

Sustainable Building Rating Systems Addressing Building Maintenance and Janitorial Products, Policies and Methods

Leonardo Academy Inc.

White Paper

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Leonardo Academy focuses on using integrated thinking to promote environmental sustainability. We develop innovative, outcome-focused products and resources that facilitate sustainability by integrating economics, policy, and ecology. We produce rating systems, certification programs, educational resources and other tools that make practicing sustainability practical. Leonardo Academy is a charitable (501c3) nonprofit organization.

Leonardo Academy's Cleaner and Greenersm Program develops and delivers tools that promote, facilitate and measure environmental sustainability. The program specializes in developing action plans and resources, and evaluation systems that enable organizations, institutions and individuals to reduce their impacts on the natural environment.

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Foreword

Green building design, construction and operation have become common topics for discussion among maintenance workers to architects to facility managers to corporate executives. Building owners and managers are realizing that sustainable buildings are synonymous with better building performance, healthier indoor environments, more productive building occupants, and lower building operating costs.

In the past, facility management and its components (e.g. cleaning) were not generally CEO-level issues. However, green building management falls into the larger category of sustainability, which makes it an everyday consideration.

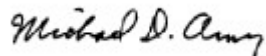
Sustainable products and services, including janitorial cleaning supplies and paper products, are also becoming mainstream as customers seek more and greener options. For example, customer demand is pushing tissue manufacturers to develop and market away-from-home products for commercial use and retail products for home use that have reduced environmental impacts.

Public discussion about the traditionally severe environmental impacts of production, combined with a rise in the popularity of green building certification programs, such as the U.S. Green Building Council's LEED for Existing Buildings program, California's Collaborative for High Performance Schools and the Green Guide for Health Care, has also played a role in the growth of the market for building maintenance and janitorial products with reduced environmental impacts. An increasing number of corporate, government and other buyers are choosing green products for their buildings in an effort to reduce their overall environmental impact.

These changes in the marketplace have created significant opportunities:

- Building owners and managers are including sustainability requirements in their procurement of products and services to help achieve sustainability objectives
- Product manufacturers, distributors and service providers are positioning their offerings to help building owners and managers achieve their sustainability goals

This white paper is a resource for all green cleaning consumers, vendors and manufacturers. Copies are available from the Leonardo Academy web site at: www.leonardoacademy.org



Michael Arny
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Section 1: Introduction

The green or sustainable building movement has shown explosive growth over the last five years. This growth is expected to continue until green buildings become the norm for building design, construction and operation. Sustainable products and services, including janitorial cleaning supplies and paper products, are also becoming more mainstream as customers specifically request greener options. Building owners and managers are realizing that sustainable buildings not only lead to better building performance and healthier indoor environments, but pay off financially as well. These changes in the marketplace create great opportunities for both buyers and sellers of sustainable products.

The Growth of Sustainable Building Rating Systems

Third-party environmental certification programs have emerged as important roadmaps guiding environmental sustainability efforts. By presenting clear paths with specific guidelines, these programs and other government and private initiatives have produced a new segment of green-products purchasers. The certification rating systems discussed in this white paper include:

- The U.S. Green Building Council's LEED for Existing Buildings™ (LEED-EB) addresses the sustainability of existing commercial buildings. (LEED for New Construction™ (LEED-NC) addresses new commercial buildings.)
- The Green Guide for Health Care™ (GGHC) addresses the sustainability of new and existing hospitals
- The Collaborative for High Performance Schools™ (CHPS) focuses solely on schools

Green initiatives such as environmental purchasing programs and third-party environmental certification programs have fueled end-user interest in sustainability. Experts believe green building will steadily gain acceptance and that janitorial supply distributors who stay current on the trend will win green business; those that ignore the trend may risk losing customers.

Sustainable Building Rating Systems: A Building Owner/Manager Perspective

The sustainable building team consists of many individuals of an organization. The team may include building owners, upper management such as CEOs and CFOs, facility managers, and individuals representing purchasing, landscaping, and janitorial avenues. The sustainable building team will be collectively referred to as "building managers" for the purposes of this white paper.

Building managers can use sustainable building rating systems as a framework for improving operations and documenting the sustainable performance of their buildings by:

- Specifying compliance with the requirements of these rating systems when products and services are purchased
- Requiring that product and service providers document compliance with the specified rating system standards

Building managers can implement building sustainability by using a whole-building rating system as a framework for improving building operation and maintenance, or incrementally, one sustainable product or service at a time. In scenario, green cleaning and janitorial paper product choices are likely to be among the first issues considered due to their low relative costs.

As building managers move forward with implementing broad building sustainability, they can be confident that a large number of product and service providers are ready to help them achieve their goals. This is especially true in the cleaning industry where a wide range of product manufacturers, distributors and service providers are excited to help implement green cleaning strategies.

Sustainable Building Rating Systems: A Product Manufacturer/Distributor Perspective

Product manufacturers, distributors, and service providers can benefit from the increased interest in sustainability and sustainable buildings in a variety of ways. Changes in the marketplace create new financial opportunities for companies that understand and respond to these changes. In order to capitalize on the opportunities emerging related to green cleaning, product manufacturers and distributors should:

Basic Level:

- Be prepared to provide sustainable products and services to building managers upon request

Middle Level:

- Understand the portions of building sustainability rating systems that apply to your products and services
- Be prepared to provide documentation and reports required by the building assist building managers in meeting these requirements
- Make it easy for your customers to succeed

Advanced Level:

- Be prepared to educate your customers on the benefits of implementing the portions of building sustainability rating systems that apply to your products and services
- Be prepared to educate your customers on how your products and services fit into the overall building sustainability rating systems so they understand the value your products provide
- Be prepared to connect customers that want to pursue overall building sustainability with product and service vendors/providers who can assist them with the rest of the components of building sustainability rating systems

Cleaning-related points in green building certification programs can be earned for such things as efficient entryway matting systems, strategically placed janitorial closets and the use of green-cleaning products and equipment. A number of successful janitorial supply distributors are offering complete green cleaning product lines. Sustainable tissue manufacturers would be well suited to use janitorial supply distributors that are highly knowledgeable about green products and programs. Many janitorial supply distributors are also offering complete green cleaning programs or packages that include green tissue and towel products. This is a great opportunity for green cleaning product and service providers to market their sustainable product and service lines into the growing green cleaning and green building movements.

Section 2: Benefits of Sustainable Building Rating Systems

Sustainable buildings are designed, constructed and operated through fully integrated processes, systems, and teams. Third-party certification programs provide a framework to guide this process. Certification programs for sustainable facility management provide a number of benefits to building managers:

- Increase building efficiency, save energy, water and other resources
- Provide satisfying, productive, quality indoor spaces
- Educate building occupants about efficiency and conservation
- Provide reduced environmental impacts
- Provide enhanced economic performance

Certification programs help building managers upgrade and operate buildings in a sustainable way by providing a framework that guides:

- Resource benefits
 - Energy management, water use, and other operating systems are evaluated during the certification process
 - Encourages the setting of a benchmark and goals for operations and process improvements
 - Increases awareness of building operations
- Communication / education benefits
 - Improved community relations including reduced liability and risk management
 - Demonstration of corporate responsibility by reducing environmental impacts
- Financial benefits
 - Provides the ability to measure actual performance against operating and process improvement benchmarks
 - Reduction of operating costs, including lower energy, water, waste disposal, emissions, and operations and maintenance costs
 - Improved equity, debt borrowing capacity, and organization credit rating
- Workplace / productivity benefits
 - Providing a healthy workplace improves employee satisfaction
 - Reduced absenteeism and turnover
- Reduced guesswork
 - Certifications and standards provide criteria for maintaining sustainable buildings

Building rating systems like LEED-EB, GGHC and CHPS lay out specific ways for building managers to attain certification points. With clear, concise criteria, facility managers and janitorial and purchasing personnel can more easily sort through information and make informed buying decisions.

Building rating systems provide guidelines and assistance for implementing these sustainable building criteria.

Section 3: Sustainable Building Rating Systems in Detail

Certifications and standards take the guesswork out of being green. City, state and federal governments are now including standards in purchasing contracts. There are several known criteria for operating and maintaining sustainable buildings that provide economic and environmental benefits and also positively impact building occupant health and productivity. Some of these criteria include:

- Sustainable site planning, including landscape design that decreases the use of pesticides and provides an outdoor learning environment
- Good building envelope design, such as efficient windows and high R-value insulation, that reduces draftiness and increases building occupant comfort levels
- Proper lighting combined with an increased use of daylighting to improve building occupant performance and comfort levels
- Good indoor air quality from adequate air filtration and exchange systems that eliminate toxins, allergens and other harmful pollutant sources
- The use of green supplies and materials to eliminate or minimize possible sources of toxins, allergens and other harmful pollutants reduces contributions to lung ailments such as asthma
- Proper design and maintenance of heating, cooling, and ventilation systems that run quietly and efficiently
- Onsite renewable energy sources such as photovoltaic systems that not only provide electricity, but can be used as an educational tool to develop building occupant and community interest in alternative energy sources

LEED for Existing Buildings, Green Guide for Health Care, and Collaborative for High Performance Schools address green cleaning products, policies, and methods in different ways. This section provides an overview of the factors and a description of the credit requirements considered in each.

Section 3.1: LEED for Existing Buildings (LEED-EB)

The U.S. Green Building Council (USGBC®) is a national alliance dedicated to promoting high performance buildings that are environmentally responsible, profitable and healthy places to live and work. USGBC members include professionals from businesses that design, construct, manage, finance, insure, own, and occupy buildings as well as government agencies and nonprofit organizations.

USGBC's Leadership in Energy and Environmental Design (LEED®) Green Building Rating System is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. LEED focuses on six categories of standards to promote whole-building sustainability: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, and Indoor Environmental Quality. The flexibility of the points system inherent in LEED makes it possible to apply the principles to most buildings regardless of location, operating budget or use. Buildings may be certified at four levels (Certified, Silver, Gold and Platinum) depending on the number of points earned.

LEED was created to establish a common standard of measurement for green buildings, to promote a whole-building approach, to recognize environmental leadership, and to stimulate green competition. The first LEED rating system, LEED for New Construction (LEED-NC), was specific to owner-occupied buildings in the process of design and construction. LEED has now expanded to include rating systems for existing buildings (LEED-EB), building core and shell (LEED-CS), commercial interiors (LEED-CI), homes (LEED-H) and neighborhood developments (LEED-ND).

LEED certification has a variety of benefits, from providing a healthier environment for building occupants to communicating a public commitment to the environment. LEED certification distinguishes building projects that have demonstrated a commitment to sustainability by meeting the highest performance standards.

The only LEED rating system that encompasses cleaning and janitorial products is LEED for Existing Buildings (LEED-EB). LEED-EB considers not only the environmental impact of a building, but also the health and productivity of building occupants. The rating system provides building operators with sustainability parameters and has motivated a new segment of green product purchasers.

The LEED-EB rating system consists of 14 requirements (called Prerequisites) and 85 credits distributed among the six key sustainability categories. A building earns a rating based on the number of credits earned, giving participants some flexibility in the points they choose to pursue. The rating scale is: Certified (32 – 39 points), Silver (40-47 points), Gold (48 – 63 points), and Platinum (64-85 points).

How LEED-EB Addresses Cleaning Products and Services

LEED-EB areas relating to building maintenance and janitorial products, policies and methods include 2 prerequisites and 14 or more credits. The specific requirements for each LEED-EB prerequisite and credit are available from the USGBC website at www.usgbc.org.

LEED-EB prerequisites and credits that address cleaning products and services include:

LEED-EB Materials and Resources Prerequisite 1.1 - Source Reduction and Waste Management: Waste Management Policy and Waste Stream Audit

- Have a recycling policy in place addressing glass, metal cans, plastic, paper and cardboard
- Conduct a waste audit, determine amounts of waste being recycled and going to landfill, and identify additional opportunities for improving recycling program
- Educate building occupants to encourage increased recycling achievements

LEED-EB Materials and Resources Prerequisite 1.2 - Source Reduction and Waste Management: Waste Management Policy and Waste Stream Audit

- Set aside appropriate space for recycling
- Have in place appropriate bins and equipment for recycling occupant waste

LEED-EB Materials and Resources Credit 5.1-5.3 – Occupant Recycling (1-3 Points)

- Documented source reduction can contribute to earning these recycling points (e.g., controlled use paper towel dispensers)
- Points are earned based on the percentage diverted from landfills:
 - 30% diversion/recycling: 1 point
 - 40% diversion/recycling: 2 points
 - 50% diversion/recycling: 3 points

LEED-EB Materials and Resources Credit 4.1-4.3 – Purchasing of Cleaning Chemicals, Paper Products and Trash Bags (1-3 Points)

- Cleaning chemicals:
 - Must be Green Seal GS-37 certified or the equivalent
 - If cleaning chemical is of a type that is not covered by GS-37 (e.g., for products such as carpet cleaners, floor finishes or strippers), it must be compliant with the California Code of Regulations on maximum allowable VOC levels
- Janitorial paper products must meet U.S. EPA Comprehensive Procurement Guideline (CPG) standards:
 - Facial Tissue: 10 to 100% Post Consumer Recycled Content
 - Toilet Tissue: 20 to 100% Post Consumer Recycled Content
 - Paper Napkins: 30 to 100% Post Consumer Recycled Content
 - Paper Towels: 40 to 100% Post Consumer Recycled Content
- Trash bags must meet CPG standards:
 - 10 to 100 % Post Consumer Recycled Content

- Points earned are determined by the percentage of purchases that meet one or more of these standards:
 - 30%: 1 point
 - 60%: 2 points
 - 90%: 3 points

LEED-EB Indoor Environmental Quality Credit 10.1 - Entryway Systems (1 Point)

- Provide appropriate grills, grates, mats for removing dirt from feet at entryways to building and provide appropriate cleaning of entryway system

LEED-EB Indoor Environmental Quality Credit 10.2 - Isolation of Janitorial Closets (1 point)

- Closets are structurally sealed, include a sink and are independently ventilated

LEED-EB Indoor Environmental Quality Credit 10.3 Low Environmental Impact Cleaning Policy (1 Point)

- Policy must address sustainable cleaning systems, use of sustainable cleaning products, use of chemical concentrates and appropriate dilution systems, training of cleaning staff, use of hand soaps without antimicrobial agents, and powered cleaning equipment with low air quality impacts

LEED-EB Indoor Environmental Quality Credit 10.4 & 10.5 Low Environmental Impact Pest Management Policy (2 Points)

- Develop and implement an integrated pest management program

LEED-EB Indoor Environmental Quality Credit 10.6 - Low Environmental Impact Cleaning Equipment Policy (1 Point)

- Vacuum cleaners must meet the requirements of the Carpet & Rug Institute "Green Label" Vacuum Cleaner Criteria and be capable of capturing 96% of particulates 0.3 microns in size and operate with a sound level less than 70dBA
- Hot water extraction equipment for deep cleaning carpets must be 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 must be equipped with vacuums, guards and/or other devices for capturing fine particulates, and operate with a sound level less than 70dBA.
- Propane-powered floor equipment must have high-efficiency, low-emissions engines
- Automated scrubbing machines must be equipped with variable-speed feed pumps to optimize the use of cleaning fluids
- Battery-powered equipment must be equipped with environmentally preferable gel batteries
- Active micro fiber technology must be used where appropriate to reduce cleaning chemical consumption and prolong life of disposable scrubbing pads
- Powered equipment must be ergonomically designed to minimize vibration, noise and user fatigue
- Equipment maintenance log must document the dates of equipment purchase and all repair and maintenance activities

LEED-EB Energy and Atmosphere Credit 1 Optimize Energy Performance (1-10 Points)

- Reduce building energy use – For example: shifting the cleaning schedule from nights to afternoons/evenings may reduce energy requirements for heating, cooling and lighting.

LEED-EB Energy and Atmosphere Credit 3.1 Building Operations and Maintenance Staff Education (1 Point)

- Provide 24 hours of training per year for each facility management person

Section 3.2: Green Guide to Health Care (GGHC)

Green Guide to Health Care™ (GGHC) is a best practices guide for healthy and sustainable building design, construction, and operations for the health care industry. GGHC is the health care 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. GGHC provides the health care sector with a voluntary, self-certifying toolkit of best practices that designers, owners, and operators can use to guide and evaluate their progress towards high performance healing environments.

Health care facilities present both a challenge and opportunity in the development and implementation of sustainable design, construction and operations practices. Issues such as 24/7 operations, energy and water use intensity, chemical use, infection control requirements and formidable regulatory requirements can pose significant obstacles to the implementation of currently accepted sustainability protocols.

GGHC is currently in pilot-phase and borrows the credit numbering scheme and credit outline structure of the U.S. Green Building Council LEED® family of products, with an additional section in each credit that addresses relevant Health Issues.

GGHC addresses two major areas, the construction of new buildings and the operation of existing buildings. The rating system consists of 10 prerequisites and 72 credits that can be earned under various categories. The overall rating of a building is based on the total number of credits earned, giving the GGHC operations rating system flexibility similar to LEED. Because the rating system is still in its pilot phase, a rating scale has not yet been developed for levels of certification.

How GGHC Addresses Cleaning Products and Services

GGHC areas relating to cleaning products and services include 2 prerequisites and 13 points. For complete details on these and other credits, visit the GGHC website at www.gghc.org.

GGHC prerequisites and credits that address cleaning products and services include:

GGHC Waste Stream Audit: WM Prerequisite 1

- Audit must identify amounts of medical waste, hazardous waste, solid waste and recyclables in the waste stream
- Implement waste reduction policy through source reduction procurement strategies, collection equipment and education of building occupants

GGHC Sustainable Cleaning Products and Materials: ES Credit 4.1-4.3 (1-3 Points)

- Minimize fragrances in cleaning products and materials
- Purchase products that meet Green Seal 37 standard
- If cleaning chemical is of a type that is not covered by Green Seal 37 (e.g. carpet cleaners, floor finishes or strippers), it must be compliant with the California Code of Regulations on maximum allowable VOC levels
- The number of points earned is determined by the percentage of relevant purchases that meet these standards:
 - 30%: 1 point
 - 60%: 2 points
 - 90%: 3 points

GGHC Janitorial Paper and Other Disposable Products: EP Credit 2 (1 Point)

Implement policy that addresses:

- Products must meet U.S. EPA Comprehensive Procurement Guideline (CPG) standards:
 - Facial Tissue: 10% to 100% Post Consumer Recycled Content
 - Toilet Tissue: 20% to 100% Post Consumer Recycled Content
 - Paper Napkins: 30% to 100% Post Consumer Recycled Content
 - Paper Towels: 40% to 100% Post Consumer Recycled Content
 - Trash bags: 10% to 100% Post Consumer Recycled Content
- Preference for paper products processed Chlorine Free
- Use of large rolls where possible
- Use of hands-free paper dispensers that limit paper portions
- No use of C-fold or multi-fold towel systems

GGHC Total Waste Management: WM Credit 1.1-1.3 (1-3 Points)

- Points are earned on the basis of percentage of waste diverted from landfill by recycling or other means:
 - 15 % diverted: 1 point
 - 25 % diverted: 2 points
 - 35 % diverted: 3 points
- Documented source reduction can contribute to earning these points (e.g., controlled use paper towel dispensers)

GGHC Food Waste Reduction: WM Credit 2 (1 Point)

- 50 % reduction in organic food waste sent to landfills/incineration earns 1 point
- Documented source reduction can contribute to earning these points

GGHC Environmentally Preferable Cleaning Policy: ES Credit 2 (1 Point)

Implement a policy that addresses the cleaning of all surfaces. The policy needs to address:

- Sustainable cleaning systems
- Sustainable floor care systems
- Required levels of disinfection for all surfaces
- Use of sustainable cleaning products
- Use of chemical concentrates and appropriate dilution systems
- Training for cleaning staff
- Use of hand soaps without antimicrobial agents except where required by code or regulation
- Cleaning equipment that does not negatively impact indoor air quality
- Use of carpet extractors that leave low moisture levels in carpets

GGHC Indoor Integrated pest management: ES Credit 2 (1 Point)

- Implement an integrated pest management program for the interior of the building

GGHC Environmentally Preferable Janitorial Equipment: ES Credit 5 (1 Point)

- Implement policy specifying use of cleaning equipment that maximizes cleaning effectiveness and minimizes burdens on health and the environment

GGHC Optimized Energy Performance: EE Credit 1 (1-10 Points)

- Reduce building energy use.

Section 3.3: Collaborative for High Performance Schools (CHPS)

The Collaborative for High Performance Schools (CHPS, often pronounced "chips") aims to increase the energy efficiency of schools in California by marketing information, services, and incentive programs directly to school districts and designers. California currently educates one out of every eight students in the nation and has seen historical enrollment growth rates four times higher than national averages. The goal of the organization is to facilitate the design of high performance schools with environments that are not only energy efficient, but also healthy, comfortable, well lit and contain the amenities needed for a quality education.

The creation and operation of sustainable schools has the power to improve student performance at a reduced cost when compared to conventional schools. Sustainable schools provide an environment conducive to learning and student achievement while saving money, energy, and resources. Sustainable schools have been shown to provide:

- Heightened student performance
- Reduced operating costs
- Better student and teacher health
- Increased average daily attendance
- Improved teacher satisfaction and retention
- Reduced liability exposure
- Enhanced indoor and outdoor environmental impact
- Eligibility for financial incentives

The CHPS certification criteria define a high performance school by addressing site planning, water efficiency, energy efficiency, materials, indoor air quality and district resolutions. CHPS is a pass/fail rating system for new buildings. To earn a "CHPS School" designation, a school must meet all of the prerequisites and earn at least 28 out of 81 points (with at least two of those points being earned in the energy category).

How CHPS Addresses Sustainability of Cleaning Products and Services

For existing buildings, CHPS provides guidance on sustainable building operation rather than offering sustainable building certification and/or ratings. A number of guidelines address cleaning products and methods in schools:

Cleaning Maintenance Plan (CHPS Guideline CP1)

- Development of a cleaning maintenance plan that outlines the goals, tasks and schedules for the custodial staff and also outlines staff training, safety guidelines, and supply information

Cleaning Products and Equipment (CHPS Guideline CP2)

- Selection of cleaning products and equipment using an environmentally preferable purchasing (EPP) strategy
- Standardization of cleaning product and equipment usage to improve safety and lead to more consistent cleaning
- Use of a portion control system for concentrated cleaning chemicals using pre-measured packets or automatic mixing and dispensing units to eliminate mistaken measurements
- Communication with all building employees, students and other building users about the "green cleaning" program in the school

Carpet (CHPS Guideline CP3)

- Use regular vacuuming
- Use walk-off mats to prevent dirt from being tracked into the carpet
- Use vacuums that meet the Carpet and Rug Institute's Green Label Criteria for indoor air quality
- When spot and extraction cleaning, use the least amount of moisture and chemicals possible
- When chemical cleaners are used, use products that are biodegradable and contain minimal dyes, fragrances, and VOCs
- Schedule carpet cleaning as part of the overall preventive maintenance plan

Resilient Floors (CHPS Guideline CP4)

- Sweep, dust mop or vacuum daily to prevent dirt from being ground into the resilient floor
- Wet mop the floor using an appropriate environmentally preferable product once a week
- Floors may have to be wet mopped more frequently depending on the color of the floor and the amount and type of soil, and usage of the area

Cafeterias/Kitchens/Breakrooms (CHPS Guideline CP5)

- Clean food preparation areas and eating tables after each food preparation or eating period
- Cleaning both the undersides and the tops of the tables
- Good mechanical cleaning (scrubbing with soap and water) physically reduces the numbers of germs from the surface
- Do not use wiping cloths for cleaning tables that are used for cleaning restrooms or floors
- Wash the floors in these areas daily
- Carpets and fabrics should be vacuumed daily and deep cleaned monthly or sooner as needed
- Walls, ceilings and vents should be routinely inspected and cleaned as required
- Be sure to identify any food scraps, proteins, and standing wastewater that can become overgrown by fungi and bacteria, including under sinks, washers, refrigerators and trashcans
- Perishable refuse should be picked up daily in restaurants or in mid to high volume food preparation areas
- Ensure that trash containers are covered and that pest control is effective

Restrooms (CHPS Guideline CP6)

- Clean restrooms daily, focusing on trash removal, surface cleaning, cleaning urinals, toilets, sinks and spills, and disinfecting
- Dirty mop bucket water should be disposed of properly and should not be used for cleaning other areas
- Supplies need to be replaced as needed, which may be more or less than once per day depending on the dispensing equipment
- Once a week, a more extensive cleaning should focus on deep stain and soil removal, such as scrubbing walls, doors, tiles, as well as graffiti removal
- More frequent cleaning may be required based on weather and level of use
- Staff should wear appropriate personal protective equipment (PPE)
- Product labels contain recommendations for proper handling and personal protection. Gloves and wetsplash goggles should be available when using cleaning products, especially when working with disinfectants. Mild, non-acidic products should be used when possible
- Avoid the use of chlorine bleach solutions in schools

Furniture (CHPS Guideline CP7)

- Use a high filtration vacuum, or if this is not possible, use a dampened micro-fiber or treated dust cloth to remove dust from shelves, desks, tables, blinds and other hard surfaces
- Dusting should occur as needed when dust accumulates
- Doorknobs, light switches and other surfaces that frequently come in contact with hands should also be cleaned with a sanitizer or disinfectant cleaner

Window Coverings (CHPS Guideline CP8)

- Combine regular vacuuming and dusting to prevent mold infestations
- When using detergent or other chemical cleaners, use the least amount of product possible and select mild detergents and products that are least toxic, biodegradable, and contain low amounts of dyes, fragrances, and VOCs

Whiteboards/Chalkboards (CHPS Guideline CP9)

- Daily cleaning of chalkboards and whiteboards should be part of the building's shared green cleaning responsibility and should be assigned to building occupants as needed
- The custodial staff should focus on more hazardous and critical areas of cleaning. This policy also helps prevent accidental erasure of classroom materials or assignments

- Significant cleaning of chalkboards/ whiteboards with green cleaning products should be scheduled for periodic times during the year, preferably during vacations. Building occupants should be notified in advance of these scheduled cleanings so that they can record important material from the boards
- Regular cleaning of erasers is vital to keeping chalkboards clean
- Begin cleaning chalkboards by vacuuming up all chalk dust, then wipe down with a micro-fiber cloth

OSHA Bloodborne Pathogen Standard (CHPS Guideline CP10)

- Blood and other potentially infectious material spills should be addressed immediately
- Follow the OSHA procedure for handling blood and other potentially infectious materials (OPIM) spills
- According to OSHA standards, always assume that the material is infected with HBV, HIV, or other bloodborne pathogens

Section 4: Green Cleaning Requirements in Comparison

Table 1: Low Environmental Impact Cleaning Policy

	CHPS	GGHC	LEED-EB
Policy Must Address:			
Sustainable cleaning systems	Yes	Yes	Yes
Use of sustainable cleaning products	Yes	Yes	Yes
Minimize cleaning product use	Yes	No	No
Use of chemical concentrates and appropriate dilution systems	Yes	Yes	Yes
Training for cleaning staff	Yes	Yes	Yes
Implementation Plan	Yes	No	No
Use of hand soaps without antimicrobial agents	Yes	Yes	Yes

Table 2: Janitorial Paper Products and Trash Bags

	CHPS	GGHC	LEED-EB
Facial Tissue			
At least 10% Post Consumer Content	Yes	Yes	Yes
Preference for chlorine free bleached	Yes	Yes	Suggested
Toilet Tissue			
At least 20% Post Consumer Content	Yes	Yes	Yes
Preference for chlorine free bleached	Yes	Yes	Suggested
Use of large rolls where possible	Yes	Yes	Suggested
Paper Napkins			
At least 30% Post Consumer Content	Yes	Yes	Yes
Preference for chlorine free bleached	Yes	Yes	Suggested
Paper Towels			
At least 40% Post Consumer Content	Yes	Yes	Yes
Preference for chlorine free bleaching	Yes	Yes	Suggested
No use of C- or multi-fold towel systems	No	Yes	No
Use of large rolls where possible	Yes	Yes	Suggested
Hands-free paper dispensers	Yes	Yes	Suggested
Trash Bags			
At least 10% Post Consumer Content	Yes	Yes	Yes

Table 3: Cleaning Chemicals

	CHPS	GGHC	LEED-EB
Meets Green Seal 37 standard (or equivalent)	Yes	Yes	Yes
California Code of Regulations on maximum allowable VOC levels	No	Yes	Yes
Minimize dyes and fragrances	Yes	Yes	Yes
Prefer neutral pH	Yes	Yes	Yes
Increased biodegradability	Yes	Yes	Yes

Table 4: Low Environmental Impact Cleaning Equipment

	CHPS	GGHC	LEED-EB
Purchasing Policy	Yes	Yes	Yes
Vacuum cleaners	Yes	Yes	Yes
Hot water extraction carpet cleaners	Yes	Yes	Yes
Floor buffers, burnishers and automatic scrubbers	Yes	Yes	Yes
Propane-powered floor equipment	Yes	Yes	Yes
Automated scrubbing machines	Yes	Yes	Yes
Battery-powered equipment	Yes	Yes	Yes
Equipment maintenance log	Yes	Yes	Yes

Table 5: Janitorial Closets

	CHPS	GGHC	LEED-EB
Sealed off from rest of building	No	Yes	Yes
Independent Ventilation	No	Yes	Yes
Sink Present	No	No	Yes
Adequate lighting	Yes	No	No
Adequate storage	Yes	No	No
Properly maintained and organized	Yes	No	No

Table 6: Entryway Systems

	CHPS	GGHC	LEED-EB
Mats or Fixed System	Yes	No	Yes
Cleaning Program in Place	Yes	No	Yes

Table 7: Waste Management and Source Reduction

	CHPS	GGHC	LEED-EB
Policy and Program Addressing:			
Source Reduction	Yes (G-ED1)	Yes	Yes
Recycling	Yes (G-ED3)	Yes	Yes
Waste Stream Audit	Yes	Yes	Yes
Education	Yes	Yes	Yes
Composting	Yes (G-ED4)	Yes	Yes

Table 8: Integrated Pest Management

	CHPS	GGHC	LEED-EB
Integrated Pest Management Program	Yes	Yes	Yes

Table 9: Reduce Building and Site Energy Use

	CHPS	GGHC	LEED-EB
Reduce Building and Site Energy Use	Yes	Yes	Yes

Table 10: Additional Environmental Benefits

	CHPS	GGHC	LEED-EB
Accredited Sustainability Professional	Not Addressed	Not Addressed	Yes
Document delivery of significant additional environmental benefits beyond requirements of an existing Rating System Prerequisite or Credit	Not Addressed	Yes	Yes
Document delivery of significant additional environmental benefits of a type not addressed by an existing Rating System Prerequisite or Credit	Not Addressed	Yes	Yes

Table 11: Specific Cleaning Protocols

	CHPS	GGHC	LEED-EB
Specific Protocols for:			
Carpeted Areas	Yes (G-CP3)	No	No
Resilient Floors	Yes (G-CP4)	No	No
Cafeterias/Kitchens/Breakrooms	Yes (G-CP5)	No	No
Restrooms	Yes (G-CP6)	No	No
Furniture	Yes (G-CP7)	No	No
Window Coverings	Yes (G-CP8)	No	No
Whiteboards / Chalkboards	Yes (G-CP9)	No	No
Bloodborne Pathogen	Yes (G-CP10)	No	No

Section 5: Resources

Collaborative for High Performance Schools

142 Minna St. 2nd Floor
San Francisco, CA 94105
Phone: (877) 642-2477
Fax: (415) 957-1381
www.chps.net

Green Guide for Health Care

info@gghc.org
www.gghc.org

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www.leonardoacademy.org

U.S. Green Building Council

1015 18th Street, NW, Suite 508
Washington, DC 20036
Phone: (202) 828-7422
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www.usgbc.org

Please contact Leonardo Academy with any questions or comments about this paper.