



Executive Summary

The following report contains an in depth analysis and redesign for the lighting and electrical systems of the new Indianapolis International Airport. LEED rating analysis and construction cost analysis is discussed as additional design breadth work in this report. Cost analysis is performed on the savings and cost of reduction and additions of equipments and architectural elements. LEED credential assessment is performed based on modifications of two existing space.

The lighting design depth work has concentrated on the Exterior Departure Canopy Area, Ticket Hall, Civic Plaza and the Passenger Concourse. They will be discussed in an order that is based on the path sequence of how a normal passenger will experience and walk through the airport. Design criteria, design goals and concepts are discussed, followed by a series of design sketches, schematic design illustration, photometric calculations and photorealistic renderings. The goals set for each space will comply with each of the design criteria issued. Daylighting studies were performed where applicable.

The electrical design depth work has focused on all the spaces except the Exterior Departure Canopy area. The re-layout of several 480/208V distribution and lighting panelboards will be performed according to the lighting modification. Retrofit of equipments such as panel boards, and step down transformers were specified per the design condition (such as the LED fixture additions for each space). Control and circuit diagram are then presented for each space.

After light and electrical depth work are completed, a LEED certification study will cover the feasibility of taking the expected LEED Silver Rating to a LEED Gold rating through strategic planning of different spaces within this airport. A cost analysis is then followed to assess if the design strategies are beneficial to the overall construction budget.

In conclusion, an overview of the entire design process is then discussed, and re-evaluated. The depth and breadth topics shall provide a thorough understanding to all my audience, demonstrating that my design are aesthetically and economically feasible.