

Centro Bus

Comfortable Energy-Efficient Lighting Provides Round-the-Clock Flexibility

SMALL COMMERCIAL LIGHTING PROGRAM — CASE STUDY

Project Profile

Type of Space

Public bus company workspaces

Square Footage

1,308

Project Objective

Comfortable, flexible, energy-efficient lighting

Project Benefits

No glare on computer monitors

Adjustable light levels

Lower utility bills

Centro Bus, the public bus company of Syracuse, NY, turned a 1,308-square-foot storage area into comfortable, functional workspaces using effective, energy-efficient lighting. The new spaces included a dispatch room, private offices, a storage area, a mail room, and a lost-and-found room. Carl Hibbard of Patricia Electric, an Ally Contractor in the New York Energy SmartSM Small Commercial Lighting Program, designed the lighting system to be energy-efficient, flexible, visually comfortable, and affordable.

Centro Bus wanted a design that would minimize energy cost, provide a comfortable atmosphere for the employees, and offer staff the flexibility to adjust light levels in their facility 24 hours a day, seven days a week. To this end, Hibbard installed three-lamp fixtures with energy-efficient T-8 fluorescent lamps and electronic ballasts throughout the occupied spaces. In the dispatch area, and in the private offices, Hibbard selected three-lamp low-glare parabolic fixtures to reduce reflections on the computer monitors. This makes the lighting more comfortable for the employees. Comfort is also enhanced by proper spacing of the fixtures, resulting in uniform lighting with no hot spots or shadows. Flexibility is achieved by using



Dimmable fixtures in the dispatch room allow employees the flexibility to set light levels to their comfort.

dimming ballasts and controls in the dispatch area and in some private offices.

For additional energy cost savings Hibbard used a combination of wall-mounted and ceiling-mounted occupancy sensors to turn lights off when spaces are not occupied. Wall-mounted units are employed in the smaller rooms. Ceiling-mounted units are used in larger areas to assure coverage of the entire space — preventing lights from being shut off while the room is occupied.

Single-lamp T-8 fluorescent fixtures were installed in the narrow hallways and mailroom, and these yield the appropriate light levels. Two-lamp fixtures provide sufficient light in low-use areas, such as the storage room. By using a combination of one-lamp and two-lamp fixtures where appropriate, Centro Bus's energy costs will be reduced as compared to using three-lamp fixtures. The long-lasting 20,000 hour T-8 lamps make the system easy to maintain.

"I love being able to dim the lights to the level that I need."

— Linda Sgroy, employee
Centro Bus

Tech Specs

- Low-glare three-lamp T-8 parabolic fixtures in offices and dispatch room
- Dimming ballasts and controls
- One-lamp T-8 fixtures in narrow corridors and mail room
- Two-lamp T-8 fixtures in storage area
- F32T8/735 linear fluorescent lamps
- Occupancy sensors in private offices and low use areas
- 1.13 installed watts per square foot after allowance for dimming controls and occupancy sensors
- Estimated annual energy savings: 1,939 kWh (over \$190 per year)

Dimming System Offers Flexibility and Energy Savings

The dimmable fixtures installed in several private offices and the dispatch room are a key feature of the lighting design.

The dimming ballasts and controls offer employees the flexibility to adjust light levels based on their needs and preferences. For example, staff can dim the lights for optimum viewing of video monitors. When ambient light levels are lower (around 30 footcandles) the video monitors will appear brighter because of the increased contrast between the monitor and general room lighting. When staff tasks involve reading or writing, light levels can be adjusted upward to around 50 footcandles to increase illumination at the desktop.

With this built-in flexibility, staff on different shifts are able to set the light levels based on their preferences. The daytime shift in the dispatch room tends to set the ambient

lighting levels low, while the nighttime shift prefers to have the lighting levels higher. As an added benefit, the dimmable fixtures help reduce energy costs — energy consumption for lighting is lower when the dimming system reduces light output.

The Bottom Line

Hibbard selected affordable, easily obtainable fixtures that qualified for an additional \$352 in cash incentives from the **New York Energy SmartSM** Smart Equipment Choices Program. Taking this incentive into account, the cost of materials was reduced to under \$2 per square foot. Centro Bus will realize significant savings on their electric bill due to the energy-efficient lamps and fixtures, the dimming controls, and the motion sensors. Further, Centro Bus's employees have the flexibility they wanted to control the light levels with the new system.

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.

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).

"The system is easy to maintain and people are very happy with the lighting. The occupancy sensors save energy and people use the dimming controls which saves additional energy costs."

— Ray Crossley, Maintenance,
Centro Bus