

EXECUTIVE SUMMARY

This is the final report of my Architectural Engineering Capstone Project. It is a culmination of five years of study and reflects aspects from many of the varied subject areas that I have received instruction in during my tenure as a student in this program.

I analyzed and redesigned several systems for The Pennsylvania Academy of Music in Lancaster, PA. I focused on two areas of focus deeply, and two additional areas of focus more broadly. First, I analyzed the lighting needs of four spaces – the Building Entrance, the Grand Foyer, the Library, and the Roof Terrace. After establishing this criteria, I generated lighting layouts and renderings of the solutions that I felt best met the criteria I had laid out. Some of these systems reduced the amount of lighting equipment required significantly.

After gathering information on the correct equipment to create a working system, I analyzed the impact these designs would have on the power distribution system. For the Grand Foyer, my lighting redesign ended up using a fraction of the energy the original design called for, and this had far reaching impacts on the electrical system as well.

One area of my breadth work focused on architecture. I modified the Roof Terrace space by creating a Pergola for this space to help define the use of the space. The other area of my breadth work was in the structural system of the building. I analyzed the impact that adding this structure to the Roof Terrace would have on the structural system and whether or not it would have an impact on other systems.

Each of these four areas of focus are incredibly interrelated, as I have learned throughout the course of this project. It was very important to keep this in mind when designing any portion of this project.