

Making sense of green cleaning:

A “green” white paper

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

WHAT IS GREEN CLEANING?

Green cleaning takes a holistic approach to facility cleaning and maintenance in order to provide health and safety benefits, improve productivity and deliver cost savings. Typically, green cleaning employs chemicals, equipment and processes that minimize the environmental impact of cleaning while still maintaining or even improving cleaning effectiveness.

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

In the green movement overall, the terms “environmental impact” and “sustainability” are being used more and more, not just by environmentalists, 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.”

These are lofty goals, to be sure, but they are also goals to which individuals and corporations can aspire. 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. The contribution of green cleaning to meeting environmental goals is clearly recognized in the USGBC’s LEED (Leadership in Energy and Environmental Design) Green Building Rating Systems. In fact, LEED-EB (-Existing Buildings) has now made green cleaning a prerequisite for earning Indoor Air Quality points.

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



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

WHY CLEAN GREEN?

The interest in green cleaning among building owners and facility managers is due, in part, to the fact 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:

LEED (Leadership in Energy and Environmental Design) is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high-performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance — including green cleaning.

LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water efficiency, energy and atmosphere, materials selection and indoor environmental quality.

- *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.
- *Higher 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 increases asset value, tenant retention and satisfaction, shareholder value, employee satisfaction and morale, stakeholder relations, return on investment, and net operating income (NOI) via lower operating costs and productivity."

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

Green cleaning, a sound investment

A recent publication from the U.S. Green Building Council called the LEED-EB (LEED for Existing Buildings: Operations and Maintenance) green movement "financially feasible/economically imperative." Companies can use green cleaning as a recruitment message for employees, a marketing message for tenants and 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.

"...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

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.

National and regional BSCs have encountered tremendous opportunities in green cleaning and have tended to be advocates for the green cleaning movement. The most successful BSCs are knowledgeable about all facets of a green cleaning program — equipment, chemicals, supplies, processes and third-party standards. With the launch of GS-42, the Green Seal Environmental Standard for Cleaning Services, facilities now have objective guidance to help them develop a green cleaning program. GS-42 establishes requirements encompassing all indoor activities typically required to clean commercial, public and industrial buildings.

GREEN SEAL AND GS-42

Green Seal™ is a nonprofit organization devoted to environmental standard setting, product certification and public education. Green Seal's overall mission is to work towards environmental sustainability by identifying and promoting environmentally responsible products, purchasing and processes.



The organization's GS-42 standard establishes requirements for in-house and external cleaning services to create green cleaning programs that protect human health and the environment. This standard encompasses all indoor activities typically required to clean commercial, public and industrial buildings.

Cleaning service providers can apply to become GS-42 certified. The certification requirements include meeting all the criteria provided in the GS-42 standard and providing documentation demonstrating compliance. In addition, Green Seal conducts on-site audits that may include the cleaning service provider's own facilities, as well as a sample of its clients' facilities.

For more information, visit www.greenseal.org.

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 stay 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 YOU 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:

1. Green chemicals
2. Green cleaning equipment
3. 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 cause 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 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.

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. And 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 (LEED for Existing Buildings: Operations and Maintenance) 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 credits. The LEED-EB credit that specifies requirements for green cleaning equipment is Environmental Quality (EQ) Credit 3.7: Green Cleaning: Sustainable Cleaning Equipment, which is worth one point.

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

Green cleaning equipment

The equipment features and performance required in a green cleaning program are well defined in the LEED-EB Rating System, particularly in EQ Credit 3.7: Green Cleaning: Sustainable Cleaning Equipment Policy. (See LEED sidebar.) Details on whether specific equipment meets these requirements should be available from your equipment manufacturer's Web site or local sales representative.

To qualify for EQ Credit 3.7: Green Cleaning: Sustainable Cleaning Equipment Policy, a building's cleaning equipment policy needs to specify that:

- Vacuum cleaners are certified by the Carpet and Rug Institute's "Green Label" Testing Program and operate with a sound level less than 70 dB A.
- Carpet extraction equipment used for restorative deep cleaning is certified by the Carpet and Rug Institute's "Seal of Approval" Testing Program for deep-cleaning extractors.
- Powered floor maintenance equipment, including electric and battery-powered floor buffers and burnishers, is equipped with vacuums, guards and/or other devices for capturing fine particulates, and shall operate with a sound level less than 70 dB A.
- Propane-powered floor equipment has high-efficiency, low-emissions engines with catalytic converters and mufflers that meet the California Air Resources Board (CARB) or EPA standards for the specific engine size and operate with a sound level of less than 90 dB A.
- Automated scrubbing machines are equipped with variable-speed feed pumps and onboard chemical metering to optimize the use of cleaning fluids.
- Battery-powered equipment is ergonomically designed to minimize vibration, noise and user fatigue.
- Equipment is designed with safeguards, such as rollers or rubber bumpers, to reduce potential damage to building surfaces.



A unique AXP onboard solution-dispensing system 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.

"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*

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.

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 indoor air quality (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.

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 attacks: 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.

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

"The Green Guide for Healthcare helps the leaders and managers of healthcare 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...takes its lessons to heart and joins the growing movement toward better healthier environments in the healthcare sector."

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

nationwide. The Healthy Schools Network (www.healthyschools.org) offers a "Guide to Healthier Cleaning and Maintenance: Practices and Products for Schools." 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 Healthcare™. This voluntary, self-certifying program of best practices is, in the organization's own words, "the healthcare sector's first quantifiable sustainable design tool kit integrating enhanced environmental and health principles and practices into the planning, design, construction, operations and maintenance of their facilities." The tool kit includes a sustainable purchasing policy for cleaning products and materials. The GGHC program is also serving as a basis for LEED's new rating system specific to healthcare facilities, which is currently in draft stage.

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 (EPP) — 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.

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.

ADVANCE EQUIPMENT THAT IS CERTIFIED FOR GREEN CLEANING:

Certified vacuums include Advance's *PowerOne*, *Adgility XP*, *ReliaVac*, *BackVacuum XP*, *CarpeTwin*, *CarpeTrieve* and the *Terra* sweeper vac. The Adgility XP backpack vacuum has also received the CRI Seal of Approval for Vacuum Cleaners — a new program that is even more stringent than the Green Label program. Visit www.carpet-rug.org for more information.

Vacuums, floor machines, burnishers and automatic scrubbers that meet the 70 dB A sound level standard include the Advance *Advolution* rider-burnisher (65 dB A) and the Advance *Advenger* rider-scrubber (65 dB A) — which are both quieter than the 69 dB A level of normal conversation.

Carpet extractors certified under the CRI Seal of Approval for Deep-cleaning Extractors in low-moisture and restorative modes include the Advance *AquaClean*®, *AquaPro*™, *AquaPLUS*®, *Adphibian*™ and *AquaRide*®. These extractors meet CRI's standards for soil removal, carpet drying time and carpet appearance retention.

Automatic scrubbers that feature the required variable-speed systems to optimize use of cleaning solutions include the Advance *Convertamatic* line. This series of scrubbers is available with an integrated AXP onboard dispensing system that controls solution flow and uses pre-set scrub settings that combine solution flow and scrub pressure.

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

- **U.S. Green Building Council (USGBC) and LEED.** LEED is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high-performance green buildings. www.usgbc.org
- **NIOSH/EPA.** A joint IAQ reference from the National Institute for Occupational Safety and Health and the Environmental Protection Agency that documents how to develop and implement a facility operations and maintenance plan. www.cdc.gov/niosh
- **Green Guide for Healthcare.** A voluntary, self-certifying program of best practices for the healthcare industry; includes a sustainable purchasing policy for cleaning products and materials. www.gghc.org
- **Carpet and 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.)
- **Green Seal.** An independent, nonprofit organization, Green Seal sets environmental standards for floor care products and equipment and certifies cleaning service providers that meet those standards. www.greenseal.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



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