Market Focus: Cleaning for Health

BY ROBERT KRANITZ

If there is one expression that has become the motto, if not the marching orders, of today's professional cleaning industry, it is "cleaning for health." This all-important phrase was likely first coined by Dr. Michael Berry in his precedent-setting book, Protecting the Built Environment: Cleaning for Health. Since then, this concept has become powerful and significant—and rightly so.

At one time, our main purpose was to clean for appearance. But after Berry's book was published, our industry was forced to reevaluate its primary function. We have now realized that our work and what we do for our end-customers is far more meaningful than just keeping floors shiny, counters wiped off, and carpets vacuumed. What we do helps keep people healthy.

While these changes were taking place, cleaning was also moving toward center stage in our industry. Cleaning to protect human health means reducing the negative impact cleaning can have on the health of cleaning workers and building occupants as well as protecting the environment. After all, what's the point of having clean, sterile surfaces if people get sick because of the cleaning products used?

Around this same time, frightening public health scares, such as SARS, norovirus, MRSA, and other diseases, became prominent in headlines and news coverage throughout the world. Doctors and public health professionals were unable to stop the spread of these diseases and infections with vaccines or medications. Instead, cleaning professionals were called upon to provide health-based solutions aimed toward minimizing outbreaks and cross-contamination. In fact, one presenter at a Cleaning Industry Research Institute—CIRI—event even suggested that due to the connections between cleaning and health, the professional cleaning industry should be placed under the umbrella of the health care industry.

The link between cleaning and protecting human health is now a well-established part of the cleaning industry, lifting both our industry's image and confidence and giving cleaning professionals a definite role and purpose beyond just tidying up facilities. However, this new role has also caused us to face a serious dilemma. How can we tell if we are cleaning to protect human health? As we all know, appearances can be deceiving when it comes to cleanliness. Fortunately, evolving methodologies can prove that visually clean surfaces are safe, healthy, and hygienically clean.

Fireflies, ATP, and 'Really Clean'

Over the years, several methods have been used to test for the presence of bacteria and microorganisms that can possibly harm human health. Before 1877, scientists attempted to detect and study bacteria growth by containing them in glass jars or covered bowls of broth. However, it was often difficult to separate the bacteria into colonies and the broth, and exposure to the air sometimes contaminated the samples.

The most powerful early method to test surface contamination was the Petri dish, also known as "the dish that changed the world." Julius Richard Petri, a military physician, took a relatively flat dish, invented an agar (a growth medium containing nutrients) to create a solid medium at the dish's base, and placed a slightly larger glass on top that fit over the sample dish. This design protected the sample, allowing it to grow in isolation. Surfaces to be tested are swabbed and any transferred bacteria and microorganisms are then applied to the Petri dish. If bacteria or microorganisms are present, they will be noticeable under a microscope after a few days. The Petri dish process is a simple method that is still in use.

However, using a Petri dish presents challenges for the professional cleaning industry. "The first problem is time," says John Richter, technical director for Kaivac, Inc. experienced with adenosine triphosphate (ATP) testing devices. "In most cases, if we need to determine if a surface has contaminants, we need the information now and not in a few days. [Additionally,] trained
technicians are usually needed to swab a surface and conduct the actual [Petri dish] test.”

Fortunately, the emergence of ATP technology has simplified this issue for our industry, although actually, the technology is not new—it is only the rate at which results are available that is new.

ATP technology was first developed about 40 years ago. The way it works is directly tied to fireflies. According to Christopher Contag, a bioluminescence researcher at Stanford University quoted in Bioluminescence: Fireflies and the Future, by Heather Sheldon, fireflies create light within their bodies due to a chemical reaction that depends on the presence of ATP, found in all living organisms. When a surface, such as a counter or restroom fixture, is swabbed and ATP is present, it is a good indication of living organisms being present.

ATP produces a readable light, called a RLU (Relative Light Unit), that is emitted directly proportional to the amount of ATP present. Soiled surfaces usually have higher ATP readings than clean surfaces. While the presence of ATP itself is not necessarily a danger, its existence signals pathogens that could harm human health are potentially present.

Similar to the Petri dish method, early ATP systems were relatively slow. Also, the equipment's computerized technology was expensive, and a trained technician was typically required to conduct the testing. “But in recent years, smaller and less expensive ATP systems have been introduced,” says Richter, “Some [of these systems] are hand-held, but most significantly, some can provide [test!] results in less than 15 seconds, making them very effective for the professional cleaning industry.”

**Beyond Technology**

In addition to ATP technology other health-based cleaning programs and systems have also evolved in recent years.

Among the most ISSA’s notable are Cleaning Industry Management Standard (CIMS) and CIMS-Green Building (GB) certification programs.

“CIMS lays out a management framework designed to facilitate the efficient delivery of cleaning services, therefore assuring that certified organizations are capable of meeting their customers’ cleanliness expectations and contributing to the facility’s overall health,” says ISSA Facility Service Programs Account Executive Plamena Todorova. “The CIMS-GB designation provides all of the pieces to the green puzzle to help organizations develop and deliver a comprehensive green cleaning program. Using cleaning chemicals and products that comply with current green criteria can, for example, significantly improve the indoor air quality of a facility by reducing respiratory and other irritants. The CIMS-GB criteria are specifically based on the green cleaning requirements under the USGBC’s LEED:EBOM [U.S. Green Building Council’s Leadership in Energy and Environmental Design for Existing Buildings Operations and Maintenance] green buildings rating system. In fact, a CIMS-GB certified cleaning provider can partner with its customers to help them achieve the green cleaning credits under LEED:EBOM.

**A Crystal Clear Future**

According to Richter, it is easy to see the path that the professional cleaning industry has embarked on. “We are on a mission to prove the effectiveness of our services,” he says. "Whether it is through the use of technology or cleaning ‘best practices,’ the end game is the same: cleaner, healthier facilities.”

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