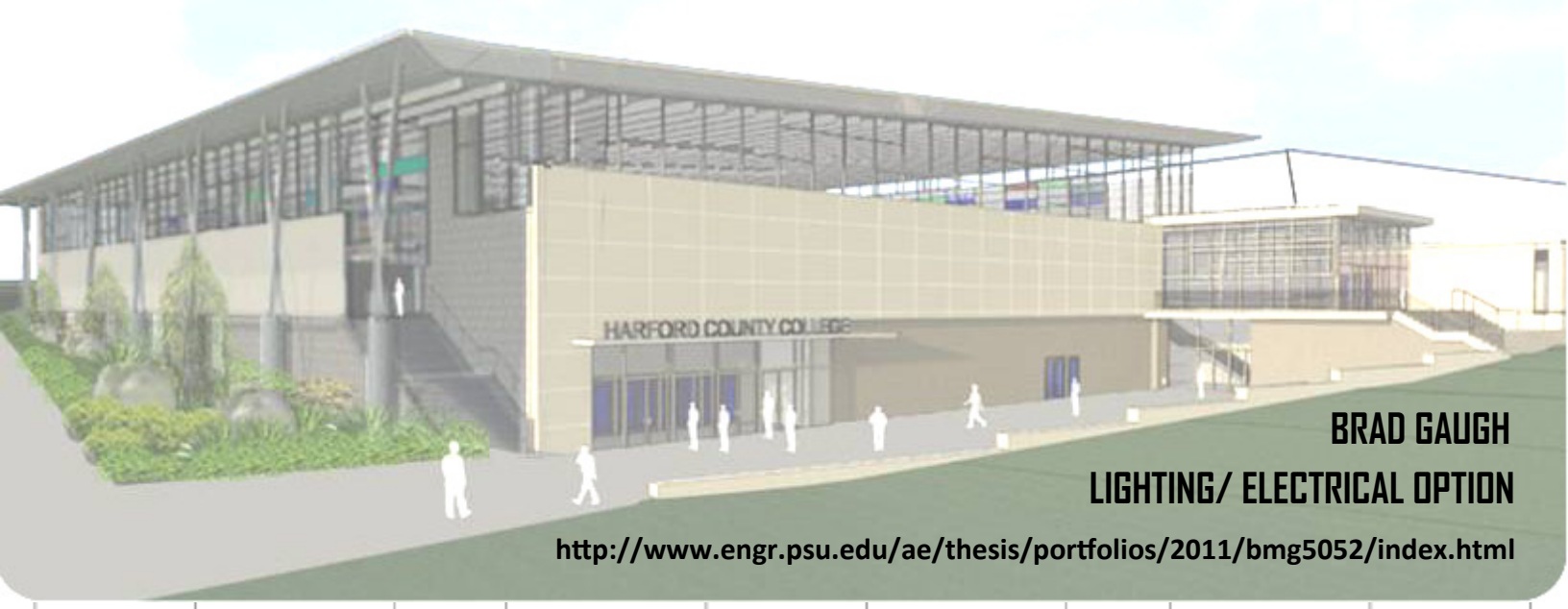
SUSQUEHANNA CENTER RENOVATIONS & EXPANSIONS

BEL AIR, MARYLAND



BRAD GAUGH

LIGHTING/ ELECTRICAL OPTION

http://www.engr.psu.edu/ae/thesis/portfolios/2011/bmg5052/index.html

PROJECT TEAM

Owner —Harford Community College

Architect — Hord Coplan Macht

Construction Manager —Turner Construction

Landscape Architect —Site Resources

Civil Engineer —Site Resources

Structural Engineer —CMJ Structural Engineering

MEP Engineering —Burdette Koehler Murphy & Associates

Lighting Consultant —Dunlop Lighting Design

Telecommunications —Spexsys

Natatorium —Counsilman Hunsaker

STATISTICS

Size—110, 000 SF

Height—2 : 1 Above Ground @ 45ft

Construction Dates—April 2011—August 2012

Project Delivery Method—Design—Bid—Build

Project Cost—$28 Million

STRUCTURE

The foundation is comprised of a two way slab and the slabs' thicknesses range from 3 1/2" to 10". The super structure is composed of concrete and steel columns at varying locations. The steel columns are located in all areas except the main arena, which is supported by concrete columns. The roof system is comprised of composite decking and trusses at 8' on center in the main and auxiliary gym.

ARCHITECTURE

The athletic facility uses primarily three main types of materials on the façade to distinguish between the two main floors; the arena level and main level. The architect uses matte painted concrete block for supporting walls that start at the arena level and end at the main level. At the main level, glazing is used as the distinguishing factor and allows for interesting perspectives and views looking out of building from the concourse at the main level. Lastly, the architect uses an aesthetically appealing design for the down spouts by forming a V-shape on the sides of the main arena.

LIGHTING and ELECTRICAL

The service entrance is supplied by BGE 's pad mounted transformer, which is stepped down to 480Y/277 V, 3 PH., 4W. The main switchboard is sized at 3200 A and the emergency power is supplied by a 60 W generator at 75 KVA. The lighting is primarily linear fluorescent luminaires and the main and auxiliary gym is illuminated by metal halide pulse start fixtures.

MECHANICAL

The mechanical system takes advantage of a variable air volume fan coil system consisting of energy recovery AHU's that reduce cooling and heating demands for units. The cooling is generated by an air cooled high efficiency chiller and the extracted heat from this unit is collected in a DX refrigeration system and used to reheat the pool. There is also a rain harvest collection system, which supplies water to urinals and toilets.