

## CASE STUDY



# UVC Goes to School

**UVC Emitters™ enhance the hygiene, and reduce illness and absenteeism at a California preschool**

BY ROGER STAMPER

**A**t the Crescent Avenue Christian Preschool in Buena Park, Calif., director Marcia Sevilla is proud of their conscientious approach to health and hygiene.

"Illness prevention is a very high priority for us," Sevilla explains. "We have a book on germs that we review with the children, we talk about it a lot, and we're always making sure they wash their hands properly."

In addition to these traditional precautionary measures, this preschool uses another, more hi-tech tool for ensuring a healthy environment: ultraviolet-C, or UVC lights, installed in the air-handling system. Since installing the lights in the summer of 2002, Sevilla reports an estimated 20 percent drop in absenteeism among students and a 50 percent drop among teachers.

"Last winter was an especially bad flu season for Southern California schools," Sevilla recalls. "I can say very confidently that throughout this season, our students and teachers have had some colds, but not the humdinger fevers and flus that the other schools in our area have

consistently experienced."

Sevilla first learned about the UVC lights from a parent who had installed the devices in her home air-conditioning system in the hope of alleviating her young daughter's severe allergy-asthma symptoms. When she found that the lights were indeed effective, she suggested that Sevilla consider using the devices at the school.

## UVC benefits

Ultraviolet-C energy has a germicidal effect on all types of microbes, including bacteria, mold and even the tiniest viruses, which are far too small to be captured by regular air filters. For many years, UV light has been used for water disinfection, but the older technology did not work effectively in air-handling systems.

The mid-1990s marked the arrival of a new-generation UVC device engineered specifically for hvac systems, capable of delivering the high output needed to perform in cold and moving air. By killing or deactivating a very high percentage of the infectious disease particles that



UVC technology has proven successful in reducing bacteria and viruses.

would otherwise circulate through the Crescent Avenue preschool classrooms, the lights can greatly reduce the spread of colds, flu, chicken pox, measles and other common illnesses.

Sevilla notes that another reason for installing the lights was mold prevention — a huge concern for school administrators everywhere. When an hvac system is in the cooling mode, its cold and dark environment provides a fertile breeding ground for mold.

These microbes grow and multiply on coil and drain pan surfaces and are then ventilated through the building, potentially causing allergic reactions that can range from sneezing and watery eyes to serious upper respiratory conditions. As long as the system runs, this vicious cycle continues. UVC energy ends the cycle by stopping mold at the source.

"We have a number of asthmatic students who bring breathing apparatus to school, so it's very important for us to make sure the air is as healthful as possible," Sevilla explains. "We feel the UVC devices have made a real difference. We've also found that some of the children who are borderline asthmatic are not tipping in that direction because of the cleanliness of the environment."

In addition, Sevilla says a teacher who has been with the school for many years has noticed that her chronic cough subsides during her hours spent at school, an improvement that has coincided with the installation of the UVC lights.

Sevilla adds, "The air even smells fresher and cleaner since installing the lights. I have many friends who direct schools. Sickiness is everywhere, but you can limit it by practicing good hygiene and by using devices like this."

The lights are installed in an air-handling unit serving the school's five classrooms. They require virtually no maintenance, she notes, except for an annual changeout of the tubes, a procedure much like changing a light bulb.

## Absenteeism and cost issues

The Crescent Avenue Christian Preschool is a year-round school with 70 students ranging in age from 2½ to 5½ years. As a tuition-based preschool, funding comes from the enrollment and from supplementary fundraising efforts for special needs such as playground improvement. Absenteeism, though a concern, is not a financial issue.

In the public school arena, however, funding is related directly to attendance. High absenteeism ultimately means less money for the school. Many studies have found that poor IAQ leads to greater absenteeism and lower productivity. Thus, educators need to recognize that good school IAQ isn't just a good idea for health reasons, it's also essential to the bottom line.

UVC devices are a win-win proposition for schools, because they help achieve this goal, as we've seen with Crescent Avenue Preschool and many others. The lights also offer further savings through reduced operational expenses. UVC devices have a proven track record in helping users reduce energy consumption and operational costs. By keeping

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coils free of mold and organic build-up, the lights bring hvac systems back to peak efficiency. Benefits include improved airflow, temperature and humidity control, the elimination of coil cleaning programs and significant energy savings. ♦

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