Christine Marie Clowes

Architectural Engineering – Lighting/Electrical Option

Architectural Lighting Design Portfolio

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The uniquely innovative high-tech lighting applications of this educational facility enhance the scientific functionality of the space. The ideas of circulatory flow, architectural emphasis, linearity, and visual contrast are implemented throughout the lighting design. Each space was designed to emphasize these themes and provide adequate lighting to fully utilize each area. Detailed calculations were performed to ensure the meeting of all energy codes and lighting guidelines.

Lobby – Daytime Setting

Lobby – Nighttime Setting

University Science Building

Howard Brandston Student Lighting Design Education Grant Recipient – Team Submission

Stairwell

Corridor

University Science Building

Howard Brandston Student Lighting Design Education Grant Recipient – Team Submission

Video Wall Lab/Projection Room –
Classroom Setting

Video Wall Lab/Projection Room –
Projection Screen Setting

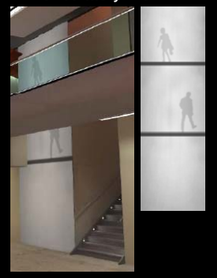
University Science Building

Howard Brandston Student Lighting Design Education Grant Recipient – Team Submission

Integrate Natural Materials

High-Tech Design

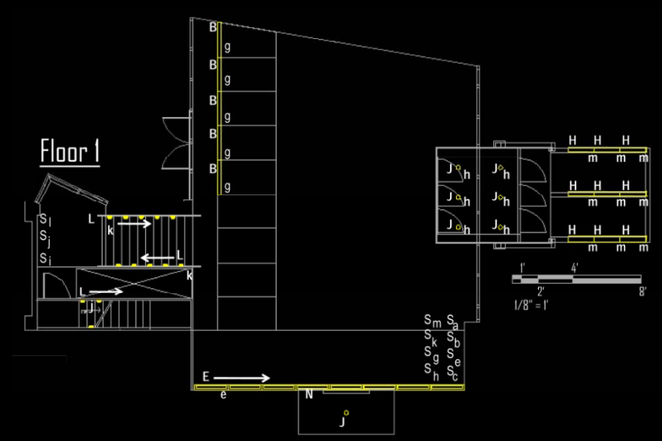
Circulatory Flow

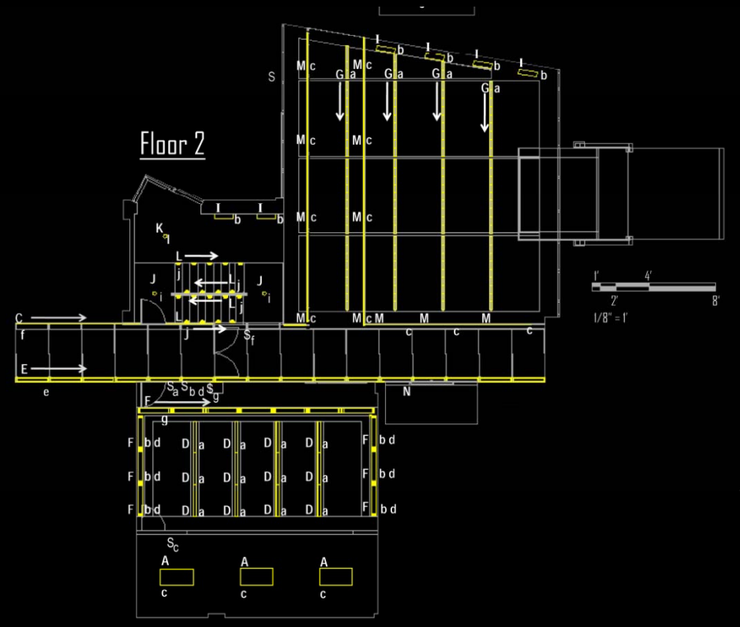


Way-Finding Lights

Energy Efficient

ASHRAE 90.1 Energy Code	Allowable	Actual
Watts (W)	4293	4050
Power Density (W/sq.ft.)	1.16	1.09





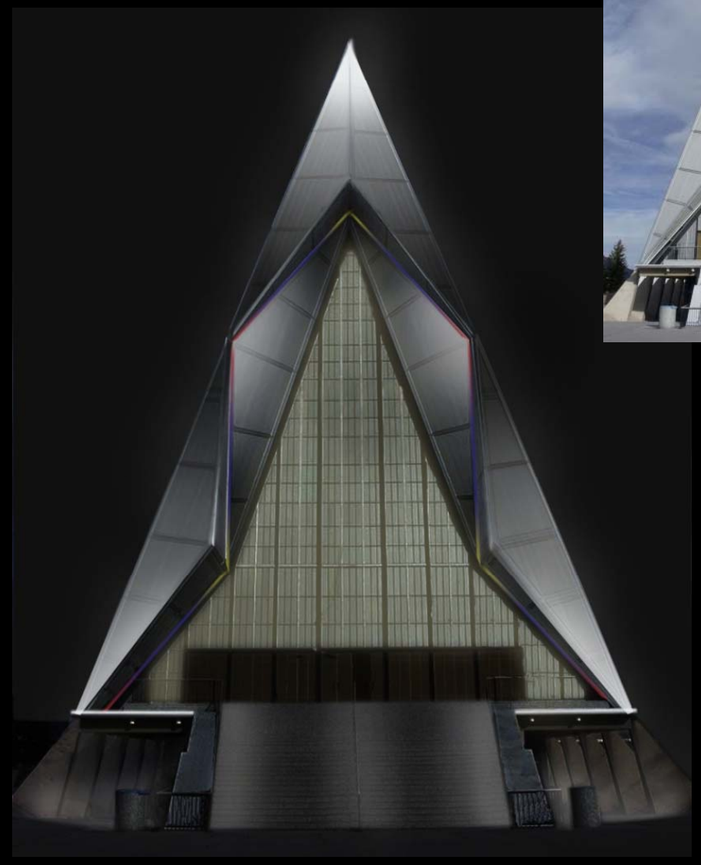
University Science Building

Howard Brandston Student Lighting Design Education Grant Recipient – Team Submission

The exterior lighting design for this unique building was represented using Adobe Photoshop. The schematic design phase of building and the portraying of strong conceptual elements was emphasized.

Daytime Image

Nighttime Image

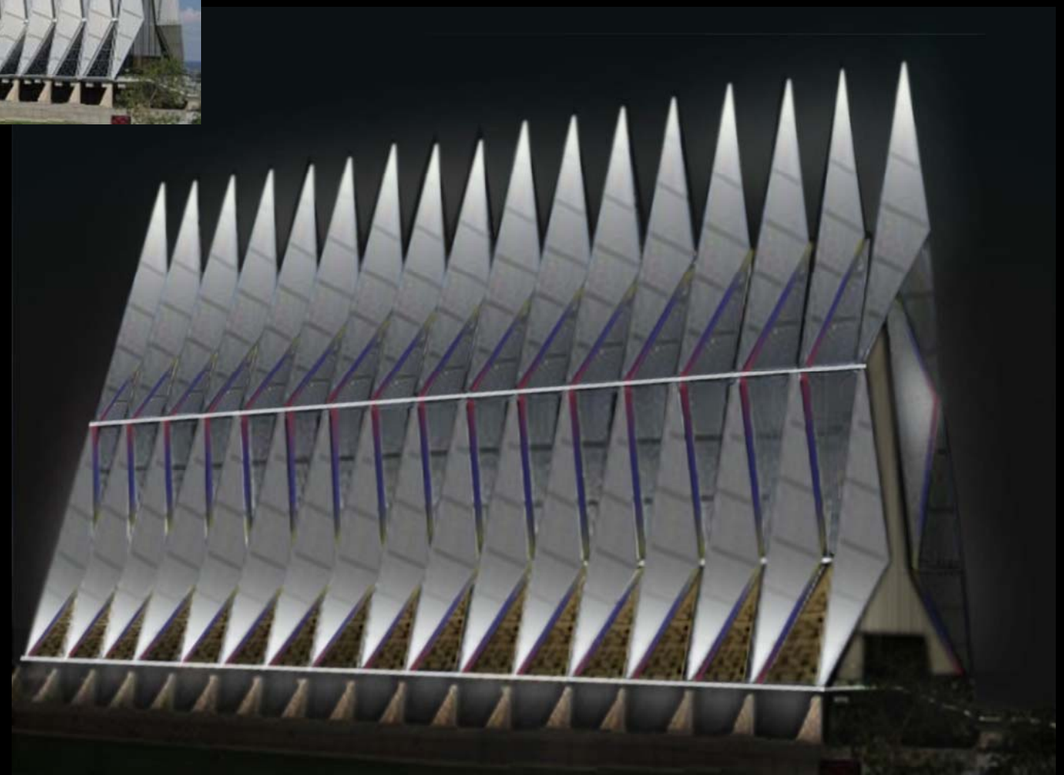


Air Force Academy Chapel

Schematic Lighting Design – Computer Aided Lighting Design Course

Daytime Image

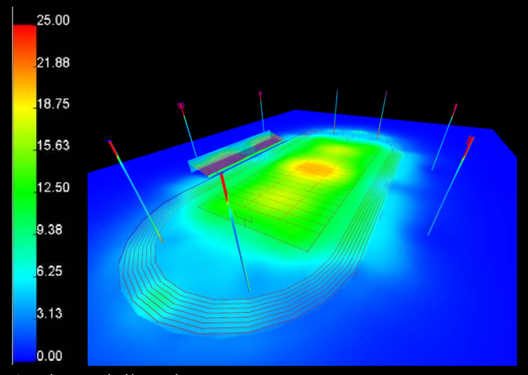
Nighttime Image



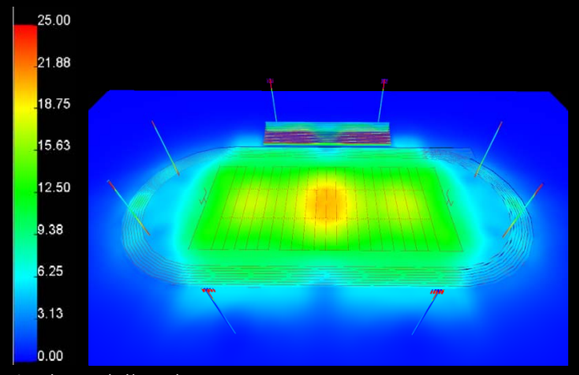
Air Force Academy Chapel

Schematic Lighting Design – Computer Aided Lighting Design Course

The lighting design for this sports complex was carefully selected to meet all appropriate illuminance, contrast, and light trespass criteria for a stadium housing both football games as well as track and field events.



Luminance (cd/sq.m.)

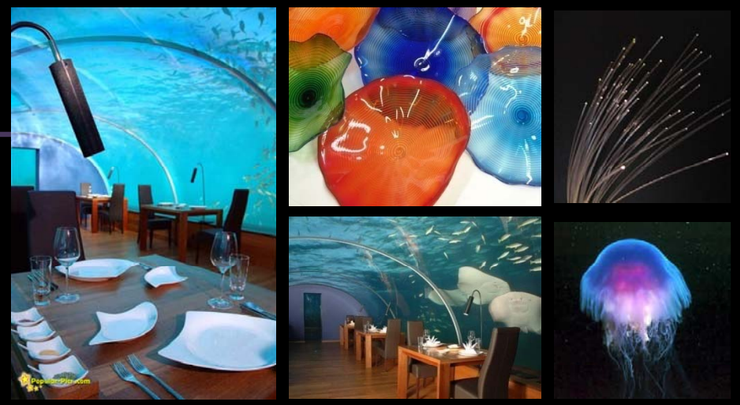


Luminance (cd/sq.m.)

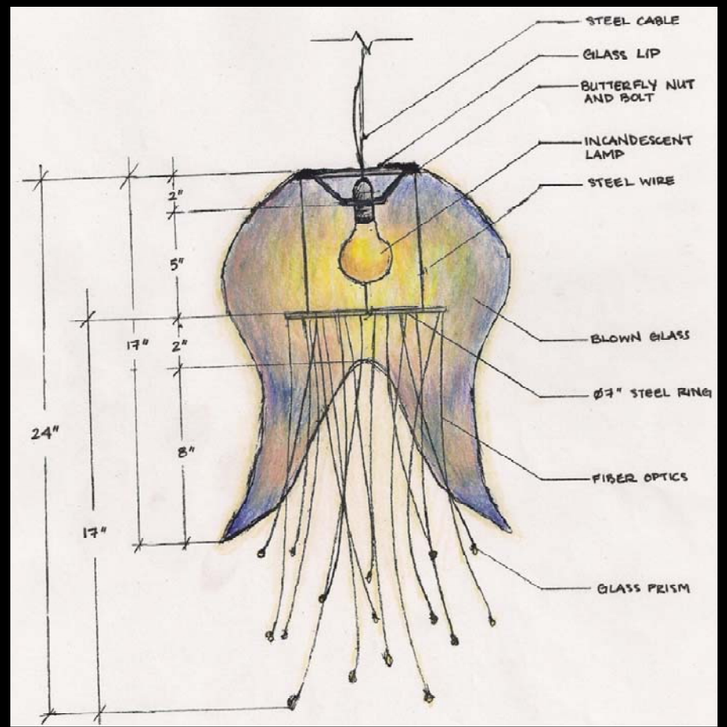
Sports Complex

Outdoor Sports Lighting– Computer Aided Lighting Design Course

This custom luminaire was designed to serve an aesthetic purpose in an aquarium-themed restaurant. By combining the forms of a jellyfish, stingray, and octopus, it resembles a creature of the sea. The complete design process, from creating an initial concept and application to building a physical model, was implemented.



Inspiration



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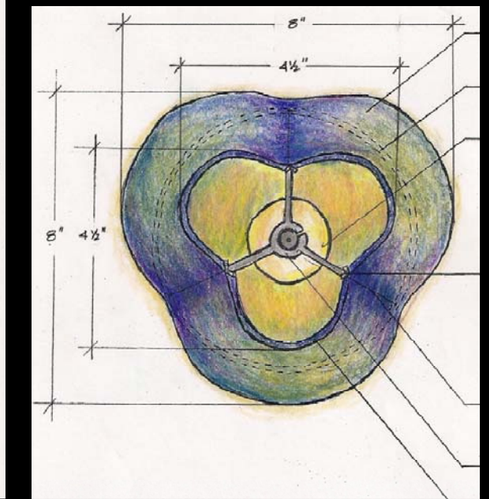
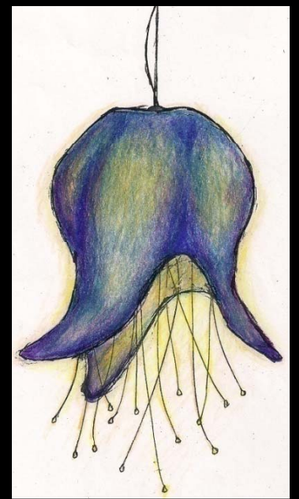


Plan



Perspective

Custom Luminaire

Basic Theory of Architectural Illumination Course

Designed as a multi-use complex located in State College, Pennsylvania, the structure aims to attract students, professionals, and retirees. The building encloses 54 lofts and condominiums, 6 cinemas, 4 offices, 2 retail spaces, and a restaurant. As a consideration throughout the building design, the use of steel construction highlights both structure and architecture. The inclusion of daylighting, a green roof system, natural ventilation, and lighting control systems will assist in achieving LEED certification.

First Floor

Perspective

Second Floor

Site Plan

Fraser Centre

Fourth Year Architecture Studio

Upper Atrium

Lower Atrium

Retail Space

Main Entrance

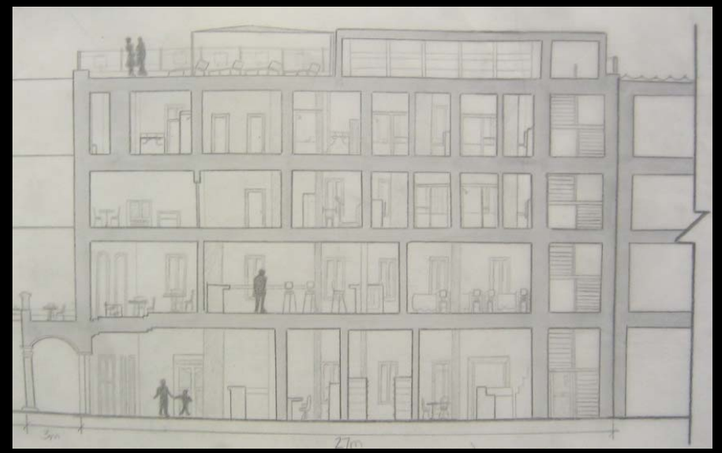
Elevation

Restaurant Patio/Cantilever

Fraser Centre

Fourth Year Architecture Studio

While studying abroad in Rome, Italy, this hotel design was created for an architecture studio course. The building's context and location greatly influenced the design. The structure was created in place of an existing commercial building located in Piazza di Trevi. The façade was opened to create views of the neighboring church and Trevi fountain, acting as a *theater* for those inside to enjoy the historic attractions. The building's *orientation* also provided superior views to both of these famous landmarks. Interior mirrors were strategically placed so that the *reflections* from these "looking glasses" provided outside views in all directions.



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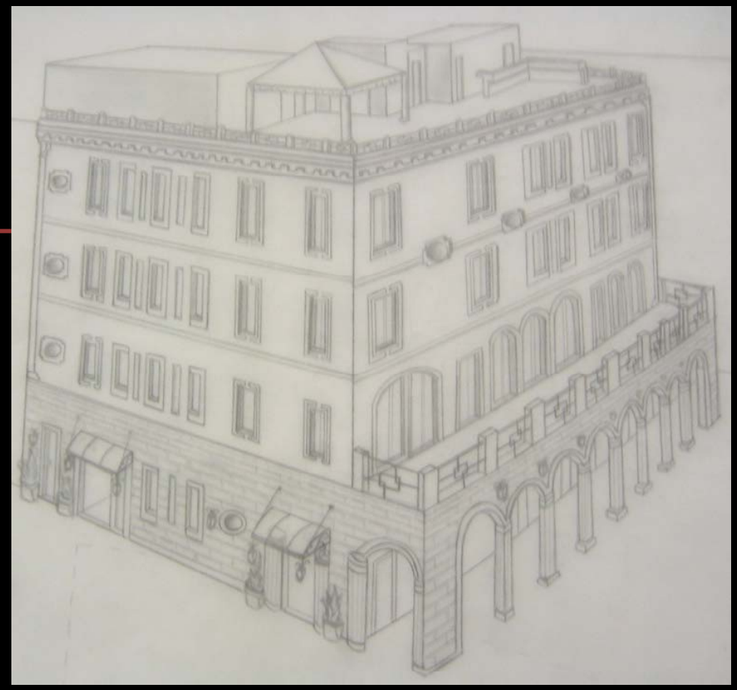
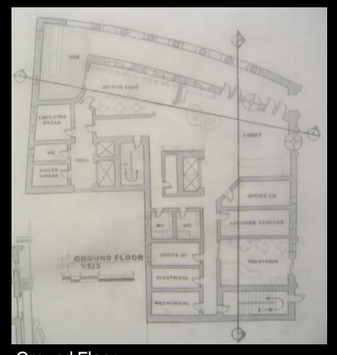
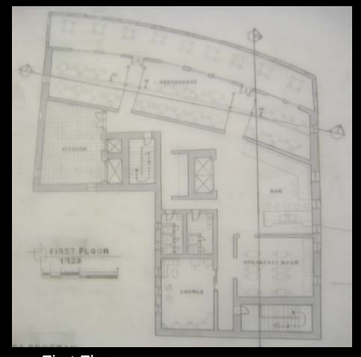


Perspective



Ground Floor



First Floor

Second Floor

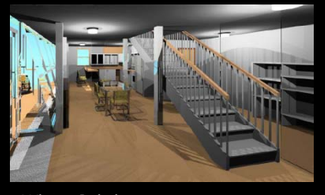
Ossevare di Vetro – "The Looking Glass"

Boutique Hotel – Architecture Studio in Rome, Italy

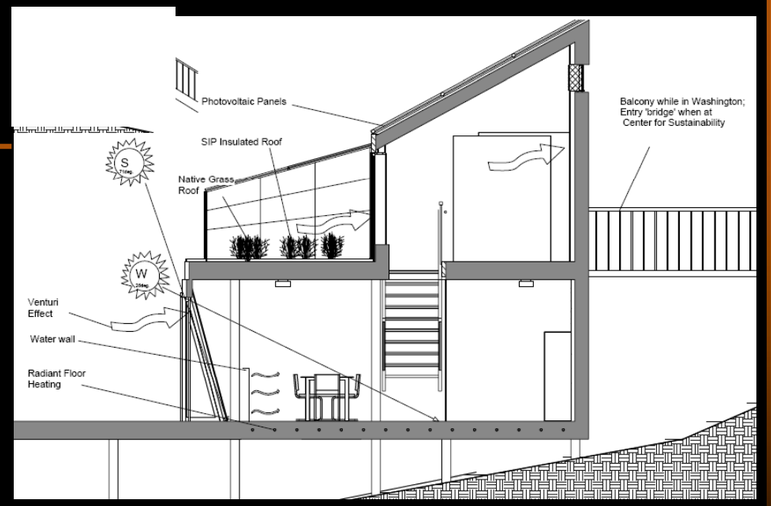
In an attempt to design the ultimate energy efficient home, the sun played an integral role in the structure's orientation and layout. The use of natural materials, photovoltaic panels, a green roof, and heat capture systems are important energy saving elements. The concepts of circulation, modularity, and the separation of public and private spaces were also considered.

Exterior Rendering

Summer Solstice



Winter Solstice



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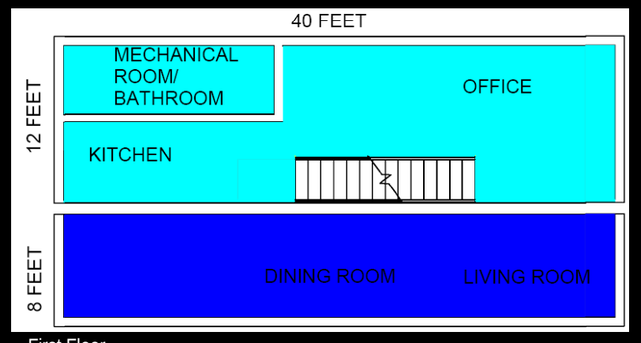
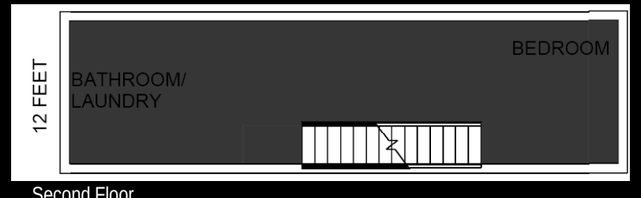


First Floor



Second Floor

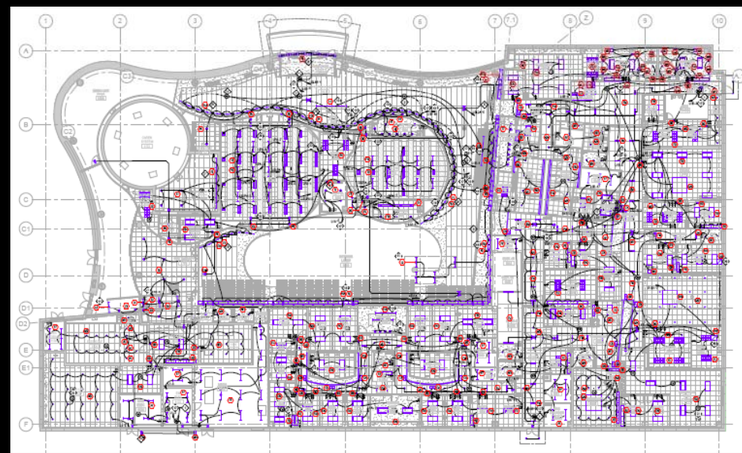
House of the Rising Sun

Solar Decathlon Home Design – Second Year Architecture Studio

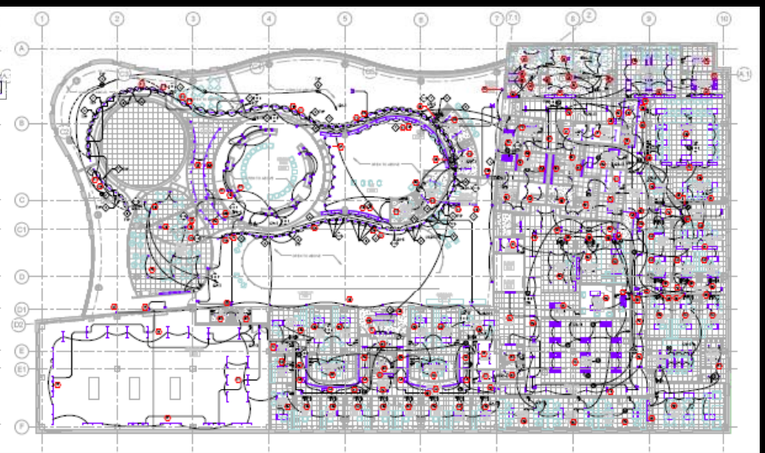
This state of the art facility, to be located at the National Naval Medical Center, was designed by SmithGroup for veterans with traumatic brain injuries. The lighting design (for the “bar” spaces), controls, and circuiting was completed while interning during the summer of 2008. The building is currently being analyzed as part of a senior thesis course through existing and new design proposals.

Interior Renderings
(courtesy of SmithGroup)

Exterior Rendering
(courtesy of SmithGroup)



First Floor Lighting Plan



Second Floor Lighting Plan

National Intrepid Center of Excellence, Bethesda, MD

Senior Thesis and Summer Internship Experience