

Electrical Designer

Job Titles

- Electrical Designer I
- Electrical Designer II
- Electrical Designer III

Reports to

- Vice President of Electrical Engineering.

Position Overview

- Under the direction of the Electrical Engineer and Project Manager, the electrical designer applies electrical theory to design and specify lighting and power systems, performs lighting calculations and circuit loading calculations, completes energy code compliance documentation, participates in coordination meetings with design team members and clients, corresponds with vendors and contractors, performs site surveys, observes construction projects, edits specifications, and reviews submittals.

Duties and Responsibilities

- Electrical Designer I
 - Proficient in REVIT.
 - Conduct site surveys and documents existing conditions.
 - Develop preliminary receptacle layout and circuiting.
 - Develop preliminary lighting layout and circuiting.
 - Develop preliminary fire alarm device layout.
 - Develop preliminary one-line diagrams.
 - Develop preliminary data device layout.
 - Demonstrate some understanding of Codes and Standards (National Electrical Code, Illuminating Engineering Society, National Fire Alarm Code, and Telecommunications Distribution and Methods Manual) and is willing to engage in Code research.
 - Shows initiative in learning design software like Acuity Visual and SKM PowerTools for Windows.
- Electrical Designer II
 - Proficient in REVIT and Acuity Visual.
 - Demonstrate some understanding of Codes and Standards (National Electrical Code, Illuminating Engineering Society, National Fire Alarm Code, and Telecommunications Distribution and Methods Manual) and is willing to engage in Code research.
 - Shows initiative in learning design software like SKM PowerTools for Windows.
 - Coordinate with electrical and communications utility companies.
 - Perform preliminary voltage drop calculations.
 - Conduct site surveys and prepare preliminary reports and studies.
 - Prepare preliminary construction cost estimates.
 - Prepare preliminary layout of electrical distribution system and equipment.
 - Service entrance and equipment.
 - Distribution equipment.
 - Engine-generators and transfer switches.

- Uninterruptible power supplies and central battery inverters.
 - Design electrical utilization system.
 - Layout receptacles and circuits.
 - Layout mechanical and plumbing equipment and circuits.
 - Layout architecturally specified equipment and circuits (electrically operated roller shades, door operators, toilet accessories, etc.)
 - Design lighting systems.
 - Perform lighting calculations.
 - Interior and exterior lighting and controls.
 - Emergency lighting systems and exit signs.
 - Occupancy sensing systems.
 - Prepare preliminary layout of communications systems.
 - Outside plant cables and pathways
 - Equipment rooms
 - Backbone cables and pathways.
 - Horizontal cables and pathways.
 - Intercommunications systems.
 - Audio-visual systems.
 - Prepare preliminary layout of electronic safety and security systems.
 - Card access
 - Video surveillance
 - Intrusion detection
 - Fire alarm
- Electrical Designer III
 - Proficient using Codes and Standards (National Electrical Code, Illuminating Engineering Society, National Fire Alarm Code, and Telecommunications Distribution and Methods Manual.)
 - Coordinate with electrical and communications utility companies.
 - Calculate short-circuit currents, perform coordination and arc-flash studies.
 - Perform voltage drop calculations.
 - Conduct site surveys and prepare reports and studies.
 - Prepare construction cost estimates.
 - Design electrical distribution system and equipment.
 - Service entrance and equipment.
 - Distribution equipment.
 - Engine-generators and transfer switches.
 - Uninterruptible power supplies and central battery inverters.
 - Design electrical utilization system.
 - Layout receptacles and circuits.
 - Layout mechanical and plumbing equipment and circuits.
 - Layout architecturally specified equipment and circuits (electrically operated roller shades, door operators, toilet accessories, etc.)
 - Design lighting systems.
 - Perform lighting calculations.
 - Interior and exterior lighting and controls.
 - Emergency lighting systems and exit signs.
 - Occupancy sensing systems.

- Networked lighting control systems.
- Daylighting control systems.
- Athletic lighting systems.
- Design communications systems.
 - Outside plant cables and pathways
 - Equipment rooms
 - Backbone cables and pathways.
 - Horizontal cables and pathways.
 - Intercommunications systems.
 - Audio-visual systems.
- Design electronic safety and security systems.
 - Card access
 - Video surveillance
 - Intrusion detection
 - Fire alarm

Qualifications

- Electrical Designer I: Two- or four-year degree in engineering or technology related subject area.
- Electrical Designer II:
 - Four-year degree in engineering or technology related subject area and 5 years verifiable work experience, or
 - Two-year degree in engineering or technology related subject area and 10 years verifiable work experience.
- Electrical Designer III
 - Four-year degree in engineering or technology related subject area and 10 years verifiable work experience, or
 - Two-year degree in engineering or technology related subject area and 20 years verifiable work experience.

Working Conditions

- Generally, work is in a typical office environment.
- Travel to client meetings is required.
- Travel to project sites and the ability to document existing conditions is required.
- Travel to construction sites and the ability to observe and document construction progress is required.
- Compliance with client and job site superintendent safety protocol is required.
 - Hard hats, safety toe shoes, hi-visibility vest, ear and eye protection are sometimes required to be used.
- Some evening and weekend work is required.
- Occasional overnight travel is required.

Direct Reports

- Electrical BIM Technicians