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executive summary

The thesis is to find solution of lighting design for four spaces in the building of Fraunhofer Center of Sustainable Energy as well as the electrical system redesign to keep up with the changed lighting load. The Fraunhofer CSE building is located in Fort Point Channel in Boston. It's a historical building within in a historic neighborhood where more and more commercial and professional companies are merging in and using the old buildings as their new homes.

The thesis report discusses the existing condition of each space and the approach of the design solution, then the calculation and rendering for the solution to test the design and compare with the requirement and criteria. The existing designs were studied in the previous technical reports from last semester. And the report only includes the results of the lighting design, electrical system redesign as well as architectural and structural breadths.

In the lighting design portion, the lighting depth successfully achieved the design goals both in the qualitatively and aesthetically. Most of the criteria and requirements are met for each space and the final renderings also address the concept of the design that is proposed in the schematic design phase. For the electrical depth, new branch circuits are redesigned as well as the feeders are resized as needed.

The two breadths are focusing on the changing of interior architecture and the structure system resizing. The architectural breadth is proposed not only to change the looking of the space in the building to create a better working environment, but also to accommodate the new lighting design and provide it a more opportunities for more creative design. And the structure is automatically needed to be studied for the big change of the architecture.