

SECTION 261100 – PROGRAMMING CONSIDERATIONS

1.0 General

- A. During the schematic phases of the project, the design professional shall determine and document the pertinent electrical criteria and design basis for the project in conjunction with the University Engineering Department and the User. The following shall be addressed:

2.0 Services and Systems:

- A. Source of electrical supply to project including voltage and required capacity. A schematic load estimate for the project shall be calculated based upon historical watts per square foot (by load and building type), meter readings, billing data or by using connected loads and demand/diversity factors.
- B. Demarcation points for electrical, IT/telecom/data and other services shall be determined.
- C. Define major pathways, including vertical riser shafts, underground routes, concrete embedment's, etc.
- D. Emergency and/or standby generator power requirements and emergency power system equipment locations shall be determined. A schematic load estimate and a description of the loads shall be provided, broken into emergency, legally required standby and optional standby categories.
- E. The requirement for Uninterruptible Power Supply or other conditioned or voltage-regulated power shall be determined and a schematic load estimate provided.
- F. The requirements for auxiliary systems such as lightning protection, intercom, public address, snow-melting, automatic clock, white noise, audio/visual, fire alarm, security, access control, etc. shall be determined in coordination with the User.

3.0 Means and Methods:

- A. Define allowable wiring methods, including cable types, raceway types, junction and pull boxes, termination and splicing methods, etc.
- B. Define allowable supporting methods, especially where coordination with architectural elements imposes unusual requirements, standards of care, etc.
- C. Vibration and seismic requirements.

4.0 Fire Alarm System

- A. The location of the fire alarm control panel (FACP), remote annunciator(s), fire fighters controls panels, etc. shall be determined. Generally, this will involve assigning a location within the building to be designated as the fire command center (FCC).
- B. Coordinate and confirm these decisions with the University Department of Fire and Emergency Services (D.F.E.S)

- 5.0 Provide hazardous area analysis for laboratories and other areas where flammable materials, fuels, etc. are stored and used, where required in coordination with the User group and the University Department of Fire and Emergency Services (D.F.E.S) representatives. The type and extent of hazardous area classification shall be determined and documented during the initial design phase.
- 6.0 Size and location of electrical rooms shall take into consideration voltage drop limitations (2% for feeders and 3% for branch circuits). This generally dictates a satellite electrical room every 20,000 gross square feet. Allow space for future equipment additions beyond that included in the project. Space requirements for electrical and telecom/data rooms shall be identified in the schematic phase of the project.
- 7.0 Ascertain equipment requiring special voltages, isolated grounding systems, magnetic field shielding, or radio frequency shielding or filtering. Ascertain outlet density for power and data in laboratory applications.
- 8.0 Placement of satellite IT closets/IDF rooms shall take into consideration the maximum allowable station cable length (approximately 180 ft), and the intensity of IT requirements for the User.
- 9.0 Lighting footcandle recommendations and switching, dimming and automatic lighting control schemes shall be reviewed with the University Engineering Department and the University Architect during schematic phase of the project. Refer to Section 265000 for detailed lighting requirements.