LIGHTING

GENERAL INFORMATION

1.1 This section applies to interior lighting fixtures.

DESIGN REQUIREMENTS

2.1 Each room/area shall have its light fixtures controlled from a local control device(s) for each circuit serving the room. Provide additional controls where required by energy code.

2.2 Designs for lighting will incorporate the most aggressive energy efficient technologies available in accordance with the University’s requirement to save energy and reduce carbon footprint.

2.3 Lamps shall be T-5 type and be accepted by the operations department. Special consideration will be given to innovative energy efficient technologies such as solid state lighting. Otherwise, bulbs and fixtures must be of a type that is commonly stocked in the maintenance department, easy to replace and readily available from local suppliers.

2.4 Comply with the New York City Energy Conservation Construction Code at an absolute minimum. It is expected that lighting designers will be as aggressive as possible to reduce electrical load from lighting – so any innovative technologies will be considered.

2.5 Identify any and all rebate opportunities and work with the University to apply for them in a timely and thorough manner.

2.6 Do not install indirect or hi-hat lighting - these fixtures waste energy by hiding a portion of their generated light.

2.7 Provide emergency lighting units in all generator rooms and enclosures, electrical closets, main electric service rooms, UPS rooms and any other room likely to require access by facility personnel during emergencies. These units shall be provided with 3-hour battery back-up.

2.8 The designer will design in egress lighting on emergency circuits and security lighting which will not be switched off under any circumstances. The security and emergency egress lighting plan will be presented to the operations department before the final design is issued.
DESIGN REQUIREMENTS

2.9 Specify appropriate dimming ballasts and coordinate day lighting systems with fixture vendor.

2.10 Fixtures shall be supported in accordance with New York City codes.

CONSTRUCTION REQUIREMENTS

3.1 Exit Lights

a. Provide self-contained, AC battery-illuminated exit light units with universal mounting and downlight component. New York City approved.

b. Lamps: LED type rated for 25 years life.

c. Graphics: The word “EXIT” shall be spelled in ¾ inch stroke red letters.

d. Directional Arrows: Chevron type design to indicate egress path.

e. Battery: Sealed, maintenance-free, nickel-cadmium type, with 10-year nominal life.

f. Charger: Integral, fully automatic, solid-state type, with sealed transfer relay.

g. Finish: Matte black for exposed parts.

h. Operation: Sign shall be illuminated by AC powered lamps under normal conditions. Relay shall turn emergency lamps on automatically when supply circuit voltage drops to 80 percent of nominal or below. Lamps shall operate for 90 minutes minimum. Lamps shall automatically disconnect from battery when voltage approaches deep-discharge value. When normal voltage is restored, AC powered lamps shall relight and DC lamps shall switch off. Battery shall automatically recharge within 16 hours and maintain on trickle charge.

3.2 Emergency Lighting Units

a. Self-contained, surface wall mounted, with two lamp heads and provisions for a third lamp head on top of unit, and having the following features:

b. Housing shall be 20-gage steel, minimum.

c. LED indicator lights and push-to-test switch shall be on front panel, with concealed terminals for remote lamp heads.

d. Integral lamp heads shall be mounted on top of housing with 180-deg, 2-way, and locking swivel joints for aiming. Lamp output shall be 18-watt minimum, bi-pin halogen type minimum.
DESIGN REQUIREMENTS

e. Battery: Sealed, maintenance-free, nickel-cadmium type, with 10-year normal life.

f. Charger: Fully automatic, solid-state type, with sealed transfer relay and fused output circuits.

g. Operation: Relay shall turn lamps on automatically when supply circuit voltage drops to 80 percent of nominal or below. Lamps shall operate for duration of 90 minutes minimum. Lamps shall automatically disconnect from battery when voltage approaches deep-discharge value. When normal voltage is restored, battery shall automatically recharge within 16 hours and maintain on trickle charge.

h. Integral emergency battery-inverter units shall be utilized where appropriate. Consideration of reduced light output during operation must be accounted for.

3.3 Spare Lenses: 1 percent of spare glassware, lenses, or diffusers, but in no case less than one for each type classification of lighting fixture.

3.4 Spare Lamps: 10 percent, but not less than 2 lamps in each case, of each type and size lamp used in each type fixture.

3.5 Spare Battery Ballasts: One for each type unit installed.

3.6 Spare Batteries: One for each type battery installed.

3.7 Lighting control equipment shall be installed for easy access to maintenance and manipulation of the controls. Under no circumstances will this equipment be above ceiling or in any location requiring a ladder or lift to access.

3.8 The installing contractor shall provide a full training on the features of the lighting control system to the electric and controls department prior to acceptance.

REFERENCE

4.1 The applicable CSI Specification Section is 265000.