University of California, Riverside

Green Cleaning Policy
LEED for Existing Buildings: Operations and Maintenance
2012

SECTION 1: SCOPE

This Policy and Plan addresses environmental best practices for cleaning the interior of the University of California, Riverside (here after referred to as "UC Riverside"), located at 900 University Ave., Riverside, CA 92521. Specifically, it addresses purchasing sustainable cleaning, hard-floor and carpet products, and entryway systems; procuring sustainable cleaning equipment; developing and implementing standard operating procedures for effective cleaning; promoting and improving hand hygiene; developing guidelines for handling cleaning chemicals; developing staffing and employee training requirements; collecting and addressing occupant feedback; and establishing procedures for use of chemical concentrates and dilution systems.

SECTION 2: GOALS

The goal of this Green Cleaning Policy and Plan is to:

- Reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological and particle contaminants, which adversely impact air quality, health, building finishes, building systems and the environment
- Reduce the environmental impacts of cleaning products, disposable janitorial paper products and trash bags

SECTION 3: RESPONSIBLE PARTIES

Robert Slater, the Physical Plant Senior Superintendent, and Luis Lara, the Housekeeping Manager, with support from John Cook, the Campus Sustainability Coordinator, is responsible for developing and managing the implementation of the Green Cleaning Policy and Plan.

Contact Information for Responsible Parties:			
	Housing	Stateside	
Name:	Luis Lara	Robert Slater	John Cook
Job Title:	Housekeeping Manager	Physical Plant Senior Superintendent	Campus Sustainability Director
Phone:	951-827-7749	951-827-4219	951-827-1270
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Personnel involved with various elements of the green cleaning program shall carry out their tasks according to this policy, and report all relevant activities to the aforementioned parties. To ensure an effective and coordinated effort, the building staff responsible for overseeing the Green Cleaning Policy and Plan shall review all proposed cleaning activities before implementation.

SECTION 4: QUALITY ASSURANCE CONTROL PROCESS

The party(ies) responsible shall periodically evaluate the success of the Green Cleaning Policy and Plan. This evaluation may include producing and providing a report on an annual basis to the Campus Sustainability Coordinator. Whenever possible, the annual report shall include an evaluation of the performance, safety, cost and environmental/public health benefits achieved as a result of its implementation.

Prior to implementation, the responsible party(ies) shall review all proposed cleaning activities. Upon reviewing proposed activities, the responsible party(ies) shall determine if they meet the criteria of the Green Cleaning Policy and approve or deny action.

The responsible party(ies) shall regularly communicate with all cleaning staff, and conduct regular site inspections and evaluations to ensure that the Green Cleaning Policy and Plan is in place and functioning as intended. In addition to ongoing quality control measures, the Campus Sustainability Coordinator will review all practices and products (typically annually) to identify opportunities for improvement and expansion of environmentally friendly practices.

SECTION 5: CLEANING PRODUCTS

PERFORMANCE METRICS AND MEASUREMENT

The practices listed below shall be implemented, to the extent practicable, with a target goal of 75% of products complying, based on cost. The Responsible Party shall assign staff to track purchase rates of both compliant and noncompliant products.

PRACTICES TO OPTIMIZE USE OF SUSTAINABLE CLEANING PRODUCTS

Cleaning products and materials, including hard-floor and carpet-care products, used at UC Riverside shall, when possible, meet the requirements of IEQc3.3: Green Cleaning, Purchase of Sustainable Cleaning Products and Materials.

Product types subject to these requirements include, but are not limited to, bio-enzymatic cleaners, hard-floor cleaners, carpet cleaners, general-purpose cleaners, specialty cleaners, odor control, disinfectants, disposable janitorial paper products and trash bags, and hand soaps.

IEQc3.3: Green Cleaning, Purchase of Sustainable Cleaning Products and Materials Criteria:

- 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 cleaner use 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 GS-37 or Environmental Choice CCD-110, 146, or 148 shall meet at least one 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-trap 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:
  - 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.
- 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 (i.e., 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.

All other cleaning products not otherwise covered, such as polishes or disinfectants, will comply with the California Code of Regulation maximum allowable VOC levels. Floor care products will be zinc-free.

MICROFIBER
When applying cleaning products, microfiber products shall be used in place of cotton and tradition cleaning materials. Microfiber can hold up to seven times its weight in fluids/soils. Microfiber electro-statically attracts soil therefor reducing chemical use, and withstands normal wear. Other benefits include: Lint-free, Hypo-allergenic, moves easily across surfaces and non-abrasive.

APPROVED PRODUCT LIST
The products listed below are approved for use. Products beyond those listed here must be submitted for approval prior to use.

Product Type	Manufacturer/Product Name	Sustainability Criteria Met
General-purpose, bathroom, glass and carpet cleaner use for industrial and institutional purposes	Spartan Chemicals Green Solutions All-Purpose Cleaner MSDS	Green Seal GS-37
General-purpose, bathroom, glass and carpet cleaner use for industrial and institutional purposes	Spartan Chemicals Green Solutions Industrial Cleaner MSDS	Green Seal GS-37
General-purpose, bathroom, glass and carpet cleaner use for industrial and institutional purposes	Spartan Chemicals Green Solutions Glass Cleaner MSDS	Green Seal GS-37
General-purpose, bathroom, glass and carpet cleaner use for industrial and institutional purposes	Spartan Chemicals Clean by Peroxy MSDS	Green Seal GS-37
General-purpose, bathroom, glass and carpet cleaner use for industrial and institutional purposes	Spartan Chemicals BioRenewables Glass Cleaner MSDS	Green Seal GS-37
General-purpose, bathroom, glass and carpet cleaner use for industrial and institutional purposes	Spartan Chemicals Green Solutions Carpet Cleaner MSDS	Green Seal GS-37
General-purpose, bathroom, glass and carpet cleaner use for industrial and institutional purposes	Spartan Chemicals Tribase Multi Purpose Cleaner MSDS	Green Seal GS-37
Industrial and institutional floor-care products	Spartan Chemicals Green Solutions Floor Finish Remover MSDS	Green Seal GS-40
Industrial and institutional floor-care products	Spartan Chemicals Green Solutions Floor Sealer & Finish MSDS	Green Seal GS-40

For all products not previously listed, available products that also meet sustainability criteria can be obtained from the following resources:

Product Type	List of Manufacturer/Product Names	Sustainability Criteria
General-purpose, bathroom, glass and carpet cleaner use for industrial and	http://www.greenseal.org/FindGreenSealProductsandServices.aspx?vid=ViewProductDetail&cid=0&sid=23	Green Seal GS-37

institutional purposes		
Cleaning and degreasing compounds	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=455	Environmental Choice CCD-110
Hard surface cleaners	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=371	Environmental Choice CCD-146
Carpet and upholstery care	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=373	Environmental Choice CCD-148
Industrial and institutional floor-care products	http://www.greenseal.org/FindGreenSealProductsandServices.aspx?vid=ViewProductDetail&cid=0&sid=28	Green Seal GS-40
Digestion additives for cleaning and odor control	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=337	Environmental Choice CCD-112
Drain or grease-trap additives	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=338	Environmental Choice CCD-113
Odor-control additives	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=340	Environmental Choice CCD-115
Hard-floor care	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=372	Environmental Choice CCD-147
Janitorial paper and plastic trash can liners	http://www.epa.gov/osw/conserve/tools/cpg/products/trashbag.htm	U.S. EPA Comprehensive Procurement Guidelines
Paper towels and napkins	http://www.greenseal.org/FindGreenSealProductsandServices.aspx?vid=ViewProductDetail&cid=0&sid=41	Green Seal GS-09
Tissue paper	http://www.greenseal.org/FindGreenSealProductsandServices.aspx?vid=ViewProductDetail&cid=0&sid=25	Green Seal GS-01
Toilet tissue	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=307	Environmental Choice CCD-082
Hand towels	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=311	Environmental Choice CCD-086
Hand soaps	http://www.environmentalchoice.com/en/seeourcriteria/details.asp?ccd_id=329	Environmental Choice CCD-104
Microfiber tools and wipes	WAXIE-Green Microfiber Products	Microfiber

SECTION 6: CLEANING EQUIPMENT

PERFORMANCE METRICS AND MEASUREMENT
All newly acquired cleaning equipment shall comply with the criteria listed below. The Responsible Party shall assign staff to track the percentage of all equipment that meets the criteria, based on cost or number of pieces of equipment, with a target of 20% of equipment complies by June 2012.

PRACTICES TO OPTIMIZE USE OF SUSTAINABLE CLEANING EQUIPMENT

Purchase Criteria
All new equipment acquisitions shall comply with the requirements of IEQc3.4: Green Cleaning, Sustainable Cleaning Equipment:

- 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.

In addition to previously listed requirements, all new equipment acquisitions shall comply with requirements specific to its respective equipment category:

- *Vacuum cleaners* – Meet the requirements of the Carpet and Rug Institute "Green Label" Testing Program - Vacuum Cleaner Criteria and are capable of capturing 96% of particulates 0.3 microns in size and shall operate with a sound level less than 70dBA.
- *Carpet extractors* – 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 less than 70dBA.
- *Propane-powered floor equipment* – Has high-efficiency, low-emission engines with catalytic converters and mufflers that meet 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 onboard chemical metering to optimize the use of cleaning fluids. Alternatively, the scrubbing machines use only tap water with no added cleaning products.

Record-keeping
A log shall be kept for all powered cleaning equipment to document the date of purchase and all repair and maintenance activities. Vendor cut sheets for all equipment used onsite shall be stored onsite. When cleaning equipment replacement is necessary, acquisition dates and supporting documentation shall be retained to demonstrate that all newly acquired equipment complies with the specifications.

APPROVED EQUIPMENT LIST
The equipment listed below is approved in the event of new equipment acquisition. Equipment beyond that listed here must be submitted for approval prior to acquisition.

Equipment Type	Manufacturer/Model	Sustainability Criteria Met
Vacuums	http://www.carpet-rug.org/commercial-customers/cleaning-and-maintenance/seal-of-approval-products/soa-gl-vacuum-list.cfm	CRI Green Label certified
Carpet extractors	http://www.carpet-rug.org/commercial-customers/cleaning-and-maintenance/seal-of-approval-products/extractor-list.cfm	CRI Seal of Approval

Automatic scrubbing machines	IPC Eagle ECS Automatic Scrubbers	Reduced water and chemical consumption
Floor stripping equipment	Aztec Sidewinder Aztec Edgewinder	Ergonomic, high-efficiency and low-emission

SECTION 7: HARD-FLOOR AND CARPET MAINTENANCE

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

PRACTICES TO OPTIMIZE HARD-FLOOR AND CARPET MAINTENANCE

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

To minimize chemical use, UC Riverside has reduced the frequency of stripping or removing coatings and is able to maximize the floor's longevity, thereby conserving cleaning and floor restoration materials and minimizing occupants' exposure to harmful chemicals.

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.

SECTION 8: ENTRYWAY SYSTEMS

PERFORMANCE METRICS AND MEASUREMENT
Protocols promoting effective use of entryway systems shall be wholly adopted. Quality control checks shall be used to ensure 100% adoption.

PRACTICES TO OPTIMIZE USE AND MAINTENANCE OF ENTRYWAY SYSTEMS
All UC Riverside new construction & major renovation projects under this policy shall have entryways and entrances which are equipped with either walk-off mats grilles; or grates. Existing building shall strive to meet these requirements.

- Grilles; Grates and walk-off mats at all primary entrances shall be cleaned weekly. These systems shall be a minimum of 10 feet long in the direction of travel.
- Grilles shall be vacuumed and surface cleaned daily. Grille wells shall also be cleaned during this process and mopped weekly.
- The walk-off mats shall be professionally cleaned on a weekly basis and thoroughly vacuumed onsite on a daily basis. The flooring beneath the mats shall be vacuumed and mopped on a weekly basis as well.
- Secondary entrances shall also have walk-off mats of 10feet in length to capture initial loose particles entering the building. These mats must be vacuumed weekly, and the floor beneath shall be vacuumed and mopped on a weekly basis.

SECTION 9: HAND HYGIENE

PERFORMANCE METRICS AND MEASUREMENT
Protocols promoting hand hygiene shall be wholly adopted. QC checks will be used to ensure 100% adoption.

PRACTICES TO OPTIMIZE HAND HYGIENE
The following practices shall be implemented to optimize hand hygiene:

- All restroom facilities, including those in guest rooms, public areas and back-of-house spaces shall include appropriate hand soaps. (See Section 5.)

- Per regulations, hand-hygiene notices will be placed in all employee rest rooms.
- Alcohol-based hand sanitizers shall be provided for community use at the discretion of individual campus departments. Placement and maintenance schedules of sanitizer dispensers shall be determined by campus departments in the absence of university-wide protocol. Wall-mounted sanitizer dispensers will be prioritized over free-standing dispensers to ensure ADA compliance.

SECTION 10: HANDLING AND STORAGE OF CLEANING CHEMICALS

PERFORMANCE METRICS AND MEASUREMENT
Protocols governing safe handling and storage of cleaning chemicals shall be wholly adopted. QC checks will be used to ensure 100% adoption.

PRACTICES TO OPTIMIZE HANDLING AND STORAGE OF CLEANING CHEMICALS
The following protocols have been established to mitigate spills, leaks and mismanagement.

Storage

- Cleaning chemicals are stored in a single-locked janitorial closet. Workers access chemicals at the beginning of their shift and as needed.

Chemical Dilution Systems

(See Section 11)

MSDS Storage

- The cleaning chemical supplier is required to provide accurate MSDSs for all chemicals delivered to the building.
- MSDSs are filed, in duplicate, in the chemical storage room and the manager's office in clearly labeled binders.
- The cleaning chemical supplier maintains a toll-free hotline that can be called in the event of spills or accidents to access safety data and protocols.
- MSDS are kept at each one of the Housekeeping Custodial Storage main distribution point, with labeled binders.

Emergency Procedures

In the event of an emergency pertaining to a hazardous chemical, such as a spill or potentially harmful accident, building occupants who have been trained and have the proper materials may contain the spill and contact Environmental Health and Safety at 951-827-5528. Building occupants who have not been trained or who cannot contain the spill are to contact 911 for assistance. Remaining hazardous waste is to be disposed through Environmental Health and Safety.

SECTION 11: USE OF CHEMICAL CONCENTRATES AND DILUTION SYSTEMS

PERFORMANCE METRICS AND MEASUREMENT
Dilution systems and chemical concentrates shall be wholly utilized for the following product types:

- Diversey #50 Raindance™ Low Foam Neutral Floor Cleaner
- Diversey #2 Glance® NA Non-Ammoniated Glass Cleaner
- Diversey # 44 Crew® Bathroom Cleaner & Scale Remover
- Diversey #33 Morning Mist Nuetral Disinfectant Cleaner

PRACTICES TO OPTIMIZE USE OF CHEMICAL CONCENTRATES AND DILUTION SYSTEMS
Chemical concentrates and dilution systems are used according to the procedures below to minimize risk to staff and occupants, and to conserve resources.

Dilution System Description

The chemical dilution system in use is the Diversey Command Center Dispensing System. It is a four button wall-mounted unit that ensures no chemical contact or waste. It is designed to fill either buckets or bottles, and can be specifically adapted to fill either one. Bottles are filled at a rate of 1 gallon per minute, and buckets are filled at a rate of 4 gallons per minute. It automatically mixes chemicals and features adjustable dilutions.

Protocol for Use

The Command Center is straightforward and easy-to-use:

- Chemicals are mixed automatically; no direct handling is required by the operator.
- The desired dilution and dispense mode (bucket or bottle) is selected by the operator.
- The operator presses the dispense button, and the solution is dispensed at the desired dilution.

Maintenance

The distributor and vendors of the Command Center Dispensing System is responsible for maintenance under warranty. Physical Plant shall be contacted for maintenance needs and distributor contacts.

SECTION 12: VULNERABLE BUILDING OCCUPANTS

To protect vulnerable building occupants, such as pregnant women, children, asthmatics, elderly occupants, individuals with allergies and highly sensitive individuals, cleaning staff from UC Riverside 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.

SECTION 13: STAFFING AND TRAINING

PERFORMANCE METRICS AND MEASUREMENT

All cleaning personnel shall receive regular training. Vendors shall supply evidence of compliance with training requirements prior to contract award or renewal.

PRACTICES TO OPTIMIZE STAFFING AND TRAINING

All cleaning staff and managers shall receive environmental safety and health training, addressing, at minimum, hazards associated with the use, disposal and recycling of cleaning chemicals, dispensing equipment and packaging.

Training Topics

Employee training topics include, but are not limited to:

- Employee safety and health compliance as it relates to the cleaning program
- Regulatory compliance standards—OSHA, EPA, and other local, state, and federal rules and regulations
- Unsafe attitudes and conditions in the work place through Job Safety Analysis—OSHA JSA or JHA (Job Hazard Analysis)
- Employee performance improvement, such as accident prevention and record-keeping
- Compliance with health and safety rules, and regulation and confidentiality issues
- Safe chemical storage and handling
- Disposal and recycling of cleaning chemicals, dispensing equipment and packaging
- Cleaning for health, appearance, and safe working practices
- Identifying asbestos
- Safety methods and practices for using chemicals and dilution ratios
- MSDS data sheets and employees' Right to Know
- Strategies to promote hand hygiene
- Green cleaning benefits and practices

Training Hours

All workers shall receive at minimum 1 hour of training monthly and encouraged to provide at least 4 hours of training per month.

Staffing Plan
To meet cleaning objectives within the building, minimum staffing requirements must be met. Factors such as occupancy rates, seasonal variations and other considerations should be taken into account when adjusting the staffing plan.

Staffing plans should be revaluated quarterly with performance based on consistency and quality work delivered and not based on number of personnel or hours spent. Changes to the staffing plan must be approved by the responsible parties listed in Section 3.

SECTION 15: OCCUPANT FEEDBACK AND EVALUATION OF NEW TECHNOLOGIES

PERFORMANCE METRICS AND MEASUREMENT
All guests and employees shall have a mechanism by which to provide feedback on cleaning practices.

PRACTICES TO OPTIMIZE OCCUPANT FEEDBACK AND EVALUATE NEW TECHNOLOGIES AND PROCEDURES
UC Riverside has implemented an electronic collection system for gathering occupants' feedback about the green cleaning program. Occupants are encouraged to alert the management to any issues relating to the green cleaning program. In addition, management regularly researches and integrates new green cleaning technologies into the building's green cleaning procedures.

SECTION 16: TIME PERIOD

This policy shall take effect on March 26th, 2012 and shall continue indefinitely or until amended and/or replaced by a subsequent green cleaning policy.

SECTION 17: DEFINITIONS

entryway systems: Can be open floor grates or grilles with a recessed area designed to capture dirt and other debris from occupants entering the building.

green cleaning: the use of cleaning products and practices that have lower environmental impacts and more positive indoor air quality impacts than conventional products and practices.

indoor air quality (IAQ): The nature of air that affects the health and well-being of building occupants. Acceptable IAQ air contains no known contaminants at harmful concentrations and with which a substantial majority (80% or more) of the people exposed do not express dissatisfaction.

standard operating procedures: Detailed, written instructions documenting a method to achieve uniformity of performance.

sustainable purchasing policy: Gives preference to products that have little negative environmental and social impact throughout their life-cycle, and also gives preference to companies whose products have little negative environmental and social impact.

material safety data sheets (MSDS): Detailed, written instructions documenting a method to achieve uniformity of performance.

rapidly renewable materials: Agricultural products that take 10 years or less to grow or raise and can be harvested in a sustainable fashion.

volatile organic compounds (VOCs): Carbon compounds that participate in atmospheric photochemical reactions (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonates, and ammonium carbonate). The compounds vaporize at normal room temperatures.

walk-off mats: Mats placed inside building entrances to capture dirt, water, and other materials tracked inside by people and equipment.