

The Air Conditioning, Heating and Refrigeration NEWS

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Shining the light on ductwork mold may cure building illness

CERRITOS, Calif. — A hypersensitivity to mold, along with milder sensitivities to pollen and other allergens, reportedly turned one woman's home



into a nightmare.

Over a period of months, Beverly Hills resident Benedicta Oblath developed chronic sinusitis, bronchial asthma, and allergy symptoms so severe that she

became virtually incapacitated.

"I suspected that something inside my own house was slowly poisoning me, but I didn't know what it was or how to eradicate it," she said.

An IAQ specialist conducted air sampling at the Oblath home and discovered high levels of mold and some fiber glass particles — indications that something was wrong with the hvac system that had been installed two years earlier, during remodeling of

the five-bedroom residence.

In an attempt to solve the problem, Mrs. Oblath and her husband Geoffry contacted various consultants, whose suggested remedies ranged from tearing down walls (to clean out mold and other pollutants) to them moving away temporarily.

During their investigations, the Oblaths learned of Steril-Aire's

"UVC Emitter," a germicidal UV light source that the company claims can kill surface and airborne microorganisms.

"Mold and mold products are the most common allergens, and they exist in all air-handling equipment to one degree or another," said Dr. Robert Scheir, vice president of technical development at Steril-Aire.

"With allergic individuals, these spores initiate a chain of reactions that can lead to congestion, breathing difficulties and — as in Ms. Oblath's case — even asthma and other complications."

Mold the culprit

The World Health Organization has estimated that mold may account for 40% to 60% of IAQ problems; other experts say the figure may be higher.

Steril-Aire teamed with Temperature Equipment Corp., an hvac contractor and service company based in Granada Hills, to engineer a solution to the Oblaths' problem.

Michael Holm, a sales supervisor with the contractor, said, "We found that the existing system design promoted mold buildup, despite prior removal of humidifiers thought to be the culprit.

"I couldn't stop coughing, I couldn't sleep at night. It was like a horrible respiratory flu that I just couldn't shake."



DR. ROBERT SCHEIR (left) looks on as Michael Holm installs a UVC Emitter in a residential a/c system.

"We also found improper duct repair after the removal of these humidifiers. This was the source of loose fiber glass in the airstream.

"With Steril-Aire's help, we analyzed the situation and decided to place germicidal UVC Emitters in the coil plenums, where the UV light could effectively irradiate the coils and drain pans to kill the mold that was building up heavily in those areas."

The home's a/c system has three separate zones, enabling the Oblaths to isolate certain areas if desired. Two zones were equipped with three lamps each; the third smaller zone required only two lamps.

"We also felt we should remove the old leaking and potentially contaminated ductwork and replace it to be assured it would be completely sealed," Holm said.

As Temperature Equipment planned the renovation of the a/c system, Mrs. Oblath's condition worsened by the day.

"I couldn't stop coughing, I couldn't sleep at night. It was like a horrible respiratory flu that I just couldn't shake. I was really at the end of my rope."

Musty odor gone

The contractor replaced the ductwork and filters and installed the UVC Emitters. Mrs. Oblath said, "Within just a couple of days, I noticed a dramatic difference in the house.

"The air smelled as fresh as mountain air. The musty odor we had previously noticed was gone. Then my symptoms began to ease up.

"I stopped coughing, I was able to sleep through the night. As the days went by, I continued to get better and better."



GLOWING TUBE at the business end of the UVC Emitter.

From a state of extreme debilitation, she rapidly improved to the point where she was able to do a full, rigorous workout six days a week.

"I really feel like these people saved my life."

To prevent any possibility of mold buildup, the Oblaths run the fan (and, thus, the UVC lamps that are tied into the system) on a round-the-clock basis.

The emitter's tubes are expected to last up to a year, making service requirements minimal.

An added dividend: Running the fans continuously has greatly improved the general cleanliness of the house and has reduced the need for dusting.

More on installation

Holm reports that Temperature Equipment has now installed the emit-

ters in several homes and commercial buildings.

"It certainly demands consideration in any home or building where there are allergic or asthmatic occupants," he said.

"Also, we're finding that the product is not limited to severe problem situations. It's being used on a preventive basis, too — to help prevent the spread of diseases such as flu and colds."

Holm said the emitters are not difficult to install and may be used in a variety of locations to maximize "kill rates."

Installation sites include mixed-air plenums or return ducts, before and/or after evaporator coils, and anywhere in the supply side of the system.

UV light in the "C" band (200 to 280 nanometers) has been used for decades to kill harmful microorganisms of all types.

However, UVC sterilization has not been a viable technology for microbial control in air-handling systems, because the output and stability of conventional UVC lamps — thus their ability to kill germs — is drastically reduced by the hostile environments of cold and/or moving air.

But Steril-Aire's patented UVC Emitter can actually increase its output in relationship to cold and/or moving air, the company said.

It produces more than five times the radiant output of conventional UVC lamps under typical hvac conditions, along with exceptional plasma stability and a broadband UVC wave form, for effective and efficient sterilization of a broader range of species.

For more information, contact Steril-Aire USA Inc., 11100 E. Artesia Blvd., Suite D, Cerritos, Calif. 90703; 310-467-8484; 310-467-8481 (fax).

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