1.0 GENERAL

1.1 Related UBC Guidelines

.1 UBC Campus Plan (Phase 6), Part 3, Section 2.5.2 on page 30.
UBC Vancouver Campus Plan: Part 3 Design Guidelines

.2 UBC Exterior Lighting Master Plan Part 4 Section 4.1.

1.2 Coordination Requirements

.1 UBC Energy & Water Services (Vancouver)
.2 UBC *Facilities Electrical* (Vancouver)
.3 UBC Facility Management (Okanagan)

1.3 Description

.1 UBC requirements for Exterior Lighting, Street Lighting and Landscape Lighting.

2.0 MATERIAL AND DESIGN REQUIREMENTS

.1 For each project, exterior lighting must be provided for all roadways, plazas, walks, steps, etc., to a level sufficient to meet safety requirements of all users, but as a minimum to meet IESNA published standards where available. Where public use of the project at night is required, this lighting shall extend beyond the boundaries of the project site to include contiguous access and parking areas.

.2 Lighting design shall incorporate the principles of sustainability and its products and systems shall be energy conserving, long life, have a low cost of ownership and shall be easily and safely accessible for service and maintenance. If special equipment is required for lighting maintenance then the consultant shall, prior to tender, present a preliminary Lighting System Maintainability Plan to UBC *Electrical* (Vancouver) / Facility Management (Okanagan) for review and approval. The preliminary plan shall contain a high-level overview of the special equipment and processes required for maintenance of the system. Architectural, Structural and Conveyancing requirements must be confirmed for moving special equipment to and from the locations after construction is completed. The finalized plan will be submitted by the contractor and it shall contain detailed documentation describing the special equipment, maintenance procedure/schedule and spare parts

.3 Exterior lighting is supplied with electrical energy from nearby buildings. For each project where existing exterior lighting will be impacted by planned new construction, the new project scope shall include all needed adjustments, removals or relocations to the existing systems to ensure continued operation of existing exterior lighting systems beyond the project boundaries, as well as new exterior lighting for the new project. The scope for remediation of existing lighting systems shall be as per the original design intent. All impacted existing systems shall require coordination with UBC *Facilities Electrical* (Vancouver) / UBC Facility Management (Okanagan). *UBC Facilities Electrical* / Facilities Management Policies and Procedures shall be followed when investigating and/or modifying existing systems.

.4 Lighting equipment shall be vandal proof by use of proper design and sufficient mounting height. Specifically, post top units at low mounting height (below 5m) and bollards shall not be used.

.5 Building highlighting/floodlighting is discouraged.

.6 Landscape (garden-shrub-lawn) type lighting is not acceptable.

.7 Exterior lighting that is powered by a building shall be under the control of the BMS scheduling system. The areas shall be divided into the following (as applicable):

.1 Building Mounted Exterior Lighting
.2 Walkway/Landscape/Area Lighting
.3 Street Lighting
.4 Street Lighting Receptacles (Mounted on the pole base)

Each area shall contain its own set of HOA, contactors, relay and pilot light for independent control via the BMS. Refer to Standard Detail E12-1 for an example of 2 areas.

.8 Where feasible, floodlighting of high quality, low glare design installed on building areas inaccessible to the public can be used.

.9 In all cases, lamps of low energy input-high lumen output with appropriate color rendition shall be used.

.10 For lane and roadways, refer to UBC Campus & Community Planning design guidelines: https://planning.ubc.ca/planning-development/policies-and-plans/campus-land-use-planning/vancouver-campus-plan (Vancouver)

https://campusplanning.ok.ubc.ca/policies-plans/plans-guidelines/ (Okanagan)

.11 Poles shall be steel and be painted with one coat of primer and 2 coats of paint.

.12 Poles complete with luminaries shall be able to withstand 160 km/h winds.

.13 All conduit systems for street lighting shall be sized for designed conduit fill then increased by 1 trade size. Minimum conduit size shall be 37mm. All conduit and fittings shall be RPVC.

.14 All conductors for street lighting shall be minimum #8AWG RW90XLPE 1000V rated. Control and power conduits shall not share the same conduit system.

.15 Boxes used for street or landscape lighting shall be sized as per the CEC. All boxes shall be of concrete construction, come with galvanized steel covers labeled “ELEC” and incorporate a bonding lug.

.16 No electrical equipment such as transformers, ballasts, starters, drivers, etc. shall be installed in in-ground boxes or any below grade installations.

.17 Exterior lighting shall not be dimmable. DMX, DALI and other lighting control systems shall not be used without an approved variance from UBC Electrical (Vancouver) / Facility Management (Okanagan).

.18 Cast Light fixtures (where required) shall be mounted on concrete surfaces. Cast in place fixtures shall not be used.

.19 Exterior lighting pole bases to be installed minimum 13mm above hard scape and 50mm above soft scape. New light fixture base shall project minimum 50mm above finished soft scape grade.

.20 All light fixtures provided shall be stock items (no custom made fixtures) readily available from local suppliers. The fixtures are required to be in current production with no plans to cease production and support within a 5 year period.

*****END OF SECTION*****