

# SCHOOLS

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*Educational  
facilities need  
lighting  
control that's  
flexible,  
code-compliant  
and  
affordable.*

When you think about it, almost every room in a school is a "multi-purpose" room. Classrooms are used for instruction, audio-visual presentations, quiet reading, group work and sometimes even nap time. Gymnasiums function as dance halls, award ceremony venues and more. Old-fashioned on/off light switching really isn't flexible enough to meet multiple demands like these; today's educational facilities require flexible lighting control to provide the right amount of light in the right places at the right times.

Fortunately, today's digital lighting control systems allow schools to effectively meet multiple needs by giving teachers and administrators unprecedented flexibility and control over the lighting in every part of their facility, from the classrooms and cafeteria to

the administrative offices, gymnasium, library and hallways. Flexibility and control aren't the only benefits, however; a digital lighting control system also offers energy code compliance, operating cost savings, optimized productivity, high teacher/student satisfaction, simplified maintenance and efficient central management.

Multiple studies have shown that classrooms with proper lighting — including ample natural daylight — have a positive effect on academic performance. With digital lighting control, the electric lights in a classroom are automatically dimmed and brightened in imperceptible increments in response to changing natural light levels in the room. This prevents over-lighting and significantly cuts energy use and energy costs.

*Project  
Example*



*Foster Elementary School  
Appleton, WI*

Foster Elementary School in Appleton, WI, participated in a pilot project with Starfield to compare a traditional on/off switched system against networked lighting controls in identical classrooms, to see which one would provide better energy savings and higher teacher and student satisfaction.

Starfield designed a lighting control network that teamed continuous dimming, light sensors, occupancy sensors and manual dimming control to provide a comprehensive solution. The networked classroom's three rows of lights can be dimmed independently to provide teachers with flexible options for different activities, while daylight harvesting occupancy sensors work in the background to provide unobtrusive energy management by dimming the lights imperceptibly in response to changing natural light levels. The result is a classroom that works for everyone and has become the most desired classroom in the school.



## Digital Lighting Control Provides Many Benefits in Educational Facilities

### For teachers and students, it's...

- ◆ Flexible
- ◆ Comfortable
- ◆ Easy to use
- ◆ Inconspicuous

- ◆ Light fixtures can be controlled individually or in groups, enabling teachers to set appropriate light levels for different parts of the room
- ◆ Teachers can set different lighting levels for different activities, optimizing student comfort and productivity
- ◆ Wall-mounted dimmers are easy to use and intuitive
- ◆ Daylighting (automatically adjusting electric light levels based on the amount of daylight in the room) is done imperceptibly using continuous range dimming — unlike step-level dimming, which distracts students with lamps turning on and off

### For administrators, it's...

- ◆ Cost-effective
- ◆ Code-compliant
- ◆ Centrally manageable
- ◆ Future-proof

- ◆ The initial cost for a digital lighting control system is now comparable to a conventional lighting control system
- ◆ Starfield's control system is compliant with California's Title 24 energy code, including expected 2008 revisions such as peak demand energy management and real-time utilities billing
- ◆ The system can be centrally managed at the building, campus and/or district level via the internet
- ◆ The system is software-based rather than hard-wired, so ongoing software updates keep the system from becoming obsolete

### For facility managers, it's...

- ◆ Automated
- ◆ Energy-saving
- ◆ Flexible

- ◆ Lighting control is computerized like other building automation systems, enabling central management and system integration
- ◆ The system can reduce lighting energy costs by up to 40% by automatically dimming and brightening lights (in imperceptible increments) in response to changing daylight levels in each room
- ◆ Lighting zones and scenes are easily re-configurable via software to meet changing space requirements — no re-wiring necessary

### For maintenance crews, it's...

- ◆ Uncomplicated
- ◆ Pro-active
- ◆ Time-saving

- ◆ The system consists of a small number of standardized parts, simplifying maintenance and minimizing spare parts inventory
- ◆ Two-way communication between ballasts and management software means that problems are identified immediately — and can often be fixed before a staff member notices and complains
- ◆ Management software increases the likelihood of "one-trip fixes" because printed work orders tell maintenance crews exactly what replacement lamps or parts they should take with them to the site

Rev. 10-06