

VIRGINIA COMMONWEALTH UNIVERSITY	PHYSICAL PLANT DIVISION
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APPROVED BY: _____	LEED EB O&M: Green Cleaning Policy
EFFECTIVE DATE:	REV. DATE: 5/25/2011

A. Intent

This Green Cleaning Policy has been written with the intent of reducing 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.

B. Statement of Commitment

Virginia Commonwealth University (VCU) defines sustainability as the goal of maintaining a good quality of life for those who presently experience it, while expanding that quality of life to those who lack it; understanding and respecting the needs of future generations and the limits of natural systems within which quality human lives are necessarily embedded and dependent. VCU is committed to promoting sustainability through its cleaning practices in order to maintain a safe and healthy environment for all building users.

C. Scope

This Green Cleaning Policy shall be utilized in all VCU buildings. This policy does not apply to privately-maintained residential units, dormitories, or other spaces which VCU is not directly responsible for maintaining.

D. Goals

Goal #1: To purchase at least **90%** of all cleaning products, disposable janitorial paper products, and trash bags that meet the sustainability criteria set forth in *Section E1* with the intent of reducing the environmental impacts and protecting occupant and maintenance personnel health.

Target Dates for Implementation:

- By December 2011: 60% (by cost) of all cleaning products addressed in *Section E1* shall meet at least one of the established sustainability criteria.
- By September 2013: 90% (by cost) of all cleaning products addressed in *Section E1* shall meet at least one of the established sustainability criteria.

Goal #2: To purchase and/or use at least **80%** of all cleaning equipment that meets the sustainability criteria set forth in *Section E3* with the intent of reducing exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological, and particulate contaminants.

Target Dates for Implementation:

- By December 2011: 40% of all cleaning equipment addressed in *Section E3* shall meet the established sustainability criteria.
- By September 2013: 80% of all cleaning equipment addressed in *Section E3* shall meet the established sustainability criteria.}

Goal #3: To implement the Standard Operating Procedures (SOPs) defined in *Section F1* and establish an effective cleaning and hard floor and carpet maintenance system to protect building occupants and maintenance personnel, with special attention to vulnerable populations.

Goal #4: To complete training in the application of this policy for all current housekeeping personnel, as outlined in *Section F4*, by September 2013.

E. Requirements & Recommendations

1. Sustainability Requirements for ALL Cleaning Products

All cleaning products used at VCU will comply with the following requirements:

- Undiluted products must not be corrosive to the skin or eyes (pH must be between 2 and 11.5)
- Products must not be combustible (flashpoint above 150°F)
- Undiluted products must not contain ingredients that are toxic to humans, meeting the exposure limits set by NIOSH or OSHA
- Undiluted products must not contain any of the following carcinogens, mutagens or reproductive toxins:
 - Alkylphenol ethoxylates
 - Benzene
 - Phthalates and dibutyl phthalate

2. Sustainability Requirements for 90% of Cleaning Products

A minimum of **90%** of all cleaning products, disposable janitorial paper products, and trash bags shall meet **one or more** of the following standards for the appropriate category:

- a. Cleaning products:
 - 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.
- b. Disinfectants, metal polish, floor finishes, strippers or other products not addressed by the above standards:

- 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.

c. Hand soaps:

- No antimicrobial agents (other than as a preservative) except where required by health codes and other regulations (i.e., food service, health care requirements, or animal research facilities).
- Green Seal GS-41, for industrial and institutional hand cleaners.
- Environmental Choice CCD-104, for hand cleaners and hand soaps.

d. Disposable janitorial paper products and trash bags:

- U.S. 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.

3. Sustainability *Recommendations* for Cleaning Products

The following criteria are in addition to the above and are recommended but not required.

- a. Give preference to cleaning products that are recognized by one of the following third-party certifiers:
- U.S. EPA Design for the Environment Program
 - Environmental Choice Program's EcoLogo for Cleaning and Janitorial Products
 - Greenguard Environmental Institute standards for GREENGUARD Indoor Air Quality Certified® Products
- b. Give preference to cleaning products that are free of the following hazardous chemicals:
- 2-butoxyethanol
 - Ammonia and quaternary ammonium compounds
 - Chloramine
 - Chlorhexidine
 - Chlorine and chlorinated compounds, including bleach
 - Monoethanolamine
 - Optical brighteners
 - Ozone-depleting compounds (ODCs)
 - Phosphates
 - Zinc and zinc compounds
 - Other heavy metals, including arsenic, lead, cadmium, cobalt, chromium, mercury

- c. Give preference to concentrated cleaning products with controlled dilution systems to minimize chemical use and excess packaging
- d. Select products with primary packaging that is recyclable and made with post-consumer recycle content
- e. Give preference to cleaning products that have minimal fragrance and/or meet the Code of Practice of the International Fragrance Association
- f. Avoid products with a total phosphorous (including compounds) that exceeds 0.5% by weight
- g. Minimize use of aerosol products

4. Sustainability Requirements for Cleaning Equipment

A minimum of **80%** of all cleaning equipment shall meet the following criteria:

- a. Vacuum cleaners:
 - Must be certified by the Carpet and Rug Institute “Green Label” Testing Program for vacuum cleaners and operate with a sound level of less than 70dBA.
- b. Carpet extraction equipment used for restorative deep cleaning
 - Must be certified by the Carpet and Rug Institute’s “Seal of Approval” Testing Program for deep cleaning extractors.
- c. Powered floor maintenance equipment, including electric and battery-powered floor buffers and burnishers:
 - Must be equipped with vacuums, guards and/or other devices for capturing fine particulates and operates with a sound level of less than 70dBA.
- d. Propane-powered floor equipment has high-efficiency, low-emissions engines with catalytic converters and mufflers:
 - Must 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.
- e. Automated scrubbing machines:
 - Must be equipped with variable-speed feed pumps and on-board chemical metering to optimize the use of cleaning fluids.
- f. Battery-powered equipment:
 - Must be equipped with environmentally preferable gel batteries.
- g. Powered equipment:
 - Must be ergonomically designed to minimize vibration, noise, and user fatigue.
- h. All equipment:
 - Must be designed with safeguards, such as rollers or rubber bumpers, to reduce potential damage to building surfaces. Keep a log for all powered cleaning equipment to document the date of equipment purchase, cost per item, all repair and maintenance activities, and include vendor specification sheets for each type of equipment in use.

5. Sustainability Recommendations for Cleaning Equipment

The following criteria are in addition to the above and are recommended but not required.

- a. Give preference to tools and equipment that reduce or eliminate the use of chemicals, including but not limited to:
 - Microfiber mops and cloths – effective without added chemicals for dusting, glass cleaning, wet cleaning, dust mopping, and wet mopping
 - Plumber's snake – use in place of caustic drain openers
 - Pumice stick – use to remove stains from the inside of toilet fixtures rather than acids or other chemicals
- b. Give preference to tools and equipment that contain high post-consumer recycled content, such as buckets, mop & broom handles, and plungers.
- c. Give preference to tools and equipment that contain natural materials such as wood and tampico bristles.
- d. Give preference to tools and equipment that are durable and reusable.
- e. Give preference to vacuum cleaners with HEPA filters and micro-filtration vacuum bags that retain particles that are a maximum of 3 microns.

F. Procedures and Strategies

1. Standard Operating Procedures (SOPs)

The following SOPs are based on the core principles of green cleaning and shall be adopted **100%** at all times:

- ❖ Minimize the use of potentially harmful and irritating chemicals.
 - ❖ Remove or eliminate dirt, dust, and other contaminants.
 - ❖ Protect and preserve surfaces during cleaning.
 - ❖ Reduce contaminant infiltration at the source.
 - ❖ Identify and protect vulnerable building occupants who are sensitive to the impacts of cleaning products and practices.
- a. **General Cleaning Procedures**
 - Identify vulnerable occupants with special needs or sensitivities to cleaning products and practices and take steps to minimize negative impacts of cleaning on those occupants.
 - Develop a cleaning schedule that meets the cleaning needs of the building efficiently and effectively, while minimizing exposures of cleaning products and practices to vulnerable occupants. The Contract Administration Manager and Quality Assurance Supervisor will reassess the cleaning schedule every six months to maintain efficiencies and prevent redundant cleaning.
 - Use cleaning products that meet the sustainability criteria outlined in *Sections E1 and E2*
 - Use chemical concentrates with appropriate dilution systems to minimize chemical use wherever possible.
 - Dilute all concentrated cleaning chemicals per manufacturer recommendations for each application.
 - Use lowest concentration possible for each application.
 - When using cleaning products that are sprayed, apply directly to the cleaning cloth to minimize chemicals in the air.

- Use cleaning equipment that meets the sustainability criteria outlined in *Sections E3* and *E4*
- Use tools that do not require application of chemicals, such as microfiber mops and cloths
- Provide special attention to areas where water collects or condenses; do not allow standing water.

b. Entryways and Lobbies

- Provide special attention to building entrances to capture and eliminate dirt and dust at the source.
- Provide entryway mats (recommended minimum of 10-15' long), or provide integral entry grilles at every outside door.
- Vacuum and spot clean roll-up entryway mats daily, and/or remove entry grilles and vacuum collection pan weekly.
- Replace mats when there is visible surface wear.
- Sweep, hose down or power wash areas leading to the building entrances as needed.

c. Restrooms

- Establish cleaning schedule based on the needs of the building. Depending on the frequency of restroom use, periodic checks may be required every 3 hours or even hourly.
- Avoid overuse of disinfectants. Effective removal of soils and contaminants from surfaces will remove germs without the use of disinfectants.
- Many disinfectants require that the surface be cleaned prior to disinfecting. Use a combination cleaner-disinfectant or clean surfaces thoroughly prior to disinfecting.
- Use a damp microfiber cloth prior to disinfecting or where disinfectant is not required.
- Clean thoroughly, addressing corners, edges, under sinks, and behind fixtures and doors.
- When applying disinfectants allow adequate contact time. Always follow the manufacturer's directions for dilution, application, dwell time, and rinsing.
- Disinfect daily any surfaces that are frequently touched such as countertops, toilets, urinals, door hardware, and light switches.
- Check floor drains as needed to ensure they are operating properly and odor-free; flush clogged drains with hot water to remove clog; flush odorous drains with hot water and germicidal solution if necessary.

d. Dust Mopping

- Vacuum, damp-mop, or use a microfiber mop instead of sweeping to capture dirt and dust and avoid spreading it around.
- Change mop heads and sponges on a regular basis; at a minimum, replace mop heads and sponges weekly, or when they smell or show visible dirt, even when rinsed thoroughly
- Hang mops after use and allow to dry completely between uses; *do not* store in buckets or slop sink

e. Dusting and Spot Cleaning

- Utilize microfiber dusters or cloths for dusting and spot cleaning.
- Use a small amount of water or multi-purpose cleaner with microfiber cloths on stubborn spots or marks.

f. Hard Floor Maintenance

- Provide routine floor maintenance to reduce the need for burnishing, recoating, striping and refinishing can be reduced: Dry mop, spot mop, or vacuum floors daily.

- Select a floor care system (green finish, stripper, and cleaner) that is found to be highly effective, so that the frequency of burnishing, recoating, striping and refinishing can be reduced.
- Use a medium-speed buffing machine instead of a high-speed buffing machine.
- Ensure that buffing machines are equipped with a vacuum and filter attachment.

g. Carpet Maintenance

- Provide routine vacuuming and spot cleaning to reduce the need for major carpet cleaning and prolong the life of the carpet. Carpet can hold 5-10 times its weight in dirt before it becomes visible. Daily vacuuming with an efficient vacuum cleaner (see *Section E3*) is the cornerstone of effective carpet maintenance.
- Change vacuum bags when they are 3/4 full; check bags prior to each use
- Spot clean daily. Attend to spots and spills as soon as possible after the spill occurs. When applying chemicals use a coarse spray to minimize dispersal into the air. Use a spot cleaner that is compatible with the green carpet cleaning chemicals that are typically used.
- Notify building occupants at least 24 hours in advance of any major carpet cleaning.
- Schedule deep cleaning based on the traffic, dirt level and general needs of the building.
- Provide adequate or increased ventilation during major carpet cleanings to reduce potential exposure of chemicals to building occupants and allow the carpet to dry more quickly.
- Consider new technologies in carpet maintenance such as dry power cleaning, low-moisture foam systems, counter-rotating brushes, microfiber rollers, or encapsulating systems.

h. Trash & Recycling Collection

- Use all cleaning products until containers are completely empty prior to opening a new container.
- Use products with expiration dates prior to expiration (may affect reducing quantity ordered)
- Dispose of all excess product in accordance with manufacturer instructions
- Recyclable packaging includes, at a minimum, white office paper, mixed paper, press board, corrugated cardboard, plastics #1 (PET) and #2 (HDPE), metal, and glass
- Recycle all packaging in designated recycling area located in designated recycling areas.

2. Hand Hygiene

The following procedures should be wholly adopted.

- a. Signage will be provided in restrooms to educate building users on the importance of hand hygiene and effective hand washing technique.
- b. Hand soaps should meet the criteria set forth in *Section E.2.c*
- c. Only alcohol-based waterless hand sanitizers will be made available for use in all computer labs and in restrooms as needed.

3. Handling and Storage of Cleaning Chemicals

The following procedures should be wholly adopted.

- a. Storage Requirements for Cleaning Products
 - Containers will be securely closed when not in use.
 - Storage areas that contain cleaning products will be fully ventilated.
 - Custodial closets and storage areas will be kept clean and free of standing water.
 - Where dispensing equipment is used, ensure that worker exposure is minimized.

- All products must be clearly labeled and prominently state dilution recommendations.
- b. Hazardous Spills
 - VCU has a response program to help employees prepare for an event involving a hazardous material emergency. Each department is responsible for handling emergencies within their own work environments. Emergency preparedness plans are developed and communicated to all employees.
 - Specific emergency assistance is available through the **Office of Environmental Health and Safety**.
 - Report any spills of hazardous chemicals immediately by calling the **Chemical/Radiation Emergency Line at 828-9834**. Properly trained personnel will be available to evaluate and offer technical assistance to facilitate the cleanup of the spill.
 - In the event of a hazardous spill, the following general procedures may be used but should be tailored to fit the individual needs of the department's Emergency Response Plan:
 1. Implement the department's Emergency Response Plan.
 2. Attend to any persons who may have been contaminated. Chemical spills on the skin or eyes must be treated immediately.
 3. Notify persons in the immediate area about the spill.
 4. Evacuate all nonessential personnel from the spill area.
 5. Refer to the appropriate Material Safety Data Sheet (MSDS) and if the spilled material is flammable turn off all ignition and heat sources.
 6. Avoid breathing vapors of the spilled material. If necessary, use an appropriate respirator if approved to do so. Otherwise evacuate the area.
 7. Leave on or establish exhaust ventilation if it is safe to do so.
 8. Secure the supplies necessary for the cleanup. Most small liquid spills (<100 ml.) can be absorbed with paper towels, sand or an absorbent.
 9. During the cleanup operation, wear appropriate protective equipment.
 10. Notify OEHS if a hazardous material is involved.
 - After the cleanup of a chemical spill, all materials including any paper towels used in the cleanup must be disposed of as waste according to the policies for Chemical Waste Disposal. Particular Care should be exercised in handling absorbent materials used in the cleanup of flammable liquids to protect against potential fire hazards.

4. Staffing & Training

Housekeeping Contract Manager shall provide training to all cleaning staff for all methods and products described within this policy. A Safety Manual will be available at all times on site and accessible to all staff members. The Safety Manual will include contact information to direct product questions, emergency contact for hazardous event (such as a spill), MSDS for all products, and step-by-step instructions for proper use of each product (including use, dilution, and disposal). If cleaning staff is non-English speaking, training and Safety Manual will be provided in multi-lingual format and dilution instructions will be in pictorial format.

SSC Service Solutions, contractor for MCV Campus provides 4.5 hours per month in training, or 13.5 hours quarterly, for a total 54 hours annually on this training.

GCA Services Group, Inc., contractor for the Monroe Park Campus, provides 1.25 hours monthly or 3.75 hours quarterly, for a total of 15 hours annually on this training.

Training must include, at a minimum:

- a. General orientation
- b. Review of this policy, including intent, procedures, and products; incorporate into semi-annual staff training

- c. General cleaning practices and techniques
- d. Use and care of housekeeping equipment and supplies
- e. Housekeeping chemicals
- f. Review of Safety Manual and where it is located for reference
- g. Review of universal warning symbols pertaining to hazardous substances and waste
- h. Instruction on how to read a material safety data sheet (MSDS)
- i. Where applicable, procurement training must be provided for responsible parties. Procurement training must include, at a minimum, review of the requirements in this plan and all referenced standards. Plant Operations or Personnel will provide checklists and posters on site for cleaning staff that describe procedural requirements in accordance with this policy.

5. Feedback

VCU is committed to implementing a successful and effective Green Cleaning Policy and will take the following actions to collect occupant feedback and provide continuous improvement and evaluate new technologies, procedures, and processes:

- a. Contract Administration Manager will implement an occupant survey and complaint response system.
- b. Contract Administration Manager will document all feedback received and the remedial actions taken in response.

G. Performance Criteria

1. Verification Procedure

VCU will conduct an audit in accordance with APPA Leadership in Educational Facilities' (APPA) "Custodial Staffing Guidelines" to determine the appearance level of the facility.

2. Standard Operating Procedures (SOPs) Documentation Requirements

- a. A detailed maintenance plan shall be developed to include the following information for each maintenance activity:
 - Schedule
 - Purpose
 - Cleaning Chemicals to be used
 - Other supplies or equipment to be used
 - Key Actions
- b. A maintenance log shall be developed and updated to include the following information:
 - Dates of maintenance activity
 - Person performing maintenance activity
 - Details of maintenance, such as the number of coats of floor finish applied (base & top coats)
 - The duration between maintenance activities, such as floor stripping and refinishing cycles

3. Product & Equipment Documentation Requirements

- a. All products must be pre-approved prior to use at VCU.
- b. The Housekeeping Contract Manager must demonstrate at least **90%** of all cleaning products, disposable janitorial paper products, and trash bags meet the sustainability criteria set forth in *Section E1*.

- The Housekeeping Contract Manager must provide manufacturer cut sheets or technical specification sheets demonstrating that products contributing to the percentage specified above meet one of the sustainability criteria set forth in *Section E1*. For example, submit product literature showing Green Seal certification.
- The Housekeeping Contract Manager must submit MSDS for all products.

H. Responsible Parties

Key individuals and assigned tasks:

1. Buyer Manager
 - a. Adopt purchasing policy for sustainable cleaning products and equipment.
2. Contract Administration Manager
 - a. Enforce SOPs and provide ongoing documentation and enforcement.
 - b. Manage the collection of occupant feedback.
3. Housekeeping Contract Manager (804) 827-1482.
 - a. Implement training for staff and maintenance personnel.
 - b. Enforce guidelines for the safe handling and storage of cleaning chemicals.

I. Time Period

1. This policy will remain in effect going forward from its inception date, August 29, 2009.