

GREEN CLEANING

GUIDE TO SUCCESS

The right vacuum is certainly critical for removing contaminants and soil. Cleaning for Health® is much more than products & equipment. It's a complete bundle - planning, products, and performance.

- Larry Shideler, ProTeam CEO





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You may have heard that there are no green cleaning standards, or that green products are too expensive or not effective. You might be thinking that this whole “green cleaning” thing is just a marketing ploy or a fad, or maybe that it is something that will happen in the distant future.

This booklet has been produced to help dispel these myths, and provide you with an understanding and some tools to help you deliver a level of service that creates a healthier facility while minimizing harm to people and the environment.

The information in this booklet is applicable to every type of facility, including commercial office buildings, schools, hospitals, government buildings and industrial facilities. Whether you are a manager of an in-house staff or a cleaning contractor, our goal is to provide you with the information you need to make informed choices as you pursue a green cleaning strategy.

One of the most important points to take away from this booklet is that green cleaning has become easy to implement. The variety of effective and affordable green products and equipment has increased dramatically in the past few years. And, the demand for green cleaning services continues to expand. This has been led by organizations such as the *US Green Building Council, Collaborative for High Performance Schools, Hospitals for a Healthy Environment*, many Fortune 500 companies, as well as federal, state and local government agencies. Green cleaning has become main stream.

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Partners In Indoor Air Quality Education

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Understanding Green Cleaning

Let's start with some definitions:

1) Green cleaning may be most simply defined as:

"Cleaning to protect health without harming the environment."

*Stephen P. Ashkin
The Ashkin Group, LLC.*

2) The federal government, through Executive Order 13101 has defined "Green" as:

"...products and services that reduce the health and environmental impacts compared to similar products and services used for the same purpose."

Notice that in both definitions, health is mentioned before the environment. This is intentional. Green cleaning is not a feel good fad, or just for tree-huggers. We believe that improving the indoor environment to improve health is so important, we've partnered with the American Lung Association to educate and promote these issues. This commitment is the basis of our Cleaning For Health program.

Like all maintenance activities, cleaning has often been seen as simply an expense.

And, like most expenses, the goal has been cost reduction, often through reduction or elimination of services.

Cleaning for "acceptable appearance" or "minimal occupant complaints" is too often the accepted standard. Yet cleaning has a tremendous impact on the overall performance of the facility as well as its occupants.

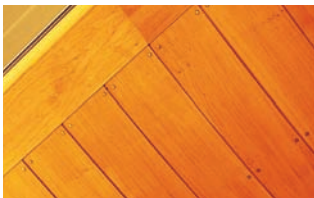
As cleaning professionals, you are well aware of the impact poor cleaning has on the life cycle of surfaces such as carpet, tile, walls, and fixtures, resulting in premature replacement and additional costs.

You may not be as aware of the impact poor cleaning has on occupant productivity, health, morale, and objective measures such as student test scores or attendance. We'll look at all of these a bit later in this booklet.

While the differences between green cleaning programs and traditional cleaning programs are significant, many systems being used now are not necessarily bad or wrong.

"Never doubt that a small group of thoughtful committed citizens can change the world. In fact, it's the only thing that ever has."

- Margaret Meade



The cleaning industry has continually improved the range of products, equipment, and services.

With an understanding of the principles of green cleaning, combined with training and well designed programs, you are in a better position today to dramatically improve the quality of the indoor environment.

Finally, it is important to understand that there ARE standards for green cleaning and the information and tools we provide in this booklet are consistent with those standards.

The United States EPA and GSA have established guidelines for the procurement of green products and services,

The US Green Building Council has developed and implemented a series of standards for new construction and existing buildings – LEED-NC and LEED-EB (Leadership in Energy and Environmental Design for New Construction and Existing Buildings.)

Cities, such as Chicago and Santa Monica and States such as Massachusetts and Pennsylvania have established standards for

procurement; as have major school districts, such as Chicago Public Schools and initiatives in California and other states.

See **Additional Resources** for details and web addresses.

Importance of Green Cleaning

To appreciate the importance of green cleaning, you need to understand the impact cleaning has on a building, its occupants, and the environment.

Cleaning is incredibly important in protecting the building itself, the structural materials, furnishings, mechanical and climate control systems, equipment such as computers and other property. Poor cleaning can lead to shorter than expected life cycles, expensive repair requirements or high replacement costs.

Cleaning is also essential to creating a safe, healthy and productive work and living space for the building's occupants. It may seem obvious, but it bears repeating, many cleaning chemicals are powerful and can be hazardous not only to the person using them, but to the rest of the building population.

References:

Building Operating Costs:

Building Owners and Managers Association
www.boma.org

Stephen Ashkin
The Ashkin Group, LLC.
www.AshkinGroup.com



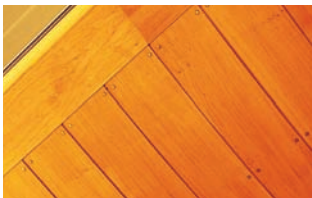


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“Cleaning is a cost effective strategy with two major focuses: Preventing contaminants from entering a facility in the first place, and capturing and removing those contaminants that do enter before they can be a threat to health, property, or economic vitality.”

- Stephen P. Ashkin



For example, incorrect or inadequate cleaning may lead to an insect infestation. This may necessitate the use of toxic pest elimination chemicals, which can linger in the indoor environment; being inhaled or ingested by people with impaired immune systems, pregnant women, children, the elderly and can have negative impacts on the healthiest individuals as well.

Cleaning’s Impact on Health & Performance

Cleaning’s impact is felt in many not so obvious ways, as well. Let’s look at a typical commercial office environment. Consider three areas of impact; Productivity, Litigation, and Marketing.

Scientific studies have documented productivity gains between 0.5% and 7% associated with greener indoor office environments. Most experts agree that 2% is about average. If the average cost per square foot for salaries and benefits is \$130, even a 1% improvement in productivity works out to about \$1.30 per square foot.

This improvement in productivity can more than pay for the cost of cleaning.

Litigation relating to indoor air quality, sick building syndrome, mold and other problems has increased dramatically. The potential for more lawsuits as reports of allergies, asthma, multiple chemical sensitivities and other problems associated with poor indoor air quality is staggering, especially in public buildings. A green cleaning program can be a tremendous asset in creating the healthy environment that can prevent this increase.

Inadequate cleaning of any kind generates complaints. Costs to replace a tenant are climbing - sales, marketing, remodeling, etc. Owners and managers are justifiably concerned about tenant retention.

The leasing market is very competitive. While cleaning has often been looked at as simply an expense, an effective green cleaning program can be used as a powerful tool in this competitive marketplace.



Many companies have embraced the concepts of sustainability and stewardship; they are promoting their efforts to reduce their impact on the environment and create healthier, safer workplaces. These companies have also found that incorporating a green mission is a powerful marketing tool.

Children are more vulnerable to contaminants in the environment as a result of poor cleaning, as well as the dangers of harsh or toxic chemicals.

Pound for pound, children eat more food, drink more liquids and breathe more air than adults. Furthermore, their immune systems are not as developed as an adult's and their breathing rate tends to be much faster, allowing the inhalation of even more contaminants.

This vulnerability is evidenced in a skyrocketing increase in the asthma rate, increasing rates of childhood cancer, increasing behavioral and attention deficit disorders, some of which are being attributed to contaminants from their environment.

In **schools** the evidence is clear; study after study demonstrates the impact of cleaning and indoor environmental quality on students' health, performance, attendance and test scores.

Asthma and allergic reactions have reached levels that are so alarming that they are regularly reported in major newspapers. In 2003 over 14 million lost school days were reported.

At the same time, there is dramatic evidence of the POSITIVE impact improvements in cleaning practices can have on these statistics. After instituting cleaning programs that included the products, equipment and procedures similar to those outlined in this booklet, the percentage of children meeting the minimum requirements of standardized test scores increased by over 25% and attendance increased significantly.

School districts are faced with unprecedented budget cuts and too often look at cleaning as an expendable service. Just as in a commercial setting, the impact of poor cleaning results

References:

Children's health impacts:

Indoor Air Quality & Student Performance
U.S. EPA August 2003

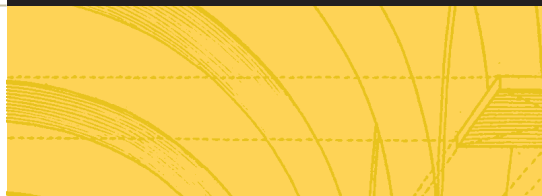
Healthy School Environment & Enhanced Educational Performance - The Case of Charles Young Elementary School, Washington, D.C.
CRI January 2002

Health Care Impacts:

NOSOCOMIAL INFECTIONS: Multidisciplinary Approach to Management
Hans H. Liu, MD, FACP

Hospitals for a Healthy Environment
www.h2e-online.com

Healthcare Without Harm
www.noharm.org

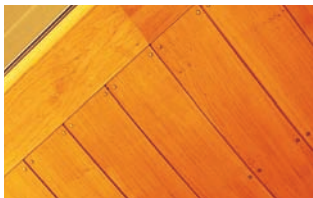
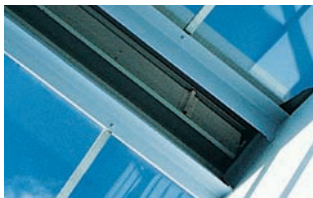




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Training is a critical component of any effective cleaning program. The **Team Cleaning**• program was designed to ensure that all employees are provided specific instructions to properly complete their tasks. (See *Additional Resources*)



in **INCREASED** costs – repairs, unplanned replacement costs and remedial measures to correct problems. A properly planned and monitored green cleaning program can not only improve the health and performance of the school’s students and staff, but can also provide a high level of control and predictability over the maintenance budget.

While the **health care** industry practices a high level of cleaning in critical care areas, it is not immune to the problems associated with typical cleaning standards. Every year over 2 million people contract nosocomial infections, many of these can be traced to inadequate general cleaning practices, contaminated surfaces and poor hand washing. Poor dust control in one part of the hospital can lead to contaminants being transported to other areas.

Organizations such as *Hospitals for a Healthy Environment* and *Health Care Without Harm* are working to improve the cleaning standards of the industry while minimizing the negative impacts on patients, staff and the environment.

Finally, consider the impact on the **custodians** themselves. Powerful chemicals, many with potentially harmful effects, equipment that is not ergonomically designed, matched with little direction and generally insufficient training have led to high turnover rates and astronomical workman’s compensation claims. In fact, insurance costs are often the second highest cost of maintenance after the labor itself.

A properly designed green cleaning program, using safer chemicals, dispensers to protect the user from concentrated products, ergonomically designed back pack vacuums and an effective training program can directly impact two of the highest personnel costs – turnover and Workman’s Compensation.

For a building service contractor, this can lead to increased profitability, for in-house operations it means more tasks can be completed with existing staff or avoiding outsourcing.



Cleaning's Impact on the Environment

It is clear that cleaning's impact on buildings, occupants and the custodian is significant. Over 3.5 million people are employed in the cleaning industry in the United States. The impact our industry has on the environment is equally significant. Consider the amount of chemicals, equipment, paper and materials consumed by our industry.

Every year approximately 6 billion pounds of **chemicals** are used by the cleaning industry. Add in the raw materials and processes used to produce them and that number is increased by a factor of 10 - about 60 BILLION pounds annually.

While these products are important to accomplish our tasks of protecting the health of occupants and the buildings themselves, some of these chemicals are hazardous and can cause serious environmental damage. Furthermore, many of these products are made from non-renewable natural resources such as petroleum, which means that once it is depleted it can never be used by future generations.

Given the huge numbers involved, and the potential impact on health and the environment, it is critical that we choose and use chemicals appropriately.

Over 4.5 billion pounds of janitorial **paper** (towels, tissue, etc.) are consumed each year in commercial and institutional buildings. Much of it is made from virgin tree pulp which requires the cutting of approximately 50 million trees per year.

During production, this paper is often bleached with chlorine compounds, releasing toxic compounds, such as dioxin, into the environment. Dioxins are carcinogenic and considered some of the most deadly man-made substances on earth.

Over 500 million pounds of vacuum cleaners and other powered **equipment** (typically replacements for old or poorly performing machines) are produced every year consuming large quantities of natural resources.

The disposal of these older machines would fill approximately 10,000 tractor trailers making a sizable impact on our landfills.

References:

Employment & product use statistics:

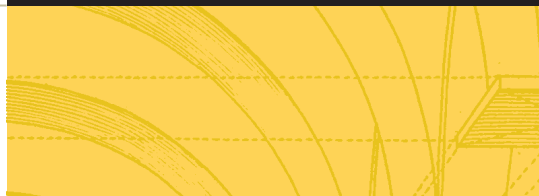
Building Service Contractors Association International:
www.bscai.org

U.S. EPA
www.epa.gov

Human health effects:

Sick building symptoms in office workers: a follow-up study...
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Health effects associated with indoor air pollutants
Proceedings of IAQ 86: Managing Indoor Air for Health and Energy Conservation

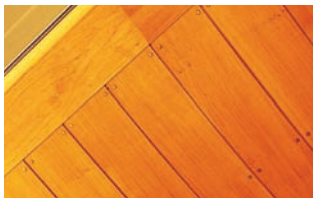




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The longest journey begins with a single step.
-Confucius



Obviously, there are enormous opportunities to reduce the impact on both health and the environment. A well designed, implemented and monitored green cleaning program can address all of these issues, improving the quality of our indoor environment while minimizing potential adverse effects on health and the environment as a whole.

Planning a Project

In many situations the planning process can be quite simple and straightforward:

- Identify the needs and goals of the facility and any unique vulnerability of the occupants, cleaning personnel or the environment (e.g. water use issues, sewage discharge requirements, or air quality issues.)
- Evaluate current products, equipment and procedures.
- Using the guidelines presented in this booklet and the advice of a competent supplier, choose the chemicals, paper products, equipment and supplies.
- Train your staff to follow the new procedures.

- Monitor progress and continually improve the program.

It is important that all the stakeholders in your organization understand and support the changes you are making.

While green cleaning is much more than simply changing a product or two, that change itself is an important step. Replacing a group of traditional chemicals with equally effective, but greener alternatives will provide a safer working environment and begin to improve the overall quality of your building.

Adding appropriate entry mats, and upgrading your vacuum cleaners, as well as vacuuming frequency, can have immediate impacts on reducing the level of contaminants while creating a more comfortable and productive facility.

As the overall “quality of life” improves in your facility, and the occupants begin to recognize the differences, changing to paper with a higher level of recycled content and adding a recycling program become easier and more accepted (in facilities that already have effective



recycling programs – green cleaning is a natural next step.)

In other words, proceeding in a planned, organized and consistent fashion will allow you to make the changes with minimal disruption while maximizing the positive benefits.

Pilot Programs

In organizations with multiple buildings, such as school districts, commercial office complexes, contractors with a diverse customer base or when multiple and diverse stakeholders are present, beginning with a pilot program can be an effective starting point. A pilot program is also useful for evaluating unique situations or requirements.

A pilot program is simply the implementation of a complete program but in a limited area – typically one or two buildings in a complex, or one or two schools in a large district.

The steps involved are similar, but should also include development of a steering committee or leadership team. Identification of the team members is important. The major reason for implement-

ing a pilot program is to gain buy-in from the critical stakeholders.

Some of these include:

- Safety / Health / Environment Manager
- Teachers
- School Nurse
- Parents & Students
- PTO / PTA Representative
- Head Custodian / Cleaning Personnel
- Doctors & Nurses
- Office Manager
- Tenant Representative
- Senior Management
- Union Representative
- People with chemical or other sensitivities

Every organization has an official structure and an unofficial structure. There may be “thought leaders” or other individuals that are looked to for their unofficial leadership. Making them a part of the team, helping to ensure their buy-in, can go a long way in gaining the buy-in from the organization as a whole.

While every new program should start with clear expectations, goals and milestones, it is even

Project Planning

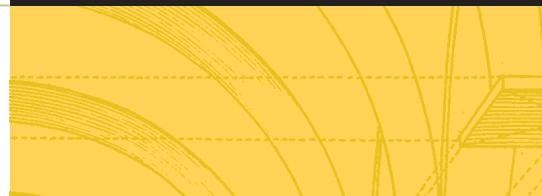
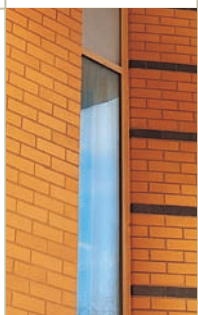
Implementing any project involves walking a fine line between planning and “just doing it”.

We’ve all heard the axiom “The failure to plan is planning to fail.” On the other hand, many projects never get off the ground as a result of “analysis paralysis.”

Your project, whether a pilot or a full scale program, should be viewed as a process. Recognize up-front that it will change over time. You will gain experience, identify new opportunities, and find new solutions as time goes by.

- Start with realistic goals that can be measured.
- Do not aim for perfection, but rather for improvement.
- Measure results and modify the program to make continuous improvements.

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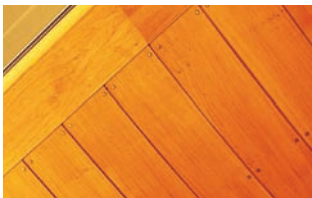
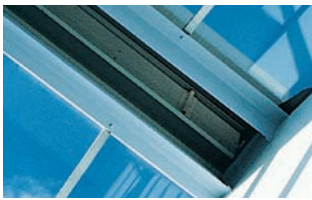




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“The world will not evolve past its current state of crisis by using the same thinking that created the situation,”
- Albert Einstein



more critical when implementing a pilot program. Whether a green cleaning program or a new computer system; more pilot programs have died as a result of unclear expectations or poorly defined measurements than any other cause.

Setting a clear method for measuring success and establishing an end point will provide the best chance for moving forward at the completion of the pilot.

Communication is critical as well. Countless post-mortems have highlighted the need for better communication for a successful project. Assign one individual as the communication point person. Provide access to the tools and facilities for them to properly communicate within the team, as well as with the general population, and establish a consistent means of frequent communication.

Not only will you be in a better position to highlight success, but questions can be answered in a timely fashion, preventing negative rumors and whisper campaigns from developing.

The final point regarding pilot

programs is that they should not last indefinitely. There should be a clearly stated time period for the test and it needn't be too long. Generally, most organizations find that start-up and fine-tuning takes about 30 days.

Once the program is up and running, results should be seen in another 30 to 60 days. Within that time, they are able to demonstrate that even if the building was already clean, that the change to safer products, more responsible use of paper products and better equipment does NOT add to the cost (in many cases, implementing a well designed program REDUCES costs.)

Then, implementing the program on a company or district wide basis becomes relatively straightforward.

Choosing Products, Equipment, and Supplies

Far too often, green cleaning is sold as simply replacing one product or piece of equipment with a “green alternative”.

Usually, a traditional cleaner is replaced with an environment-



ally preferable alternative. It certainly is important to look for cleaning chemicals that are made from less hazardous and renewable natural ingredients, relieving the pressure on limited, non-renewable (often petroleum based) raw materials. However, an effective green cleaning program is much more than this.

An effective program includes not only the cleaning chemicals, but equipment, tools, entry mats, recycling containers, janitorial paper, trash can liners and accessories.

However, one of the most frequently overlooked issues and of equal importance to the products themselves are the appropriate procedures, effective training and support services.

The following recommendations represent the product standards and requirements for green cleaning products from the **US Green Building Council's LEED for Existing Buildings rating system**, the **Collaborative for High Performance Schools' Operation & Maintenance Manual**, **Hospitals for a Healthy Environments' Green Guide for Healthcare**, as well as a number

of Federal, State and Municipal efforts including those from **Massachusetts, Pennsylvania, Chicago and Santa Monica.**

Cleaning Chemicals

For general purpose, bathroom, and glass cleaners, look for products that have been "certified" to meet the **Green Seal GS-37** standard. Product categories not covered by GS-37 should conform to the **California Code of Regulations** maximum allowable VOC levels.

Use concentrated chemicals, with effective dispensing systems to minimize chemical exposure to custodians and other building occupants. Dispensers are also an effective tool to ensure proper dilution, ensuring consistent performance, preventing waste, over use and saving money.

Look for metal-free floor finishes that have demonstrated durability to minimize the need for frequent re-coating or stripping.

Finishes that eliminate or reduce the need for burnishing are also preferred, as the burnishing process creates a large amount of fine dust particles that can

References:

US Green Building Council:
www.usgbc.org

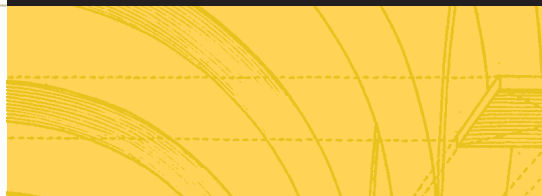
Collaborative for High Performance Schools:
www.chps.net

Hospitals for a Healthy Environment:
www.h2e-online.org

Green Seal:
www.greenseal.org
Green Seal is a not for profit environmental standard setting organization that has no financial interest in any particular products. Their standards are widely used and highly respected both for their technical competence and consensus-based development process.

California Air Resources Board/ California Code of Regulations (CCR)
Title 17 CCR Section 94509
www.arb.ca.gov/consprod/regs/Cpreg.doc

Ergonomic comparison of backpack & upright vacuums:
Battelle Memorial Institute, University of Ohio, Columbus 1998

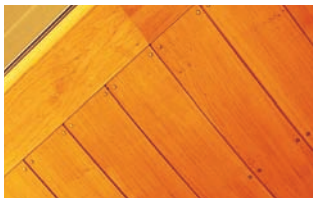




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Ergonomic design and ease of use are every bit as important as amps and airflow. ProTeam backpack vacuums have been designed to help prevent injury as well as improve performance through industry leading ergonomics and intuitive operation.



contaminate indoor air, affecting occupant health and damaging delicate electronic equipment and building surfaces.

Regular hand washing is important for protecting health and high quality hand soap should be chosen.

Most green cleaning programs however discourage the unnecessary use of anti-microbial containing hand soaps, except in certain applications (health care and food service, for example).

Equipment

Equipment should be chosen that improves productivity, prevents injury to the user and effectively captures, removes or prevents the introduction of contaminants into the indoor environment.

ProTeam is the only vacuum manufacturer partnering with the American Lung Association to promote and advance the issues surrounding the impact vacuuming has on improving indoor air quality. Our backpacks, hip vacs, canisters and uprights are ergonomically designed and are constructed for

years of use in commercial settings.

Our unique Four Level Filtration System® ensures the removal of irritants and contaminants while reducing the amount of daily dusting required in your facility.

Carpet extractors should remove enough of the moisture and soiled solution to ensure carpets are dry within 24 hours. This will minimize potential resoiling, slip-fall accidents and growth of mold and mildew.

Look for floor scrubbers that effectively minimize the use of water and chemicals. This helps conserve resources, help floors dry faster, reducing the potential for slip-fall accidents and can have a dramatic impact on cleaning rates as well.

Floor polishers should have active vacuum attachments to minimize the introduction of fine dust particles into the air while buffing or burnishing.

Paper & Liners

For most people, chemicals are the first products to come to mind when they think of buying



green products, but paper and plastic trash can liners are at least an equally large issue.

The United States Environmental Protection Agency (EPA) has developed a set of purchasing guidelines for government agencies with recommended levels of recovered and recycled content called the Comprehensive Procurement Guidelines; the same standards adopted by most other green purchasers.

The EPA recommendations for paper and trash can liners commonly used in the cleaning industry are listed below. Content levels should be read as X% recovered fiber (RC) including a minimum of Y% post-consumer fiber (PC).

Item	PC Fiber %	RC Fiber %
Toilet Tissue	20-60	20-100
Paper Towels	40-60	40-100
Paper Napkins	30-60	30-100
Facial Tissue	10-15	10-100
General Purpose Wipers	40	40-100
Plastic Liners	10-100	10-100

While these guidelines are not law in a commercial setting, they are an excellent starting point as you begin to develop your own green cleaning program.

In addition, most green cleaning programs recommend the use of large rolls for janitorial paper products. Hand towels should be dispensed from “hands-free” paper towel dispensers to reduce the potential for cross-contamination.

And many green cleaning programs encourage the use of recycled paper that is manufactured without the additional use of chlorine during the bleaching process, termed Process Chlorine-Free.

Entry Way Mats

Entry way mats are available in a staggering variety of quality and materials. Be sure to select high quality mats of sufficient length (typically 10-12 feet) that are designed for your climate and traffic load.

To be effective, matting should be placed inside and outside every building entrance.

References:

US EPA Comprehensive Procurement Guidelines:
www.epa.gov/cpg/

“Entry mats are often chosen based on lowest price and their cleaning and maintenance neglected. However, it costs much less to prevent the entry of dirt and contaminants than it does to remove them later.”

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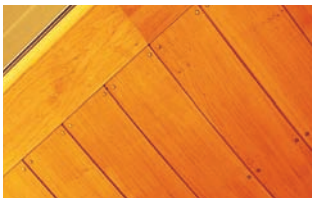




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The Integrated Pest Management Institute of North America is a non-profit organization promoting the safer prevention and control of indoor pest infestations.
- www.ipminstitute.org



Regular vacuuming and cleaning of entry mats is a critical component in preventing the entry of contaminants into your facility.

Other Tools

Finally, there are a myriad of tools and accessories used in daily and specialty cleaning that offer opportunities to positively impact your green cleaning program.

Micro-fiber cloths and flat mops can effectively replace traditional paper or cotton wipers, rags and mops. Micro-fiber cleans more effectively, reduces the use of water and chemicals and can be laundered many more times than traditional cloths or yarns, saving money and reducing waste. Micro-fiber does not support the growth of mold or mildew, helping to prevent the “stinky closet” syndrome.

Many plastic products are still made from raw materials with no recycled content. Brooms, brushes and buckets with recycled content will perform as well as traditional tools and often cost less.

Landscaping and Pest Control Products

Landscaping and pest control chemicals are often toxic. Look for products that are based on safer alternatives and consider programs and procedures that reduce or eliminate the need for some of these products. For example, a major cause of rodent or pest infestations are the crumbs left from people eating at their desks or not keeping trash areas clean. Simply improving general housekeeping or cleaning up spills and crumbs immediately, eliminating clutter and sealing potential entry points can prevent a visit from the pest control service.

Procedures & Training

As we have pointed out throughout this booklet, green cleaning is more than simply changing products.

Using safer, more effective products, equipment of better design, conserving and recycling paper and installing entry mats are all very important parts of a green program. Each of these individually will go a long way to improve the quality of your



facility's indoor environment and will reduce cleaning's impact on the environment.

But, to be truly effective, it is important to implement proven procedures supported by proper training.

Just as important as conserving resources, it is important to properly use labor. An effective program should improve the results in your facility without adding significant cost and in many cases could result in significant cost savings.

One of the most effective programs in use today is Team Cleaning®. Often misunderstood as only appropriate for large facilities or crews, Team Cleaning at its heart simply defines the process by the task.

Stressing the understanding of the task (specialists), Team Cleaning provides a firm foundation for a green cleaning program.

Manufacturers and distributors of cleaning products, equipment

and supplies often provide effective training programs and suggested procedures. However, the most effective green cleaning program uses training programs and procedures that address the entire cleaning process and not just those affected by the individual manufacturer's products.

Finally, there are several consultants and organizations that specialize in the design and implementation of green cleaning programs. Many are willing to provide examples and references for you in evaluating the suitability of their programs for your needs and situation.

Stewardship

The concept of Stewardship begins with the understanding that everyone in the facility has an impact on the facility's environment.

This includes the traditional building occupants, the cleaning service (whether in-house or out sourced), other contractors (caterers, roofers, landscapers, pest control, etc.), visitors,

Team Cleaning

Team Cleaning is a flexible, efficient and cost-effective cleaning system. It offers advantages through better deployment of labor, effective cleaning methods, and simplified training programs.

Although a facility may have one, two, or many cleaning workers, the duties are defined and separate. The actual number of custodians does not affect the Team Cleaning concept. In a smaller building, a custodian may perform two or more specialist's tasks.

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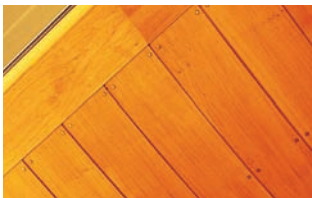


CLEANING FOR HEALTH

planning | products | process

“Cleaning is a special form of management. It is a system of activities with specific goals, purposes, strategies, and work plans. We make choices and place priorities on what we do according to what is most important to health.”

- Michael Berry, PhD



clients, customers, delivery people and on and on.

When you begin to take this view, many opportunities to improve the indoor environment begin to become more obvious.

Consider these typical scenarios:

- Papers are stacked on desks, file cabinets, credenzas, waste baskets, chairs, even piled on the floor – this prevents regular dusting and vacuuming. The dust that accumulates in this office is transported through the HVAC system adding to the load on the system and spreading irritants and contaminants throughout the office.
- Coffee and soda spills are not blotted up when they occur – left instead for the “cleaners”. But the cleaning schedule has been cut back, so the spot is left for a week and becomes a difficult to remove stain. This requires the use of an aggressive and potentially hazardous chemical spotter, adding more contaminants to the air supply. Furthermore, the

damp carpet attracts more soil, requiring more frequent, costly extraction, or a slip-fall as someone steps from the damp carpet to a tile floor.

- Employees eating at their desk to meet a deadline drop crumbs on the carpet and put soiled food containers in their trash can. If not cleaned up in a relatively short time, they can attract insects and other pests, requiring the hiring of a pest control service using a toxic, VOC laden spray.
- A local community group uses the school cafeteria after hours, doesn't rearrange the tables or stack the chairs, leaving the work for the custodians. As a result the custodians have less time to properly clean classrooms or rest rooms.

These are some simple examples, you will likely think of many more.

Why does this go on? If someone was playing a radio too loud in the office, everyone would take steps to ask them to turn it down. The loud noise would



surely be considered an irritant, affecting the performance of others nearby.

Unfortunately, in the cases outlined above, the irritant (usually a chemical or maybe a wet spot on the carpet) is distant from the source. We can all identify the radio and its owner. But it can be more difficult to track down the cause for an allergic reaction from a VOC caused by carpet spot remover.

Stewardship begins with recognizing our own impact on the environment and taking the steps necessary to minimize it.

As an organization embraces green concepts, understands the impacts on human and environmental health and moves toward the concept of stewardship, our buildings will become healthier and the occupants more productive and healthier as well.

Conclusion

Because of the success of numerous government and private sector initiatives, green cleaning is here to stay and it's clear that the implementation of a comprehensive green cleaning

program offers many significant benefits to a facility, its occupants, the custodial staff and the environment. These include increased productivity, profitability, improved performance and morale, as well as contributing to a sustainable environment.

It's also clear that you can begin to see many of these benefits by making some relatively simple changes to your current maintenance program. Begin by choosing cleaning products that maximize effectiveness while minimizing impacts on human health and the environment and adding well designed equipment will improve productivity and reduce costs while improving the overall cleanliness of the facility.

And, of course, be certain to provide an effective training program to ensure you maximize the potential benefits of your new program.

By using the materials presented in this booklet, along with the services of knowledgeable suppliers and manufacturers, you will be well on your way to realizing the benefits of "going green" in your organization.

"Today, buildings need to incorporate energy efficiency, waste reduction, reduced water consumption, healthy work environments, clean indoor air and many other green design features. With these improvements will come a better quality of life for all Americans, enhanced economic vitality and a smaller environmental footprint."

Senator James Jeffords (I-VT)



Additional Resources

The Ashkin Group, LLC.
www.AshkinGroup.com

Building Owners and Managers Association
www.boma.org

Building Service Contractors Association International
www.bscai.org

California Environmental Protection Agency
www.calepa.ca.gov

California OSHA
www.dir.ca.gov/occupational_safety.html

Center for a New American Dream
www.newdream.org

Carpet and Rug Institute
www.carpet-rug.com

Center for Disease Control
www.cdc.gov

The Collaborative for High Performance Schools
www.chps.net

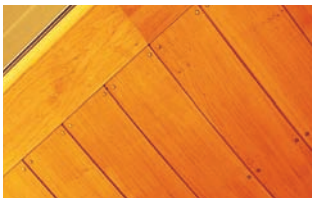
Green Seal
www.greenseal.org

Health Care Without Harm
www.noharm.org

Hospitals for a Healthy Environment
www.h2e-online.org

International Sanitary Supply Association
www.issa.com

"Integrating 'sustainable' or Green building practices into the construction of state buildings is a solid financial investment."
- California Sustainable Building Task Force



Additional Resources

The Integrated Pest Management Institute of North America
www.ipminstitute.org

Janitorial Pollution Prevention Project
www.west2pnet.org/janitorial/jp4.htm

Leadership in Energy and Environmental Design (LEED)
www.usgbc.org

National Institute of Occupational Safety and Health Administration
www.cdc.gov/niosh/homepage.html

Occupational Safety and Health Administration
www.osha.gov

Office of the Environmental Executive
www.ofee.gov

United States Environmental Protection Agency
www.epa.gov

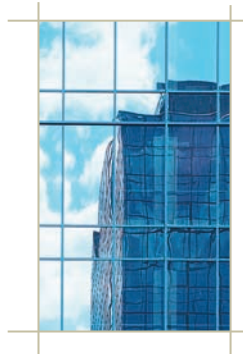
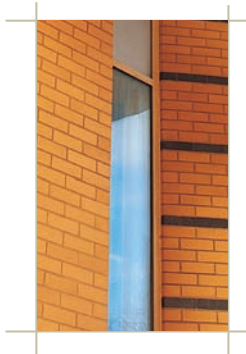
US EPA Comprehensive Procurement Guidelines
www.epa.gov/cpg/

U.S. EPA Office of Pesticide Programs
www.epa.gov/pesticides/

US Green Building Council
www.usgbc.org

“Materials managers don’t understand the role they play in waste stream management. They aren’t paying attention to what happens to products once they enter the facility and are not accountable for the impact these items may have on the environment.”

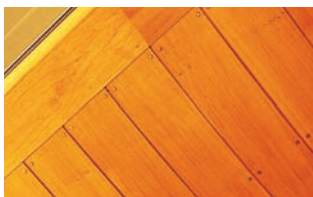
Janet Brown, Medical Waste Manger for New York’s Beth Israel Hospital.



High Risk Cleaning Chemicals

"If man recognizes that he must work with microorganisms rather than against them—trying to defeat them with all of those chemicals, which they cannot—I think we would be better off."

- Philip M. Tierno Jr., PhD, author of *The Secret Life of Germs: Observations of a Microbe Hunter*



The following is a list of commonly used cleaning products. Typical ingredients are listed along with potential health and safety hazards associated with those ingredients.

An excellent starting point for your green program would be to examine your inventory, replacing any of these products with safer alternatives.

Acid Toilet Bowl Cleaner
Hydrochloric Acid
Corrosive to eyes and skin

Metal Cleaner
Perchloroethylene
Poisonous, Causes Cancer, Flammable

Carpet Spotter
Perchloroethylene
Poisonous, Causes Cancer, Flammable

General Purpose Cleaner
2-Butoxyethanol,
Sodium Hydroxide, or
Ethanolamine
Reproductive toxin, affects internal organs such as liver & kidneys
Corrosive to eyes and skin

Baseboard Stripper
2-Butoxyethanol,
Sodium Hydroxide, or
Ethanolamine
Reproductive toxin, affects internal organs such as liver & kidneys
Corrosive to eyes and skin

Floor Finish Stripper
2-Butoxyethanol,
Sodium Hydroxide, or
Ethanolamine
Corrosive to eyes and skin, Poisonous

Graffiti Remover
2-Butoxyethanol,
Sodium Hydroxide, or
Ethanolamine
Corrosive to eyes and skin, Poisonous

Glass Cleaner
2-Butoxyethanol
Alcohol, Ammonia
Flammable or Poisonous. Respiratory Irritant

Mold & Mildew Remover
Bleach, (Sodium Hypochlorite)
Corrosive to eyes and skin
Produces a deadly gas when mixed with other common cleaning agents

Glossary

CHPS - Collaborative for High Performance Schools, is dedicated to improving educational quality and facilitating the design of resource efficient, healthy and comfortable learning environments.

CRI - Carpet and Rug Institute is a national trade association representing the carpet and rug industry. Their Green Label program certifies vacuum cleaners as environmentally preferable based on ability to pick up and retain soils.

EPA Comprehensive Procurement Guidelines - Guidelines for Federal Agencies in purchasing paper products with specific levels of recycled content. Many private and commercial institutions are adopting this standard.

Green Cleaning - Cleaning to protect health without harming the environment

Green Seal - An independent non-profit standards setting organization that provides assistance to organizations in choosing environmentally preferable products. GS-37 is the standard that applies to general purpose, washroom, glass and carpet cleaning chemicals.

LEED - Leadership in Energy and Environmental Design, is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. LEED-NC applies to New Construction and LEED-EB to Existing Buildings.

Stewardship - Stewardship and Occupant Responsibility Programs recognize that it is everyone's responsibility to help create the healthiest indoor environment possible. These programs are developed in conjunction with the facility's senior officials and include training and other communication strategies to engage the building's occupants, cleaning personnel, vacuum specialists, etc.

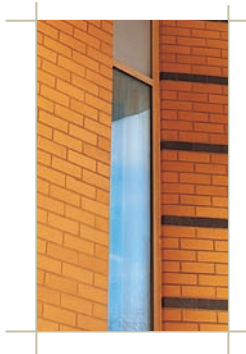
Team Cleaning® - A cleaning method using task specialists (light duty, rest room cleaner, etc.) proven to improve productivity and quality.

USGBC - US Green Building Council - a coalition of leaders in the building industry. They are dedicated to promoting environmentally responsible, profitable and healthy facilities.

VOC - Volatile Organic Compounds have been linked to indoor air quality problems and potential respiratory distress. Often found in fragrances, floor finishes, solvent based cleaners and other typical cleaning products.

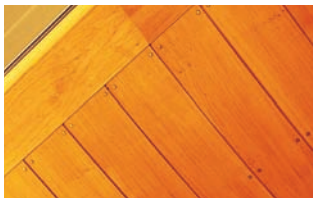
"We must find ways to lessen the burden on Earth's resources and encourage better stewardship of the planet so that all of us live in a clean and productive environment. The decisions we make in the decades to come will affect not only all of human civilization but also the fate of thousands of species representing millions of years of evolution."

**President Jimmy Carter,
"Challenges for Humanity:
A Beginning" National Geographic
Magazine, Feb 2002**





“If altruism isn’t enough to hook you, look at green and sustainable practices from a pragmatic point of view”
 - Harry H. Frampton, III, Chairman,
 Urban Land Institute



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Leadership

Cleaning for Health

ProTeam is committed to green cleaning and Cleaning for Health.

Historically, the quality of vacuuming has been evaluated by the appearance of the carpet. However, third-party studies demonstrate the importance of proper vacuuming on issues of indoor air quality, particulate removal, as well as labor efficiencies.

ProTeam is committed to manufacturing superior high-filtration vacuum cleaners that exceed the challenges of Cleaning for Health.

Partners in Indoor Air Quality Education

The American Lung Association (ALA) and ProTeam are partners in a national program to educate the public about the benefits of healthy indoor air quality and ways to promote lung health.

ProTeam is collaborating with the ALA in an educational campaign designed to generate awareness and educate people about indoor air quality issues.

This exclusive educational partnership recognizes the ALA's mission of preventing lung disease and promoting lung health, as well as ProTeam's goal of developing innovative cleaning technologies to address indoor air quality concerns.

The American Lung Association does not endorse products.