



Coboconk Wellness Centre

Facade and Site Lighting Study

May 2021 _ Revision 1



Site Lighting Design Criteria

The lighting for the facade and site is required to achieve the following design criteria:

- Meet all necessary code requirements
- Meet a safe nighttime environment
- Ontario Building Code (OBC)
- Ontario Fire Code (OFC)
- ASHRAE
- IES Handbook 10th Edition
- RP-20 Parking
- RP-33 Exterior Environment
- RP-8 Roadway Lighting

The following sections on this sheet provide an overview of the specific design parameters necessary to comply with the above criteria.

Design Drivers

- Preservation of historic materials and character
- Occupant comfort
- Energy conservation
- Maintenance requirements
- Aesthetics

Code Requirements and References

Requirement - Ontario Building Code

Lighting design must adhere to the Ontario Building Code. The following sections and code excerpts pertain to site lighting.

9.9.12. Lighting

9.9.12.2. Required Lighting in Egress Facilities

- (1) Every exit, public corridor or corridor providing access to exit for the public shall be equipped to provide illumination to an average level of not less than 50 lx at floor or tread level and at all points such as angles and intersections at changes of level where there are stairs or ramps.
- (2) The minimum value of the illumination required by Sentence (1) shall be not less than 10 lx.
 - *Arup interpretation:* Egress exits and stairs from building are to be illuminated to an average level of 50 lx at floor and with a minimum of 10 lx.

9.9.12.3. Emergency Lighting

- (1) Emergency lighting shall be provided in,
 - (a) exits,
- (4) Illumination from lighting required in Sentence (1) shall be provided to average levels of not less than 10 lx at floor or tread level.
- (5) The minimum value of the illumination required by Sentence (4) shall be not less than 1 lx.
 - *Arup interpretation:* Path of egress to be illuminated for emergency lighting to an avg of 10 lx and minimum of 1 lx.

IES Recommended Practice for Lighting and Parking Facilities

RP-20-14

- 1.0 fc (min) at grade
 - Uniformity: 4:1 (avg/min)
 - Uniformity: 15:1 (max/min)
 - (Assume concrete parking surface)

IESNA References for Safety

The Illuminating Engineering Society of North America has established standards for lighting, that provide a benchmark reference for safety and design guidance for all lighting design applications. The following references are included for site lighting.

Lighting Zone: LZ-3, Medium Activity

The IESNA RP-33-14 establishes lighting criteria for exterior applications by lighting zone type. The lighting zone for this project is LZ3 - which is a moderately high ambient lighting zone, and is appropriate for a commercial project requiring lighting for safety and convenience at night. The activity level for this building is assumed to be 'medium' for most of the year.

IES Handbook 10th Edition

The following design direction is provided by the IESNA Handbook 10th Edition for exterior lighting applications:

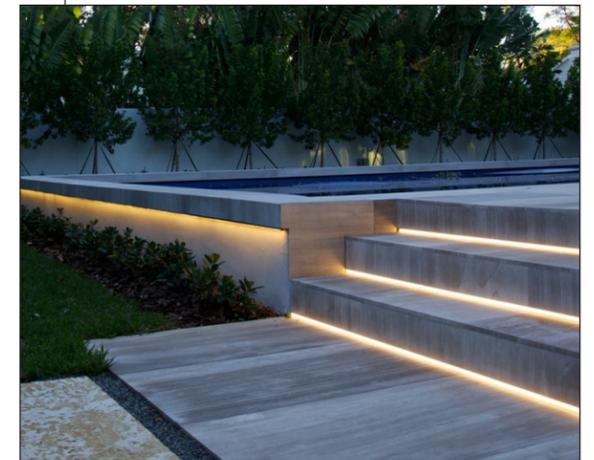
- Non-Covered Building Entries/Exits
 - Illuminance: 1 footcandle (minimum)
- Paths to curb (non-egress):
 - Illuminance: 0.6 footcandle (average)
 - Uniformity: 3:1 (ave/min)
- Plazas (non-egress):
 - Illuminance: 0.4 footcandle (average)
 - Uniformity: 5:1 (ave/min)

Site Lighting – Plan View of Design Requirements



	Parking	1 fc (min)	IES Handbook 10th ed IES RP-20
	Drive Aisle with Pedestrians	2 fc (min)	IES Handbook 10th ed IES RP-8
	Non-egress Pathway	0.6 fc (avg)	IES Handbook 10th ed

	Building Main Entrance	5 fc (avg)	IES Handbook 10th ed
	Building Entrances	1 fc (min)	IES Handbook 10th ed
	Plaza/Courtyard Areas	0.4 fc (avg) 5:1 (avg/min)	IES Handbook 10th ed





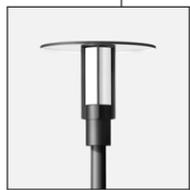
Fixture Type: P01
Manufacturer: BEGA
Model: Area/Roadway Luminaire
Pole height: 16ft



Fixture Type: P02
Manufacturer: BEGA
Model: Area/Roadway Luminaire
Pole height: 22ft



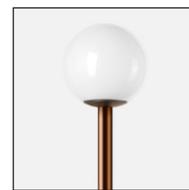
Fixture Type: P03
Manufacturer: BEGA
Model: Area/Roadway Luminaire
Pole height: 16ft



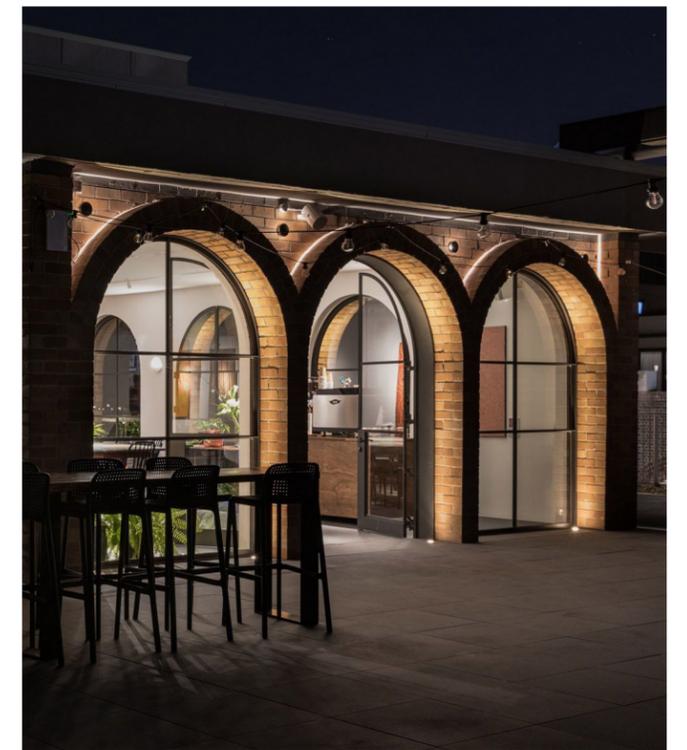
Fixture Type: P04
Manufacturer: BEGA
Model: Unshielded 77120
Pole height: 12-16ft



Fixture Type: E01
Manufacturer: LEDLinear
Model: TBD



Facade Lighting – Design Precedents









Fixture Type: E01
Manufacturer: LEDLinear
Model: TBD



Fixture Type: E04
Manufacturer: BEGA
Model: 33581



Fixture Type: E01
Manufacturer: LEDLinear
Model: TBD



Fixture Type: E01
Manufacturer: LEDLinear
Model: TBD



Fixture Type: E03
Manufacturer: BEGA
Model: 66411



Fixture Type: E02
Manufacturer: KlikUSA
Model: LEDPod40

East Elevation – Schematic Facade Lighting Intent



Fixture Type: E04
Manufacturer: BEGA
Model: 33581



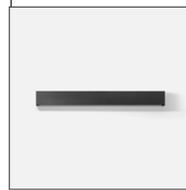
Fixture Type: E02
Manufacturer: KlikUSA
Model: LEDPod40



Fixture Type: E03
Manufacturer: BEGA
Model: 66411



Fixture Type: E01
Manufacturer: LEDLinear
Model: TBD



Fixture Type: E05
Manufacturer: BEGA
Model: 44418



Fixture Type: E03
Manufacturer: BEGA
Model: 66411



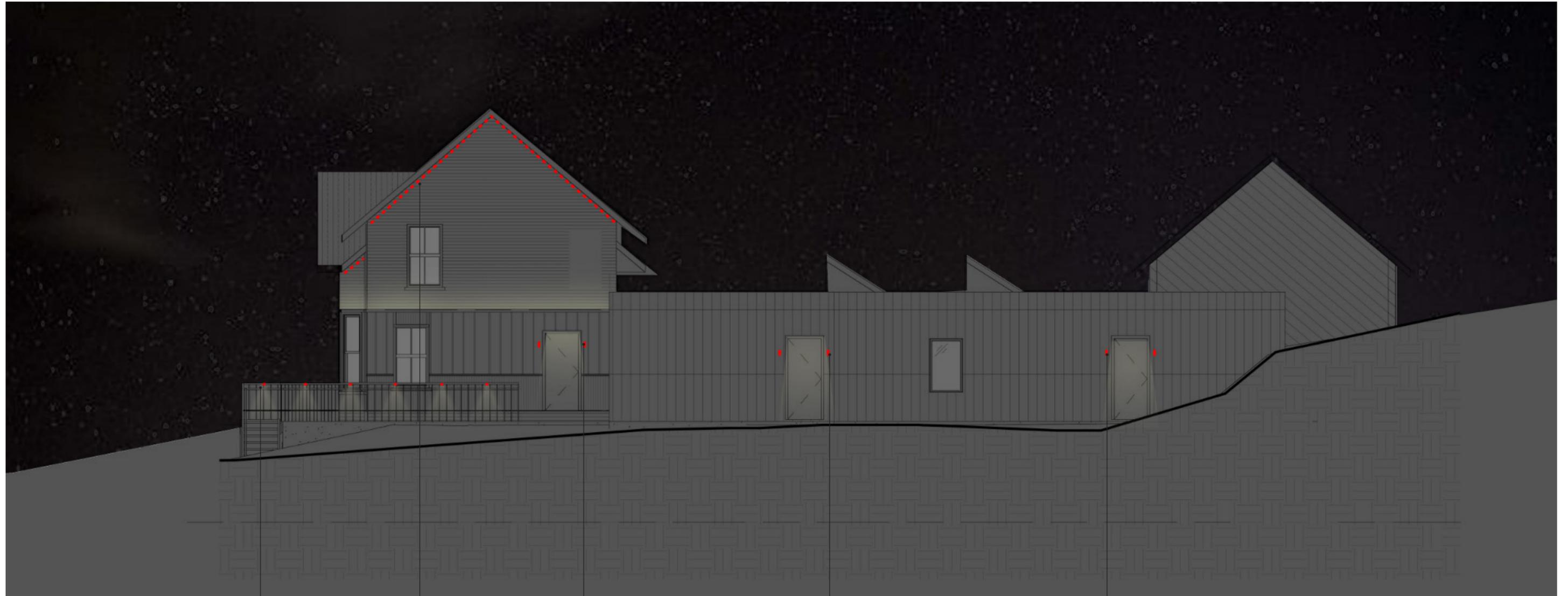
Fixture Type: E01
Manufacturer: LEDLinear
Model: TBD



Fixture Type: E04
Manufacturer: BEGA
Model: 33581



Fixture Type: E01
Manufacturer: LEDLinear
Model: TBD



Fixture Type: E02
Manufacturer: KlikUSA
Model: LEDPod40



Fixture Type: E01
Manufacturer: LEDLinear
Model: TBD



Fixture Type: E03
Manufacturer: BEGA
Model: 66411



Fixture Type: E04
Manufacturer: BEGA
Model: 33581



Fixture Type: E04
Manufacturer: BEGA
Model: 33581