



**Radford University**  
**Green Cleaning Policy and Program Plan**  
**LEED for Existing Buildings: Operations and Maintenance**  
**August 2011**

**SECTION 1: SCOPE**

This Policy and Plan addresses environmental best practices for cleaning the interior of all Radford University Facilities. 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 system.

**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.

**SECTION 3: RESPONSIBLE PARTIES**

Don Barnes, the Housekeeping Director, with support from the Housekeeping Management and Supervisory Staff is responsible for developing and managing the implementation of the Green Cleaning Policy and Plan.

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

Green cleaning strategies for the property shall include actions performed by any cleaning contractor performing cleaning operations at Radford University.

**SECTION 4: QUALITY ASSURANCE CONTROL PROCESS**

The party 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 senior management. 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 shall review all proposed cleaning activities. Upon reviewing proposed activities, the responsible party shall determine if they meet the criteria of the Green Cleaning Policy and approve or deny action.



The responsible party 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, Don Barnes will review all practices and products 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 95% 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 Radford University 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.



**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
Toilet Tissue	Vondrehle, Blue Mist	Green Seal Certified
Toilet Tissue	Vondrehle, Preserve	Green Seal Certified
Paper Towels	Baywest, Eco Soft	Green Seal Certified
Paper Towels	Georgia Pacific Envision	Eco Logo, 100% recycled
Trash Can Liners	Colonial, Degrade Away	EPA
Hand Soap	DEB/SBS, Aeroblue Foam	Green Seal Certified
Floor Cleaner/Detergent	BETCO, Green Earth Daily Floor Cleaner	Green Seal Certified
Glass Cleaner	BETCO, Green Earth	Green Seal Certified
General Purpose Cleaner	BETCO, Peroxide Cleaner	Green Seal Certified
Carpet Spotter	Bullen Co., E-Clean	EPA Design for the Environment
Carpet Cleaner	BETCO Peroxide Cleaner	Green Seal Certified
Carpet Cleaner	Windsor, RC Icapsol	EPA Design for the Environment
Stain and Odor Eliminator	Daycon DX-50	GS-37
White Vinegar	Various Companies	Natural Product
Floor Stripper	NCL, Green Impact	Green Seal Certified
Floor Finish	NCL, Aspire	Green seal Certified
Floor Finish	BETCO, Prelude	Green Seal Certified
Deodorizers	Fresh Products, Eco Fresh	Environmentally Preferable
Disinfectant Cleaner	BETCO Green Earth Daily Disinfectant	Environmentally Preferable
ALL OF THE ABOVE PRODUCTS ARE CURRENTLY IN USE AT RADFORD UNIVERSITY		

**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 January 2013.

**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:

- 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 extraction equipment for restorative, deep cleaning is certified by the Carpet and Rug Institute's "Seal of Approval" Testing Program for deep-cleaning extractors.
- Powered floor equipment—e.g., electric and battery-powered floor buffers and burnishers—are 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.
- 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.

**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
Vacuum Cleaner	Windsor Versamtic VS-18	CRI Green, Silver Level
Vacuum Cleaner	Windsor Versamatic VS-14	CRI Green, Bronze Level
Vacuum Cleaner	Windsor Nuwave	CRI Green, silver Level
Carpet Extractor	Windsor Admiral 8	CRI Green, Gold Level
Carpet Extractor	Windsor Dominator	CRI Green, Platinum Level
Carpet Extractor	Windsor Clipper 12	CRI Green, Platinum Level
Carpet Extractor	Windsor Clipper Duo	CRI Green, Platinum Level
Carpet Interim Cleaner	Windsor Icapsol Mini	Meets LEED IEQ Credit 3.4
Automatic Floor Scrubber	NuSource Simpla 20	Meets LEED IEQ Credit 3.4
Automatic Floor Scrubber	Windsor Chariot i Scrub	Meets LEED IEQ Credit 3.4
Floor Buffer	Windsor Lightning LB2000	Meets LEED IEQ Credit 3.4
Sweeper	Windsor radius 280 Deluxe	Meets LEED IEQ Credit 3.4

**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 Radford University 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 housekeeping has reduced the frequency of stripping or removing coatings to an as needed basis, based on use and condition, thereby maximizing the floor's longevity, conserving cleaning and floor restoration materials and minimizing occupants' exposure to harmful chemicals. This will normally indicate a need for stripping at approximately the 3-5 year point. Daily maintenance, top scrubbing and recoating approximately every 1-2 years will help maintain this schedule.
- 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 such as top scrubbing and recoating or top scrubbing and burnishing along with all relevant maintenance/restoration practices and the dates and duration of these activities.

#### HARD- FLOOR MAINTENANCE PROCEDURES

##### DAILY DUST MOPPING

- Gather appropriate materials and personal protective equipment (PPE), microfiber dust mop (or approved back pack vacuum with HEPA filter), angle broom, dustpan, razor blade scrapper, counter brush, wet floor/caution signs.
- Remove obstacles.
- Position caution signs as may be required.
- Vacuum walk-off mats in two directions and roll up.
- Remove large debris, stickers, gum and tape.
- Using a microfiber dust mop, dust mop edges at an angle away from the wall first and then finish area, do not shake the dust mop or remove it from the floor to prevent spreading dirt and germs.
- Use duster to clean baseboards.
- Pick up dirt with angle broom and dust pan or vacuum and crevice tool.
- Dispose of dirt properly.
- Clean up, brush off dust mop head carefully with counter brush over trash container and/or vacuum head clean, change head as required, remove any caution signs, clean up and restore all equipment, replace walk-off mats, note and report any problems, check your work.

#### HARD FLOOR MAINTENANCE PROCEDURES

##### DAILY WET MOPPING

- Dust mopping procedure MUST be followed before proceeding.
- Gather appropriate materials and personal protective equipment (PPE), mop bucket and wringer appropriate for microfiber flat or string mop, auto scrubber with appropriate pad, daily floor cleaner, razor blade scrapper wet floor/caution signs.
- Read MSDS and label instructions.
- Remove obstacles.
- Position wet floor/ caution signs at all necessary points for occupant safety.
- Mop floor edges first in straight line method, use a scrapper to remove dirt from corners and doodlebug to remove dirt from edges as required, mop floor in a figure eight method, change water continually when discoloration is noticed remember to clean baseboards.
- Use automatic floor scrubber with appropriate pad for daily cleaning and auto scrub floor, clean edges with scrapper and use clean mop as required for detail cleaning and water pick up. Auto scrubbing is the preferred technique when possible and equipment is available. The floor is now ready to burnish if desired.



- Clean up and restore all equipment, replace walk-off mats, note and report any problems, check your work

#### HARD FLOOR MAINTENANCE PROCEDURES TOP SCRUBBING AND FINISHING - INTERIM MAINTENANCE

- Dust mopping procedure MUST be followed before proceeding.
- Gather appropriate materials and personal protective equipment (PPE), automatic floor scrubber, or standard Floor machine, mop buckets, wringer, mops, wet floor/caution signs, doodle bug pad and holder
- Read MSDS and label instructions.
- Prepare the equipment and cleaning solution, fill automatic scrubber or mop bucket with appropriate amount of approved floor cleaner, fill rinse buckets with cool water,
- Use doodle bug, scrapper and floor cleaning solution to clean floor edges and base boards. Apply solution and allow adequate dwell time.
- Use a razor blade scrapper to clean corners and other hard to reach areas.
- To ensure all embedded soils are removed, use the "double scrub" method with the auto scrubber, apply the top scrub solution with the squeegee up and vacuum motor off. Apply the solution to a section of the floor allowing the solution to dwell as you scrub the area. As you begin the second pass, drop the squeegee, turn on the vacuum motor, pick up the solution and check the floor for a consistent look. If there is still embedded dirt and/or discoloration, the floor likely needs to be stripped.
- Check the floor with the palm of your hand to be sure there isn't any residue that will interfere with floor finish. If a white powder comes off on your hand, rinse again.
- For obstructed areas or if an automatic scrubber is not available, use a standard floor machine
- Apply the top scrubbing solution to the floor, allow adequate dwell time while cleaning edges with doodle bug and scrapper and corners with scrapper
- Scrub floor with floor machine thoroughly taking time to let the machine work
- Use a wet/dry vacuum to pick up the solution.
- Rinse the area with clean cool water at least two times using a clean mop
- Check the floor with the palm of your hand, to be sure there isn't any residue that will interfere with floor finish. If a white powder comes off on your hand, rinse again.
- The objective is to have a clean, dry, film free floor to begin application of finish.
- Apply appropriate number of coats of finish (2-4). See procedure below.
- Remove wet floor/caution signs and tape, clean up and store all equipment, note and report any problems, check your work.

#### HARD FLOOR MAINTENANCE PROCEDURES APPLYING FLOOR FINISH

- Gather appropriate materials and personal protective equipment (PPE), microfiber finish bucket and CLEAN microfiber finish pad, pad holder and handle, tape to prevent occupants from walking on wet finish, appropriate green floor finish.
- Put an adequate amount of finish in the finish bucket, enough for the job but try not to put more than will be used. A trash liner is not required for this bucket. It has a lid that seals to keep air tight.
- Assemble pad holder, handle and pad.
- Saturate the finish pad but don't submerge the holder and handle.
- Press the pad on the wringer surface to remove excess finish.
- Box out the area to be finished, normally not more than 8' x 20'. Use an overlapping figure eight motion to spread the finish evenly. Apply medium coats, not heavy, don't let the pad get too dry and leave dry marks, it's better to have several thin coats than try heavy coats to keep the finish even and prevent puddles and dulling.
- When the area has been coated wait until the finish is completely dry, normally within 30 minutes, but depending on humidity and temperature it could take much longer.
- Apply additional coats as required, allowing adequate drying time between coats.



- Keep finish OFF baseboards and carpet strips.
- Clean up and restore all equipment, remove wet floor/caution signs, note and report any problems. DO NOT PUT OLD FINISH BACK INTO A CONTAINER OF FINISH IT WILL CONTAMINATE THE FINISH IN THE CONTAINER.

#### HARD FLOOR MAINTENANCE PROCEDURES RESTORATIVE MAINTENANCE – STRIPPING AND REFINISHING

- Dust mopping procedure MUST be followed before proceeding.
- Gather appropriate materials and PPE, automatic floor scrubber with appropriate pad or standard floor machine with appropriate pad, bucket and wringer with floor stripping solution, buckets and wringers for rinsing and detail rinsing, doodle bug pad and holder, dry/wet vacuum, razor blade scrapper, wet floor/caution signs, tape, protective/slip resistant shoes/shoe covers.
- Read MSDS and label instructions.
- Supervisors conduct safety briefing on procedure, chemicals and fall safety.
- Protect adjacent floor area not being stripped with tape, cardboard etc. Using painters tape, tape a line between area being stripped and not being stripped to prevent stripper and finishing entering unwanted area to ensure even and no overlapping finish.
- Fill automatic scrubber with cool clear water. DO NOT PUT STRIPPER SOLUTION IN THE AUTOMATIC SCRUBBER.
- Apply the stripper solution from the bucket using a mop, to a manageable size area not the entire room. Allow the solution to dwell for 10-15 minutes. DO NOT LET STRIPPING SOLUTION DRY. Use a doodlebug and stripping solution and scrub floor edges and hard to reach areas and a scrapper to clean corners.
- Using the automatic scrubber with appropriate pad and squeegee up and vacuum motor off, or a floor machine with appropriate pad, start scrubbing to strip the old finish from the floor making an appropriate number of passes. With the auto scrubber, squeegee down, water flow set for at desired level and vacuum motor on, pick up the stripper solution and continue until floor is thoroughly rinsed. Use a mop and bucket with clean mop head to detail rinse. If a standard floor machine was used, pick up the solution with a wet/dry vacuum, followed by 2-3 rinses and then a detail rinse.
- Check the floor for any residual finish. If all finish is not removed, repeat above steps and scrub floor until all residue has been removed. Check the floor with the palm of your hand, if white residue comes off, rinse the floor again.
- The objective is to have a clean, finish free, dry, film free floor to begin the application of finish.
- Clean up and store all equipment, note and report any problems, check you work.
- Follow floor finish application procedure.

#### CARPET MAINTENANCE PROCEDURES ROUTINE MAINTENANCE – VACUUMING - DAILY

- Gather supplies and personal protective equipment (PPE).
- Remove obstacles.
- Post any necessary caution signs.
- Check the schedule of the area to be vacuumed.
- Check vacuum cleaner, bag, cord, filter, overall condition.
- Pick up large debris.
- Remove cord completely from the vacuum and plug it in.
- Note spots and stains that need to be removed.
  
- Make at least 10 vacuum passes (front to back) in heavy traffic areas, at least 8 vacuum passes (front to back) in medium traffic areas and at least 6 vacuum passes (front to back) in low traffic areas. Make slow deliberate



movements with the vacuum to give it time to remove soil. At least 4 passes front and back are required to remove soil.

- Clean up and store all equipment, check vacuum bag and cord note and report any problems.

#### CARPET MAINTENANCE PROCEDURES

##### ROUTINE MAINTENANCE – SPOTTING DAILY

- Gather supplies and personal protective equipment (PPE).
- Read MSDS and label instructions.
- Remove obstacles.
- Post wet floor/caution signs.
- Inspect area for spots.
- Remove solids and blot up any excess liquid.
- Using appropriate green spotter, dispense spotting solution in a coarse stream directly on the spot, agitate with carpet brush, work toward the center of the spot, blot as necessary, let dry completely and vacuum.
- For difficult spots a spotting machine may be necessary.

#### CARPET MAINTENANCE PROCEDURES

##### ROUTINE MAINTENANCE – ENCAPSULATION CLEANING – EVERY 1-3 MONTHS – MORE OFTEN AS NEEDED

- Notify any vulnerable employees or building occupants before starting the cleaning procedure.
- Gather supplies and personal protective equipment (PPE).
- Read MSDS and label instructions.
- Remove obstacles.
- Post wet floor/caution signs.
- Mix encapsulation solution following label instructions in a tank sprayer.
- Lightly mist (do not saturate) the solution on an area of carpet that can be cleaned before the solution gets dry.
- Using the encapsulation machine clean the area where the solution has been applied, by operating the machine over the area in two different directions.
- Let carpet dry.
- Note and report any problems.
- Vacuum at the next available opportunity.

#### CARPET MAINTENANCE PROCEDURES

##### RESTORATIVE MAINTENANCE – DEEP EXTRACTION – ANNUALLY

- Notify any vulnerable employees or occupants before starting the cleaning procedure.
- Gather supplies and personal protective equipment.
- Read MSDS and label instructions.
- Remove obstacles.
- Post wet floor/caution signs.
- Inspect carpet for spots and pre- treat as necessary.
- Fill the appropriate size carpet extractor with cool clean water and extract the carpet thoroughly using no more water than necessary and do not flood carpet.
- Follow each wet pass with a MINIMUM of three dry passes.
- Delay the last pass to allow final wicking. Run the last pass perpendicular to the other passes.
- Enhance drying time with a dry terry cloth bonnet procedure. A dry bonnet procedure eliminates wick back, gives the carpet a uniform look by eliminating extractor lines, and improves the drying process.
- Use carpet dryers for the final drying of carpet.
- Allow carpet to dry thoroughly before allowing traffic back on it.
- Remove wet floor/caution signs.
- Clean and store all equipment.
- Note and report any problems.





## **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 entryways and entrances into Radford University are equipped with walk off mats and/or semi permanent walk off carpet tiles.
- Walk-off mats at all primary entrances shall be vacuumed in two directions, rolled up and the floor under them swept and mopped and/or vacuumed DAILY, and thoroughly cleaned WEEKLY. These systems shall be a minimum of 10-12 feet long in the direction of travel.
- Secondary entrances shall also have walk-off mats of 10–12 feet in length to capture initial loose particles entering the building. These mats must be vacuumed daily in two directions, rolled up and the floor under them swept and mopped and/or vacuumed DAILY, and thoroughly cleaned WEEKLY.
- An entryway systems log will be maintained in all facilities, which will include, facility name, entry location, type of matting or system and size.
- The following statement has been included in all housekeeping employee's position description work tasks. Walk-off mats will be vacuumed, rolled up, and the floor under them swept and mopped and/or vacuumed DAILY and thoroughly cleaned WEEKLY.

## **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

- All restroom facilities shall include appropriate hand soaps.
- Housekeeping staff will receive regular training on the following. Get in the habit of washing hands frequently throughout the day, when coming into contact with people who have colds or viruses, after removing gloves, and visiting the bathroom.
- Hand washing procedure. Wet hands with warm water, place approved soap in hand, an amount the size of a nickel, use vigorous friction and lather hands and wrists for 15-30 seconds, rinse and dry completely with paper towels.

## **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 on the ground floor. Workers access chemicals at the beginning of their shift and as needed.
- Only chemicals that are authorized for use shall be store in closets.
- MSDS sheets are required for all chemicals.
- Chemical will be stored with lids, caps etc. in place on the container.
- Managers and supervisors will inspect closets during the monthly Quality Assessment Inspection to ensure chemicals that are authorized for use are stored properly.

##### **Chemical Dilution systems**

(See Section 11)

##### **MSDS Storage**

- The cleaning chemical supplier is required to provide accurate MSDS's for all chemicals.
- MSDSs are filed, in duplicate, in the chemical storage room and the manager's office and in first floor housekeeping closets 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.

#### **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:

Floor Cleaner/detergent, glass cleaner, disinfectant, general purpose cleaner, when possible a dilution type dispenser will be used for floor stripper and any other chemical.

##### 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**

BETCO Fast Draw 4 This is an enclosed tamper proof, lockable system with separate indicators for products to prevent any possible contamination. It has both ASSE and IAMPO approved backflow prevention. Product containers have tamper proof metering tips for proper dilution control. Dilution systems are located in strategic housekeeping closets throughout all facilities.

##### **Protocol for Use**

Procedural steps for use are posted in housekeeping closets where systems are located. Procedural steps are contained in the system brochure.

##### **Maintenance**



The housekeeping equipment repair technician provides maintenance of the dilution control systems following the system technical manual and troubleshooting guide.

## **SECTION 12: CONTAINMENT AND TREATMENT OF LABORATORY CHEMICALS**

### **PERFORMANCE METRICS AND MEASUREMENT**

For any drain that handles laboratory-type liquids, containment drains must be provided that will appropriately treat the liquid waste.

### **PRACTICES TO OPTIMIZE USE OF CONTAINMENT DRAINS IN LABORATORY SPACES**

Containment drains are installed and used, as necessary, according to the procedures below, to minimize risk to staff and occupants, and to mitigate contamination of natural resources.

#### **Containment Drain Description**

Glass traps are provided to catch heavy metals and acids to prevent them entering the waste water system.

#### **Protocol for Use**

The containment drain systems are in place to catch heavy metals and acids should spills occur and prevent them from entering waste water.

#### **Maintenance**

Facilities Management plumbing shop maintains the containment drains as required in coordination with the safety office.

## **SECTION 13: VULNERABLE BUILDING OCCUPANTS**

To protect vulnerable building occupants, such as pregnant women, children, asthmatics, elderly occupants, individuals with allergies and highly sensitive individuals, housekeeping staff and if contract cleaning staff are utilized 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 14: 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 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
- Maintenance and proper use of housekeeping equipment
- Cleaning procedures and methods
- Fire extinguisher training
- Lead and asbestos
- Personal protective equipment

### **Annual Training Hours**

All workers shall receive 40 hours of training annually

### **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.

Under typical conditions, total cleaning staff time shall be not less than 8 hours per day with the exception of small facilities requiring less time. Generally 90 staff members work 8 hours per day per facility to meet these requirements for all university facilities.

## **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 TECHNOLOGY AND PROCEDURES**

Radford University 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 August 1, 2011 and shall continue indefinitely or until amended and/or replaced by a subsequent green cleaning policy.