CAPTAIN JOHNSTON BLAKELY
ELEMENTARY SCHOOL

Blakely Elementary
Lighting Design
Site Lighting

05 September 2017

ARUP

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Concept

Summary

The site lighting design concept strives to highlight the landscape architectural elements in an understated manner while minimizing light trespass and pollution.

The discussion at right describes key areas of the site lighting design.

Roadways and Parking

Light levels at the roadways and parking areas have been optimized to provide adequate light levels for safety and security while adhering to the municipality's requirements for zero light trespass and light pollution reduction.

Entry Sequence

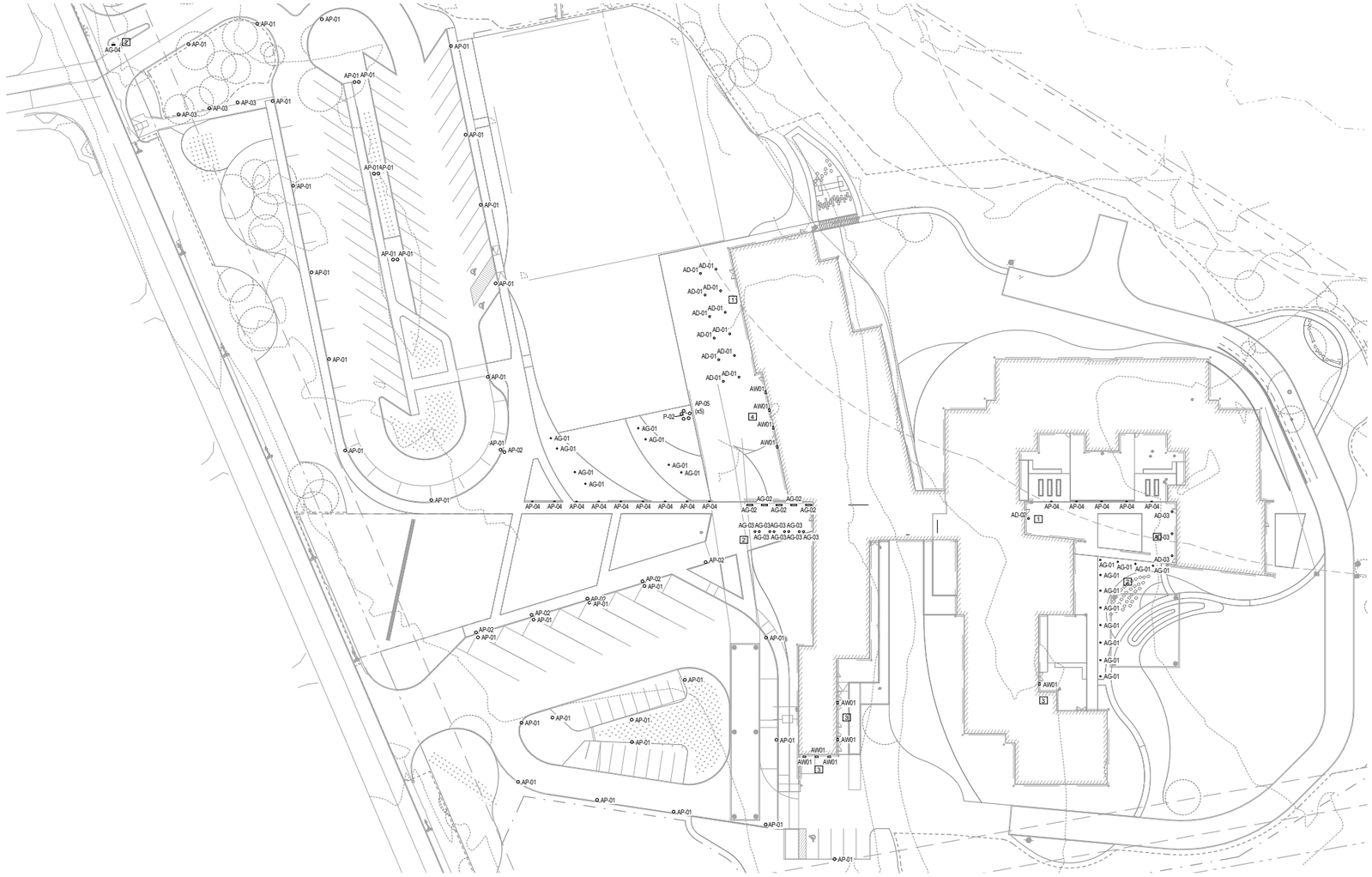
Low level bollard lighting and strategic use of landscape lighting creates a pleasant path of travel for visitors, leading them to an entrance canopy that is light primarily by in-grade uplighting.

Play

The high activity play areas, with tall play towers will be lit by a tall wood pole with multiple fixtures mounted in a playful manner. This strategy complements the height of the play towers and the trees that will surround this play area.

Blakely Site Lighting

Plan



Proposed Site Lighting Plan

AD-01

Canopy Downlight

AD-02

Canopy Downlight

AD-03

Canopy Downlight

AG-01

Landscape Uplight

AG-02

Entry Wall Graze

AG-03

Entry Column Uplight

AG-04

Signage Uplight

AP-01

20’ Pole Light

AP-02

14’ Pole Light

AP-03

3’ Bollard

AP-04

Wood Bollard

AP-05

Tall Multi-headed Pole Light

AW-01

Facade-mounted Fixture

Blakely Site Lighting

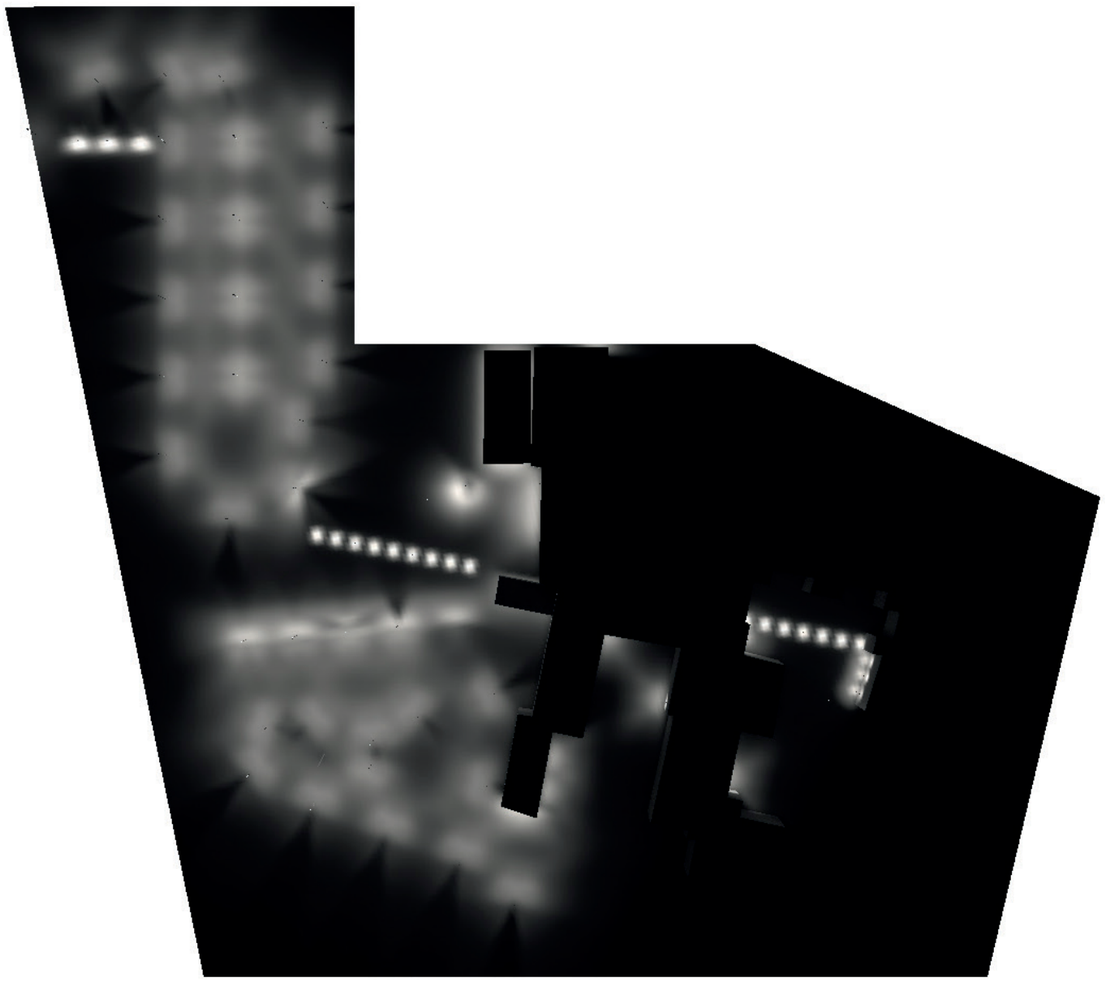
Rendering

Discussion

The site lighting at Blakely has been designed according to the criteria indicated at the end of this document.

To the right is a grayscale rendering exported from AGI, the lighting calculation software that was used.

Sketches



Grayscale rendering

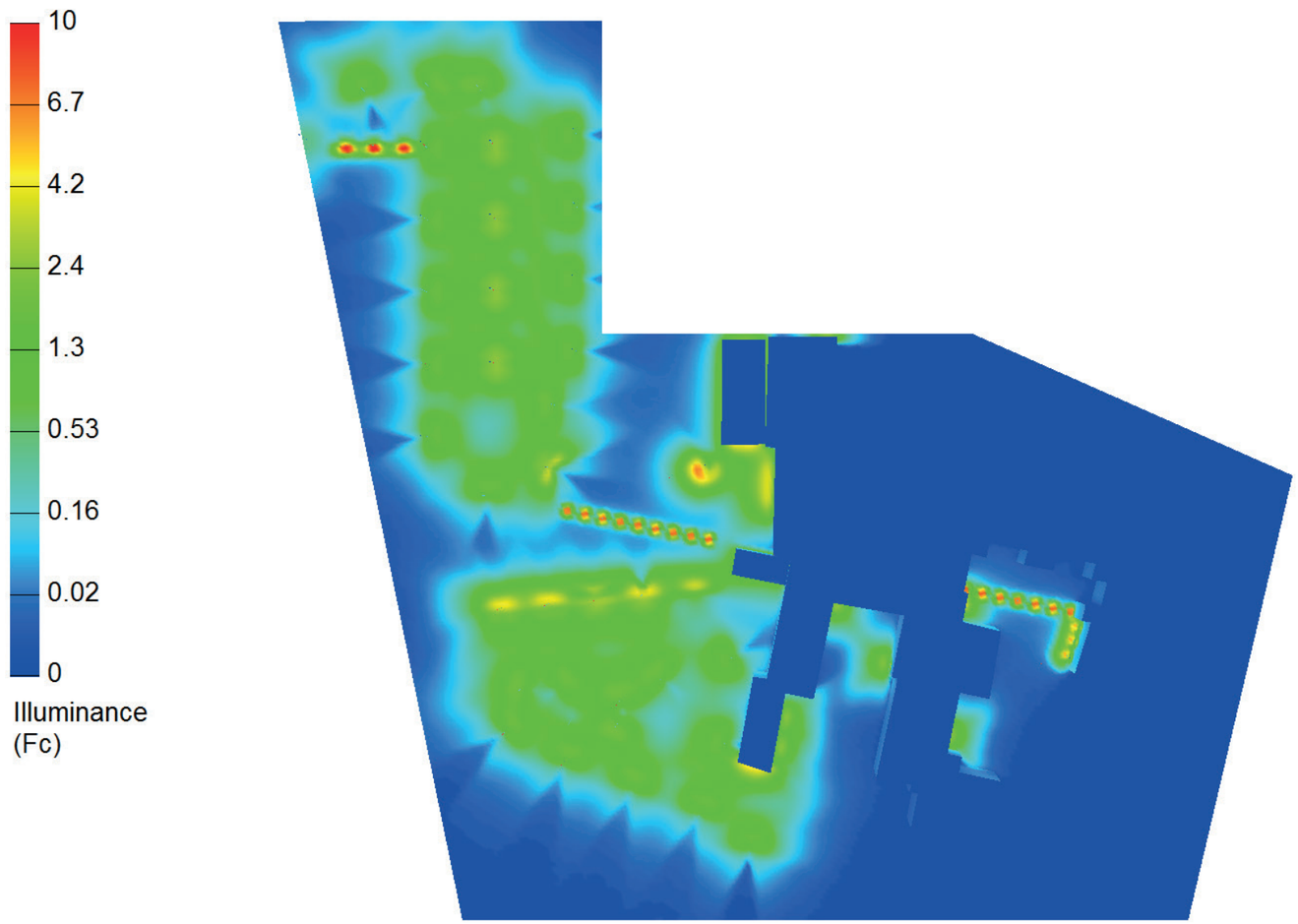
Blakely Site Lighting

Pseudocolor

Discussion

The light levels that result from the current site lighting design is shown in the image at right.

Sketches



Pseudocolor indicating light levels

Design Criteria

General Specification

The specified fixtures are budget-conscious, with quality, performance, and durability in mind.

- All luminaires shall be LED
- Incandescent lamps shall not be used
- Color Temperature of 3000K shall be used throughout the site.

Design Criteria

The following codes, guides, and recommended practices have defined the lighting criteria:

- The IESNA Lighting Handbook 10th Edition, 2010
- IES RP-8-14 Roadway Lighting
- IES RP-20-14 Lighting for Parking Facilities

Lighting Controls

A programmable control system with time clock functionality is proposed for the site lighting.

Design Criteria

Area/Task Type	Target Illuminance [fc]	Target Contrast [avg/min]	Anticipated Lighting Concept	Notes
Drive Aisles/Parking Areas	0.5 fc minimum	4:1	16’ light poles	LZ2, pre-curfew, R4 asphalt
Roadways	0.6 minimum	3:1	4’ bollard	Local, Medium pedestrian conflict, R4 asphalt
Exterior Pathways	1.2 fc average	3:1	4’ bollard	
Canopied Entrances	3 fc average	2:1	Recessed downlights	
Drop off areas	1 fc average	2:1	16’ light poles	LZ2,, Medium activity
Loading bay	10 fc average	4:1	Wall packs	

Above: Lighting design criteria footcandle [fc] target is horizontal illumination at the floor unless otherwise noted.

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