



GREEN CLEANING POLICY

5/9/2011

This document meets the requirements for the USGBC LEED 2009 for Existing Buildings:
Operations & Maintenance (LEED- EBOM 2009 v.3)

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Introduction

Building environments have a significant impact on human and environmental health, worker productivity and overall sustainability. Based on extensive industry research focused on building maintenance and operations, technology and cleaning science, UMass Physical Plant Custodial Services has identified the best tools, products and practices for maintaining sustainable buildings that protect human health and the environment. This policy adheres to the LEED 2009 for Existing Buildings: Operations & Maintenance standard.

Intent

This policy is intended to identify maintenance and operations best practices and guidelines for minimizing building impact on human health and the environment. Compliance with this policy allows UMass Physical Plant Custodial Services to create a building environment that minimizes waste, uses more sustainable products and systems, and uses energy as efficiently as possible.

Sustainability Statement of Commitment

UMass Physical Plant Custodial Services is committed to maintaining and operating buildings in the most sustainable way. We define sustainability as operating "to meet the needs of the present without compromising the ability of future generations to meet their own needs," particularly with regard to use and waste of natural resources.

The Three Pillars of Sustainability

Sustainability is often defined as the "triple bottom line" or as having three pillars: People, Planet and Profit. A balance of these three pillars is essential to achieving sustainability. This policy includes elements that address all three.

- **Social Responsibility (People):** UMass Physical Plant Custodial Services will follow fair and beneficial business practices with regard to employees and the community in which the company conducts its business.
- **Environmental Issues (Planet):** UMass Physical Plant Custodial Services will adopt and adhere to sustainable business practices to have as little impact on human health and the environment as possible.
- **Economic Issues (Profit):** UMass Physical Plant Custodial Services will conduct business with not only social and environmental impact in mind, but also with the best economic outcome possible.

Objectives and Outcomes

- Implement and follow practices that promote sustainability, including steps to reduce buildings' impact on human health and the environment, increase efficiency, and reduce waste, both in UMass Physical Plant Custodial Services's operations and those of its suppliers.
- Promote health, safety and productivity throughout the organization through quality maintenance and operations of UMass Physical Plant Custodial Services's buildings.
- Drive UMass Physical Plant Custodial Services's long-term commitment to sustainability as a journey instead of a destination.
- Record and measure all sustainability practices for reporting, monitoring and continuous improvement purposes.

Occupant Responsibility

One of the primary objectives of this policy is to protect the health of building occupants. UMass Physical Plant Custodial Services will communicate the policy's objectives and outcomes with building occupants organization-wide, with the message that occupants play a significant role in supporting the policy to ensure its success. UMass Physical Plant Custodial Services will ask occupants to provide feedback on maintenance and operations performance, objectives and outcomes.

Sustainable Purchasing

LEED EBOM: Materials and Resources, Prerequisite 1

UMass Physical Plant Custodial Services will follow a sustainable purchasing policy that is aligned with the U.S. Environmental Protection Agency's Environmentally Preferable Purchasing Policy to protect human health and reduce the environmental impact of materials used in the operations and maintenance of buildings. The purchasing policy will identify and outline acceptable products, tools, equipment and materials based on product ingredients and packaging.

UMass Physical Plant Custodial Services will evaluate the items that are purchased for the building, identify more environmentally friendly alternatives, and establish a policy to purchase these alternatives when economically feasible. The organization will work with suppliers to identify environmentally preferable products that meet the needs of the building.

Requirements (Cleaning Materials & Products):

LEED EBOM: Indoor Environmental Quality, Credit 3.3

UMass Physical Plant Custodial Services will implement sustainable purchasing for cleaning materials and products, disposable janitorial paper products and trash bags. Cleaning product and material purchases include items used by in-house staff and/or outsourced service providers.

- The cleaning products meet one or more of the following standards for the appropriate category:
 - Green Seal GS-37, for general-purpose, bathroom, glass and carpet cleaners used for industrial and institutional purposes
 - Environmental Choice CCD-110, for cleaning and degreasing compounds
 - Environmental Choice CCD-146, for hard surface cleaners
 - Environmental Choice CCD-148, for carpet and upholstery care

- Disinfectants, metal polish, floor finishes, strippers or other products not addressed by the above standards meet one or more of the following standards for the appropriate category:
 - Green Seal GS-40, for industrial and institutional floor care products.
 - Environmental Choice CCD-112, for digestion additives for cleaning and odor control
 - Environmental Choice CCD-113, for drain or grease traps additives
 - Environmental Choice CCD-115, for odor control additives
 - Environmental Choice CCD-147, for hard floor care
 - California Code of Regulations maximum allowable VOC levels for the specific product category

- Disposable janitorial paper products and trash bags meet the minimum requirements of one or more of the following programs for the applicable product category:
 - Environmental Protection Agency (EPA) Comprehensive Procurement Guidelines for Janitorial Paper and Plastic Trash Can Liners
 - Green Seal GS-09, for paper towels and napkins
 - Green Seal GS-01, for tissue paper
 - Environmental Choice CCD-082, for toilet tissue
 - Environmental Choice CCD-086, for hand towels
 - Janitorial paper products derived from rapidly renewable resources or made from tree-free fibers

- Hand soaps meet one or more of the following standards:
 - No antimicrobial agents (other than as a preservative) except where required by health codes and other regulations (e.g., food service and health care requirements)

- Green Seal GS-41, for industrial and institutional hand cleaners
- Environmental Choice CCD-104, for hand cleaners and hand soaps

Requirements (Equipment):

LEED EBOM: Indoor Environmental Quality, Credit 3.4

UMass Physical Plant Custodial Services will use janitorial equipment that reduces building contaminants and minimizes environmental impact. The cleaning equipment program includes the following:

- Vacuum cleaners are certified by the Carpet and Rug Institute's "Green Label" Testing Program for vacuum cleaners and operate with a sound level of less than 70dBA.
- 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 operates with a sound level of less than 70dBA.
- Propane-powered floor equipment has high-efficiency, low-emissions engines with catalytic converters and mufflers that meet the California Air Resources Board (CARB) or Environmental Protection Agency (EPA) standards for the specific engine size and operate with a sound level of less than 90dBA.
- Automated scrubbing machines are equipped with variable-speed feed pumps and on-board chemical metering to optimize the use of cleaning fluids. Alternatively, the scrubbing machines use only tap water with no added cleaning products.
- Battery-powered equipment is equipped with environmentally preferable gel batteries.
- 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.

UMass Physical Plant Custodial Services will keep a log for all powered cleaning equipment to document the date of equipment purchase and all repair and maintenance activities and include vendor specification sheets for each type of equipment in use.

Sustainable Cleaning Procedures

LEED EBOM: Indoor Environmental Quality, Credit 3.1

UMass Physical Plant Custodial Services will follow sustainable cleaning procedures to reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological and particulate contaminants, which adversely affect air quality, human health, building finishes, building systems and the environment.

UMass Physical Plant Custodial Services will have in place a high-performance cleaning program, supported by its green cleaning policy that includes the following:

- standard operating procedures addressing how an effective cleaning and hard floor and carpet maintenance system will be consistently utilized, managed and audited;
- an appropriate staffing plan;
- address specifically cleaning to protect vulnerable building occupants;
- training of maintenance personnel in the hazards, use, maintenance, disposal and recycling of cleaning chemicals, dispensing equipment and packaging;
- use of chemical concentrates with appropriate dilution systems to minimize chemical use wherever possible;
- use of sustainable cleaning materials, products, equipment, janitorial paper products and trash bags (including microfiber tools and wipes);
- use of sustainable cleaning and hard floor and carpet care products meeting the sustainability criteria outlined in the purchasing policy;
- Use of cleaning equipment that meets the sustainability criteria outlined in the equipment purchasing policy.

Hand Hygiene

UMass Physical Plant Custodial Services will develop strategies for promoting and improving hand hygiene, including both hand washing and the use of alcohol-based waterless hand sanitizers. UMass Physical Plant Custodial Services will communicate with building occupants proper hand washing techniques. Employees and other building occupants will be encouraged to wash hands after cleaning; after using the restroom; before eating; after coughing, sneezing or blowing their noses; after handling trash; after exposure to an ill person; and before going home.

Integrated Pest Management

LEED EBOM: Indoor Environmental Quality, Credit 3.6

UMass Physical Plant Custodial Services will develop, implement and maintain an integrated pest management (IPM) plan, defined as managing pests in a way that protects human health and the surrounding environment and that improves economic returns through the most effective, least-risk option. IPM calls for using least-toxic chemical pesticides, minimum use of chemicals, use only in targeted locations and use only for targeted species. IPM requires routine inspection and monitoring. The plan must include the following elements:

- Integrated methods, site or pest inspections, pest population monitoring, evaluation of the need for pest control and 1 or more pest control methods, including sanitation, structural repairs, mechanical and living biological controls, other nonchemical methods, and if nontoxic options are unreasonable and have been exhausted, a least-toxic pesticide.
- Specification of the circumstances under which an emergency application of pesticides in a building or on surrounding grounds being maintained by building management can be conducted without complying with the earlier provisions.
- A communications strategy directed to building occupants that addresses universal notification, which requires advance notice of not less than 72 hours before a pesticide under normal conditions and 24 hours after application of a pesticide in emergencies, other than a least-toxic pesticide, is applied in a building or on surrounding grounds that the building management maintains.
- Any cleaning products included in the integrated pest management policy must meet the requirements outlined in UMass Physical Plant Custodial Services's Sustainable Purchasing policy.

Exterior Hardscape

LEED EBOM: Sustainable Sites, Credit 2

UMass Physical Plant Custodial Services will develop and implement an environmentally preferable, low-impact building exterior and hardscape management plan to help preserve surrounding ecological integrity. The plan will address maintenance equipment, snow and ice removal, cleaning of building exterior, paints and sealants used on the exterior, and cleaning of sidewalks, pavement and other hardscape.

Indoor Air Quality

LEED EBOM: Indoor Environmental Quality, Prerequisite 1 and Credits 1.1-1.5

UMass Physical Plant Custodial Services will enhance indoor air quality (IAQ) by optimizing practices to prevent the development of indoor air quality problems in buildings, correcting indoor air quality problems when they occur and maintaining the well-being of the occupants.

UMass Physical Plant Custodial Services will Develop and implement on an ongoing basis an IAQ management program based on the EPA Indoor Air Quality Building Education and Assessment Model (I-BEAM).

UMass Physical Plant Custodial Services will survey building occupants and evaluate building systems to identify potential IAQ problems and implement an ongoing program to prevent these problems from occurring and to maintain a high level of IAQ. UMass Physical Plant Custodial Services will also include in the program a plan for preventing moisture accumulation and mold in the building.

Pollutant Source Control

LEED EBOM: Indoor Environmental Quality, Credit 3.5

UMass Physical Plant Custodial Services will employ permanent entryway systems (grilles, grates, mats) at least 10 feet long in the primary direction of travel to capture dirt and particulates entering the building at all public entry points, and develop the associated cleaning strategies to maintain those entryway systems as well as exterior walkways. Public entryways that are not in use or serve only as emergency exits are excluded from the requirements, as are private offices.

UMass Physical Plant Custodial Services will provide containment drains plumbed for appropriate disposal of hazardous liquid wastes in places where water and chemical concentrate mixing occurs for laboratory purposes.

Resource Conservation

UMass Physical Plant Custodial Services will, where possible, conserve resources, including cleaning materials, water, energy, and transportation used in the process of cleaning and maintaining buildings. When possible, UMass Physical Plant Custodial Services will specify solutions that save water and energy, such as waterless urinals, hybrid fleet vehicles, automatic restroom fixtures, day cleaning and source reduction.

Waste Reduction/Diversion

Through the development and implementation of a waste management plan, UMass Physical Plant Custodial Services will facilitate waste reduction initiatives to reduce the amount of waste generated by building occupants that is hauled to and disposed of in landfills or incineration facilities.

The organization will evaluate the building's waste stream and establish policies to divert materials from disposal in landfills or incineration facilities by encouraging the reuse and recycling of items.

Occupant Health & Safety

UMass Physical Plant Custodial Services will demonstrate its capability to meet occupant environmental, health and safety requirements. Based on these requirements UMass Physical Plant Custodial Services will develop, implement and communicate a policy for occupant health and safety.

Worker Health & Safety

UMass Physical Plant Custodial Services will have a workplace health and safety policy. UMass Physical Plant Custodial Services will train and document training of workers on safe work practices. Management and employees will be trained to report and track any accidents and incidents. UMass Physical Plant Custodial Services and its staff will review the workplace health and safety policy at least once every 24 months.

Packaging

UMass Physical Plant Custodial Services will use, when possible, highly concentrated cleaning products for their reduced environmental impact from packaging and transportation. Cleaning products will have adequate dilution control systems, preferably closed, unalterable proportioning systems for precise dosing and worker safety. Packaging will be recycled when possible.

Storage

UMass Physical Plant Custodial Services will develop guidelines that address the safe handling and storage of cleaning chemicals used in buildings, including a plan for managing hazardous spills or mishandling incidents. UMass Physical Plant Custodial Services's storage guidelines will also include:

- Storage of corrosives, flammables and combustibles only according to applicable OSHA, EPA and NFPA standards.
- A spill containment plan and documented employee training.
- A waste disposal and recycling plan and documented employee training.

Training

UMass Physical Plant Custodial Services will develop requirements for staffing and training of maintenance and cleaning personnel appropriate to the needs of buildings. Curriculum will specifically address the training of maintenance personnel in the hazards of use and in the disposal and recycling of cleaning chemicals, dispensing equipment and packaging. Management and workers will be trained in the following areas:

- Supervisor Training – Supervisors and managers will be trained on technical and leadership skills.
- Worker Training – Workers will be trained on customer service skills, technical skills and personal development.
- Safety Training – All employees will go through safety training as required by regulations, including safe handling and use of hazardous materials and chemicals.
- Green Cleaning Training – Cleaning personnel will be trained according to the organization's green cleaning curriculum.

All training will be documented.

Floor and Carpet Care Logs

UMass Physical Plant Custodial Services will have a written floor maintenance plan and carpet care plan for buildings. The plan will include:

- The number of coats of floor finish applied to floors as base and top coats
- Scheduled floor maintenance and restoration procedures by dates
- Scheduled carpet maintenance and restoration procedures by dates

Scope of Work

UMass Physical Plant Custodial Services will define cleaning service requirements with a site-specific scope of work describing cleaning service requirements. Cleaning service requirements will align to UMass Physical Plant Custodial

Services's mission and values. Any changes to cleaning service requirements will be documented.

Frequency Minimums

UMass Physical Plant Custodial Services will measure and document cleaning performance against the scope of work and performance outcome requirements. Supported by customer feedback surveys, inspections and level of complaints, UMass Physical Plant Custodial Services will determine when it is necessary to adjust cleaning frequencies for the best cleaning performance and customer satisfaction. Frequency minimums will be set based on impact on occupant health and overall risk.

Periodic Audits/Assessment

UMass Physical Plant Custodial Services will implement measurement tools, a customer feedback program and a continuous improvement plan to periodically evaluate the effectiveness of the green cleaning program, including technologies, procedures and processes.

APPA Appearance Assessment

LEED EBOM: Indoor Environmental Quality, Credit 3.2

UMass Physical Plant Custodial Services will conduct an audit in accordance with APPA Leadership in Educational Facilities' "Custodial Staffing Guidelines" to determine the appearance level of the facility. UMass Physical Plant Custodial Services will require that facilities score 3 or less.

If areas are identified as falling below the expected standard, UMass Physical Plant Custodial Services will make improvements to the cleaning program accordingly.

Regulatory Compliance

UMass Physical Plant Custodial Services will comply with all pertinent provisions of the federal OSHA Hazard Communication Standard and all comparable state requirements. The organization will comply with the following provisions:

- Develop, implement and maintain a written hazard communication program.
- Make readily available Material Safety Data Sheets (MSDS) for all hazardous chemical products.

- Maintain an inventory of chemicals that includes an accurate and complete list of all chemicals onsite.
- Train all employees who handle chemicals on the use and hazards of the chemicals.
- Ensure chemicals are used safely and properly, and according to manufacturers' instructions.

UMass Physical Plant Custodial Services will also follow regulations for chemical storage and disposal and for selection of Personal Protective Equipment (PPE).

Definitions and Glossary

APPA Association for Educational Facilities Management Professionals: promotes excellence in all phases of educational facilities management, including administration, planning, design, construction, energy/utilities, maintenance, and operations.

APPA Custodial Staffing Guidelines: guidelines established by APPA, an association for educational facilities management professionals, covering five levels of clean used to assess facility appearance.

Building Occupants: those who visit and work in buildings.

California Air Resources Board (CARB): governing board of California, also known as CARB, the "clean air agency" for the California government.

California Code of Regulations: contains the text of the regulations that have been formally adopted by state agencies.

Carpet and Rug Institute: a nonprofit trade association representing the manufacturers of more than 95 percent of all carpet made in the United States, as well as their suppliers and service providers.

Cleaning: locating, identifying, containing, removing and properly disposing of undesirable substances from surfaces or materials.

Environmental Choice: an eco labeling program established by Environment Canada addressing more than 300 product categories to help cleaning product and services purchasers identify services and products that are less harmful to the environment.

Environmentally Preferable: Executive Order 13423 defines "environmentally preferable" as "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."

Green cleaning: the use of cleaning products and practices that have lower environmental impacts than conventional products and practices.

Green Seal: an independent, nonprofit certifier and science-based standards development organization. A Green Seal certification mark on a product means that it has gone through a stringent process to show that it has less impact on the environment and human health.

MSDS (Material Safety Data Sheet): a form containing data regarding the properties of a particular substance. Record of all MSDS is an important component of product stewardship and workplace safety.

Management: individuals who make decisions about how the organization is operated.

NFPA: international, nonprofit association with a mission to reduce worldwide fires and other hazards that impact quality of life. The association provides and advocates consensus codes and standards, research, training and education.

OSHA (Occupational Safety and Health Administration): a government agency of the U.S. Department of Labor that is charged with maintaining safe and healthy work environments.

OSHA Hazard Communication Standard: a standard that addresses the issue of evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees.

Rapidly Renewable Resources: agricultural products that take 10 years or less to grow or raise and can be harvested in a sustainable fashion.

Sustainable: when sustainability is defined as operating “to meet the needs of the present without compromising the ability of future generations to meet their own needs,” something is sustainable when it is capable of being used with minimal long-term effect on the environment.

Workers: employees who deliver cleaning services.

Resources

Definition of sustainability on page 4 – The United Nations. Statement made by Norwegian Prime Minister Gro Harlem Brundtland, 1989.

Policy elements were written to comply with the following industry standards:

- LEED 2009 version 3 for Existing Buildings: Operations & Maintenance standard

