Case Study: Rural Oregon School

Idaho Power, Sterling Bank team up with Nyssa Schools

Selected as one of six "Celebrating School Success" award winners in 2005 by the Oregon Department of Education, the small, rural Nyssa School District is working diligently to provide a quality education for its students.

That good news about the education award came at a time when the community of 2,163 was facing many challenges regarding school funding. The city, located along the Snake River on the Idaho border in Malheur County, is primarily an agricultural community recognized for its russet potatoes, sugar beets and onions. About 20 percent of families and 23 percent of the population are below the poverty line.

Nyssa Elementary expects to save 73% of the electricity used for lighting with this project.

While excellence in education is the priority for school districts, Oregon school boards must also compensate teachers and staff, maintain physical school facilities and pay the operating bills. In Nyssa, building maintenance is often deferred because of lack of funds.

When the funding opportunity came along in 2006 for Nyssa to implement some energy efficiency projects at the elementary and high school, the Nyssa School Board jumped on it.

The Nyssa Elementary School upgraded its lighting to energy-efficient T5 compact fluorescents with electronic ballasts and installed occupancy sensors. The $12,000 project is expected to save 73 percent of the electricity used for lighting at the school, in addition to providing a better quality and brighter light.

"Everybody loves it!" said Facilities Director Vince Perez. "The gym is brighter and the color is better."

At Nyssa High School, 400-Watt metal halide lamps were replaced with new fixtures, T5 lamps and electronic ballasts. The $39,600 project is expected to save 64 percent of the electricity used for lighting at the school and provide a better quality and brighter light.

In addition, the School Board upgraded the control and ventilation system. The prior ventilation system did not have adequate amounts of fresh air entering the classroom. With the upgrade, more fresh air is used to flush out the classrooms which helps keep the students alert. Energy savings occur because less energy is used to cool the classroom air.

Williams Oil Settlement

Nyssa School District became a candidate for the energy efficiency projects when funds became available in 2005 through the Williams Oil Settlement.

The Oregon Department of Energy administers the $1 million Williams Oil Settlement. The settlement was the result of a coordinated investigation into allegations of price manipulation

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and antitrust violations in the Western power market during the energy crisis of 2000-01 by the attorneys general of Oregon, California and Washington.

The Oregon Department of Energy identifies and distributes the funds to school facilities with high-energy use. Nyssa School District qualified. The Williams Oil Settlement funds were used to pay a portion of the cost of the two high school projects and the elementary school energy project.

Other funding

In addition to the Williams Settlement Funds, the Nyssa School District lighting projects also qualified for the Oregon Department of Energy's Business Energy Tax Credit Program. The School District partnered with their utility and a private business that were able to assist so Nyssa School District could benefit from the tax credit program.

Idaho Power and Sterling Bank partnered with the Nyssa School District. The utility and bank served as the school district's "pass-through" partners. Idaho Power accepted their tax credit eligibility for the elementary school project. Idaho Power paid the Nyssa School District a lump sum of $3,660 when the project was complete. In exchange, Idaho Power took the 35 percent tax credit of $4,200 that the project qualified for.

Sterling Bank accepted the tax credit eligibility for the high school lighting project. Sterling Bank paid the Nyssa School District a lump sum of $10,098 when the project was complete. In exchange, Sterling Bank took the 35 percent tax credit of $13,860 that the project qualified for.

The energy projects will also reduce monthly electric bills. Nyssa Elementary will save about $2,800 annually; Nyssa High School will save nearly $7,000 annually. In addition to those on-going savings, Idaho Power provided the school district with a one-time incentive payment of just over $5,600 for the Elementary School project.

Thanks to the Williams Oil Settlement, Idaho Power, Sterling Bank and the Oregon Department of Energy, Nyssa School District students and staff have brighter, more uniform lights and better air quality. The projects save both electricity and money. And, that's a winning situation for this small, rural community in Eastern Oregon.

Lighting Considerations for School Gyms

There are a number of issues that should be kept in mind when considering fluorescent lighting for school gyms (or other high ceiling spaces) lighting, according to Greg Churchill, Energy Analyst with the Oregon Department of Energy's School Team. "School districts should consider these factors if choosing T5 fluorescent lighting rather than the traditional metal halide or mercury vapor lighting."

Pros

- T5s can reach full light output quickly when they are first turned on and after the light is turned off then on again. Metal halide (MH) or mercury vapor (MV) lights do not.
- The light output from the T5 degrades slightly over time while the MH light levels drop significantly.
- Staff can wait for several T5s to fail before replacing lamps whereas when one MH fixture fails it needs to be replaced immediately.
- T5s provide better color output (referred to as color rendition) than MH or MV lights. Poor color rendition can make people and objects look dull.
- Cracked T5s do not emit UV radiation that can burn the eyes of students and staff. Broken MH lights can present a health hazard.
- T5s can be turned on and off quickly without effecting light levels while MHs can not. T5s can even be controlled using occupancy sensors.

Cons

- Staff must change several T5s compared to one MH. This may take more time as well as require a high lift.
- T5s are expensive compared to T8s and MHs. Prices are expected to drop over time as they did with T8s after they were introduced.

Fluorescent Lamps

T12 - 1.5 inches in diameter T8 - 1 inch in diameter T5 - 5/8 inch in diameter

New technology allows fluorescents with smaller diameter to provide brighter light using less electricity.