

# **Green Cleaning Policy**



*Learning with Purpose*

Effective January 1, 2016

This policy meets the criteria of the LEED EBOM 2009 v3

## **I. Overview**

This Green Cleaning Policy has been designed to implement a fully comprehensive green cleaning program for the University of Massachusetts Lowell (hereafter “UML”). Used in conjunction with the attached “Exhibits”, it includes industry best-practices as well as green cleaning processes to ensure a healthy and safe environment for the people who visit or work in UML’s buildings.

## **II. Required Green Cleaning Policies and Procedures**

### **Green Cleaning Program Overview**

To demonstrate its commitment to sustainable facilities, UML has invested in the “greening” of its custodial operations. To achieve this end, this Green Cleaning Policy has been structured based on the LEED EBOM 2009 v3 rating system. UML’s facilities abide by the green cleaning strategies described in this Policy in at least 90% of their useable space.

### **Purpose of Green Cleaning**

Many custodial cleaning products have been shown to degrade indoor air quality, pollute the water, and negatively impact the health of sensitive occupants. In effort to maintain a clean facility, service providers and facility managers often use harsh solutions that, while disinfecting the building, contaminate the indoor air. It is UML’s desire to maintain both clean facilities and healthy environments for their occupants, and they are therefore committed to the green cleaning practices in this policy.

### **Participation**

UML recognizes that the participation of all custodians and supervisors is an essential component of a successful green cleaning program. Therefore, UML includes the requirements associated with green cleaning in the custodial scope of work for all of its facilities on campus.

The custodial team incorporates the following elements into its high-performance cleaning program: green products / supplies / equipment, standard operating procedures, hand hygiene, staff training, solution storage, dilution and safe handling, staffing models, quality inspections, occupant feedback and continuous improvement strategies.

### III. Purchase of Sustainable Cleaning Products and Materials

#### *LEED EBOM: IEQ, Credit 3.3*

The custodial team shall abide by the UML green cleaning product and material standards; the approved supply and consumables list is communicated to all employees in **Exhibit A: Green Cleaning Tracker**. UML employees shall only use supplies and consumables on this list. Any exceptions must be approved, in writing, by the Custodial Manager.

UML shall purchase general custodial products such as disposable paper products and trash bag liners that contain recycled material. At least 75% of the total annual purchases of these products (by cost) shall meet at least one of the following sustainability criteria:

1. The cleaning products meet one or more of the following standards for the appropriate category:
  - a. Green Seal GS-37, for general-purpose, bathroom, glass and carpet cleaners used for industrial and institutional purposes;
  - b. Environmental Choice CCD-110, for cleaning and degreasing compounds;
  - c. Environmental Choice CCD-146, for hard-surface cleaners; and/or
  - d. Environmental Choice CCD-148, for carpet and upholstery care
2. 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:
  - a. Green Seal GS-40, for industrial and institutional floor care products; and/or
  - b. Environmental Choice CCD-112, for digestion additives for cleaning and odor control;
  - c. Environmental Choice CCD-113, for drain or grease trap additives;
  - d. Environmental Choice CCD-115, for odor control additives;
  - e. Environmental Choice CCD-147, for hard-floor care; and/or
  - f. California Code of Regulations maximum allowable VOC levels for the specific product category
3. Disposable custodial paper products and trash bags meet the minimum requirements of one or more of the following programs for the applicable product category:
  - a. EPA comprehensive procurement guidelines for custodial paper and plastic trash can liners;
  - b. Green Seal GS-09, for paper towels and napkins;
  - c. Green Seal GS-01, for tissue paper
  - d. Environmental Choice CCD-082, for toilet tissue;
  - e. Environmental Choice CCD-086, for hand towels; and/or
  - f. Custodial paper products derived from rapidly renewable resources or made from tree-free fibers

4. Hand soaps meet one or more of the following standards:
  - a. 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);
  - b. Green Seal GS-41, for industrial and institutional hand cleaners;
  - c. Environmental Choice CCD-104, for hand cleaners and hand soaps;

UML shall use the attached **Exhibit A: Green Cleaning Tracker** to track all supply and consumable purchases, including metrics for sustainable vs. non-sustainable costs.

To the extent practical, no cleaning or disinfecting products should contain ingredients that are carcinogens, mutagens, or teratogens. These include chemicals listed by the U.S. EPA or the National Institute for Occupational Safety and Health on the Toxics Release Inventory (40 CFR, Section 372, Subpart D). If such products containing these toxic chemicals must be used (cleaning solutions for specific equipment, etc.), only the minimum amounts should be used and the product must be disposed of properly. On the Toxic Release Inventory, a complete list of toxic chemicals is maintained by the U.S. EPA and can be found at [www.epa.gov/tri/chemical](http://www.epa.gov/tri/chemical).

UML shall document the type, volume and concentration of all chemicals used in the cleaning process. UML's Green Cleaning Policy also includes a plan for handling of hazardous spills or mishandling incidents.

## **IV. Purchase of Sustainable Cleaning Equipment**

*LEED EBOM: IEQ, Credit 3.4*

The custodial team shall abide by the UML green cleaning equipment standards; the approved equipment list is communicated to all employees in **Exhibit A: Green Cleaning Tracker**. UML employees shall only use equipment on this list. Any exceptions must be approved, in writing, by the Custodial Manager.

UML must implement an equipment program to reduce building contaminants with minimum environmental impact. At least 40% of the total annual purchases of equipment (by count) shall meet at least one of the following sustainability criteria:

1. Vacuum cleaners meet the requirements of the Carpet & Rug Institute “Green Label” Testing Program – Vacuum Cleaner Criteria and are capable of capturing 96% of particulates 0.3 microns in size and operates with a sound level less than 70dBA.
2. Hot water extraction equipment for deep cleaning carpets is capable of removing sufficient moisture such that the carpets can dry in less than 24 hours. Extraction equipment is certified by Carpet and Rug Institute’s “Seal of Approval” Testing Program for deep-cleaning extractors.
3. Powered maintenance equipment including floor buffers, floor burnishers and automatic scrubbers are equipped with vacuums, guards and/or other devices for capturing fine particulates, and shall operate with a sound level less than 70dBA.
4. Propane-powered floor equipment has high-efficiency, low-emissions engines and operate with a sound level of less than 90dBA.
5. Automated scrubbing machines are equipped with variable-speed feed pumps to optimize the use of cleaning fluids. Automated scrubbing machines must use only tap water with no added cleaning products.
6. Battery-powered equipment is equipped with environmentally preferable gel batteries.
7. Where appropriate, active micro fiber technology is used to reduce cleaning chemical consumption and prolong life of disposable scrubbing pads.
8. Powered equipment is ergonomically designed to minimize vibration, noise and user fatigue.
9. Equipment has rubber bumpers to reduce potential damage to building surfaces.

UML shall use the attached **Exhibit A: Green Cleaning Tracker** to track all equipment purchases, including metrics for sustainable vs. non-sustainable costs and counts.

UML shall maintain a log book (see tab in Green Cleaning Tracker) for all powered custodial equipment, to document the date of equipment purchase and all repair and maintenance activities. The log book shall include vendor specification sheets for each type of equipment in use.

## **V. Standard Operating Procedures (SOP's)**

### **UML's Task and Frequency Sets (Specifications)**

UML cleans all buildings and spaces according to **Exhibit B: UML Cleaning Specification**. In the cleaning specification, each task has an associated frequency shown to its right. Frequencies indicate how many times per year the task is performed. For example, tasks performed once per week have a frequency of 50. Tasks performed daily (Monday – Friday) have a frequency of 250.

UML custodians also abide by the safety and procedural SOP's contained within **Exhibit D: UML Training Modules**.

### **Applying Green Cleaning to the Cleaning Specification**

The green cleaning requirements in this Policy shall be applied to the UML Cleaning Specification.

For example, the task, "Clean door glass and other adjacent glass areas" must be performed using a chemical that meets the Green Seal GS-37 standard and microfiber technology in lieu of paper products when possible as set forth in the Green Seal GS-42 Standard. The task, "Fully vacuum all carpeted areas from wall to wall including walk-off mats and edges" shall be performed with a vacuum cleaner that captures 96% of particulates 0.3 microns in size and operates with a sound level less than 70dBA.

### **Special Treatment of Carpets**

Carpet can be a source of bio-pollutants, dust and volatile organic compounds (VOCs). Pesticides and cleaning products (such as stain removers) that remain on the carpet after initial application can volatilize (rise up into the air) over time and contaminate the indoor air. The following carpet treatment guidelines will mitigate the need for carpet cleaning solutions through both preventative and prescriptive treatment.

1. Prevent stains
  - a. Clean up spills promptly using cold water and one or more blotting cloths
  - b. Make a spill kit available to occupants
2. Promptly clean and thoroughly dry carpets if they should become saturated with water
  - a. Quick action following a leak or other water damage may prevent carpet loss and the growth of mold and/or mildew. (Do not attempt to clean a moldy carpet without proper protective equipment, clothing, respirators, and air filters. Special training may be required to adequately deal with a water-soaked carpet.)
3. Avoid excessive use of carpet shampoos and bonnet cleaning products. Bonnet cleaning involves the use of cotton, rayon, and/or polypropylene pads and a rotary shampoo

machine. Although these chemicals are usually mild, overuse makes more frequent extraction cleaning necessary.

4. Deep-clean when necessary
  - a. Periodically deep-cleansing of carpet is necessary to extract dirt, bio-pollutants, moisture, and embedded cleaning agents.
  - b. A wet vacuum water extraction machine after dry vacuuming may be used.
  - c. The Carpet and Rug Institute recommends rapid drying of the carpet, within 24 hours.
  - d. Pre-sprays applied carefully and left on long enough can reduce the amount of chemicals needed.

### **Reducing Microbial Growth through Proper Cleaning**

The following are basic guidelines to minimize the need for antimicrobial products at UML:

1. Clean first and then apply disinfectant.
  - a. Most disinfectants are not cleaners, and are usually only effective on a clean surface.
  - b. Wait the recommended time before rinsing the antimicrobial solution from the surface (usually at least ten minutes, although some products are rapid-use and may only need one or two minutes)
2. Use disinfectants only when and where required
  - a. Ordinary detergents should remove more microbes than disinfectants
3. Change mop heads and sponges daily
4. Change cleaning water frequently (water used in mop-buckets, etc.)
  - a. Do not waste water by overfilling mop buckets, etc.
5. Intentionally clean areas where water collects and condenses
  - a. Areas such as refrigerator and air conditioner pans as well as air cleaner/humidifier machines
6. Use a drain maintainer (containing enzymes) if drains clog or has an odor
7. If there is a food preparation area in any of the subject buildings, UML employees that prepare food for customers must use antimicrobial soaps and/or disinfectants

Note: If a building uses antimicrobial products, it needs to document the specific antimicrobial used, the location, date and reason for use.

## **VI. Hard Floor and Carpet Maintenance**

Floor-care maintenance shall consistently be performed according to written protocols, without exception. QC checks shall be used to ensure 100% adoption.

### **Practices to Optimize Hard-Floor and Carpet Maintenance**

The floor and carpet maintenance program at UML is designed to use few, or no, harmful chemicals; remove and eliminate irritating dust, dirt and other contaminants; and protect and preserve floors.

UML employees shall follow the floor and carpet care instructions outlined in **Exhibit D: UML Training Modules 7 – 10**, according to the frequencies documented in **Exhibit B: UML Cleaning Specification**. These requirements ensure a safe and healthy floor and carpet maintenance program for the custodians and occupants alike.

To minimize chemical use, UML has reduced the frequency of stripping or removing coatings to once per year in all area types, and is able to maximize the floor's longevity, thereby conserving cleaning and floor restoration materials and minimizing occupants' exposure to harmful chemicals. Additionally, UML is converting many of its finished flooring to a "no-strip" finish that only requires mopping and auto scrubbing (no burnishing, scrub and recoat, or strip and refinish; thereby minimizing chemical usage, waste, and labor).

A written floor maintenance plan and log shall be maintained, which details the number of coats of floor finish being applied as the base and other applications (top coat), along with all relevant maintenance/restoration practices and the dates and duration of these activities.

### **Floor and Carpet Care Schedule**

UML shall use a Floor and Carpet Care Schedule to plan, document and track its restorative services. This schedule shall be updated at least quarterly and shall indicate the estimated and actual dates for restorative work. See the "**Hard Floor and Carpet Schedule**" in Exhibit A: Green Cleaning Tracker" for an example.

## **VII. Promotion of Hand Hygiene**

UML will promote healthy hand hygiene by providing soap and soap dispensers in custodial closets, kitchen areas, bathrooms, break rooms and locker rooms. Custodians are required to wash their hands on a routine basis while servicing the facility. Alcohol-based hand sanitizers will be provided in public areas. Where applicable, the buildings' paper products should be dispersed from hands-free dispensers to eliminate levers and cranks that users share. Hand soaps shall not contain anti-microbial agents (other than as a preservative system) unless required by health codes and other regulations.

## **VIII. Safe Handling and Storage of Cleaning Chemicals**

### **Chemical Storage Guidelines**

Custodial team shall maintain a program that reduces the exposure of the building occupants to potentially dangerous chemical, biological, and particle contaminants which adversely impact air quality, health, and the environment.

1. Any chemical stored in the custodial closets will have a locked container which encloses the liquid cleaning products and delivers out proper specified measurement for dilution.
2. The solutions used by the custodial team will all be stored in the custodial closet(s) and the housekeeping staff must follow these guidelines:
  - a. Safety Data Sheets (SDS) must be available to all service providers
  - b. Service providers are trained on MSDS and Chemical Handling annually
  - c. All containers must be properly labeled to be easily identifiable
  - d. All cleaning products must be properly and safely stored
    - i. No liquids will be placed on shelves above eye level
  - e. Custodians must use appropriate Personal Protective Equipment
  - f. Chemical dilution systems must be adhered to
  - g. Unnecessary amounts of chemicals should not be stored in the custodial closet
  - h. Only authorized employees will have access to the main storage room
  - i. UML should install and maintain proper hot and cold water supplies and drain systems in custodial closets for the use of chemical dispensing and dilution

## **IX. Staffing and Training**

### **Staffing**

UML shall maintain an appropriate staffing plan that is consistent with the UML Cleaning Specification (Exhibit B). Staffing levels are derived by multiplying the area's net cleanable square footage by the specific production rates for each area type. The **Exhibit C: UML Workloading Tool** shall be used to estimate staffing levels for new or renovated buildings.

### **Service Provider Training Requirements**

*UML will provide training of personnel in the hazards, use, maintenance and disposal of cleaning chemicals, dispensing equipment and packaging. Documentation of the training sessions, attendees and topics covered shall be collected and maintained by the housekeeping manager.*

UML shall track employee training hours via the Training Log Book (see template in **Exhibit A: Green Cleaning Tracker**). At a minimum, each custodian shall receive eight hours of documented training, per year.

UML uses the training modules included in **Exhibit D: UML Training Modules**. Training topics shall include:

1. Basic Custodial Training
  - a. Custodians receive basic training, including the UML Cleaning Specification, and this UML Green Cleaning Plan.
2. Training Specifications
  - a. Safety data sheets (SDS).
  - b. Compliance with the green chemical, consumables and equipment standards
  - c. Use and wear of Personal Protective Equipment.
  - d. Service providers should be informed of UML's product reporting requirements.
3. Communication
4. Environmental Health and Safety training
5. Blood-borne pathogen training
6. Asbestos awareness training
7. Appropriate chemical "hazard" communication training
8. Workplace safety training
9. Orientation to the area(s) being serviced
10. Life Safety training

## **X. Occupant Feedback and Continuous Improvement**

### **Occupant Feedback**

UML collects building occupant feedback on an ongoing basis in order to improve its custodial program. Each year, UML has Sightlines conduct a formal custodial survey to discover and respond to building occupant ideas and complaints. The custodial team operates with a “continuous improvement” mindset and will be open to new ideas, technologies, procedures and processes. UML will document survey results, as well as the response to the survey. See **Exhibit E: Custodial Survey** for more information.

### **Quality Control Measures**

*LEED EBOM: IEQ, Credit 3.2*

UML is committed to maintaining its buildings in an environmentally preferable way that will benefit the health of the facility occupants, visitors, maintenance personnel and the natural environment. To this end, UML routinely evaluates the successes and shortcomings of all employed practices and makes immediate alterations accordingly. Building and site walk-throughs are completed routinely by UML supervisors and management to ensure adoption and proper application.

As recommended by the U.S. Green Building Council, UML shall use a third-party to assess the quality of the custodial services, at least once per year. The third-party inspectors shall inspect a random cross-section of at least 20% of the campus’s square footage, during normal usage hours. Inspection data shall result in an overall score that can also be converted to an APPA appearance level.

Facility occupants are highly encouraged to report any outstanding custodial issues to the facility personnel. New technologies for environmentally sensitive cleaning will be continuously monitored and assessed as they become available and adopted when they are applicable (**see the “New Product Testing” tab in the Green Cleaning Tracker**). Similarly, this Policy will be updated as needed to ensure that current and successful procedures are being carried out.

### **Vulnerable Building Occupants**

To protect vulnerable building occupants, such as pregnant women, children, asthmatics, elderly occupants, individuals with allergies and highly sensitive individuals, custodians shall use only low/no VOC cleaning products; they shall perform routine cleaning and floor restoration activities after working hours when the majority of occupants have left the building; the staff shall limit the number of cleaning chemicals used in the building; and they shall maintain a high level of cleanliness thus minimizing the presence of irritants.

## **XI. Indoor Chemical and Pollutant Source Control**

*LEED EBOM: IEQ, Credit 3.5*

UML shall employ permanent entryway systems (grilles, grates, mats) at least ten feet long in the primary direction of travel to capture dirt and particulates entering the building at all public entry points. These entryway systems and exterior walkways shall be appropriately cleaned (see UML Cleaning Specification). Public entryways that are not in use or serve only as emergency exits are excluded from the requirements, as are private offices. When possible, mats shall be fire resistant and have solid backing. UML shall retain all product literature when purchasing new mats, grilles or grates.

Whenever possible, UML will install low-maintenance plants around the building's entryways. "Low-maintenance plants" are unlikely to produce fruit, flowers or leaves that are likely to be tracked into the building. UML shall select plants that are based on an integrated pest management (IPM) approach to eliminate pesticide applications that could be tracked inside.

UML shall provide containment drains plumbed for appropriate disposal of hazardous liquid wastes in places where water and chemical concentrate mixing occurs for laboratory purposes.

## **XII. Reporting and Documentation**

### **Reporting**

UML shall provide documentation of its comprehensive green cleaning program upon request. The primary method for documenting the adherence to this Green Cleaning Policy is the **Green Cleaning Tracker (Exhibit A)**. This tracker shall be updated on at least a quarterly basis.

### **XIII. Effective Date**

This UML Green Cleaning Policy shall take effect immediately upon **January 1, 2016** and shall remain in full effect until officially amended and/or replaced by a subsequent green cleaning policy.

### **XIV. Responsible Participants**

The individuals below hereby agree to adhere to the Green Cleaning Policy as presented in this document:

<i>NAME</i>	<i>TITLE</i>	<i>DATE</i>	<i>SIGNATURE</i>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

## **XV. Exhibits**

### **Exhibit A: Green Cleaning Tracker**



UML Green  
Cleaning Policy - 12-

### **Exhibit B: UML Cleaning Specification**



UML Cleaning  
Specification.doc

### **Exhibit C: UML Workloading Tool**



UML Workloading  
Tool.xls

### **Exhibit D: UML Training Modules**



UML Training  
Modules.zip

### **Exhibit E: Custodial Survey**



Custodial  
Survey.pptx