



# Think *Small* for *Big* Benefits

**A**ccording to one industry expert, many cleaning workers are “Typhoid Marys”: rather than cleaning buildings effectively, they *spread illness* due to poor procedures, equipment and habits.

Why? These workers and their managers are thinking *big* when they should be thinking *small*. This goes far beyond cross-contamination issues to the very essence of why we clean.

Cleaning for *appearance* by removing “big” visible soil rather than cleaning for *health* by removing “small” invisible bacteria, such as dust particles under 10 microns, airborne aerosols, excess moisture and other micro, bio and chemical contaminants, has contributed largely to the problem of unhealthy indoor environments.

While unhealthy buildings lower productivity, raise operating costs, and increase absenteeism, healthy buildings resulting from thinking *small* can yield big benefits.

For example, Dr. Leonard Krilov implemented a deep cleaning/disinfecting regimen at a day care center in Bellmore, New York, then assessed the affect on children in the facility. By monitoring health indicators and attendance, Krilov demonstrated that deep cleaning, including disinfecting the childrens’ toys after use, reduced illnesses by 24%, doctor visits by 34%, antibiotic usage by 24% and absenteeism by 46%, noted the Journal of Infection Control and cited by the Ashkin Group.

In an East Coast school district, healthier cleaning practices in 17 buildings raised student attendance between .5 to 2 percent per building. For every 1 percent increase in attendance, the school district received \$225,000 yearly in state

aid. Regular disinfection of desks, doorknobs and other “touch points” plus switching to efficient, high filtration vacuums were key aspects of the program.

At a well-known software company, a highly allergic employee got rid of the air cleaner she previously ran 24 hours a day in her office because she no longer needed it after cleaning crews switched to vacuums with better filtration.

A New York school saved 15 percent on its supply budget by removing eight “toxic or hazardous” substances from the school’s cleaning operation.

At a medical catheter factory, the catheter tube rejection rate from airborne contamination was reduced from 10 percent to 4 percent when the cleaning contractor implemented critical environment backpack vacuums with HEPA filtration—a 250 percent improvement.

According to researchers William J. Fisk and Arthur H. Rosenfeld in their report, *Estimates Of Improved Productivity And Health From Better Indoor Environments* published in Indoor Air, Volume 7, pages 158-172: “existing technologies and procedures can improve indoor environments in a manner that significantly increases health and productivity...For the U.S., we estimate potential annual savings and productivity gains of \$6 to \$19 billion from reduced respiratory disease; \$1 to \$4 billion from reduced allergies and asthma, \$10 to \$20 billion from reduced sick building syndrome symptoms, and \$12 to \$125 billion from direct improvements in worker performance.”

**BY JIM HARRIS, SR., CBSE**

Department of Energy studies suggest that improving building environments would reduce health care costs and sick leave while increasing worker performance for a productivity gain of \$30 to \$150 billion annually.

So how can your organization think *small* and win *big* by adopting healthier cleaning practices in a practical way?

Create a system that maximizes the efficiency of labor, features micro, chemical and bio-contaminant removal as a foundational principle, and is trainable and measurable.

Start by determining your cleanable square footage. If you don't know what this number is, you cannot effectively deploy workers efficiently to cover the needed amount of space—and remove the necessary amount of soil—within budget.

Next consider training your workers as team specialists. Specialists get more work done in less time, and tend to produce better, safer and healthier results through sharper focus. Seminars are available that teach workloading specialists to optimize labor, speed and quality. Specialists enable increasing the frequency of cleaning—and therefore facilitate more particulate & bio-contaminant removal for a healthier environment.

Select supplies, tools and procedures that optimize productivity while minimizing environmental contamination. Here are a few examples:

- Place generous barrier mats at outside entrances to prevent soil and the contaminants (chemicals, pesticides, pollen, etc.) that stick to it from entering the building. Up to 80 percent of soil and contaminants enter a building from the outside.
- Vacuum instead of sweeping or dust mopping. Vacuuming hard floors using an efficient vacuum and filtration system will remove more soil than dust mopping, and reduce airborne dust and damp mopping.
- Use microfiber cloths or disposable dusting sleeves for dusting. Microfiber captures and holds more dust than conventional materials without the use of chemical treatments. Disposable dusting sleeves enable throwing out the dust with the used sleeve rather than shaking out a duster and contaminating the air.
- Use a two-step process with antimicrobial products in soiled areas and allow 10 minutes dwell time. Many soils deactivate disinfectants and must be removed before antimicrobial products can work. Disinfectants need to dwell or set for 10 minutes to achieve the label kill-rate, so consider applying disinfectant *first* during restroom clean-

ing. Also, since disinfectants are pesticides, use only when and where required. Consider using less-toxic hydrogen peroxide-based sanitizing products where applicable.

- Use microfiber flat mops to maximize bacterial removal, cleaning and productivity. Microfiber has been shown to remove 96 percent of bacteria using water only (Daniels & Associates, Toronto).
- Clean and dry areas where water collects or condenses such as refrigerator and air conditioner pans and air cleaners/humidifiers to prevent microbial growth.
- Use a dehumidifier in damp areas.

Stay vigilant and in touch with workers. According to maintenance industry analyst, Richard Shaw: "One of the main principles of training that is often violated is that a trainer should observe the worker in action and not just view the results. Even after people are trained, this procedure needs to continue. Adjustments need to be made, and routines can deteriorate because workers want to save time."

### Tight Budget? Clean More

While budget crunches prompt many managers to short-cut maintenance and cleaning to save money, this measure may undermine the health of building occupants and raise long-term costs. According to ASHRAE: "Maintenance cut-backs can lead to IAQ problems (ALA 1997; Siebel et al. 1996). The costs of the associated health effects, discomfort and loss of productivity may be far greater than the presumed savings from the avoided maintenance (Fisk and Rosenfeld 1997)."

While cutting corners and reducing attention to detail and the invisible "small" contaminants, is common with tight budgets, just the opposite approach may be needed to save money in the long term.

According to Fisk and Rosenfeld: "...calculations indicate that the potential financial benefits of improving indoor environments exceed costs by a factor of 8 to 17."

Taking the steps to address the "small" soil will help ensure your facility not only looks clean but also stays healthy—and wins big.

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