

## **Executive Summary**

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Lighting/Electrical Option

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In this upcoming spring semester, I will be redesigning the University of California, San Diego Cal IT<sup>2</sup>'s lighting system. As required by The Penn State Architectural Engineering Department, an in-depth study on the lighting, electrical systems and two breadth topic studies must be done for my thesis building.

My proposal discusses the five spaces I will be redesigning: the main lobby, black-box theater, 3100 research cluster, courtyard, and underground tunnel. The new lighting scheme for these spaces is discussed in my schematic design presentation. As part of the lighting design, I will be creating a new controls system for the lighting as part of my electrical design. This will also include a new emergency power system.

One of breadth topics includes designing a new acoustical system for the black-box theater. New ceiling and wall materials will be used to determine the correct reverberation times and implemented into my lighting design. The other breadth topic includes providing a cost analysis on the new lighting and electrical system. A pay-back period will be calculated as well as the initial costs for both the original system and the new redesigned lighting system.

Through this whole process, I hope to learn a great deal about energy savings and how light can guide people through a space. With my new innovative lighting scheme, I hope to achieve a technological and intriguing space for Cal IT<sup>2</sup>.