

BEFORE



ABOUT US



At C2AE, we are architects, engineers, and planners delivering projects that thrive. We do this by keeping people firmly at the center of every design we create. Our vision is to elevate human achievement in all of the communities we serve through integrity, excellence, respect, and creativity.

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Hoekstra Electrical Services was founded on a vision for providing high-quality electrical services, with extra-ordinary customer service, to contractors, businesses and home owners.

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AFTER

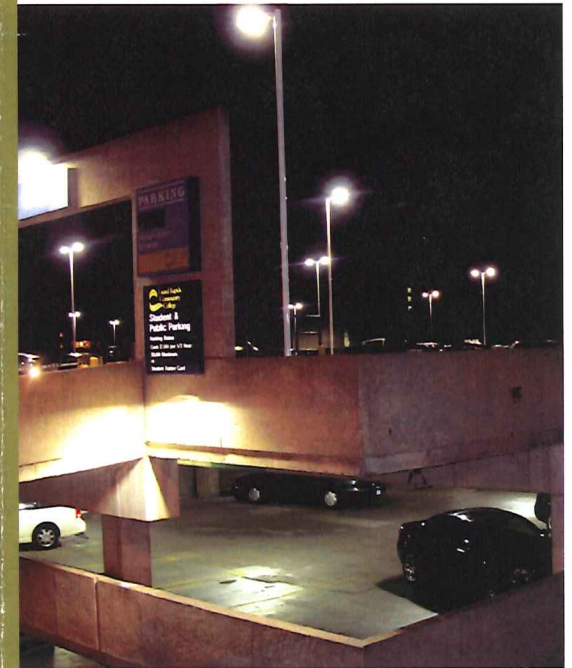


The Bostwick Ramp is located on the campus of Grand Rapids Community College and has entrances on Bostwick and Ransom Streets NE.

GRCC

GRAND RAPIDS COMMUNITY COLLEGE

Bostwick Ramp LED Lighting Upgrades



DESIGN REQUIREMENTS

Replace all existing 70W high pressure sodium fixtures (HPS) with new high efficient and rebate approved lighting system in main parking garage.



Replace existing high pressure sodium (HPS) fixtures at site including upper deck pole fixtures and wall pack fixtures. Replace existing T12 fixtures in inner loop stairwells.

DESIGN CHALLENGES

- Increased scope of work to include replacement of existing 1970's vintage panelboards.
- Upgraded emergency lighting to include separation of life safety system with an automatic transfer switch and panel.
- Existing bay spacing is 30' which is shorter than typical 40' design standards.
- Increased emergency lighting to include egress lighting throughout drive area.
- Maintaining IES standard lighting levels for the facility with increased concern for the amount of security lighting.

DESIGN LIMITATIONS

OVERALL PROJECT COST WAS FIXED

- Limited wireless lighting control to main parking fixtures.
- Stairwell lighting to remain at 24/7 operation with no switched or dimming control.
- Wall pack lighting on perimeter and inner court area to remain with single on/off control point.

LIGHTING REVIEW OPTIONS FOR MAIN GARAGE

LIFECYCLE COST EVALUATION

- T8HO 2 and 3 lamp parking garage fixtures
- LED 1 for 1 replacement of existing wallpacks mounted to beams
- LED 1 for 2 replacement based on every other bay and extension of existing circuits.



**RETURN
ON
INVESTMENT**

INSTALLATION

MAIN PARKING GARAGE FIXTURES

Kenall Tekdek

- With integral Limelight wireless controls
- 92 lumens/watt at 5,000K
- L70/90,000 at 25° C (77° F)
- Specified lower drive currents to extend light output fixture

LIGHT POLES AND WALL SCONCES

Lithonia D-series

- Up to 80-100 lumens/watt
- L88/100,000 hours at 25° C (77° F)

STAIRWELL FIXTURES

Kenall MLHA 5 Series

- 50W LED, 104 lumens/watt
- L70/90,000 at 25° C (77° F)

ENERGY REBATES

\$45,000 (approx.)

COMPLETE PROJECT ROI

17 YEARS

ROI ON MAIN GARAGE FIXTURES

5.5 YEARS

CONTROLS

Lighting controls provide individual control of each integrated parking lot fixture for zoned motion control per floor and for the internal and external loop.

Photocell provides adjustable dimming and on/off control of fixtures for daylight harvesting.