

SMALL COMMERCIAL LIGHTING PROGRAM — CASE STUDY

“Sales have significantly increased since the new lighting was installed.”

-Jeff Portner, Manager

Project Profile

Type of Space

Children's Clothing Store

Square Footage

7,300 of Retail Space

Project Objective

Longer lamp life, improve color rendition, and energy savings

Project Benefits

Reduced maintenance costs

Improved merchandise presentation

Lower utility bills

Kid City, in Mount Vernon, NY, is one of several stores operated by Youngland Kid Shop, Inc. Youngland sells a complete line of brightly-colored children's clothing, including merchandise bearing the Kid City label. When your name appears on the label, you want your merchandise to look its best. Youngland was not satisfied with the existing store lighting, and wanted a better showcase for its products and a more pleasant atmosphere for customers. It also wanted to improve the energy-efficiency of its lighting while reducing maintenance costs. To accomplish this, Youngland worked with Mike Rizzo of Castle Hill Electric Supply, a New York Energy SmartSM Small Commercial Lighting Program Ally Distributor, to redesign its lighting.

Castle Hill understood the needs of the Kid City location and designed a lighting scheme and selected fixtures that improved the visual environment while minimizing energy and maintenance costs. The design resulted in a brighter and more pleasing atmosphere for staff and customers—an effective, energy-efficient lighting design.

Putting Merchandise in the Best Light

Castle Hill knew from its Small Commercial Lighting Program Ally training that the lighting system had to address several design considerations to provide Kid City with quality

lighting. The fixtures and lamps had to provide sufficient light on both vertical and horizontal surfaces, and yield uniform lighting throughout the store. Superior color rendition was also critical. Castle Hill faced an additional challenge: one section of the store had a ten-foot solid ceiling and the other section had a thirteen-foot grid ceiling.

For the higher grid ceiling section, Castle Hill selected Mercury T-8 recessed parabolic fixtures, all properly spaced according to the manufacturer's recommendations. These were selected because they easily fit within the existing grid and produced the appropriate light levels for general retail merchandise. Mercury parabolic fixtures were selected for the lower ceiling section. With a low ceiling, smaller fixtures help the space look larger.

All the selected fixtures met the Small Commercial Lighting Program requirement for glare control, providing lighting that is more comfortable and pleasant for staff and patrons. The use of “800” series lamps, with a high color rendering index exceeding 80, ensures that the bright colors of the clothing are more accurately portrayed, providing exceptional visual interest. Further, the high light output of the lamps



Ceiling fixtures light the floor displays while cove lighting accents the wall displays

reduced the number of fixtures and lamps needed for the project, keeping initial equipment costs low. The results were horizontal light levels that are appropriate for general retail stores. Equally important, the 40 to 50 footcandles provided on the vertical plane yields uniform lighting for customers to view the merchandise and for store staff to stock the floor displays. Aside from the visual benefits the new lighting system provides, the 20,000-hour average life for T-8 fluorescent lamps significantly reduces maintenance costs. The inherent energy-efficiency of the lamps and ballasts helps keep energy costs low and reduces cooling costs in the summer months.

Grand Re-Opening

The lighting was installed in time for a successful holiday season. After the holidays,

Kid City's management wanted to add new lighted wall displays for the spring line of colorful clothes. Youngland again consulted Castle Hill for a solution. Continuous rows of T-8 strip lighting were installed incorporating reflectors to direct the light onto the walls. The fixtures were mounted within an existing valance, and provide accent lighting for the wall displays. The new accent lighting successfully draws patron attention to the featured merchandise. Youngland's managers were so pleased with the new appearance of the Kid City store that a grand re-opening was held—with nothing changed other than the lighting. Jeff Portner, Manager of the Kid City store, is thrilled with the even illumination of the store. He stated, "There are no longer any hot spots like those created by the original metal halide fixtures. The lighting is even, and much less costly to operate. We were always replacing the metal halide lamps."

Employees agree that the new lighting is more comfortable and sufficient for the tasks they perform. The change has resonated with customers, who are pleased with the store's new look.

The Bottom Line

Lighting energy use for Kid City's Mount Vernon store is well below the maximum level allowed by the Energy Conservation Construction Code of New York State. General lighting is provided with only 1.17 W/ft². The accent lighting

increased the lighting power density by 0.8 W/ft², which is also below the maximum level allowed by the Code. With an aggregate lighting power density of only 1.97 W/ft², this is a very energy-efficient retail store lighting project. As a result Kid City is enjoying cost savings of over \$2,800 per year. Equally important are the savings Kid City is realizing in operating costs.

The project cost for general lighting was less than \$2.00 per square foot for materials, making this a very economical system. The technology used in the store can be found in readily available low, medium or high-end fixtures. Further, Kid City's needs were met: providing the proper light levels; visual comfort; uniformity; and accurate color rendering. The result is a comfortable atmosphere for shoppers and staff.

Flags still fly from the Kid City Grand Re-Opening



For More Information

The New York State Energy Research and Development Authority (NYSERDA) offers businesses energy-saving opportunities through the New York Energy SmartSM Small Commercial Lighting Program. Additional programs can help businesses reduce utility costs, including the New York Energy SmartSM Smart Equipment Choices Program, which offers financial incentives to businesses for energy-efficient lighting equipment and a variety of other electric-efficiency measures. Low interest rate financing may be available through the New York Energy SmartSM Loan Fund Program.

To learn more about these incentives and to make your lighting more effective and efficient, visit www.nyseda.org/sclp or call toll-free 1-866-NYSERDA (1-866-697-3732).

Tech Specs

- Glare-controlled 2X4 and 2X2 T-8 parabolic fixtures
- Two-lamp T-8 linear fluorescent wall washers in a continuous row
- High color rendering linear fluorescent lamps
- 1.97 installed watts per square foot for general lighting
- Estimated kilowatts reduced compared to typical retail store: 9.7 kW
- Estimated annual kilowatt-hours saved compared to a typical retail store: 28,300 kWh
- Estimated energy savings compared to a typical retail store: \$2,800*

* Savings based on a \$0.10 kWh rate and 2,900 operating hours per year.