FRES HOUSEKEEPING DEPARTMENT
GREEN CLEANING GUIDELINES

Table of Contents:
SECTION A  SUMMARY AND INTENT
SECTION B  RESPONSIBLE PARTY STATEMENT AND TIME PERIOD
SECTION C  STATEMENT OF PURPOSE AND BENEFITS
SECTION D  REQUIREMENTS & PRODUCT RECOMMENDATIONS
  1. Cleaning Practice Requirements
  2. Housekeeping Policies & Standards
  3. Equipment
  4. Standard Operating Procedures (SOPs)
  5. Recycling

Appendices
  A – Bin Pairings
  B – Color Coding
  C – Fate of Your Waste
  D – Microfiber Training
  E – Par Level Document
  F – Equipment Log
  G – Enhanced Housekeeping Part A
Section A – Summary and Intent
These Guidelines serve two primary functions:

First, the guidelines inform and educate facility managers and maintenance staff on how to meet green housekeeping certification requirements – the standard maintenance protocols and practices for all Penn interior spaces.

Second, the Guidelines serve to demonstrate that new construction and renovation projects at the University of Pennsylvania meet and exceed the requirements for a “green cleaning and housekeeping” innovation credit as part of the US Green Building Council (USGBC) LEED criteria. The intent for a green cleaning/housekeeping innovation credit is to reduce exposure of building occupants and maintenance personnel to potentially hazardous chemical contaminants that adversely impact air quality, occupant well being, and the environment.

To meet this LEED Credit, the project team must demonstrate that a comprehensive green cleaning/housekeeping program is in place with clear performance goals. To show that these requirements are met, USGBC requests, and these Guidelines provide, the following:

1. A statement of purpose describing what the policy is trying to achieve from a health and environmental standpoint, focusing on cleaning chemicals and custodial training.
2. A contractual or procedural requirement for operations staff to comply with the Guidelines, including a written program for training and implementation.
3. A clear set of acceptable performance’s level standards by which to measure achievement, such as Green Seal Standard GS-37 or California Code of Regulations, Title 17 Section 94509 “VOC Standards for Cleaning Products.”
4. Demonstration that the products used by campus housekeeping services in every campus building and interior space are non-hazardous, have a low environmental impact, and meet the criteria set forth in #3 above. This includes documentation of housekeeping policies and environmental cleaning solution specifications, including a list of approved chemicals and practices.
5. A method by which building occupants can provide feedback regarding cleaning practices.

The Green Housekeeping Guidelines are to be applied in every space at Penn, whether the space is part of a project seeking USGBC LEED certification or not.

Section B – Responsible Party Statement and Time Period
The operating policies and procedures set forth in these Green Cleaning Guidelines are implemented under the authority of the Director of Housekeeping for the University of Pennsylvania. Any changes or deviations from the policies and procedures require written authorization from the Director of Housekeeping.

This policy covers the calendar years 2018 and forward.

Section C - Statement of Purpose and Benefits
These Guidelines establish a policy for the purchase and use of cleaning products and methods that reduce adverse impacts on public health and the environment. Cleaning methods set forth in these Guidelines emphasize the removal, prevention, or minimization of the introduction of indoor pollutants (including soils, particulates, microbes, etc.) while maintaining a safe and healthy environment for all building users. Additionally, the methods recommended minimize the amount of product used as well as the amount of waste created; concentrated cleaning products should be utilized when available.
Products that fall under these Guidelines include general cleaners, hard floor chemicals, and disposable janitorial paper products such as trash bin liners. Although some specific product names and information are listed in the table below, there may be situations where other similar products will be substituted, but all products used in Penn buildings and spaces will meet the criteria set forth in these Guidelines. Any substitution must be approved in writing by the Director of Housekeeping for the University of Pennsylvania.

There are two primary benefits to “green” interior cleaning methods. First, selecting products that do not contain environmental contaminants reduces the ecological impact of cleaning products that end up down the drain or otherwise disposed of. Second, cleaning practices that take environmental principles into account improve indoor air quality for building occupants and cleaning staff. The result is a decrease in building-related illness, greater productivity, and reduced liability for the University of Pennsylvania.

Green housekeeping is shown to reduce suspended particles, volatile organic compounds, as well as bacteria and fungi. ("Indoor Environment Characterization of a Non-Problem Building: Assessment of Cleaning Effectiveness" prepared for the US EPA Environmental Criteria and Assessment Office by Research Triangle Institute, 1994.)

Section D - Requirements and Product Recommendations
1. Cleaning Practice Requirements
   a) Storage requirements for cleaning products:
      Supply / Equipment Rooms must have adequate shelving at a safe height to allow product storage. Any products too large for the shelving must be placed on dunnage racks; at no time can there be product stored directly on the floor. Supply / Equipment Room floors must be kept clean and clear, with access to all interior walls and spaces. Supply/Equipment room must be locked at all times and on a secure key ring with limited access.
      Janitor’s closet(s) shall be equipped with sinks (30” or larger floor level preferred), and drains that can handle large volume of liquid at a single time. Water spigot should be the type that would enable one to attach a garden hose (threaded). Closet size should have adequate space for the storage of a housekeeping cart and daily supplies. Additionally, shelving may be required to meet the closet standard. There should be enough dedicated janitor’s closets in the space to limit any overlapping purchases of chemicals or equipment. Closets must be locked at all times and on a secure key ring with limited access.

   b) Waste Removal Requirements
      Bin Pairings
      Trash and co-mingled recycle containers will be placed in specific areas throughout the facility. All containers will be placed in accordance with the Bin Pairing Standards developed by the University of Pennsylvania, as documented floor plans with containers clearly marked. All containers will be equipped with appropriate lids that are color-coded as per Penn standards (see below). All containers will be appropriately labeled with approved Penn signage.
      Please reference -Appendix A – Bin Pairing Standard

      Color Coding
      All trash cans will be lined with clear liners constructed of 70% post-consumer recycled material. Each liner is clearly marked: “Trash only”. Co-mingled Recycling liners are blue in
color and constructed from 70% post-consumer recycled material, as are the trash liners. All liners must be consistent with the Universities color-coding system.

*Please reference Appendix B – Color Coding*

**Fate of Waste**

Trash and recyclables will be removed from all areas throughout the facility according to a pre-determined schedule established on a daily basis, tilt-carts will be used for collection. There will be a lid on the tilt-cart units as they are being moved throughout the facility. The trash and recycling will be taken to a designated area where industrial, enclosed trash containers will be kept. The trash and recycling will be separated at that point and deposited into the appropriate container. Containers will be removed and emptied at the time they are full.

*Please reference Appendix C – Fate of Your Waste*

**c) Building Occupant Feedback**

University faculty and staff will have access to the assigned Building Administrator, with whom they can provide feedback regarding green cleaning practices. Occupants are encouraged to alert the Building Administrator to any issues relating to green cleaning practices or concerns with service. Building Administrators can be found on the Facilities and Real Estate Services webpage.

The Housekeeping team will meet monthly the Building Administrator and his designates to review green cleaning practices and address concerns. These meetings will focus on maintenance and cleaning program concerns and inquiries. Feedback from these sessions and other cleaning program inquiries will be recorded and tracked, and accommodations will be made for those occupants who are vulnerable or chemically sensitive by adjusting cleaning schedules where necessary. Housekeeping will work with the custodial staff to ensure that issues are being properly addressed.

---

2. **Housekeeping Policies and Standards – Required cleaning products and practices**

Cleaning products and materials shall meet the sustainability requirements outlined in the USGBC LEED IEQ Credit 3.3. Should criteria be revised in subsequent versions of LEED EB-O&M.

For the purpose of this section, cleaning products shall include green cleaning chemicals, materials and products, floor finishes and strippers, disposable janitorial paper products and trash bin liners. Any certification or MSDS information is available upon request.

Below is a list of approved cleaning products authorized for use.

### General Cleaning Chemicals

<table>
<thead>
<tr>
<th>Product</th>
<th>Manufacturer</th>
<th>Purpose</th>
<th>Sustainability Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stride</td>
<td>Diversey</td>
<td>Neutral Floor Cleaner</td>
<td>Green Seal GS-37</td>
</tr>
<tr>
<td>Glance NA</td>
<td>Diversey</td>
<td>Glass &amp; Multi Purpose Cleaner</td>
<td>Green Seal GS-37</td>
</tr>
<tr>
<td>Crew Bathroom Cleaner</td>
<td>Diversey</td>
<td>Restroom Cleaner</td>
<td>Green Seal GS-37</td>
</tr>
<tr>
<td>Kaiblooey</td>
<td>Kaivac</td>
<td>Restroom Cleaner used with Kaivac Machine</td>
<td>Green Seal GS-37</td>
</tr>
<tr>
<td>Alpha HP</td>
<td>Diversey</td>
<td>Multi-Surface Cleaner</td>
<td>Green Seal GS-37</td>
</tr>
<tr>
<td>Virex III</td>
<td>Diversey</td>
<td>Disinfectant Cleaner</td>
<td>Currently None Available</td>
</tr>
</tbody>
</table>

### Disposable Janitorial Paper Products
### Trash Liners

<table>
<thead>
<tr>
<th>Product</th>
<th>Manufacturer</th>
<th>Purpose</th>
<th>Sustainability Criterion</th>
<th>Documentation Enclosed</th>
</tr>
</thead>
<tbody>
<tr>
<td>40x46 Natural “Trash Only”</td>
<td>Revolution Bags</td>
<td>Trash Collection</td>
<td>Eco-Logo</td>
<td>Yes</td>
</tr>
<tr>
<td>40x46 Blue “Recycle Only”</td>
<td>Revolution Bags</td>
<td>Recycle Collection</td>
<td>Eco-Logo</td>
<td>Yes</td>
</tr>
<tr>
<td>43x47 Black</td>
<td>Revolution Bags</td>
<td>Outside Trash Collection</td>
<td>Eco-Logo</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Floor Care

The recommended process for floor care is to use the 3M Stone Protector for Terrazo and the 3M resilient floor care finish for VCT. Utilizing these products with an appropriate maintenance schedule will eliminate the need for chemical stripper when developing a floor care cycle. Any new construction is required to utilize this process on all hard surface spaces where applicable, existing construction must submit a plan outlining a conversion to this process within a five year period.

This process will also require a maintenance schedule* approved by The Director of Housekeeping and displayed in the supply room and janitorial closets.

### Carpet Care

- Vacuum – A vacuuming schedule must be developed and incorporated into the housekeeping job assignment
- Schedule* – A maintenance schedule involving daily, interim, and restorative care must be developed and displayed in the supply room and janitorial closets.
- Carpet Spotting – daily carpet spotting should occur with the use of a low moisture system
- Interim Care – should consist of mechanical agitation with a low moisture system
- Restorative - should consist of low moisture carpet extraction and occur annually

### Microfiber

Cleaning with microfiber cloths instead of paper towels will reduce the amount of particulate left when servicing a space while lessening the use of chemical cleaners. The purchase and commercial laundering of microfiber products allows the re-use of cleaning materials and reduces the ecological footprint of cleaning and housekeeping services.

A requirement of these Guidelines is to include a comprehensive training program for the cleaning staff and adequate space for the pick-up and drop off of microfiber material.

*Please reference Appendix D – Microfiber Training (example)*

### Chemical Purchasing
In order to consolidate deliveries to campus and reduce the amount of product stored, a par level inventory system must be implemented meeting the following requirements.

- Par level tracking sheet approved by The Director of Housekeeping
- Weekly inspections reported to the Regional Director
- Semiannual review of par levels
- Reduction of onsite chemicals and chemical purchases
- Inspection of closets for compliance by the Regional Director

*Appendix E: please reference the Par Level document*

Prohibited chemicals: Any product not listed above, shall be considered to be prohibited. Any exception to this rule must be cleared for a specific purpose, shall be evaluated for environmental and health impacts, and require approval from the Director of Housekeeping. If a product is granted an exception, it will be assigned to a manager who is responsible for access to the chemical and staff training as appropriate. At the conclusion of the approved exemption the assigned manager will be responsible for removing all of the product from the building immediately and sending electronic notification to the Director of Housekeeping confirming removal.

*Tracking and maintenance of the schedule will be a function of the Housekeeping Manager*

3. **Sustainable Cleaning Equipment**

Sustainable Equipment shall be purchased and utilized in combination with the Green cleaning guidelines outlined above. All equipment must meet the criteria listed below:

- Vacuum Cleaning Equipment shall meet or exceed Carpet and Rug Institute (C&RI) requirements for efficiency and operate at a sound level of less than 70dBA. Certification under either the Green Label or Seal of Approval Programs shall indicate compliance.
- Carpet Extraction Equipment used for restorative deep cleaning will meet or exceed the Carpet and Rug Institute (C&RI) Seal of Approval Testing Program for deep cleaning extractors.
- Automated scrubbing machines will be equipped with eCh20 technology and hour meters.
- Battery-powered equipment is equipped with environmentally preferable batteries, including gel or absorbent glass mat (AGM) 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.

All staff managers assigned to oversee use of powered cleaning equipment are to keep a log for all powered equipment to document the date of equipment purchase, all repair and maintenance activities, and vendor specification sheets for each type of equipment in use. Equipment logs should be kept and available for review in the Custodial Directors Office.

*Appendix F – Equipment Log*

4. **Standard Operating Procedures (SOPs)**

Housekeeping Training and Procedures: All housekeeping personnel working within the space must be trained in accordance with the Enhanced Housekeeping Training Plan outlined in the Enhanced Housekeeping Master Plan, part A.

*Appendix G – Enhanced Housekeeping Master Plan, Part A*
5. Recycling
One of the primary keys to making Penn’s recycling effort work, especially in a way that is efficient for both cleaning personnel and occupants, is to develop clear building goals and procedures. It is critical to work with building management to support education and to engage the occupants in this effort. Cleaning personnel are not required to separate recyclables from trash. It is critically important that the building management team work to address non-compliance by individual occupants or those that frequently contaminate the waste stream.

Signage
It is important to enlist the occupants to sort their recyclables and to make it clear which recyclables are to be collected and where they are to be placed. Consistency is an important part of this process and can be achieved by only utilizing the University approved signage for all waste streams.

The link for approved signage is:
https://www.facilities.upenn.edu/sustainability/waste-management-and-recycling

Deskside Recycling
A large percentage of waste generated at an individual’s desk or work station is recyclable. Deskside recycling will help increase the building diversion rate and help eliminate pest problems. Deskside Recycling eliminates personal trash cans from offices and replaces them with small recycling can. Bin pairings are then set up in common space to collect trash that will be removed by housekeeping. Occupants would be expected to recycle at their desk but then walk any trash or food waste to the common area cans. There is a recommended option that allows the purchase of a small desktop trash can (the mini bin) that is kept on the occupants desk and for which the occupant is responsible.

Please note that the standard operating procedure for desk side recycling is as follows:
- Complete a binventory assessment of the building to determine appropriate number and placement of common-space bin pairings.
- Communicate common area can placement to building occupants and housekeeping.
- Desk side trash bin is removed and replaced with a desktop mini bin.
- Every room/space will have a deskside recycling bin to be used for all clean 1-7 plastics, metals, glass, and paper.
- Housekeeping will not empty anything besides the desk side recycling bins.
- Occupants are responsible for emptying mini bin at centrally located landfill bins.
- All food waste in buildings should go in centrally located landfill bins.

For more information on what can be recycled please visit:
http://www.facilities.upenn.edu/sustainability/waste-management-and-recycling

For more information on mini bins:
https://www.youtube.com/watch?v=rZ1swJkz7wI