



MARISSA GESELL



Pennsylvania State University
MAE/BAE Architectural Engineering
Lighting/Electrical Option
Architectural Studies Minor
May 2009 Graduation

Acrylic Painting

Facial Study





Facial Study

Ink Wash

Sketchbook Drawing

Man and Woman





Panther

Sketchbook Drawing

Sketchbook Drawing

National Geographic





Man Fall off edge of the World

Large Rendering

Oil Painting

Abstract City



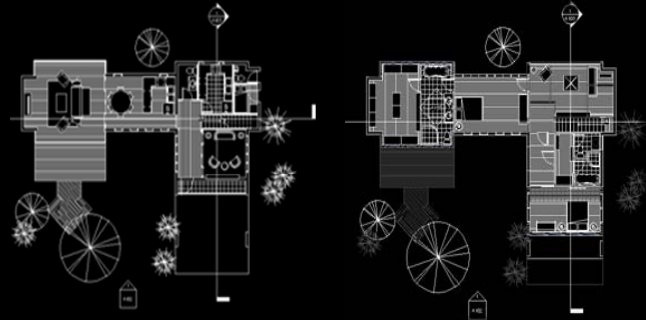
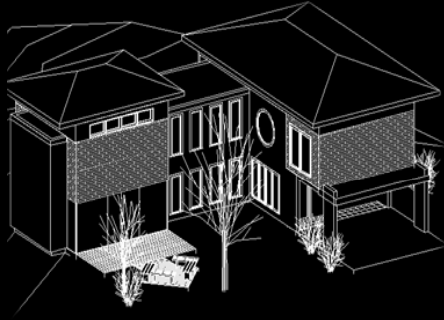


Man in Hole and Portrait

Italian Street Painting

3-D Modern House Model

Computer Aided Design-Revit, Viz and AutoCAD

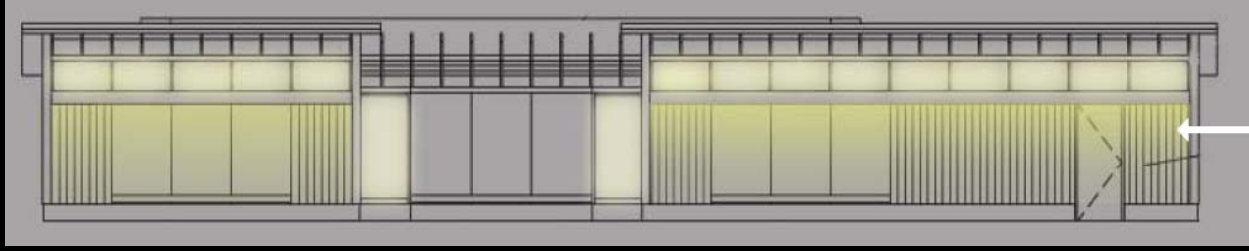




Computer Aided Design-Revit, Viz and AutoCAD
Interior Rendering of Modern House

Tanglewood Public Restroom

HLB Lighting-Schematic Lighting Design



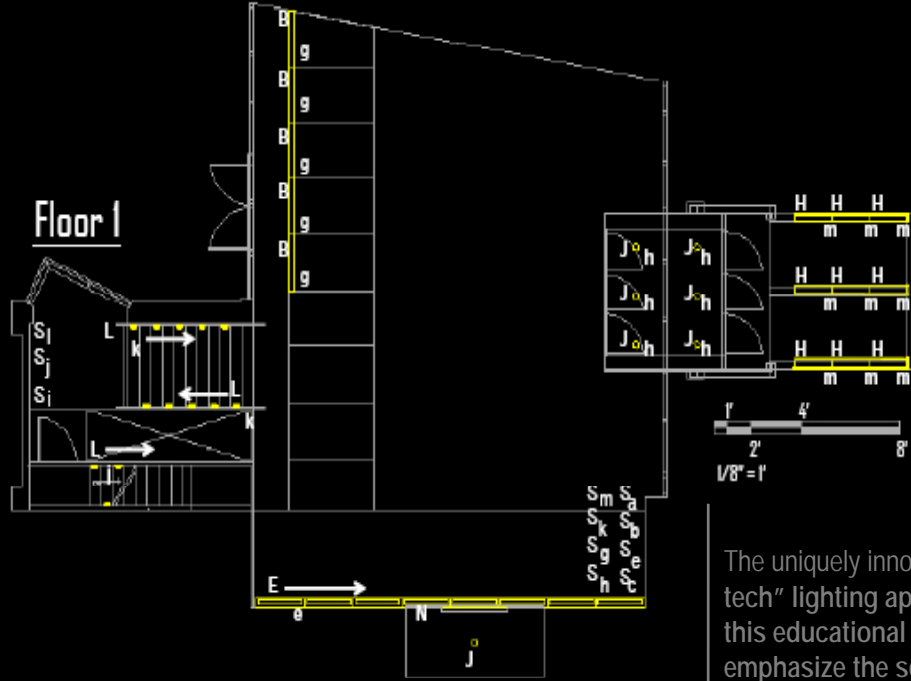


Architectural Studio Design

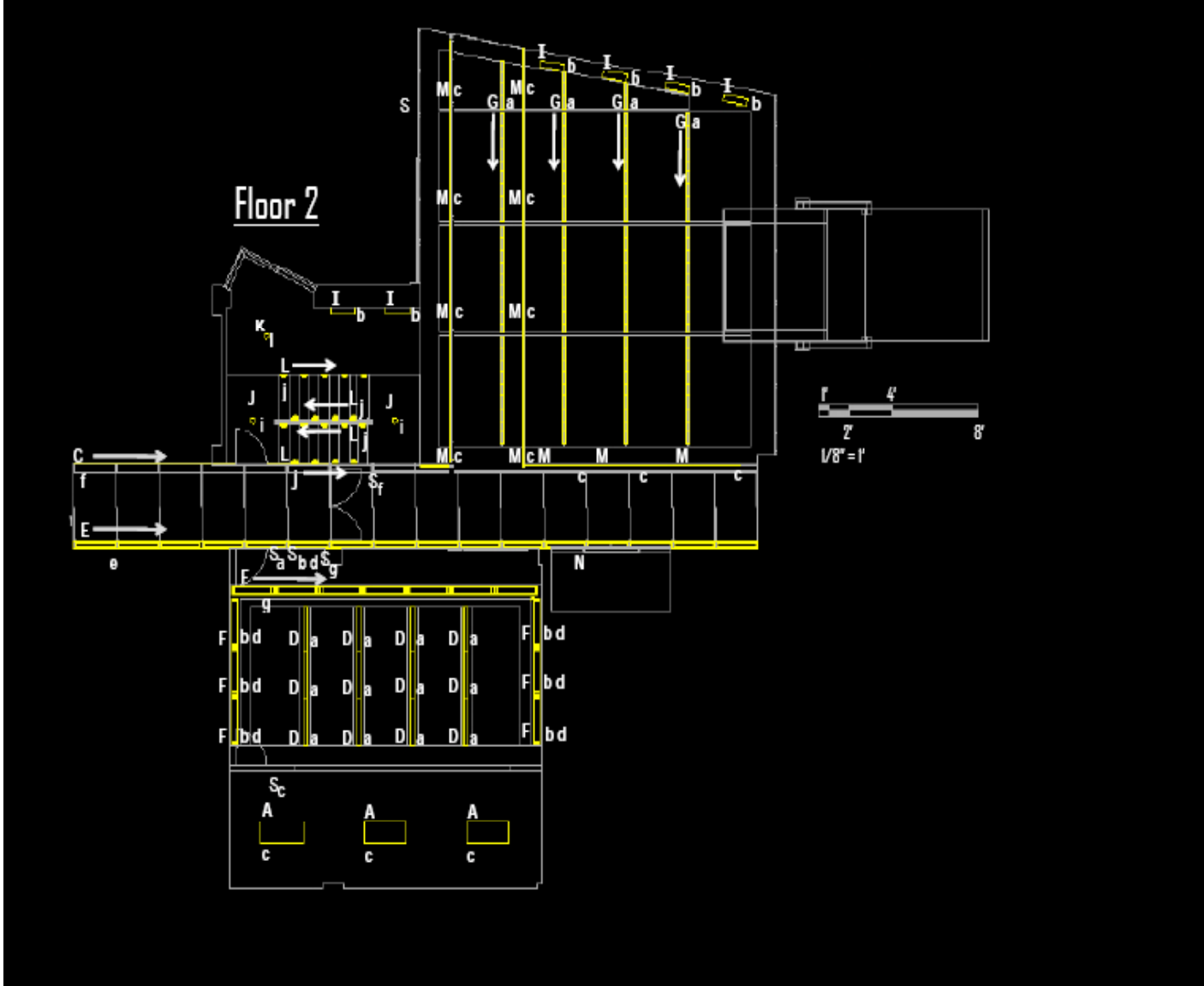
Restaurant Interior

Howard Brandston Education Grant 08'

1st Place- 1st Floor Lighting Plan



The uniquely innovative “high – tech” lighting applications of this educational facility emphasize the scientific functionality of the space . The ideas of circulatory flow, architectural emphasis, linearity, and visual contrast are implemented throughout the lighting design.



Floor 2

1st Place- 2nd Floor Lighting Plan

Howard Brandston Education Grant 08'

Howard Brandston Education Grant 08'

1st Place- Science Building Lobby at Night



Average Illuminance (fc) 9.6

Max Illuminance/Min Illuminance 3.4



1st Place- Science Lobby During the Day

Howard Brandston Education Grant 08'

Howard Brandston Education Grant 08'

1st Place- Science Building Stairwell



Average Illuminance (fc) 4.5

Max Illuminance/Min Illuminance 1.7



1st Place- Science Building Corridor

Howard Brandston Education Grant 08'

Howard Brandston Education Grant 08'

1st Place- Science Building Classroom Setting



Average Illuminance (fc) 27.8

Max Illuminance/Min Illuminance 2.1



Average Illuminance (fc)	5.9
Max Illuminance/Min Illuminance	5.6

1st Place- Science Building Projection Setting

Howard Brandston Education Grant 08'

Lighting a Vertical Surface

Fifteen Scenarios of Wall Grazing and Wall Washing

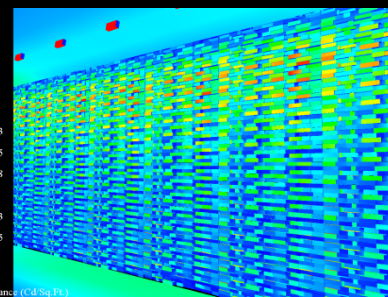
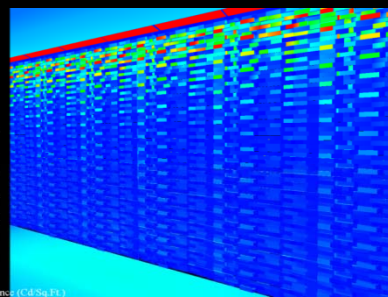
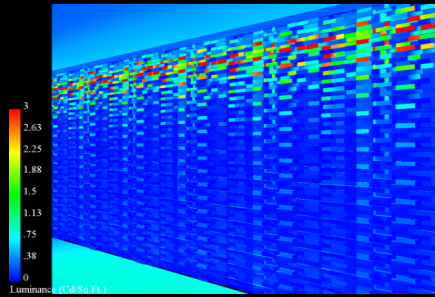
#1 Recessed LED Wall-slot



#2 Semi-recessed linear fluorescent wall-washer



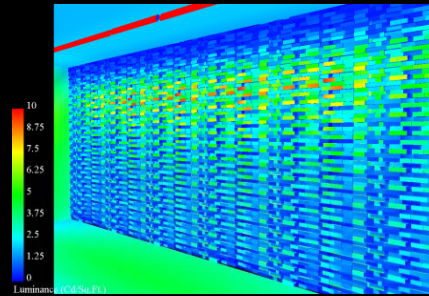
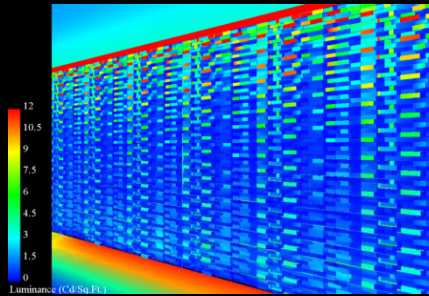
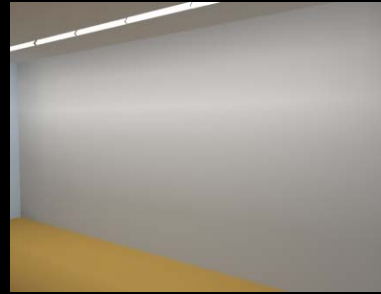
#3 Semi-recessed metal Halide wall-washer



#4 Recessed Halogen
Wall-slot

#5 Semi-recessed linear
fluorescent wall-washer

Luminaires



1



#2



#3



#4



#5



Fifteen Scenarios of Wall Grazing and Wall Washing

Lighting a Vertical Surface



Lighting Model

Flynn Impression Study-1'' -1' Scale

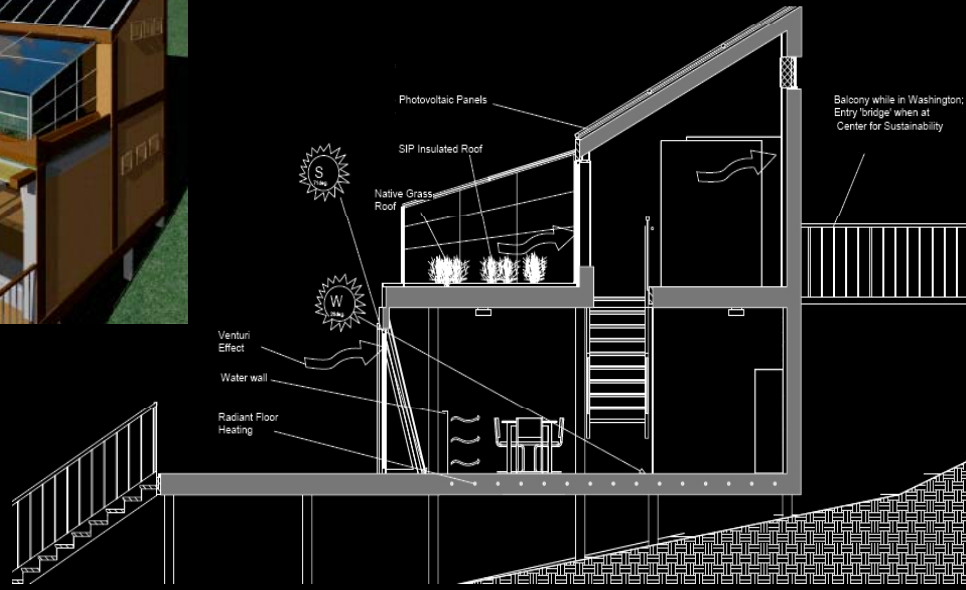




Summer Solstice



Winter Solstice



Architectural Studio Design

Solar Decathlon House

2008 Nittany Lights

Patriotic Theme –Lighting Landscape and President’s House





Patriotic Theme –Lighting Landscape and President’s House

2008 Nittany Lights

Façade Lighting

Schematic Lighting Design





Architectural Studio Design

Fraser Center Multi-Complex

Thesis

Website Design- In Progress

marissa gesel | lighting electrical

architectural engineering thesis project

Massachusetts Public Library

updates | news

date | subject

- 9-3-08 | student biography draft
- 8-29-08 | building statistics part I
- 9-30-08 | Tech Report 1
- 10-8-08 | Abstract
- 10-13-08 | building statistics part II

Home

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- Building Stats
- Thesis Abstract
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The Capstone Project Electronic Portfolio (CPEP) is a web-based project and information center. It contains material produced for a year-long Senior Thesis class. Its purpose, in addition to providing central storage of individual assignments, is to foster communication and collaboration between student, faculty consultant, course instructors, and industry consultants. This website is dedicated to the research and analysis conducted via guidelines provided by the Department of Architectural Engineering. For an explanation of this capstone design course and its requirements click here.

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Note: While great efforts have been taken to provide accurate and complete information on the pages of CPEP, please be aware that the information contained herewith is considered a work-in-progress for this thesis project. Modifications and changes related to the original building designs and the original design contained errors or was flawed. Differing assumptions, code references, requirements, and methodologies have been incorporated into this thesis project; therefore, investigation results may vary from the original design.

Massachusetts Public Library

Construction

Size
- 35,000 SF Renovation
- 70,000 SF Expansion
- 105,000 SF Total

Stories
- 3 above grade (6 total)

Original Contract Sum
- \$70,000,000

Dates of Construction
- January 2007 - April 2009
Project Delivery Method
- Design-Bid-Build

Joint Venture Construction

Electrical

2000 KVA service entrance transformer

- NISTAR Electric

- 480 V primary

- 208/120 V secondary

Emergency Power

- Diesel Generator

- 300kW/375kVa, 480 V/277 V

Lighting

Daylighting and Occupancy Controls

- in conjunction with Lutron dimming system
Over 60 fixture types with a variety of lamps

- fluorescent, HID, LED, and incandescent

Mechanical

Forced air heating and cooling

- with additional fin tube and fan coil units

No units on ceiling (due to code)

- All systems located in main basement

- or located in attic space

- 5 AHUs total

Two cooling towers

- hidden in mechanical well on third floor

Architectural

State-of-the-art curtain wall facade

- provides daylight views and accessibility

New children's wing

- featuring a tree-like ceiling

A young adult area

- with media stations and informal seating

Below grade parking for 70 cars

- allows for above grade green space

Underground auditorium

- provides 230 seats and expands program

Smaller craft and story rooms

- allow for private quiet spaces

Large open stacks/seating

- open floorplan and abundant daylight

Structural

Masonry Wall Construction-(historic)

- Field stone with granite or brownstone

Wood Framing-(historic)

- reinforced with internal steel skeleton

- slits on concrete spread footings

- footings located under a 5" slab on grade

Steel Frame System-(addition)

- with chevron wind bracing

- moment connections for cantilevered beams

Reinforced Concrete Foundation walls-(addition)

- Used for 3 stories below grade

- CIP formed slabs and beams

- 9" or 10" slabs on grade

- concrete spread and strip footings

Sloped Roofing (historic)

- Slate shingles

Flat Roofing (addition)

- A vapor barrier and plywood deck

- Thermoplastic membrane

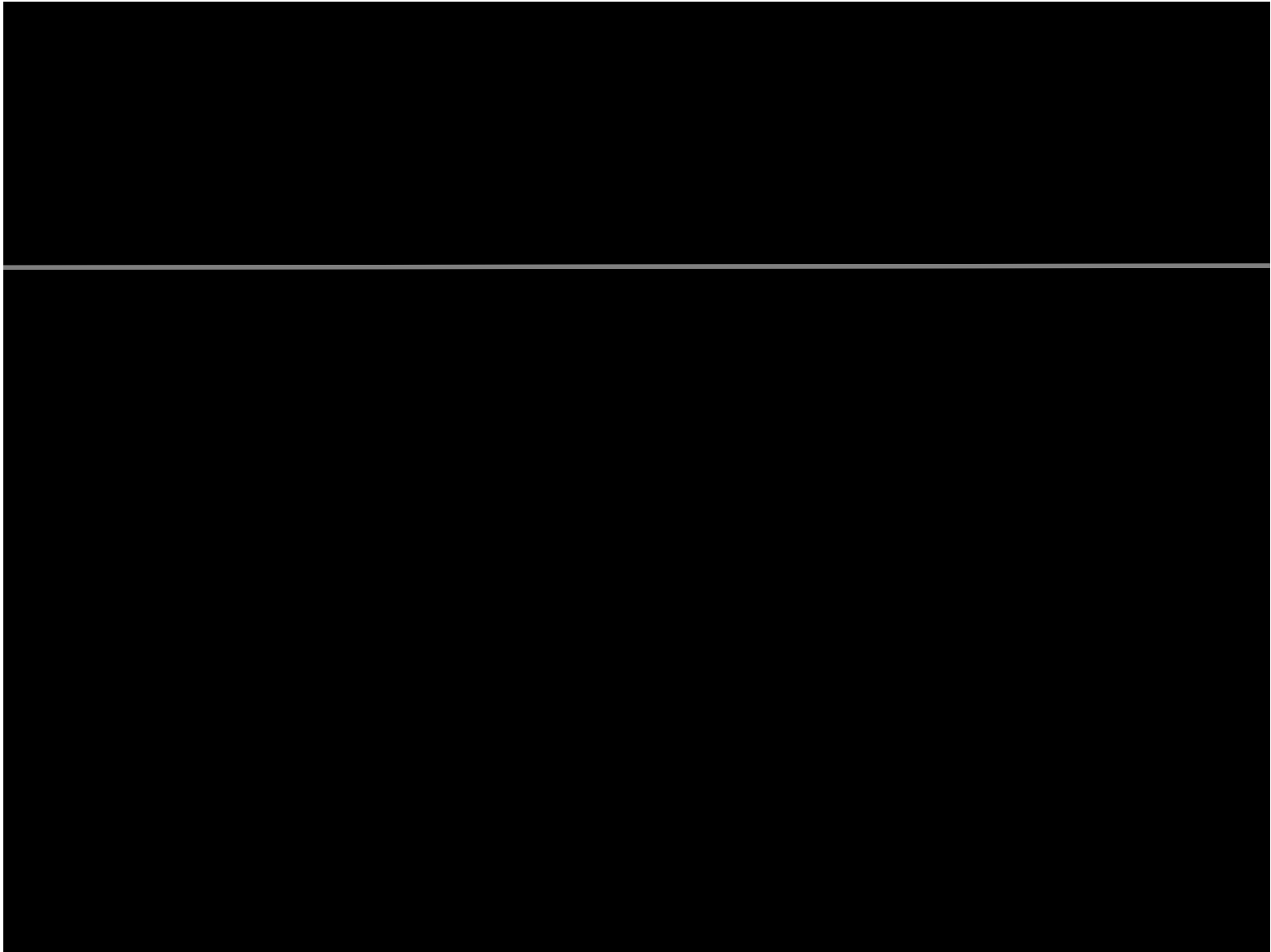
- Rigid insulation and vapor barrier



Marissa Gesell | Lighting-Electrical | Architectural Engineering

Building Abstract

Thesis





PENNSSTATE



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Objective

To obtain a full time position within a lighting design firm in which I can offer my artistic skills and knowledge in the field.

Education

The Pennsylvania State University, University Park, PA

Master and Bachelor of Architectural Engineering

5 year professional degree – ABET accredited

Option: Lighting/Electrical

Architectural Studies minor

Participated in Sede de Roma- study abroad program

Graduating May 2009

-Overall GPA 3.33

-Master GPA 3.92

-Summer 2007

Work Experience

Horton Lees Brogden Lighting Design, Lighting Design Intern

Completed design renderings and lighting design reports

Calculated power density and illuminance/luminance values

Created lighting plans and schedules

Corresponded with Manufacturers, Lighting Representatives and Architects.

Gesell Construction, Assistant

Read and interpreted architectural working drawings

Painted rooms, laid tile and replaced carpet

Completed various small projects

Sydney Mac Clothing Boutique, Assistant

Renovated boutique's layout and aesthetics

Managed shop and assisted in design choices of merchandise

Suggested new ideas to increase efficiency and raise sales

-Summer 2008

-Summer 2003-2006

-Summer 2006-Present

Awards

1st Place Howard Brandston Student Grant 2008

1st Place PES Philadelphia Chapter Student Award 2008

Deans list

Activities I Skills

Architectural Design Computer Experience-

AutoCAD 2009, Revit Architecture 2009, Viz, Adobe Photoshop CS3,

AGI, Com-check, Adobe Illustrator CS3

Language Proficiency-

Spanish

Illuminating Engineering Society-

Active member and Treasurer

Travel Experience

Switzerland, Italy, France, Germany, England, Spain, Netherlands, Singapore, Indonesia

Interests

Drawing, Painting, Photography, Skiing, Snowboarding, Playing Piano, Dancing

<http://www.engr.psu.edu/ae/thesis/portfolios/2009/meg5021/>