

Executive Summary

The Corbin Building is a restoration of the existing building to restore the façade to the 1917 era and upgrade all the existing building systems. The Corbin Building consist of two retail spaces, an entrance to the Fulton Street Transit Center/subway on the street level and floors two through nine are offices.

This report is the final submission report for the AE Senior Thesis Studio. The main topic of this report covers the lighting redesign of four key spaces throughout the building, the 3rd floor office, the Fulton Street Transit Lobby, the façade and retail space 1. The lighting redesign was based on renovation and integration into the design of the transit center while preserving its historical character. The lighting design will highlight historical character with modern light sources and fixtures.

In addition to the lighting redesign, the electrical depth modified the branch circuit distribution for each space listed above to adapt the lighting redesign. Feeders and panels were analyzed for coordination and voltage drop. A protective device coordination study was performed along with short circuit analysis for a path originating at the utility entrance, through the main switchboard and to the lighting panel on the fourth floor. SKM was used to do a short circuit analysis, load flow analysis and arc fault study for the entire electrical distribution system. A cost comparison of using bus duct was completed for an alternative solution to the existing rigid steel conduit and wire feeder for the main feeder to the switchboard.

An architectural breadth was conducted to design an architectural layout for retail space 1. The design included creating a modern luxury boutique clothing store. A mechanical breath was integrated with the lighting and architectural redesigns to create a visually please duct layout. A daylighting study on the office was done to see how much daylight penetration occurs with tall surrounding buildings, for a MAE focus using AE565 knowledge.