



Half Moone

*Cruise and Celebration Center
Norfolk, Virginia*

Thesis Proposal

12/15/08

Lighting Consultant – Dr. Mistrick

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Lighting/Electrical Option

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<http://www.engr.psu.edu/ae/thesis/portfolios/2009/jcw5009/>

Executive Summary.....	2
Breadth Overview	3
Breadth Proposal: Structural	3
Breadth Proposal: Mechanical.....	3
Spring Semester Planned Schedule	4



Executive Summary

This document describes the work that I will perform on Half Moone Cruise and Celebration Center for the spring semester of my senior thesis. The scope of my work will include:

- the lighting design of four spaces
- daylighting analysis of the Waiting Area / Ticket Queuing space
- showing a reduction of power consumption and lighting levels in the Waiting Area / Ticket Queuing space
- adjusting the electrical system to accommodate the proposed lighting design
- electrical coordination studies
- electrical system analysis with SKM software
- solar heat gain analysis due to skylights (breadth topic #1)
- roof structure analysis due to skylights (breadth topic #2)
- generating a coherent report which explains my findings

The four spaces to be redesigned for the lighting component are:

- Façade
- Lobby
- Waiting Area / Ticket Queuing
- Conference Room

The lighting design of these spaces will be tied together by an aquatic theme because of the building's water-related purpose and the nature of the Norfolk community. The design will strive to address the tasks in each space, and will accommodate different building uses in the public spaces. In addition to the task-related criteria established in the Technical Assignment #3 and presented at Lutron, the proposed design will specifically address comments by the lighting designers such as a coherent theme and a sense of entertainment.



Breadth Overview

The Waiting Area / Ticket Lounge space is roughly 11,500 square feet. In addition to a gather space for cruise passengers before departure, this room is capable of supporting large social gatherings due to its unobstructed floor plan. It could be advantageous to incorporate daylight into the space by using skylights. Incorporating skylights into the large Waiting Area / Ticket Lounge space will alter the roof design and increase solar heat gain.

Breadth Proposal: Structural

I propose to analyze if the existing structural elements will support skylights. If skylights will not be supported, I will propose adjustments to the design so that skylight additions could be realized.

Breadth Proposal: Mechanical

With the addition of these skylights, it is anticipated that daylight would be the main source of illumination during the day. Electrical light consumption would be reduced, but there would be a change in the mechanical loads due to solar heat gain. I propose to investigate the solar heat gain in the Waiting Area / Ticket Lounge.



Spring Semester Planned Schedule

AE 482 Schedule	
Week	Description of Activities
Winter Break	Begin CAD modeling of spaces
Jan. 11 th – 17 th	
Jan. 18 th – 24 th	
Jan. 25 th – 31 st	Complete first lighting space
Feb. 1 st – 7 th	Start Structural and Mechanical Breadth
Feb. 8 th – 14 th	
Feb. 15 th – 21 st	
Feb. 22 nd – 28 th	Finish Structural and Mechanical Breadth
March 1 st – 7 th	Complete second lighting space
March 8 th – 14 th	Spring break
March 15 th – 21 st	Complete third and fourth lighting spaces
March 22 nd – 28 th	Complete Branch Circuit Redesign (#1 on electrical requirements paper). Complete Coordination study (#2 on electrical requirements paper).
March 29 th – April 4 th	Complete “reduction in light levels” electrical option (#3.a.vii on electrical requirements paper). Complete SKM option (#3.e on electrical requirements paper).
April 5 th – 7 th	Miscellaneous
April 8 th	Final Summary Reports due
April 9 th – 12 th	Miscellaneous
April 13 th – 17 th	Faculty Jury