

Making sense of green cleaning:

A “green” white paper

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What is “green cleaning?” Why “go green?” How do I “clean green?” And who is “cleaning green?”

There is a lot of talk going on in building construction and facilities management circles today about green buildings and, specifically, green cleaning. Our purpose with this “green” white paper is to help you make sense of all the discussion, guidelines and regulations and to help you comply with and benefit from the green cleaning movement.

WHAT IS GREEN CLEANING?

“Environmental impact.” “Sustainability.” These terms are being used more and more, not just by conservationists, but by industries, trade associations and government agencies alike. The U.S. Green Building Council (USGBC), a coalition of leaders from across the building industry, defines its mission as working to promote buildings that are environmentally responsible, profitable and healthy places to live and work. The United Nations World Commission on Environment and Development defines sustainability this way: “Meeting the needs of the present generation without compromising the ability of future generations to meet their needs.”

Green cleaning is one aspect of the growing initiative to reduce negative effects on our environment.

These are lofty goals, to be sure, but they are also goals that individual and corporate actions can combine to affect. And green cleaning is one of the actions that can minimize impact on the environment and on future generations while maximizing health and productivity for today’s workers and building occupants.

WHY CLEAN GREEN?

The contribution of green cleaning to meeting environmental goals is clearly recognized in the LEED (Leadership in Energy & Environmental Design) Green Building Rating Systems that have been developed by the USGBC. (For more information on LEED Rating Systems, see page 3.)



*“...the number
of LEED certified
buildings will increase
500 percent by 2009.”*

Jerry Yudelson
*The Insider’s Guide to Marketing
Green Buildings*



A GROWING MOVEMENT AMONG BUILDING OWNERS AND MANAGERS.

The interest in green cleaning among building owners and facility managers is due, in part, to the fact that it's good for the environment and for people. But it's also good for business. Jerry Yudelson, a sustainability consultant and author of *The Insider's Guide to Marketing Green Buildings*, cites several reasons why green buildings (which by definition, include green cleaning) make sense:

- *Reduced operating costs.* Green buildings save on energy operating costs.
- *Managed risk.* There is a lot of national attention on how mold in buildings affects people.
- *Better productivity.* According to Yudelson, better indoor air quality can be worth from one to five percent of employee costs.
- *Satisfied occupants.* Employees and tenants like to see concern for their personal well-being and that of the environment.
- *Sustainable stewardship.* Green goes beyond specific buildings – it affects the entire community.
- *Increased building value.* Annual savings through green features and practices (especially energy savings) increase the value of the building.
- *Added competitive market value.* Green buildings and green cleaning are both seen as a value-add in the marketplace.

- LEED-EB certified buildings provide “an average return on investment of 2.6 years and annual net savings over \$170,000.”
- “The aggregate total return of publicly held companies affiliated with the USGBC outperformed the Dow Jones Industrial Average by over 18% from 2000 to 2004.”
- “LEED-EB increases asset value, tenant retention and satisfaction, shareholder value, employee satisfaction and morale, stakeholder relations, return on investment, net operating income (NOI) via lower operating costs and productivity.”
- “Most of the LEED-EB certification requirements can be achieved at low cost by collaborating with service providers and manufacturers.”

2005 U.S. Green Building Council, www.usgbc.org

GREEN CLEANING IS AND WILL CONTINUE TO BE A FISCALLY SOUND INVESTMENT.

“Financially feasible/economically imperative.” That’s what a recent publication from the U.S. Green Building Council calls the LEED-EB green movement.

LEED-EB makes sense, financially and environmentally. Companies can use green cleaning as a recruitment message for potential employees, a marketing message for tenants, and as a demonstration of concerned citizenship.

Green cleaning also contributes directly to reduced operating costs for any facility. By continually reducing the cost to clean, facilities will be able to afford to do more cleaning – automatically translating to a better, safer and cleaner environment. As an example, Advance’s Adhancer™ one-pass floor maintenance system reduces labor input and equipment costs, chemical use and floor finish dust, while extending the life of hard-floor finishes and surfaces.



LEED GREEN BUILDING RATING SYSTEMS

There are several LEED rating systems that define and measure the quality of buildings and their impact on the environment. Interest in LEED certification is burgeoning among facility managers and building owners, as well as building services contractors (BSCs) who see opportunities in positioning themselves to aid in LEED certification.

LEED-EB (for Existing Buildings) is the rating system most relevant for BSCs and in-house cleaners, because LEED-EB provides detailed guidelines for green cleaning along with other aspects of building operations.

The project checklist for LEED-EB is divided into six different categories, each containing various Credits worth different point values. A building can earn up to a total of 80 possible base points. The LEED-EB Credit that specifies requirements for green cleaning is Credit 10 in the Indoor Environmental Quality category; cleaning equipment is addressed in Credit 10.6, which is worth one point.

To qualify for *IEQ Credit 10.6 Green Cleaning: Low Environmental Impact Cleaning Policy*, a building's cleaning equipment policy needs to specify that:

- Vacuum cleaners meet the requirements of the Carpet & Rug Institute Green Label Program and are capable of capturing 96% of particulates 0.3 microns in size and operate with a sound level less than 70 dB A.
- Hot water extraction equipment for deep cleaning carpets is capable of removing sufficient moisture such that carpets can dry in less than 24 hours.
- Powered maintenance equipment including floor buffers, burnishers and automatic scrubbers are equipped with vacuums, guards and/or other devices for capturing fine particulates, and shall operate with a sound level less than 70 dB A.
- Automatic scrubbers are equipped with variable-speed feed pumps to optimize the use of cleaning fluids.
- Battery-powered equipment is equipped with environmentally preferable gel batteries.
- Powered equipment is ergonomically designed to minimize vibration, noise and user fatigue.
- Equipment has rubber bumpers to reduce potential damage to building surfaces.

In addition to LEED-EB, there are three other LEED rating systems where green cleaning can contribute. They are LEED-NC for New Construction; LEED-CI for Commercial Interiors; and LEED-CS for Core and Shell. In each of these, a green cleaning program can earn up to one credit under the Innovation category.

"A savvy BSC helping a LEED-NC building owner get a point for green cleaning will alert them on how he can get them points when they apply for EB."

Tom Hicks
Contracting Profits
July 2005

GREEN CLEANING IS AN OPPORTUNITY FOR BSCS.

Building services contractors (BSCs) are seeing LEED and green cleaning as a significant marketing opportunity. While a small, but growing number of their clients are interested in LEED-EB and other LEED certifications, a BSC's ability to offer green cleaning is a selling strength even to clients not working toward building certification.

OneSource, a nationwide BSC with customers in 195 metropolitan areas and more than 31,000 employees across the country, sees tremendous opportunities for BSCs in green cleaning and has been a



"...for the cleaning industry, valued at \$140 billion, green cleaning is becoming a competitive advantage for many providers of building services."

Chris Sanford, Editor
Building Services Management
 April 2006



A unique AXP™ dispensing feature on Advance scrubbers and extractors reduces the amount of water and detergent used, eliminates operator exposure to concentrated chemicals, and reduces equipment cleaning and maintenance.

leading advocate in the green cleaning movement. Angela Gustafson, vice president of marketing services at OneSource, says that BSCs need to be knowledgeable about all facets of a green cleaning program – equipment, chemicals, supplies, processes and third-party standards. Gustafson says, “Savvy customers quickly sort out a BSC who is just passing along green marketing information from manufacturers versus the BSC who has truly taken the time to create an integrated green cleaning program that marries the best green equipment and chemicals with solid green operating procedures.”

THE ROLE OF BSCS IN GREEN CLEANING.

The Chair of the LEED-EB Committee for the USGBC, Stu Carron, suggests that BSCs can help clients in three ways: They can stay on top of LEED-EB requirements and help clients keep informed; they can help clients by purchasing (and documenting use of) green cleaning equipment; and they can partner with manufacturers and distributors of green cleaning equipment and products to get them to expand their cleaning product offerings.

HOW CAN I CLEAN GREEN?

If your facility or organization is convinced of the benefits of cleaning green, it's time to consider the three major components of any green cleaning program:

- Green chemicals
- Green cleaning equipment
- Green processes and procedures

GREEN CHEMICALS.

The cleaning chemicals category received the most attention early on in the green cleaning movement. The initial goals were to eliminate ingredients known to be toxic to plants, animals and people and that found their way into our air, water and soil. Green Seal is an independent, nonprofit organization that identifies and promotes products such as cleaners and floor care products that produce less toxic pollution and waste. The organization sets environmental standards for various product categories and certifies products that meet those standards. Today, there is a wide variety of Green Seal – certified cleaning products that perform well and meet the criteria for environmentally friendly substances. But the right chemicals are just the beginning of a green cleaning program.



GREEN CLEANING EQUIPMENT.

OneSource's Angela Gustafson says that a major challenge facing BSCs is acquiring cleaning equipment that meets green standards and delivers on its promise to perform as well as, if not better than, traditional equipment. The equipment performance required in a green cleaning program is well defined in the LEED-EB Rating System, particularly in IEQ Credit 10.6 Green Cleaning: Low Environmental Impact Cleaning Policy. (See LEED inset on page 3.) Details on whether specific equipment meets these requirements should be available from your equipment manufacturer's web site or local sales representative.

Here are a few examples of equipment features and performance requirements that are essential for green cleaning:

- Vacuum cleaners need to be certified under the CRI Green Label Program. Advance's ReliaVac™, PowerOne®, BackVacuum™, CarpeTwin® and CarpeTrier™ are some of the vacuum cleaner models you'll find listed as "Green Label Approved Vacuums" on the CRI web site at www.carpet-rug.org.
- Vacuums, floor machines, burnishers and automatic scrubbers need to operate at a sound level less than 70 dB A. Manufacturer specifications should include information about operating sound levels. For example, the Advance Advolution™ rider burnisher operates at 65 dB A as measured at the operator's position; the Advance Advenger® rider scrubber is also tested to operate at 65 dB A, which is quieter than the 69 dB A level of normal conversation.
- Automatic scrubbers need to have variable-speed systems to optimize use of cleaning solutions. Advance scrubbers, such as the Convertamatic® line, come standard with an integrated Smart Solutions™ system that controls solution flow and uses pre-set scrub settings that combine solution flow and scrub pressure into simple operator selections for regular, heavy or extreme scrubbing.
- Carpet extractors must remove sufficient moisture for drying in less than 24 hours and should be certified under the new CRI Seal of Approval for Deep Cleaning Extractors program. The AquaRide®, AquaPLUS™ AquaClean® and AquaPro™ extractors are a few machines from Advance that have received the CRI Seal of Approval for Deep Cleaning Extractors.



Advance's Adhancer™ Hard-floor Maintenance System is a good example of environmental responsibility. It's a one-pass floor-washer-polisher that reduces labor input, chemical use and floor finish debris, while it improves cleaning effectiveness, and extends the life of most floor finishes.

GREEN PROCESSES AND PROCEDURES.

Green chemicals and equipment add up to green cleaning only when they're used as part of an overall cleaning program that specifies when and how cleaning activities are performed. Information on developing green cleaning procedures is available from ASTM International in its document, E1971-05 "Standard Guide for Stewardship for the Cleaning of Commercial and Institutional Buildings." The guide does not recommend a specific process but provides information and options for developing a stewardship plan that fits your facility.



PROJECTED GROWTH RATES FOR GREEN BUILDINGS, BY MARKET SECTOR

Market Sector	Projected Growth Rate in Green Construction
Education	65%
Government	62%
Institutional	54%
Office	48%
Healthcare	46%
Residential	32%
Hospitality	22%
Retail	20%

2006 Green Building Update,
Jerry Yudelson

“Nearly 5 million American youths under age 18 suffer from asthma, and it is the leading cause of disease-related school absenteeism in the U.S.”

Building Services Management Magazine
April 2006

Another resource for establishing processes is available from the National Institute for Occupational Safety and Health and the Environmental Protection Agency. Their jointly published, definitive reference on IAQ, *Building Air Quality: A Guide for Building Owners and Facility Managers*, documents how to develop and implement a plan for facility operations and maintenance.

WHO IS CLEANING GREEN?

Interest in green cleaning – whether for environmental, health, or economic reasons – can be found in almost any market sector or facility type. From elementary schools to community centers and from Fortune 500 companies to the EPA’s own buildings, green cleaning policies are being instituted either as separate programs or part of comprehensive environmentally focused programs such as LEED certification initiatives. “Environmentally preferable purchasing policies” are also being written and adopted by many corporations, government agencies and states.

A recent survey conducted for the U.S. Green Building Council projected green building market growth for various sectors at 20% - 65% (see chart at left). At least two of the market sectors identified at the left have their own programs that promote green cleaning, the education market and the healthcare market.

GREEN CLEANING GOES TO SCHOOL

The growing incidence of asthma among children has been one impetus for schools, especially K-12, to reconsider their indoor environments and how they’re cleaned. Stephen Ashkin, a national advocate for green cleaning, notes several reasons schools are especially at risk for common allergens that trigger asthma attack: Schools have more than the usual amount of foot traffic, which stirs up dust; they are densely populated, about four times the density of an average commercial office space the same size; and chemicals used to clean and disinfect schools may pose health hazards. (*Building Services Management Magazine*, April 2006)

In the K-12 school market, there are many national and state initiatives in place for making schools healthier. Illinois’ Healthy Schools Campaign (www.healthyschoolscampaign.org) program recently published the “Quick and Easy Guide to Green Cleaning,” which the organization is distributing to schools nationwide. The Healthy Schools Network (www.healthyschools.org) offers a “Guide to Healthier Cleaning & Maintenance: Practices and Products for Schools.” And The Center for a New American Dream (a consumer organization whose mission is to protect the environment and enhance the quality of life) is



The Green Guide for Health Care ... helps the leaders and managers of health care institutions “walk the talk,” promoting the health of patients, visitors, employees, community members and the global community, while operating economically and efficiently. I hope that every medical center, hospital, and clinic in the nation gets a copy of the Green Guide, takes its lessons to heart, and joins the growing movement toward better healthier environments in the health care sector.

Howard Frumkin, M.D., Dr.P.H., FACP, FACOEM
 Director, National Center for
 Environmental Health
 U.S. Centers for Disease Control and Prevention

promoting a “Green Schools Sweepstakes” where schools can win \$5,000 for using safer cleaning products. It’s predicted that more and more schools will convert to green cleaning as a way of safeguarding the health of schoolchildren.

GREEN CLEANING, A NATURAL FOR THE HEALTHCARE MARKET

It makes sense that hospitals, clinics and other healthcare facilities are turning to green cleaning. One initiative specific to this market is The Green Guide for Health Care™. This voluntary, self-certifying program of best practices is, in the organization’s own words, “the healthcare sector’s first quantifiable sustainable design toolkit integrating enhanced environmental and health principles and practices into the planning, design, construction, operations and maintenance of their facilities.” The toolkit includes a sustainable purchasing policy for cleaning products and materials.

Another healthcare organization that is embracing the “green” cleaning initiative is the Hospitals for a Healthy Environment (H2E). It is creating a national movement for environmental sustainability in healthcare by educating healthcare professionals about pollution prevention opportunities. H2E is also providing a wealth of practical tools and resources that encourage safer building products, clean air, energy and water efficiency, safe working practices and a commitment to public health demonstrated through waste volume and toxicity reduction.

ENVIRONMENTALLY PREFERABLE PURCHASING – ANOTHER AVENUE TO GREEN CLEANING

The term *environmentally preferable purchasing* means buying “products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose.” This definition is from Executive Order 13101 issued in 1988, “Greening the Government through Waste Prevention, Recycling and Federal Acquisition.” There is a federal-wide program that encourages and assists executive agencies in environmentally preferable purchasing, i.e., buying “green.”

There are also many state programs for EPP, including the highly publicized programs in Massachusetts and California. In addition, New York City recently passed legislation that would reduce the city’s purchasing of hazardous products and instead wield its \$11 billion annual purchasing budget to drive markets for safer, environmentally friendly products. The city council passed a package of environmentally preferable purchasing bills to join a growing list of cities that have recently done the same. Programs that encourage buying green products and services are yet another impetus for green cleaning.

CONCLUSION

Concern about the environmental and health impacts of building maintenance products and practices is only going to grow in the coming years. This means that building owners, facility managers, building services contractors and many others – in virtually every buildings market segment – will need to understand and implement green, sustainable cleaning. For more information on green cleaning, use the resources listed here or contact your local Advance dealer.

RESOURCES

- **Carpet & Rug Institute.** CRI has developed independent product testing and certification programs for both vacuum cleaners (Green Label program) and carpet extractors. www.carpet-rug.org
For white papers that detail the CRI testing programs visit www.advance-us.com
- **NIOSH/EPA.** A joint IAQ reference from the National Institute for Occupational Safety and Health and the Environmental Protection Agency documents how to develop and implement a facility operations and maintenance plan. www.cdc.gov/niosh
- **Green Seal.** An independent, nonprofit organization, Green Seal sets environmental standards for various product categories (such as floor care products) and certifies products that meet those standards. www.greenseal.org
- **Green Guide for Health Care.** A voluntary, self-certifying program of best practices for the health care industry; includes a sustainable purchasing policy for cleaning products and materials. www.gghc.org
- **American Society for Testing and Materials (ASTM).** ASTM's active standard E1971-05 covers procedures to assist owners and operators of commercial and institutional buildings in the stewardship of cleaning and housekeeping operations. www.astm.org
- **Healthy Schools Campaign.** A multi-pronged endeavor for improving education, this group promotes the use of safe and environmentally friendly cleaning products in K-12 schools. www.healthyschoolscampaign.org

ADVANCE CLEANING SOLUTIONS FOR COMMERCIAL APPLICATIONS

Advance automated floor-cleaning equipment is designed to increase productivity, while reducing environmental impact and lowering the total cost to clean. From vacuums and carpet extractors to sweepers and ride-on scrubbers, Advance delivers efficient, easy-to-use equipment. All Advance equipment is backed by professional, local maintenance and service support. Advance cleaning experts are ready to analyze your needs and recommend the best floor-cleaning solution for you. To learn more about Advance commercial cleaning equipment or to find a dealer near you, visit www.advance-us.com or call 800-850-5559.

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