

Lighting Analysis, Calculations, Design, Engineering, Modeling, 3D Renderings and System Modeling/Comparisons

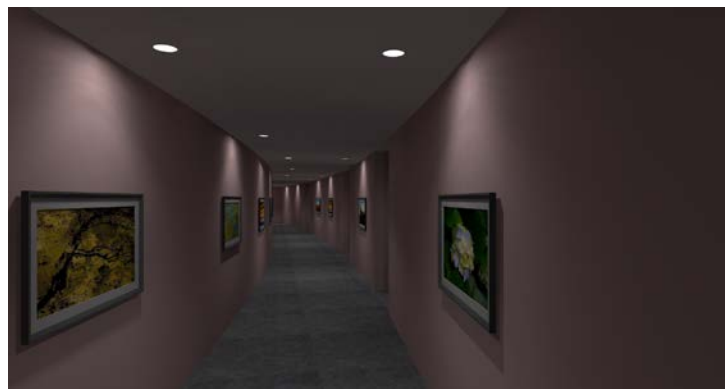
The HCS Group Lighting Design Team has on staff, Lighting Designers with years of expertise in lighting design and engineering and has developed an extensive professional lighting product of deliverables. The HCS Team can provide full point-by-point calculations, lighting power density (LPD), day-lighting calculations, roadway and emergency lighting calculations. The HCS Team can also model each in either a 3D format, rendering or provide a full video walkthrough of your facility and/or site.

State-of-the-Art and the most robust software is utilized in house by our team of professionals at HCS to model, evaluate real light intensities, shadows and daylighting calculations are used for evaluating and design of daylight harvesting and to enhance the overall lighting design and control system performance. The full range of daylight contribution can be modeled at any time of year and time of day. Real time models exhibit shadow effects from furniture, low partitions and daylight.



National and International energy codes are used including ASHRAE and **LEED** to establish the proper lighting levels, max-to-min ratios and not to exceed the appropriate lighting power densities (LPD).

Specialty design expertise and strategies are used to provide for human comfort; supporting human physiology and activities by creating a specific human environment in each space. Spaces vary and require special considerations such as healthcare functions, office spaces, circulation spaces, transition areas to provide visual navigation cues, contribute to an uplifting environment, emphasize art work displays and contribute to energy efficiency.



Our lighting design Team brings knowledge and expertise of the many available lighting equipment, controls and technology of today and in process for the future. They provide cost effective solutions considering the following aspects:

Initial material costs, Energy costs, Maintenance costs (lamp life, light source replacement, labor costs to replace, disruption costs during maintenance), Ease of maintenance and User satisfaction.

Exterior Lighting Design establishes its own unique set of requirements and building models of the site and surrounding conditions are a must, to be able to calculate to the proper requirements. HCS Group’s Team of professionals provide calculations for lighting levels, maintaining average to minimum ratios, light trespass studies, landscape and dark sky compliant. The reports are completely finished with required attachments, photometric files, cut sheets and plans ready to upload documentation for **LEED**.

A proper lighting design should minimize glare, reduce shadowing, and provide appropriate contrast that addresses safety and security; while evaluating light pollution and dark sky compliance. Proper exterior lighting should consider roadways, streets, parking, intersections, pathways and steps, changes in elevation, facility entrances, vehicle and pedestrian traffic; while maintaining the maximum or below ASHRAE LPD for energy savings. Exterior lighting assists in wayfinding and in facial recognition and should encourage movement between the various areas.

